

# **PERSPECTIVES IN BUSINESS, INFORMATION & HUMAN SCIENCES**

*Edited by*

**MUHAMMAD RASHAAD BAKASHMAR**

**NOOR INAYAH YA'AKUB**

**CHAN SAI KEONG**

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## **PREFACE**

Perspectives in Business, Information & Human Sciences covers a wide arrange of topics in business, information technology and human sciences. The compilation includes research work conducted by researchers from the Faculty of Business, Information and Human Sciences at the Infrastructure University Kuala Lumpur (IUKL). The volume covers a wide range of important economic, social, cultural and political issues.

The various chapters in the volume include analysis on governance, economic development, communication, media and ethics, culture and its relation to corporate culture and politics, digital citizenship and digital finance. In “Global Communicators, Peace Journalism and World Citizen”, Faridah Ibrahim et. al. introduce “the global communicator paradigm”. They argue that “the proliferation of new technology, digital citizenship and global communication has led to new tools about educating peace and harmony in different cultures” . They point out the various cultures in a globalized world makes it imperative that individuals from different cultures, languages and ethnicities must learn to express themselves effectively in order to create a peaceful and harmonious world. They note that “Global communication skills are especially important in various environments such as politics and businesses, where language and cultural barriers can impact efficiency”. The ideas presented in this paper permeate the themes discussed throughout the volume.

Another important theme covered in this volume relates to business ethics and advertising. For example, the chapter by Fathonah Aina Baharuddin and Raja Alaini Raja Omar with reference to Shariah compliant products, look at the importance of ethical advertising. The chapter observes that “many international marketers used various unethical ways in advertising and marketing their products” The study emphasizes the need for advertisers to abide by the law and ethical standards to avoid deception and misleading customers.

In their study on the impact of Covid-19 and attitudes towards online learning, Noor Hamizah Mohamed Laksemana et al. examine the various challenges that faced students who had to adapt to online learning methods during the pandemic. The study also focuses on the positive impact that the shift from physical classroom had on learners such as increased flexibility, comfort and the ability of students to be able to review and repeat lecture video recordings for revision and improve their understand of the materials being taught. Similarly, on the same theme of the impact of Covid-19 pandemic on education and learning, the chapter by Muhammad Nazeem et al. examines the “perspectives among English Language Teachers of Reluctant ESL/EFL Learners During the Covid-19 Pandemic”. From the findings of their research, they conclude that there is a need for English teachers to adapt to “new teaching environments” and for learners to cope with virtual learning”. The contribution by Nalinah Poongavanam et al. looks at the issue from the perspective of the challenges of teaching STEM and non-STEM students during the Covid-19 pandemic.

The work by Karthiyaini Devarajoo et al. emphasizes the general observation by a number of studies in this work that effective use of technology in higher education does have a positive impact on the quality of teaching and learning. This theme is also covered in the chapter by Soraya Tairanet al. who highlight the importance of ensuring good and easy access to the internet and wireless facilities.

Another important theme explored in this volume is digital literacy and digital citizenship. There are several contributions on this theme. For example, the chapters by Haslin Hasan et al. and Robiatul A'dawiah Jamaluddin et al represent studies that show the capacity of ICT applications to

enhance value in various fields of learning and communication including combating misinformation and enhancing the capacity of learners. For instance, the research by Robiatul A'dawiah which studied the MyScience application showed MyScience may increase preschoolers' scientific process abilities in Space Explorationthemed learning compared to standard teaching and learning approaches; and that the design of multimedia components in MyScience is connected to student accomplishment in Exploring Space.

The book also contains chapters on the impact of the Covid-19 pandemic on faith and religion, philanthropy, education and the use of technology in education and developments in online learning. The chapter by Lim Hock Ann et al. examines the impact of Covid-19 lockdown restrictions on the faith of Catholics in Malaysia and the coping methods employed by the faith's adherents to deal with the effects of Covid-19 lockdowns. The study also explores new opportunities in faith practices and engagement for the Malaysian Catholic faithful that have risen from the pandemic.

The contributions by IUKL researchers contained in this volume cover a wide spectrum of issues on the impact of technology, economic and social changes and challenges on communication, education, business, the economy, politics, faith and culture. It is a useful reading to any researcher who is interested in such important topics. Finally, the accessible writing style used by most of the authors makes Perspectives in Business, Information and Human Sciences useful resource to all interested members in the general public.

Muhammad Rashaad Bakashmar  
Noor Inayah Ya'akub  
Chan Sai Keong

# CULTURAL INSTRUMENTALISM, DEVELOPMENTALISM AND GOVERNANCE IN MALAYSIA

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## INTRODUCTION

Most studies on the rule of law in Southeast Asia approach the subject from either the jurisprudential perspective or the socio-economic paradigm. The jurisprudential approach concerns itself more with procedural rather than substantive matters and focuses its attention to the judicial decision-making process (Ohnesorge, 2003, pp. 92-93). While providing some useful insights on the legal aspects of the issues under investigation, the jurisprudential approach tends to shed little light on the relationship between the law itself and the various economic, political and cultural instruments upon which the legitimacy of the current constitutional order relies. On the other hand, the socioeconomic perspective of the rule of law concerns itself with the relationship between the framework of rules and social life. However, the overemphasis on the impact of property rights on economic development tends to understate the multifaceted nature of governance as an analytical category and the need for an interdisciplinary approach to the subject. As a result, rule of law is reduced to an aspect of economic activity and planning similar to literacy rate or the level of union membership in the workforce (Ohnesorge, 2003, pp. 2-3). This theoretical compartmentalisation of the 'rule of law' as an analytical category tends to oversimplify the complex interaction between the various legal, political, socio-cultural and economic forces that either legitimate or limit government actions. Consequently, the dynamism of the 'rule of law' as a political and social variable is completely missed or glaringly understated.

In the case of Malaysia, most scholarly attention on the subject has largely focused on the textual aspects of the law and the judicial process often leaving aside the political forces that shape *de facto* rule of law in the country. The themes commonly covered include constitutional amendments, infringements on the principles of separation of power, judicial independence, judicial corruption and the rules governing the conduct of elections (Lee, 2004; Teik, 1999; Yatim, 1995). While all these are useful dimensions of the problem, they do little to explain the various means with which the acquisition, centralization and the distribution of legislative and executive powers is legitimized before the eyes of the masses. As Hassall and Saunders suggest, in addition to the constitution and its associated arrangements, there is a need for an inquiry that takes into account, the operation of the government, its historical evolution, the traditions on which it rests, and its social, political and economic contexts (2002, p. 3).

This study seeks to fill this theoretical gap by examining the dynamics of power and governance in Malaysia through the developmentalist perspective. This approach allows us to explore the intersection between local politics (hereby conceived as a culturally constructed category) and capitalism (as an imported universal economic category). The main focus is on the manner in which state authority is conceived (both from the legal and cultural perspective) and the means of its legitimation within the developmentalist paradigm. It is hoped that this approach would provide some important insights on how cultural factors have served as important levers of governance in the state-led capitalist transformation of the Malaysian economy and society.

A developmental state is distinguishable through some important characteristic features. These include the blurring of the distinction between the public and private realms, the

mobilisation of nationalism and the manipulation of culture, the use of development as a legitimising principle of the state, a significant role of the state in the economy and the existence of a technocratic elite committed to economic reform but autonomous from specific interest groups (Abbott, 2003, p.32). The relevance of culture in shaping de facto rule of law in Malaysia is therefore mainly dependent upon its role as legitimation instrument for the government's developmental policies rather than as a determinant of policy goals or objectives. Thus, theoretically, one may contend that political authority it is would be more willing to adopt culturally- defined institutional forms when such forms would help to provide legitimation for the state and its policies. Alternatively, in cases where conceptions of "cultural traditions" are potentially at odds with the state's development agenda, such "traditions" or "cultural values" would be deemed either inexpedient or in some cases reconstructed to suit policy priorities.

According to Hobsbawm, invented traditions belong to three overlapping types, i.e. those establishing or symbolising social cohesion or the membership of groups, real or artificial communities; those establishing or legitimising institutions, status or relations of authority; and those whose main purpose is socialisation, inculcation of beliefs, value systems and conventions of behaviour (1983, p.1, 9). In Malaysia, cultural instrumentalism has affected all these three areas i.e. identity formation, institutional legitimation as well as the active construction of the dominant 'values' in society by the state and its various agents of socialization.

In Gramscian terms, cultural instrumentalism in Malaysia has been an important dimension in the official construction of the public developmental discourse (Butko, 2004). For Gramsci, civil society is not simply a sphere that acts as a buffer to the state. Rather, it is conceived as an arena of constant competition, conflict, and clash of ideas. In this sense, "whoever controls civil society succeeds in manufacturing consent" (Ramasamy, 2004, p. 202). The overriding aim of this process is the active manufacturing of public consent and support for the state's developmental policies. The ensuing analysis examines how the political authorities in the past four decades have effectively instrumentalised traditional business networking patterns to support the implementation of economic policies. The chapter then goes on to elucidate how the use of selected cultural signals have contributed to blur the line between the public and private sphere. In turn we examine how the blurring of the lines between the public and private spheres have helped to provide a communicative platform for the legitimation of close networking between business and political elites and the impact of such processes on the rule of law in Malaysia.

## **2. Cultural Instrumentalism, Developmentalism and the "Asian Values" Discourse**

The relationship between cultural instrumentalism and the rule of law in Malaysia exhibits some significant parallels with the Singaporean experience. Between 1963 and 1965, the island city state of Singapore was part of greater Malaysia which also incorporated Peninsula Malaysia, Sabah and Sarawak. Following the separation of Singapore from Malaysia in 1965, the government of Singapore sought to chart its own path towards economic development. An important aspect of this strategy involved the construction of a new state with a new "culture" that would help legitimate the chosen means for the implementation of developmental policies and the attainment of rapid economic growth.

To facilitate economic growth and development, selective elements of the ethnic culture were promoted as "cultural backups" to reinforce values that were deemed essential to the culture of work and competitiveness in the international marketplace. However, this politically motivated cultural production was not always successful. At times public resistance to government-promoted values was apparent as the forces of primordial values struggled against cultural instrumentalism by the state (Chua and Kuo, 1991, pp. 9-10). From a theoretical perspective, the

gap between the “promoted” (i.e. politically constructed) culture and the “primordial ethnic character” represented the degree of successful cultural construction by the developmental state.

The ‘political construction of culture’ in Singapore aimed at the “mental” production and at providing emphasis on various developmentally-defined goals. These included for example the introduction and promotion of the English language as the *lingua franca*, the suppression of ethnicity as a source of social and communal identity, the destruction of established settlements and the construction of mass housing, the inculcation of home ownership as a value and the introduction of population control measures to curb population growth. Most of these measures were arguably geared towards the deconstruction of some long held Asian traditional values that were seen by the administration as obstacles to the city state’s bid to achieve rapid economic success. Under pressure from the policies were local ethnic languages, the role of ethnicity as a source of communal identity and loyalty, traditional settlement patterns, the extended family as a long-held tradition among the local ethnic communities, and the value among most local communities who viewed fertility and (big) family size as signs of prosperity and happiness” (Chua and Kuo, 1991, pp. 15-23).

However, the dedicated implementation of these policies over two decades exposed their side effects. Commitment to productivity and career led to excessive individualism and over-consumption, birth control gave rise to labour shortages, the urge on the part of the young middle class to own homes led to premature break-up of families and increased the pressure for the state to support care for senior citizens. Faced with these challenges, the government moved to revise (i.e. deconstruct) its previously cherished “values” (read policies). In a sudden twist, the various economic challenges and social ills that were clearly by-products of the government’s own previous “politically produced values” were labelled as the bad effects of “Westernisation.

To legitimate the shift away from these “values” that had become “unproductive”, since the late 1970s, the Singaporean authorities embarked on the promotion of a new set of “values” under the banner of “Asian values” to “arrest the rot” that threatened the nation. The shift was marked by an emphasis on a return to the “Asian” values of honouring the family institution, the importance of the mother tongue(s), and the significance of teaching moral education in schools (Chua and Kuo, 1991, p. 26). As was the case during the first shift in the 1960s, this one too was hyped with references to the “values” of society. As these events suggest, cultural instrumentalism has and continues to play a significant role in the legitimization of government policies and the management of the changes and stresses associated with rapid economic development in Southeast Asia.

Similar trends have been observed in Malaysia as the government retooled culture in the service of its developmental policy objectives. However, before engaging the details of this process in Malaysia, it is important that some important differences between the Malaysian case and that of Singapore be identified. First, unlike in Singapore where the construction of the new national identity prompted the suppression of ethnicity as a primary source of communal identity, in Malaysia the political construction of “race” as a basis of political party formation and economic redistribution led to the promotion rather than suppression of racial identity as a source of political and communal identification.

Second, the ‘political construction of culture’ in Singapore was premised on the notion that national identity and culture were a post-1965 phenomenon. This led to the emphasis on nationhood as a postcolonial phenomenon which entailed the elimination of primordial values and traditions as valid sources of “national culture” particularly during the first twenty years of independence. To the contrary, in Malaysia, the “political construction of culture” has often been supplemented by the “cultural construction of politics”. As a result, unlike Singapore where

religion has been categorically eliminated as a basis of national identity, in Malaysia, the inclusion of local (communal) traditions into the postcolonial constructions of culture precipitated a situation where religious and ethnic symbols of authority and legitimacy are collectively harnessed to help provide cultural legitimation for prevailing power relations and policies.

Rapid economic growth in Malaysia in the 1980s through the 1990s marked the productive success of state interventionist policies that began in the early 1970s. State-led capitalism provided an opportunity for the adaptation of 'universal' market values embodied in Western capitalism to Malaysia's own political and socio-cultural milieu. According to Wan-Ling Wee, the encounter between Western capitalism and non-Western cultures in Asia demonstrates that: (2002, pp. 2-3):

- (a) capitalism is a cultural form with practices and demands, to which the ways of life of the society that desires it will need to adapt;
- (b) even though the logic of capitalism can be outlined, local conditions will dictate that capitalism will spread in ways that will proceed but not be entirely consonant with its various Western origins; and
- (c) states from "on top" may attempt to re-tool local cultures to fit capitalism's cultural specificities, but also from "the bottom" local cultures may either resist or enable the development process.

Whereas the 'political construction of culture' has been instrumental in the promotion of new developmental projects and its associated elite configurations in the economic sphere, the 'cultural construction of politics' has facilitated the legitimation of the new institutional forms by providing a cultural and religious dimension to new educational, legal and financial institutions streamlined to fulfil the developmental vision of the Malaysian state. In fact, Prime Minister Mahathir Mohamad was very clear in his prioritisation of developmental policy goals over Malay customs and traditions. In his well noted book, *The Malay Dilemma*, Mahathir argued that the adat was no longer the essential thing to the Malay community it once was. As such, he suggested, adat could "be changed or ignored in the process of progress" (1970, pp. 104-105).

Despite such notions, the Malaysian authorities realised that in a largely conservative Malaysian society, the success of any public policy hinged upon its perceived conformity with long held societal values and traditions. In this sense, development policies and programmes had to be presented in the image of primordial values. When such congruence did not exist, the adat had to be retooled to legitimate government policies and minimise potential public resistance to social dislocations associated with rapid economic development (Scott, 1985). The combination of rapid economic growth and successful legal and cultural legitimation enabled the government to transpose public's support generated from positive economic performance in the private sphere to be reflected as mass approval of government development policies in the public sphere. In this sense, the blurring of the line between the private and public spheres associated with statist developmentalism helped the government to efficiently convert successes in the private sector into political legitimacy.

The Malaysian intellectual community has been an active participant in the construction of discursive categories that help to tie up the nation's developmental goals with the people's cultural aspirations and values. As Shamsul notes, in Malaysia, "knowledge, irrespective of philosophical or theoretical grounding, has been used directly or indirectly as an instrument to advocate an ethnic cause or to launch a purportedly 'objective, scientific critic' of an ethnic group or sub-ethnic group" (Shamsul, 1998, pp. 34-35). Invariably, the successful inculcation of such "meanings of culture" has served to further the implementation of

developmental policies and harmonise any potential tension between the political and cultural spheres. The Malaysian case vindicates Gramsci's assertion that intellectuals often act as intermediaries between the masses and the administration, and that "in every country, the stratum of intellectuals has been radically modified by the development of capitalism" (1994, p. 328). In order to organise the state and commerce, the ruling class tends to produce a particular type of intellectuals who, with their value-laden intellectual activities, produce hegemony and reproduce the status quo (Holub, 1992, pp. 22-26).

The "Asian values" discourse in East and Southeast Asia is another discursive arena where new "cultural" values have been constructed and deconstructed to provide a "quasi-anthropological" bond for the peoples of the region beyond the confines of their national borders. Tommy Koh, identifies the following values as constituting Asian values: hard work, respect for authority, strong family ties, reverence for education, thrift, teamwork, and a balance between the individual's interests and those of society. Tung Chee-hwa adds to this list modesty, integrity and the desire for continuous improvement (Koh, 1993, p. 160). The 'neutrality' embedded in the semantics of the "Asian values" allows for their instrumentalisation to support various policy goals. In the next section, we examine the relationship between cultural values, political patronage and the rule of law in Malaysia. Specifically, the discussion aims at addressing the following questions: to what extent has cultural instrumentalism in the private sector moulded Malaysia's brand of state-led capitalism, and second, in what ways has cultural instrumentalism in the private sector affected the rule of law in Malaysia?

## **2. State-led Capitalism and the Re-orientation of *Guanxi* as a "Political Tradition".**

One important notion embedded within Asian values is the concept of *guanxi*. In the Confucian tradition, *guanxi* is a general term used for "social networking". Literally, it can be translated as "relationship" or "connection". In general, *guanxi* refers to the establishment of personal connections between two independent *individuals* (not firms or companies) to enable a bilateral flow of social or personal transactions. Conceived in accordance with Chinese cultural norms and traditions, the *guanxi* are long term relationships which are founded on reciprocity, obligations and duties, the obligation for the strong (i.e. powerful or of higher status) to assist the weak, and mutual sensitivity. The *guanxi* networks can be established on the basis of family, kinship, hometown, classmates or co-workers.

An important feature of *guanxi* business engagement is the fact that the sanction of the law is not sought in commercial transactions. Relationships and dealings are based on mutual trust and membership into a *guanxi* network is often initiated by an introduction of a new aspiring member by a current member who bears the responsibility for the behaviour of those he or she introduces. *Guanxi* is always personal. When two firms whose owners or leaders belong to a *guanxi* deal with each other, they regard it as a dealing between the two individuals rather than the two firms they represent (Ying Lun So and Walker, 2006; Irene Yeung and Tung, 1996). Proponents of Asian values argue that the persistent East Asian cultural preference for *guanxi* (i.e. rule of relationship) and 'familism' (i.e. the family and clan bases that underlie many Asian businesses) in the face of a thriving market economy suggest that an alternative trajectory exists for East Asia, namely one based on the co-existence of rule of law and a rule of relationship (Cheng et al. 2003, p.5). In the coming paragraphs, with reference to the Malaysian case, we critically analyse this proposition. At issue here is the way in which the "rule of relationship" which is supposedly a core feature of the "Asian values" has been distorted by the embedding of capitalism in the vertical structures of the developmental state in Malaysia.

Business-government relations in East Asia have often been given a cultural connotation by the authorities. Reference to the cultural values has helped to underscore the local legitimacy of business conglomerates built around relational networks in various parts of East Asia. It is argued that the major business cartels in East Asia such as the Japanese *keiretsu* and *sogo sosha*, the Korean *chaebols*, and the major government-linked Malaysian conglomerates (GLCs) founded under the “East” policies are prominent examples of shared values in the East (Min Chen, 1995, pp. 4-5, 167-177, 249-252).

In Malaysia, the ‘cultural’ sanctioning of such forms of corporate ownership paved the way for the evolution of closer ties between political parties, party elites and the corporate sector (Milne and Mauzy, 1983-84, p. 268). However, unlike the individual and family based traditional *guanxi* networks, state-led capitalism in Malaysia has helped to reconstitute this traditional ‘relational’ form of networking into a variety of other forms. These include among others politician–businessperson, party-business and state-corporate alliances. Some observers have used terms such as political patronage, renteering and crony capitalism to loosely describe such networks. However, the “Asianness” of such new alliances has occasionally been questioned. Kheng-Boon Tan, for instance, describes such “political *guanxi*” as “the particularistic connections *outside* of the Chinese community, with the indigenous [Malay] political and bureaucratic elites” (2000, p. 66). In other words, the political instrumentalisation of the *guanxi* allowed the Malaysian and other governments in the region to assume the role of the ‘parent family’ on which various business entities ‘attach’ themselves to form a state-led ‘*guanxi*’.

In the case of Malaysia, there have been widespread allegations that some politicians have been using their positions to help family and friends obtain credit, government contracts and ownership of public companies at reduced prices (Ching, 2005; Gomez, 1990, 1991, 2004a, 2004b; Jomo, 1997; Koon, 1997; Johnson and Mitton, 2003). While allegations of direct patronage are often denied, historical evidence suggests that it is difficult for one to understate the significance of ‘family’ and personal friendships as key success factors in the Malaysian business world.

It is important to note, however, that while the reconstruction of the socio-cultural *guanxi* into “political *guanxi*” helped transpose traditional Chinese *guanxi* networking onto the political sphere, it has been difficult to adapt some of the key substantive aspects of the *guanxi* culture within the resultant clientelist networks. As noted earlier, in its socio-cultural Confucian conception, *guanxi* is a *long-term* relational connection that is based on *mutual trust* and operates on the basis of *reciprocity*. In contrast, the survival of a given “political *guanxi*” between the political elites and their business “alliances” tends to be generally assured only so long as the political elite(s) remain in power. Experience has shown that once political power seeped out of the hands of the concerned political elite(s), such networks of “political *guanxi*” often re-invent themselves and businesspersons (privatesphere) seek new political *guanxi* partners in the public sphere (Johnson and Mitton, 2003).

Unlike the trust-based traditional *guanxi* in which relations between network members were expected to be durable and lasting over the *long term*, political *guanxi* are *short-term* instrumental arrangements for fulfilling mutual self-interests that are dependent on the political elites’ ability to maintain their powerful positions and influence. Thus, claims that political patronage arrangements in Malaysia are genuine reconstructions of Asian relational traditions blur the distortions associated with the instrumental embedding of the cultural *guanxi* by the state elite into the government- business networks that have often been associated with renteering, cronyism and/or political patronage in the Malaysian state-led capitalism.

### 3. CONCLUSION

This chapter sought to present two important points. First, that the Malaysian case presents an interesting study on the complex relationship between traditional values and the politics of state-led economic development. That governments in countries like Malaysia through various framing platforms have sought to harness the legitimization power of cultural constructs to successfully improve the public support for developmentalist policies. The foregoing analysis highlighted the role of intellectual discourse as contributing to the success of cultural instrumentalisation within the political sphere.

Second, the chapter discussed how developmentalism as a system of state-led economic development policy making and implementation tends to blur the lines between the private and public spheres. This leads to the creation of grey areas where cultural constructs could be applied as value principles for guiding both cultural and developmentalist political networking. Such political practices, which superficially may seem alien to Western understandings of liberal capitalism, were able to be harmoniously integrated to governance structures of developmental Asian states like Malaysia and Singapore. In such cases, it is important to recognise the important role of cultural values and practices in providing a framework for the legitimization of government development policies as well as assimilating new and complex forms of political-business relations and economic governance in countries like Malaysia.

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# **GLOBAL COMMUNICATORS, PEACE JOURNALISM AND WORLD CITIZEN:TOWARDS A FRAMEWORK OF DIGITAL CITIZENSHIP**

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## **1. INTRODUCTION**

Global communicator is a paradigm that places communicators as persons that bring high courage for accepting his or her own culture and also having high consideration for other peoples' cultures. The proliferation of new technology, digital citizenship and global communication has led to new tools about educating peace and harmony in different cultures. Good global communicators are notable for their listening power, empathy, concise, friendly and observant. These qualities are the inherent values present in trained and learned communicators. The importance of communication in a globalized world is paramount because individuals from different countries, ethnicities, languages, cultures and other diversities must understand one another and express themselves to another effectively in order to create a peaceful and harmonious world.

## **2. GLOBAL COMMUNICATOR – AN ALTERNATIVE PARADIGM**

What is the first thing that comes to your mind when you come across the words 'global communicator'? Yes, we often discussed the effects, advantages, and benefits of global communication, but rarely focus on the roles of global communicators themselves. Global communicator is a term that refers to the roles and abilities of individuals in effectively communicating issues related to cultural, economic, and political analysis of the patterns and effects of communication that occur between nations or states. Also, the ability of individuals to provide and access information cross-cultural through speaking, listening, reading, and writing. The main idea is, we don't all "speak the same language," even if we're all using English. Each country has a different culture, with different expectations and customs (Payne, Raiborn & Joyner, 2005). Global communication skills are especially important in various environments such as politics and businesses, where language and cultural barriers can impact efficiency.

To be able to understand the roles and concepts of global communication and the concepts contained in it, it is important for us to understand the cultural, political, and historical aspects that help to define global communicators to date. The path of global communicators has been known for the last 3000 years when traders started to enlarge their trades to other nations, exploration activities, military campaigns, and colonization. The condition that caused the growth of the study of global communication, namely, the opposition to war and the use of international propaganda, the development of international organizations and diplomacy, the spread of ideology and the use of communication for embedding ideological messages, the development of increasingly advanced communication technology (Shulz, 2011). Four growths occurred in the 80s when technology and communication technology developed rapidly, and the development of international organizations which leads to the emergence of the 'global communicator'. The development of information and communication technology is the beginning of the spread of current globalization around the world. The spread of globalization is related to the progress of information development and communication technology. Globalization is a process where relationships between countries in the world become wider and more intense in all aspects of life

human, such as social, cultural, criminal, financial, and even spiritual (Collyer, 2018). Then the meaning of culture itself is something that will affect the level of knowledge and covers the system of ideas or concepts found in the human mind. Today's culture is no longer only synonymous with western culture, but countries in Asia began to show creative ability by becoming various cultural exporters. This is where the roles of global communicators took place.

As far as we wanted to discuss the historical part of it, there is no specific information on when exactly the term 'global communicator' was first identified. However, we will focus on the roles and impacts of effective global communicators in today's world. The essence of the global communicator is the role of the individual in sharing knowledge, ideas, and beliefs, with various individuals in the world (Behbehanian & Burawoy, 2014). At this time, global communication not only can be done by those who are in power. The global internet and communication infrastructure are more comprehensive than the technology used in the past. As general citizens, we can also connect with individuals in other parts of the world rapidly. The development of communication technology allows you to also become a global communicator yourself. The explosion of information through communication media such as the internet, satellite, electronic media, and cyber technology, especially computer technology has made information sharing become wider. In the context of human life, global communicators cover the political, social, and economic fields and indirectly have an impact on society such as the process of transfer of values, especially ways of thinking and acting (Taekke, 2019). The advancement of technology that occurs throughout human civilization, especially in the form of information technology, is the main substance for globalization. The development of the use of technology around the world has created a form of the information revolution which gives more benefits as well challenges to global communicators. It cannot be denied that the advancement of technology became the main medium for global

communicators. The development indirectly affects the lives of various societies today. It is an unavoidable thing since most of the country needs it as one of the foundations for national development. The influence of technology in life especially as the medium for information sharing among global communicators has become a part of modern society which will continue to increase its use and influence over time. This influence in society has gone beyond all aspects of life, starting from the influence of technology on the economic system to its influence on culture and values in society. Culture is the glue that hold peoples' perceptions, beliefs and thinking patterns.

### **3. IMPORTANCE OF GLOBAL COMMUNICATOR AND WORLD CITIZEN**

Global communicator in today's world is very important, especially in the current practice of digital world. Without the right practice as a global communicator, it will be very difficult for the nation to develop, especially in business. Global communicator is important today because it can link within business management and international communication towards the practice become globalization. It can become more efficient and easier for the world trade and it can connect the relationships within customers and businesses across the world. The importance of communication in globalization is paramount because individuals from different countries, ethnicities, languages, cultural attitudes and other variations must understand one another and express themselves to another effectively in order to work together (Purba & Siahaan, 2021). By having good global communicator, it can communicate with people both inside and outside of the organisation and as a key characteristic of successful business builders in the world trade.

Besides that, global communicator is important because they already conduct research on the other culture for them to communicate with other culture due to cultural differences and each cultural language differs with the other. This is because each community has a different way of how they conduct their business in their culture. So, by having good global communicator, they will learn the different culture of that community and adopt to the global communication. Not only learn about the different culture from their own, but global communicator also learns how to watch the body language of the listeners to determine whether the language is causing a discomfort or not. If it is through a telephone call, some actions like silence on the other end can indicate many reactions to the discussion at hand because some cultures are very sensitive and one should be very careful when communicating with them (IvyPanda, 2022)

With the technology advances over the years and needs someone that be able to keep up to date with the latest trend for effective communication around the world. So, by having global communicator, it can be always aligned with modern technology to avoids delays in any business transaction and any global communicator should always remember that 'time lost is money lost.' With the competency of the technology, it will help to understand how to conduct the business in more effective and helps to build trust between the two companies

### **4. COMMUNICATING INTERNATIONALLY AND ACROSS CULTURE**

In understand different cultures and communicate internationally, the person needs to learn and adapt to cross cultural communication. Different cultures live and work together closely. When the person adapts to various cultural norms, it can make the person more open in conversation and become more productive as a team. It also can make the person communicate more effectively as overall. By understanding the cross- cultural theory, it can make the person explores how people of different countries, ethnicities, and cultures can work together to communicate most effectively. This means overcoming language differences, understanding multicultural nonverbal cues, and working together to understand how to best convey ideas across cultural divides. Given the prevalence of remote work and the continued globalization of the economy, cross-cultural

communication is likely to become more important than ever in the years ahead (Cross cultural communication and cultural understanding).

By having more understanding in cross-cultural communication, it allows people to avoid miscommunication and misinterpretation, instead opening up the possibility of fruitful relationships across previously daunting cultural barriers. This form of multicultural communication enables the free exchange of information among people of vastly different backgrounds, empowering everyone to profit from the flow of valuable data (Cross cultural communication and cultural understanding). There are three basic elements for cross cultural communication where its cover on language, nonverbal communication and social norms. On the language its focus on verbal communication is how people most explicitly convey information from one person to another, so knowing how to speak different languages greatly empowers people to connect across cultural divides. The second element is nonverbal communication where it focusses on body language such as facial expressions or through eye contact. The last element is social norms where different cultural norms lead to different communication styles. For example, in high-context cultures (such as in Japan and China), people talk around a subject gingerly rather than take a more blunt approach. By contrast, low-context cultures (such as in the United States and Germany) generally prefer more direct forms of communication.

## **5. INTERCULTURAL COMMUNICATION AND GLOBALISATION**

Globalisation has caused profound changes on communication among people in many ways. Due to a number of factors, the world is getting smaller thus increasing the probability of people coming into contact with others who are culturally distinct from them. Some of the factors making the world flatter are immigration, economic interdependence, international security, disease control and advancement in technology (Samovar, Porter, & McDaniel, 2009). Thus, globalisation has accentuated the importance of the ability to communicate across cultures (Cavanaugh, 2015; Trompenaars & Hampden-Turner, 2012) also known as intercultural sensitivity.

In addition, within the era of globalisation and K-economy, the role of intercultural sensitivity is prevalent for graduates who are competing for employment in a global market (Guruz, 2010). Western economies, for example, are opening their door for employment opportunities for graduates irrespective of their nationality. This move is important to the Western economies in order for them to substitute their ageing population (Verbik & Lasanowski, 2007). Hence, this creates an open market for graduates from all parts of the world, competing to secure employment outside of their home country and familiar culture.

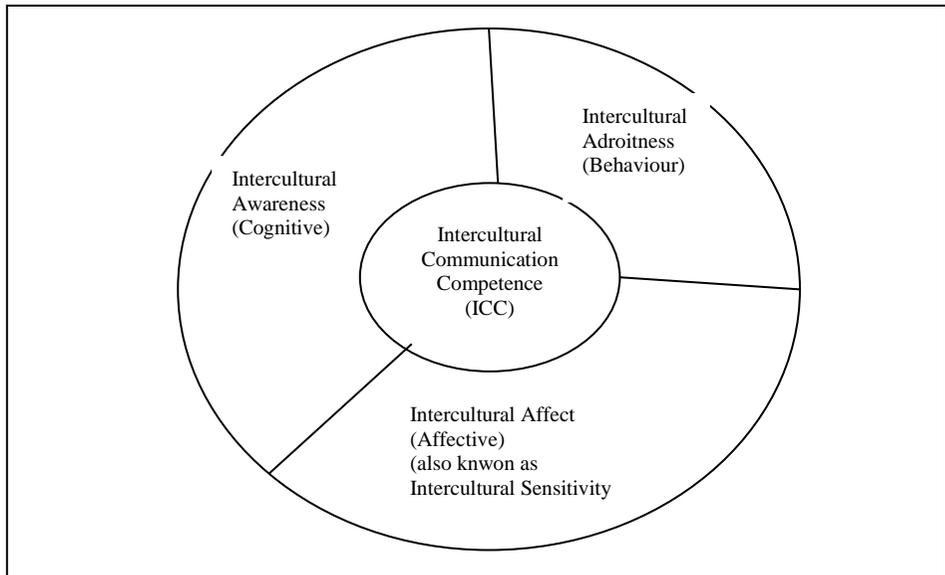
Khan et al., (2010, p. 290), for example, states that an important skill for future global workforce to possess in today's competitive global employment market is cultural sensitivity, dubbed as "one of the most powerful tools in increasing a group's competitive edge". Khan et al., (2010) emphasised on the importance of increasing cultural sensitivity as the skill to effectively communicate across cultures among students to prepare them to enter a more complex and interdependent world.

Further, the importance of intercultural sensitivity is established with the changing composition of workforce. According to Lloyd and Hartel (2009), today, organisations have become very diverse in many aspects which include cultural diversity in their workforce as well as organisational policies. Organisations recruit members from diverse cultural backgrounds to bring in various perspectives in optimising organisational outcomes. This further emphasises that graduates should not only possess technical competency in their respective area but also intercultural sensitivity that can enable them to work in multicultural work settings.

## 6. INTERCULTURAL SENSITIVITY

Intercultural sensitivity (IS) is central in cross-cultural communication settings. A further understanding of the concept of intercultural sensitivity requires an insight into the conceptualisation of intercultural communication competence (ICC). This is because some equate ICC to intercultural sensitivity in terms of the conceptualisation (Bennett & Bennett, 2001) and some view intercultural sensitivity as an interdependent yet exclusive element of ICC (Chen & Starosta, 1997, 2000).

Intercultural communication competence (ICC) is pre-requisite to effective cross-cultural communication. It enables individuals to “relate appropriately in a variety of cultural context” (Bennett & Bennett, 2001, p.6). As shown in Figure 1, ICC consists of three dimensions which are intercultural awareness (cognitive), affective or emotion and intercultural adroitness (behavioural). Intercultural awareness concerns one’s knowledge (cognitive) about other cultures; affective dimension refers to one’s emotion that may motivate him/ her to engage in cross-cultural interactions; and intercultural adroitness refers to one’s engagement in cross-cultural interactions. The awareness (cognitive) dimension and affective dimension are requisites to adroitness. Without knowledge about other cultures, and the motivation to engage in cross-cultural communication, the adroitness (behavioural) dimension will not takeplace.



**Figure 1:** Intercultural Communication Competence (Chen & Starosta, 1997)

Lustig and Koester's (2010) definition of intercultural communication competence (ICC) is similar but using different terms. Intercultural awareness is known as knowledge; intercultural affect is known as motivations; and intercultural adroitness is known as actions. Nonetheless, the functions of each dimension remain similar. Bennett and Bennett's (2001) conceptualisation of intercultural sensitivity is quite similar to that of intercultural communication competence (ICC). They argued that for the development of intercultural sensitivity to occur, all the three dimensions, which are cognitive, affective and behavioural, must work in tandem thus the Developmental Model of Intercultural Sensitivity (DMIS) came into conception. DMIS postulates that “as one’s experience of cultural difference becomes more sophisticated, one’s competence in intercultural relations increases” (Bennett & Bennett, 2001, p.13). This statement refers to the

stages that make up the model in which the higher the stage one occupies, the higher his/ her competence in cross-cultural relations is.

This model is a six-stage continuum which characterizes intercultural sensitivity into two categories which are ethnocentrism and ethnorelativism. Ethnocentrism consists of three stages which are denial, defense and minimization. These three stages reflect a lack of acceptance of cultural diversity. Ethnorelativism, on the other hand, is made up of three stages which are acceptance, adaptation and integration. These three stages reflect on one's openness and readiness to accept cultural differences. An inventory known as Intercultural Development Inventory (IDI) was composed to measure the orientations towards the different stages in Developmental Model of Intercultural Sensitivity (DMIS). Intercultural Development Inventory (IDI) is a 50-item paper-and-pencil instrument.

Developmental Model of Intercultural Sensitivity (DMIS) has been widely used as a diagnostic tool in determining one's stage of intercultural sensitivity, especially within intercultural training. Thus, DMIS is appropriate for cross-national interactions which involve adaptation to new and foreign culture. As mentioned earlier, Bennett and Bennett (2001) conceptualised intercultural sensitivity as developmental thus the integration of all the three dimensions of intercultural communication competence (ICC) is imperative in determining the stage one occupies on the DMIS continuum. The identification of stage is a requisite in designing an appropriate intercultural training which will enable an individual to improve on his/ her intercultural sensitivity by moving on to the next stage. Improvement in intercultural sensitivity means progressing from stage to stage, moving towards ethnorelativism.

Chen and Starosta (1997), however, found this conceptualisation lacks clarity since there is no clear distinction between the concept of intercultural communication competence (ICC) and intercultural sensitivity. They, instead, contended that intercultural sensitivity, in specific, is the affective dimension of ICC. Chen and Starosta (1997) argued that it is the affective dimension that motivates people to "feel" the others in a cross-cultural interaction, thus, enabling them to have a greater level of intercultural sensitivity. This is consistent with Pettigrew and Tropp's (2008) findings which showed an integral role of affective factors in comparison to cognitive indices in intergroup contact.

Chen and Starosta (2000) developed an instrument known as Intercultural Sensitivity Scale (ISS) to measure one's level of intercultural sensitivity. Initially, ISS comprised of six affective-related factors with 73 items generated from the literature. Responses were indicated using a five-point Likert's scale with 1 being "strongly disagree", 2 being "disagree", 3 being "uncertain", 4 being "agree", and 5 being "strongly agree." The respondents used in the initial study were undergraduate students with communication background in an American university. The loading used in the factor analysis was .50 and greater, resulting in 44 items. The 44-items version was subject to further test resulting in a final 24-item version. Intercultural Sensitivity Scale (ISS) consists of five dimensions which are interaction engagement, respect for cultural differences, interaction confidence, interaction enjoyment and interaction attentiveness. The 24-item instrument showed good internal consistency in the two reliability tests conducted. An alpha coefficient of .86 and .88 was shown in the first and second test, respectively.

Chen and Starosta (1997) examined intercultural sensitivity in terms of its level; a higher score on Chen and Starosta's Intercultural Sensitivity Scale (ISS) indicates a higher level of intercultural sensitivity, and a lower composite indicates a lower level of intercultural sensitivity. As opposed to the Developmental Model of Intercultural Sensitivity (DMIS), ISS does not specify a particular stage one occupies; it only provides an indication of one's level of intercultural

sensitivity, being low, moderate or high. In terms of the sample used, ISS is appropriate for both intra-national and cross-national interactions. In conclusion, Bennett and Bennett's DMIS is most appropriate as a guide in designing intercultural trainings since determining one's current stage of intercultural sensitivity is essential as a starting point. Chen and Starosta's ISS, on the other hand, is appropriate to gauge one's general level of intercultural sensitivity without the need to know a specific stage one occupies.

## **7. CONTACT WITH PEOPLE WHO ARE CULTURALLY DIFFERENT**

As discussed, a large body of research has demonstrated the importance of intercultural sensitivity within the context of the twenty-first century. Therefore, it is imperative to understand the factors that contribute towards one's intercultural sensitivity. This understanding will enable people to manipulate the relevant factors in increasing their level of intercultural sensitivity. Numerous studies have shown that one pertinent factor that promotes one's intercultural sensitivity is contact with people of different cultural backgrounds (Baños, 2006; Gurin et al., 2002; Jon, 2013; Mahoney & Schamber, 2004; Tamam & Krauss, 2014).

Past studies have shown that contact with people of diverse backgrounds yields numerous benefits. This is consistent with Allport's Contact Theory which posits that contact and interaction with people who are culturally different is associated with reduced prejudice, and reduced prejudice can be an indicator of a high level of intercultural sensitivity. A number of studies (Dong, Day, & Collaço, 2014; Mustafa, Hamid, Ahmad, & Siarap, 2012) found that a higher level of intercultural sensitivity is associated with a lower level of ethnocentrism. Chen (2010), on the other hand, found that a high level of ethnocentrism is associated with a high level of prejudice. Hence, it is proposed that interaction with cultural others is positively associated with intercultural sensitivity. In other words, besides a reduction in level of prejudice, engagement in intercultural interaction is associated with a higher level of intercultural sensitivity.

Allport's Contact Theory has been widely used to frame studies on contact among people of diverse backgrounds. In the context of higher education, many studies have examined the outcomes of contact among people of different backgrounds with different types of educational outcomes such as active thinking skills and citizenship after college. In many studies conducted within higher education contexts (Denson & Chang, 2009; Denson & Zhang, 2010; Gurin et al., 2002; Park & Denson, 2013), the mechanism of this theory is supported by relevant aspects of psychological theories such as the concept of "cognitive disequilibrium" introduced by psychologist Piaget (1985). The concept of "cognitive disequilibrium" purports that contact with people who are culturally different causes individuals to engage in critical thinking. This is because unfamiliar elements will challenge one's standard schema on events, things and people. This process contributes positively towards students' learning growth and democracy skills (Gurin et al., 2002).

The mechanism of how contact with people of different cultural backgrounds can potentially promote intercultural sensitivity can be explained using Allport's Contact Theory (1954) which posits that contact among people of different backgrounds reduces one's prejudice and negative attitudes towards the out-groups. However, for such an effect to occur, contact must occur within optimal conditions which are equal status, common goals, intergroup co-operation and authority support (Allport, 1954). The absence of the optimal conditions may even heighten hatred and prejudice among people of different cultural backgrounds. For optimal contact outcomes, equal status purports that both groups involved in the contact assume equality in terms of power, that no group is superior than the other. For example, when local and international students are brought together in a class assignment, their contributions and roles are equally

important. In this example though international students may be considered as minority, they assume equal share in the culturally diverse group.

Exhaustive meta-analytical studies by Pettigrew and Tropp (2006, 2008) lent a strong support for contact hypothesis as well as the role of the four optimal conditions in intergroup contact. The exhaustive meta- analyses conducted by Pettigrew and Tropp in 2006 involved more than 500 studies and a quarter a million participants in 38 countries. With such vast samples and data, the study captured a number of interesting findings. First, the study found a solid support for contact hypothesis, that intergroup contact typically reduces intergroup prejudice. A total of 94 percent of the samples demonstrated an inverse relationship between intergroup contact and prejudice. Second, the study found that these positive effects generalize across time and contexts, that the positive effects were not limited to the immediate contact situation only. This implies that the positive effects of intergroup contact are extended to future contact within diverse people and contact settings.

Third, the meta-analysis found that contact hypothesis is not confined to intergroup interactions only; contact hypothesis extends its applicability to diverse target groups, age groups, context settings and geographical areas. Some of those are contact among people of different socio-economic status, different gender orientations such as gays and lesbians, different age group, and people with disabilities. Due to the numerous studies done in different contexts and solid evidence generated by the meta-analyses, Pettigrew and Tropp (2006) declared Allport's Contact Theory as a general social psychological theory rather than a specific theory examining merely racial/ ethnic contact. This demonstrates the utility and heuristic value of the theory.

Fourth, the study found that the optimal conditions for intergroup contact may not be as necessary as established by Allport (1954), but they were rather facilitating conditions. The analysis showed that even in the absence of the optimal conditions within intergroup contact, the relationship between intergroup contact and prejudice would still be significant. However, the analysis also demonstrated that structured intergroup contacts that embed the optimal conditions resulted in higher mean effect size. Finally, the study found the evidence of authority support being the most important condition. Nevertheless, this finding must be interpreted with caution (Pettigrew & Tropp, 2006). It does not undermine the role of the other optimal conditions, instead they should work in tandem in optimising the positive effects of intergroup contact. With such exhaustive data and rigorous statistical considerations, this meta-analysis provided an insight into the process underlying interaction among people from different cultural backgrounds. The theory demonstrates a predictive ability; however, it does not provide much insight into the how and why underlying the process of intergroup contact.

This theory has been widely used in framing studies on intercultural interactions in various social settings. Harwood (2010) claimed that though Allport's Contact Theory emerged from social psychology, the theory is "communicative" in nature (p. 148) and because it focuses on interactions among people who are different, the theory has been used to frame a number of studies on intercultural communication.

Besides lower prejudice, interaction with people of diverse backgrounds may also be associated with intercultural sensitivity. Surveys by Mustafa et al., (2012) and Dong et al., (2014) are two of the many studies which have established a link between intercultural sensitivity with ethnocentrism. In support of the literature, the studies found an inverse relationship between intercultural sensitivity and prejudice. In short it implies that people with a higher level of intercultural sensitivity tend to have a lower level of prejudice. On the other hand, a study by Chen (2010) found a positive correlation between ethnocentrism and prejudice. Thus, based on these findings, it can be deduced that interaction with people who are different is not only associated

with reduced prejudice but it can also be associated with greater level of intercultural sensitivity. Hence the present study intended to test this assumption.

## **8. PUBLIC RELATIONS AS GLOBAL COMMUNICATORS**

The Internet boosts intercommunication and interconnection, which has led us to consider new forms of relating to one another in society. This phenomenon has been linked to the cultural aspects of societies since the mid-20th century, prompting calls for the importance of reflecting on, considering, and strengthening the implementation of digital citizenship in different educational, business, and social settings (Sancho, Hernández and Rivera, 2016). Clearly, digital citizenship is considered an essential aspect and one that should take priority such as in student training at educational institutions. This perspective is reflected in studies that have found deficiencies in student training with regard to civic knowledge (Robles, 2011).

Other studies found that a relationship between the use of social networks and citizen participation, specifically for a group of women belonging to rural areas who engage in scant digital citizen participation through these means (Jimenez, 2016). Echoing these findings regarding the use of social networks and citizen participation, studies conducted in North America reveal the efficiency of sending government information through social networks to complement the government services provided to citizens (Gao & Lee, 2017). The Internet use appears to be associated with greater citizen participation in digital spaces, consistent with the findings of Toks Oyedemi, 2015. (Gozálvez, 2011, finds that technology enriches democratic processes and citizen participation as well as citizen initiatives (Espaliú, 2015). Thus, the idea of the Internet as a space for engaging in public matters has grown stronger, as highlighted above by the different functionalities acquired by social networks, namely, providing simultaneous and multiple communication, facilitating faster transmissions of communicative and activist information (Hernández, Robles & Martínez, 2013; Gonzalez-Lizarraga, Becerra & Yanez-Diaz, 2016)

When come to digital citizenship, the perspective of public relations plays an important role too. It is important for organizations and society based on the social responsibility of managerial decisions and the quality of relationships with the stakeholder public. To behave in socially acceptable ways, organisations must scan their environment to identify the public who are affected by potential organizational decisions or who want organizations to make decisions to solve problems that are important to them. Then, organizations must communicate symmetrically with the public (taking the interests of both the organization and the public into account) to cultivate high-quality, long-term relationships with them.

The interviews with CEOs and senior public relations officers revealed that good relationships were of value to organisations because they reduced the costs of litigation, regulation, legislation, and negative publicity caused by poor relationships; reduced the risk of making decisions that affect different stakeholders, or increased revenue by providing products and services needed by stakeholders. Based on this theoretical premise about the value of public relations, the excellence theory derived principles of how the function should be organized to maximize this value.

## **9. INTEGRATED MARKETING COMMUNICATION AND GLOBAL COMMUNICATOR**

Global communicators should leverage on the concept of integrated marketing communication (IMC) that emphasises on clarity, consistency, and synergies across multiple media towards maximising communication impact to strengthen the message sent (Schultz, 1993). The main objective of IMC is to coordinate all the communication disciplines to create synergies for the message to be well comprehended and understood. Through IMC, all communication needs to be coordinated to achieve the optimally desired outcome. Three concepts of IMC have been identified by researchers, which are (1) a one-voice creative perspective involving one theme and image, (2) a perspective indicating that any marketing communication message should simultaneously focus on consumer behaviour and the outcomes it brings, and (3) coordinating activities across communication disciplines, namely advertising, publicity, and sales promotion.

Grein and Gould (1996) proposed on a revised perspective of IMC through the understanding of globally integrated marketing communication (GIMC). GIMC adds another level of IMC, in which it offers cross-country linkages of communication approaches towards creating digital citizenship in reaching the objective of peace communication (Terlutter & Capella, 2013). In the past, such coordination is not made possible because of the lack of technological affordances. As industrial revolution 4.0 advances, the coordination of communication between cultures becomes achievable.

From the perspective of GIMC, it is proposed to possess both horizontal and vertical dimensions. Vertical integration of messages concerns coordinating various promotional and related marketing communication disciplines, whereas horizontal integration in GIMC does not only involve the integration of messages across divisions, departments, and organisations but bridging across countries as well (Grein & Grould, 1996). To further elucidate GIMC explains a systemic approach that integrates both vertical and horizontal aspects. management which strategically coordinates global communication in all of its components parts towards synergistic marketing communication message to bring forth a coherent and consistent message throughout.

## **10. HUMAN RESOURCE AND GLOBAL COMMUNICATORS**

People as citizens of the world are important human resources that drive progress in organisations and nations at large. They are the set of people who make up the workforce of an organisation, business sector, or nations' industries. Human resources are undoubtedly the key resources in an organization, the easiest and the most difficult to manage human. Human Resource Management (HRM) is a collective term for all the formal systems created to help in managing employees and other stakeholders within a company. A stakeholder is any individual, group, or party that has an interest in an organization and the outcomes of its actions. Common examples of stakeholders include employees, customers, shareholders, suppliers, communities, and governments. Different stakeholders have different interests, and companies often face trade-offs in trying to please all of them.

Human resource management is tasked with three main functions, namely, the recruitment, compensation of employees, and designated work. Ideally, the role of HRM is to find the best way to increase the productivity of an organization through its employees. Despite the ever-increasing rate of change in the corporate world, the HRM role is not likely to change in a significant way.

Human resource communication is a process of exchanging information between an organization's management and its employees. This process helps to ensure that everyone is aware of the organization's goals, strategies, and operations. It also helps to maintain a positive relationship between the organization and its employees. A robust conversation is essential to any group's success - whether or not it is a small operation or a multinational corporation. Potent verbal exchange is a valuable point for human resource leaders (Suparna, 2017).

Using clear language makes it easier for employees to understand what you say. Practically it is often beneficial to use words that are not specific to your industry because this allows individuals who are not familiar with your business or position within the company to understand what you are trying to communicate better.

Therefore, Human Resource Management must use clear but respectful language to show that you care about your employees' feelings and respond to what you are saying. Good words instill a sense of trust between the employers and the employees which will lead to higher morale in the workplace. At the same time, emotional intelligence must be taken care of too because emotions play an important role too in how people communicate and later process information. The more aware you are of how your actions may be perceived by others will allow you to better understand why certain behaviors or language might make employees feel uncomfortable when communicating with each other. Communication is a two-way process. Success is attained when all parties involved have the same understanding of what has been communicated.

## **11. GLOBAL COMMUNICATORS AS PEACE JOURNALISTS**

A major focus in human resource where global communicators are concerned are the disseminator of information at the local, regional and international levels. In fact, global communicators are considered the key movers of progress that equip world citizens with knowledge. In recent years, communication scholars have propagated the idea of Global Communicator that place communicators as world citizen that emulate the role of Peace Communicators. This thought has brought to the notion of Peace Journalist. Some journalism scholars have suggested that journalist need to put aside the notion of war reporting in favour of peace journalism to promote a culture of peace (Lynch & McGoldrick 2005; Seow Ting Lee & Maslog, 2006; Faridah et al 2008; 2010; 2014). Basically, Peace Journalism is a kind of journalistic practice when editors and reporters make choices about what to report, and how to report certain happenings or events in times of war, conflicts or peace. In so doing, it creates opportunities for society at large to consider and to value non-violent responses to conflict (Lynch & McGoldrick, 2005: 5). In other words, peace journalism enhances the acts of journalists in defending the universal values of humanity, particularly peace, democracy, and human rights, pluralism and respect of differences in opinion which are important qualities in the current plight of Digital Citizenship brought by the wave of globalization.

McGoldrick and Lynch (2005) described peace journalism as a broader, fairer and more accurate way of framing stories, giving greater insights on conflict interpretation. The definition is based on a premise that place great importance to the understanding of conflicts and violence by journalists since their reports may contribute to the momentum towards war or peace.

According to Galtung (2000) war journalism tends to focus on violence as its own cause and is disinclined to delve into the deep structural origins of the conflict. War journalism reduces the number of warring parties to two. So, anyone who is not 'my friend' is automatically 'my enemy'. This is similar to the term 'either you are with us or against us' which the former US President George Bush was fond of using before the US attacked Afghanistan and Iraq after the

9/11 incident.

Such a term is a two-value orientation which general semanticists such as Alfred Korzybski and S.I. Hayakawa said could create more animosities than friendship. This term is also known as 'either-or' thinking. We sometimes become unconscious of our evaluation of things. For instance, in news writing, journalists are sometimes confused between facts that can be verified and interpretations, judgments and opinions that are exclusively their own.

From the general semanticist point of view, journalists should try to differentiate between what is going on and what they feel or understand is going on. This is termed as a multi-value system of judgment. Reports by the international news agencies, for instance, are often times found to present news based on the two-value orientation. News about their home countries is given positive coverage while news with regards to other countries is negatively portrayed. For the general semanticists, the two-value orientation is obsolete and the multi-value orientation is considered more humanly acceptable (Mohd Rajib & Faridah, 1996).

Although peace journalism has been introduced in the western world since the 70's and Malaysia in early 2000, the adoption of the principle of peace journalism is very slow. Some of the reasons cited are the nature of peace journalism is not well comprehended by journalists, not only at the local level but also internationally. It comes with its pros and cons, strengths and weaknesses, and advocates and detractors. Many journalists view peace journalism as insidious and disruptive for the standard practice. Like most other news genre covered by the media it is based on certain core principles. Journalists will only become acquainted through long term practice and experience.

A local newspaper editor in Malaysia contends that peace journalism acts as a timely and welcome antidote to much of what passes for war journalism. It is an alternative not a polemic. The elements of peace journalism are not new; it is part political analysis, part investigative journalism, part socially responsible reporting, and part advocacy journalism in the interests of peace (Bunn Negara, 2003: 6).

Peace journalism proposes that journalists take up the role as educators who could well inform and educate the public on the background, contexts and origins of global media content, providing a multidimensional setting in their reports. These, of course need training, such as media literacy and sensitization programs, conducted among journalists and the public.

According to Galtung (2000) those propagating peace journalisms consciously adopt an agenda for peace believing it to be the only genuine alternative to an agenda for war. In the process of information gathering and dissemination, these groups map the pre-violence conflict, identifying many parties and more causes, thereby opening up unexpected paths towards dialogue and peacemaking. The existence of the various international bodies and world organizations such as United Nations (UN), UNESCO, WHO, Non- Aligned Movement (NAM), and the like stand on this premise.

Peace journalism humanises all sides of the conflict and is prepared to report deceit and suffering as well as peace initiatives from all parties (Lynch & McGoldrick 2005)). In other words, peace journalist should be aware of his responsibilities and yet does not lapse into simplifications like going into a two- value orientation: President A is a Devil and President B is a Saint. What is required is the kind of journalism that is prepared to discuss the framework within which judgments are made that will enable the audience to inspect, evaluate and make their own decisions.

According to Galtung (2000) peace journalism follows a specific trend in reporting. Firstly, peace journalists need to map the conflict. Secondly, they need to identify all parties involved and thirdly, analyse their goals. In trying to give objective reports, they need to discuss the process by which some facts are selected while others suppressed. Just like the investigative journalists, they need to seek out the truths and reveal the untruths.

He also mentioned about the power that journalists possess, and coined the term 'peace journalism' to describe reporters' responsibilities to include new perspectives which are different from the conventional conflict coverage which he calls 'war journalism'. He said journalists can either take the 'low road' (war journalism) or the 'high road' (peace journalism) when writing about conflicts. The 'high road' focuses on various dimensions of conflicts highlighting peace rather than violence; truth on all sides instead of one-sided propaganda; voices of common people rather than elites; a solution-oriented story rather than victory oriented (Galtung cited in Laccase & Forster, 2012: 224).

## **12. MEDIA PROFESSIONALISM**

As information gatherers and disseminators, Peace Communicators and Peace Journalists must act in ways that allow them to report news objectively. Only then can they claim that they are professionals and that their reporting is accurate and ethically sound. However, reporting about conflict and crisis, requires journalists to adhere to different demands. This include the demands of army generals in war zones, the leaders of the warring states as well as the leaders who send their troops to foreign wars. News about war and peace negotiations is subsidized by these groups who are categorized as the protagonists of war. Information from these sources are considered official statements or accredited sources war correspondents cannot do without.

The news media have long been players in the drama of war. War correspondents or embedded journalists are always looking for sources to provide them with information for their news stories. But embedded journalists are not free to roam the war-torn zone to gather information. Hence, they have to depend heavily on subsidized information.

Usually war coverage follows a standard format. Its main focus is on acts of violence and prominent national sufferings. Violence is represented as a natural consequence of incompatible cultural differences between "us" and "them". As Lynch (2002) contended one side is the problem, the initiator, the perpetrator of violence, and the other side is the innocent victim who must respond. To the general semanticist such as Korzybski (1950) and his followers, war journalism constructs binaries between good and evil. Victimising and demonizing language is likely to be used by war protagonists and these terminologies are passed to the public via the journalists and the mass media. Hence, the challenges faced by war correspondents are to select the right words from credible sources.

The use of qualified and accredited sources has been underlined in many codes of ethics and has been the basic tenet of objective journalism. In fact, objectivity lies in the domain of professional standards that journalists need to attain and maintain. Roshco (1975) contends that objectivity does not reside in news stories themselves rather it resides in the behaviour of the journalists.

What invokes objective news? For Peace Communicators, objectivity does not mean that they are impartial observers of events but they seek out facts and report them in a fair and balanced way. By giving a balanced presentation of facts, journalists are able to satisfy more members of the audience than if they were to report the news in an overtly political manner. For a country such

as Malaysia with a backdrop of multiethnicity, it is the question of balance and professionalism that color local media landscape.

One way to get balanced news is by using balanced facts provided by multilevel sources and not just from a single source. The use of multilevel sources will enable journalists to assemble various opinions from multi-perspectives in a single story, especially a lead story.

Although an interdependent relationship exists between news sources and journalists in war zones, it is the journalists who will retain nominal veto power over incoming information. They can choose to print or not to print. However, they usually relinquish much of their decision-making responsibility to the accredited news sources assigned at the war zones who will select and control the material disseminated. While journalists may reject information from news briefings or press releases, they do depend on the constant flow of information from their news sources. To a large extent, journalists can be seen as the great processors of information passed on by the protagonists of war.

Peace Communicators and Peace Journalists in general have an overwhelming desire to find facts. They maintain that not only are they responsible to provide information to the public, the duty of providing feedback from society-at-large to the powers that-be, also lie in their hands. Hence, journalists who gather and organize information for the media tend to take their social responsibility very seriously. They view themselves as having a sacred public mission; to serve as the public's eyes and ears, to be watchdogs on public institutions and serving public interest. They see their job as seeking the truth, putting it into perspective, and publishing it so that people can conduct their affairs in an informed manner.

These are the professional demands of journalists. According to Larson (1977, p.168) professionalism "makes the use of discretion predictable. It relieves bureaucratic organizations of responsibility for devising their own mechanism of control in the discretionary areas of work." Proponents of professionalism such as Nayman et al. (1977) and McLeod and Hawley (1964) found that professional norms and values are important criteria to uphold journalistic profession. One reason being, professionalism is an efficient and economical way by which news organizations monitor and control the behavior of journalists.

Grunig and Hunt (1984) identify five dominant characteristics that should be present among professionals and these are a set of professional standards, membership in a professional organization, professional norms, a tradition of knowledge and technical competency. In this regard, journalists would call themselves as emerging professionals as many can truthfully claim that all five characteristics are present in their profession.

Because of their commitment and devotion towards carrying out their responsibility professionally, it is only natural if their interpretation of facts differ from that of their sources. Journalists consider news a highly perishable commodity, while the source of the news is more concerned about the lasting impression a story will make. To the journalist, a story is a transient element in the ongoing flow of information; to the source, it is a discrete event. The journalist is usually uninterested in the positive or negative flavor of the story, as long as it presents the facts fairly; whereas the source always wants to be cast in a favourable light (Baskin et al. 1997, p. 228)

Sometimes the media's goal of providing truth and making profit are sometimes conflicting. We have seen too often newspapers and televisions carrying more negative than positive news mainly because negative and sensational news attract readers as well as viewers and help made the news business a lucrative industry (Faridah 2001). This is so when covering war stories. One can see war stories are heavy on negative reports as compared to positive ones. Such is the case in most countries all over the world and Malaysia is without exception.

In order to survive, media industry has to attract and hold a particular audience which it could then sell to advertisers. Hence, day by day, the media content tends to be a mere interpretation of what the audience wants so as to maximize readership and circulation or ratings which often means increasing advertising and commercials as well as subscription rates.

To maximize profit, news organizations, both electronic and print, are encouraged by their corporate owners to find news that captures the attention of the audience. Since negative and sensational news sell, we see the proliferation of negative news such as conflicts and wars, and lighter stories about lifestyle, entertainment, celebrities, gossips and so on. All these forces lead to considerable pressures on journalists, and these pressures often bear ethical implications.

The use of appropriate news sources is one of the tenets of professional journalism and has been spelled out in media codes of ethics in most countries. However, sometimes news sources can provide misleading information in order to champion a certain cause without the journalists realizing that they have been manipulated. Hence, journalists need to closely monitor their sources' interests and affiliations, their track record, and the extent to which they can be considered credible and reliable. Four key factors that help journalists in analyzing the news sources are the extent of quotability, accessibility, accountability and credibility.

What constitutes credible and objective reporting? The question of objective reporting is value laden and there is no clear-cut guideline as to what is objective and what is not. Or what is news value and what is bad taste. A simple definition of objective reporting is reporting that relies on relevant and reliable sources without bias or slant. However, a practical answer to this is to put extra effort in gathering information honestly and accurately as well as treating people involved with compassion. Journalists should try to seek and report the closest truth about events of great concern and interest to the people (Mohd Rajib and Faridah Ibrahim, 1996).

## **12. MEDIA LITERACY AND ITS INFLUENCE ON DIGITAL CITIZENSHIP**

The understanding of objective reporting, fake news, misinformation, and truth in this post-truth era depend heavily on media literacy. Media literacy is the perspective used when we expose ourselves to the media and interpret the meaning of the messages we get from the media. We build this perspective based on our knowledge structure. To build a knowledge structure, we need facilities and raw materials. The means are our skills, while the raw materials are none other than information obtained from the media and from the real world (Yanarates, 2020). The question is, does having advanced technology where all sorts of information can easily be obtained at our fingertips simply categorize an individual as media literate? Or can someone who has a certain level of education and his or her ability to access various information easily be considered as a person who is media literate? What are the actual factors required for someone to be media literate? Does media literacy mean knowing how to use media channels and the ability to differentiate between the fake and the truth? Although various definitions of media literacy have been put forward by many scholars, in general, media literacy relates to how audiences can take control of the information required through the media. Media literacy is a skill for assessing the meaning in each type of message, organizing that meaning so that it is useful, and then constructing a message to convey to others. The point is, media literacy seeks to provide critical awareness for audiences when dealing with the media. Critical awareness is the keyword for the media literacy movement. Livingstone (2002) defined 'media literacy' as "the ability to access, analyze, evaluate and create messages across a variety of contexts". Media literacy itself aims to, in particular, provide critical awareness to audiences so that they are more empowered in the face of the media.

People who have a high level of media literacy will have a strong and broad perspective. They actively use a set of skills that have been highly trained so that they can place media messages in the context of very erudite knowledge structures and also have the ability to translate messages from various different dimensions. This gives the possibility of individuals to have more choices of meaning (Jolls & Wilson, 2014). People with high media literacy know how to go through these choices of meaning and choose the one that is most beneficial from a range of perspectives, cognitive, emotional, moral, and aesthetic. Thus, people with media literacy skills have greater control over media messages.

This is where the term ‘digital citizenship’ involves. Today, people are really used to the internet, such as social media. Besides, we often communicate with people in the digital world the same as how we communicate with people in the real world. The boundaries which can be seen before slowly faded through the advanced features provided by the media each day. However, the heavy usage of advanced media nowadays actually troubles many parties because anything provided through media content is not everything positive, even too many negatives (Samani, Maliki, Rashid, 2011). In fact, the fact that we are indeed used to it as sometimes we didn’t even realize our small actions as simple as leaving a comment on someone’s page can really affect our personal reputation or safety. So, what makes us part of digital citizens? The questions are; Are you a computer user? Do you find yourself always engaged with people through the internet or digital devices such as your smartphone? Do you always aware of your responsibility while using your digital platforms in connecting with people? If you answered yes to all of these questions, then yes, you are part of digital citizenship. The question now is, how to be a part of good digital citizenship? Now let’s discuss more the influence of media literacy on the digital citizen.

With the ability to understand the source, usage of communication technology, the code used, the message produced, the selection, interpretation, and impact of the message received and to be delivered using various forms of media, it can help to form good digital citizenship. This is because the relationship between media literacy and the shaping of digital citizenship is complementary to each other (Bordac, 2014). Media literacy will support civic literacy skills in understanding and helping to influence the decision-making of citizens. The ability of citizens to exert influence on the lives around them is based on information capital and understanding of the government process, the importance of participation in the public realm, and the awareness that decisions in the local realm will have a global impact. Media literacy also provides valuable capital for a person in understanding and work together with other people who may be different in culture, religion, ideology, and lifestyle so as to create an environment that is open and full of equality. This important thing becomes the main reference in creating global citizens who understand each other so that their connectedness is a form of positive cooperation to solve various global issues together through digital platforms.

### **13. BECOMING GLOBAL COMMUNICATORS IN THE DIGITAL CITIZENSHIP ERA**

As has been established earlier, understanding and covering harmonious, conflict, war and peace news is a complex process. It takes a deeper understanding of what war and peace are, and what the ultimate goal of war coverage is. These are the ongoing issues that need to be addressed by journalists when they begin their news gathering either through first-hand experience in war zones or by assembling various war news from the news agencies and other databases via the internet.

Global Communicators and Journalists need to understand that they are reporting about complex issues, which cannot be managed with a simple approach. A peace journalist, confronted with a violent, potentially violent or difficult situation, must attempt to look at the whole conflict, not just from one side. This requires lots of digging and uncovering new angles and also

interviewing multi-level news sources. This is to ensure that all sides will be heard. Many journalism codes of ethics espouse this idea and this has become a prerequisite for professional and responsible reporting.

According to a peace journalism syllabus created by an academic and practitioner. Robert Koehler (commonwonders.com), a peace journalist never settles for a violent solution and never assumes that violent is inevitable. He emphasized that peace journalism requires awareness of language. Like all good journalism, it is written in plain language that is jargon free. It is aware of the thoughtless use of the military metaphor such as collateral damage, precision bombing which have been discussed earlier.

In short, Koehler stressed that peace journalism is a goal to bring an outside source of wisdom to a complex situation. This wisdom is about the nature of healing, the possibility of transformation, the awareness of social and global wholeness, and the assumption of equality among human being.

The presence of this curriculum show evidence that peace journalism could be offered as a syllabus in a country. And peace journalism is not only confined to coverage of war and peace news, but also areas that involve conflicts such as local crime (for instance war against crime, war against drugs; war against prostitution); retributive vs. restorative-transformative justice; punishment vs. healing; ecology and environmental stories that highlight humanity's relationship with nature; all stories about human conditions which could be in the domain of economy, politics, social and religion.

Questions that need to be addressed pertaining to journalism which uses the common 5W's and 1H should now be dwelled into at a deeper level, and followed up with more critical questions such as What are the assumptions, especially the unstated ones? How was the story framed? What was left out? What was the consciousness behind the story i.e. was it a peace consciousness or something else? What is no one talking about? How could this be resolved in a positive way for everyone? What is the complex story here? How is it part of the larger peace creation effort?

#### **14. SUGGESTIONS**

The media is said to be the Fourth Estate. This is so because they act as watchdogs that check and balance the powers of the other three branches of government – the executive, the legislature and the judiciary. In their effort to be effective watchdogs, and to perform their noble duties and responsibilities, they are often caught in a web of uncertainties – between news values and bad taste; and between public's rights to know and national secrets or invasion of privacy. But the public, above anything else, have the right to be protected against misleading and distorted information. As had been established earlier, war stories are filled with bias. This requires journalists to be professional and responsible in news dissemination. The universal standard demands that news dissemination be based on accuracy and impartiality. The media are expected to carry out their watchdog role without fear or favor. And at this end, they are expected to be accountable.

Based on some observations and a prescriptive analysis of current situation, initiatives could be taken based on various agenda namely the educational societal, media and governmental policy agendas. In the educational agenda, the focus will be on the universities and their curriculum that could focus on global communicators and their worldly functions. The educating and disseminating channels would include forums, lectures, discussions related to peace

at the universities and other intellectual centers could to be initiated. The scholarly committee need to establish channel of wisdom, whether physically or virtually via online, to propagate peace messages. In the societal agenda, peace and global messages based on NGOs activities and campaigns and advocacy efforts need to be continuously implemented. In the media agenda global communicators, editors and journalists need to be sensitized on peace. They need to formulate their own model and guidelines on how to propagate peace in their news and information dissemination. And lastly, in the policy agenda, the government need to develop rules and objectiveness of the relevancy of peace. They also need to establish tools for reconciliation, and encourage mediation and arbitration.

## 15. SUMMARY AND CONCLUSION

Why do we need Global Communicators in the first place especially ethical ones? The answer is simple and straight forward – democracy depends on the free flow of accurate, responsible and trustworthy information. What we have learned from many theories of democracy is that, an informed citizenry in the Digital Citizenship era is essential in order to build a strong and independent society. Information as we know is power. In other words, those who wield information, also wield power. Hence, Global Communicators who comprises of journalists, public relations, IMC, human resource practitioners who are in the business of gathering and disseminating information, are inadvertently an important distributor of power in society, a role that makes them powerful. Hence, some ethical and professional practices are necessary so that there is a commitment to the proper use of power in carrying out their duties as global communicators. Thus, it is highly important that Global Communicators learn to be sensitive to the choice of media and peace communication so they may effectively communicate peace when disseminating information.

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# **STAKEHOLDER ENGAGEMENT AND SUSTAINABILITY: CHALLENGES IN THE DIGITAL CITIZENSHIP ERA**

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## **1. INTRODUCTION**

The implementation of programs by a country, government or company will generate fruitful outcome if the plans and programs are well received by the stakeholders. The implementation of government's program is vital to the development and economic growth of a country. Stakeholder engagement theory posits that the successful implementation of policies and programs will depend on how well the programs are accepted by both internal and external stakeholders. Among the developing countries, Malaysia has always seen major reform and modernisation in most of their development programmes. From the past government to the current new government under Pakatan Harapan (PH) much attention has been given to improve the quality of life of the citizen. Before PH, the previous government under Barisan Nasional (BN), had introduced 1Malaysia with sub-tags "People First, Performance Now" and "Keluarga Malaysia" (Malaysian Family) reflecting the commitment to make the government more performance-oriented and accountable for results and achieving well-being among the people. Under PH, the focus is on rebuilding the nation and fulfilling dreams. Hence the understanding of stakeholder engagement gives an inclination of the need for the government or anyone of authority to focus on the importance of stakeholder engagement in maintaining an equitable power balance in an organisation or a country. The focus of this chapter is to elaborate on the importance of stakeholder engagement as an initiative towards balance and sustainability.

## **2. BACKGROUND**

Stakeholder engagement, also known as 'Citizenship Participation' which focus on the jointly involvement of citizens and stakeholders in nation building (Greenwood 2007; Ihugba & Osuji, 2011). Stakeholders, according to Hill and Jones (2001), are defined as "those groups and individuals who can affect or are affected by the achievement of an organisation's objectives" (Freeman & McVea 2001:23). The implementation programs by a country or company will generate fruitful outcomes if the plans and programs are well received by the stakeholders. Likewise without stakeholders engagement the successful implementations of programs would be dubious and uncertain.

Stakeholder engagement is an instrumental element in nation building and may include either internal or external stakeholders (Hill & Jones, 2001). Internal stakeholders are stockholders, organisational employees including managers and Board members. External stakeholders are customers, suppliers, governments, unions, local communities and the public. Various studies in this area have found that stakeholder engagement can positively benefit both the organisation, society and country at large (Freeman & McVea 2001; Greenwood, 2007; Ihugba & Osuji 2011).

In the case of a nation, which is considered "an organisation" at a bigger scale, it is said

that the implementation programs by a nation's government will generate fruitful outcomes if the plans and programs are well received by the stakeholders. Likewise without stakeholders engagement, the implementations of programs would not meet the superordinate goals aimed to enhance the well-being of the people.

Various studies (Sandeep et al. 2008; Saks, 2006; Crabtree, 2005; Baumruk, 2004; Kahn, 1990) have shown that engagement is a two way relationship between the employer and the employee, and in this context the relationship between government and the people. A classic study by Kahn (1990) showed that employees are more likely to exchange their engagement for resources and benefits provided by the organisation. Saks (2006) argues that one way for individuals to repay their organisation is through their level of engagement.

The importance of stakeholder engagement in governmental policies and programs have become a hot topic in recent years ever since 'global engagement' became a buzz word under Barack Obama's administration. Where Malaysia is concerned, stakeholder engagement in government's programs is an overriding target and needs to be propagated.

### **3. DEFINITION OF STAKEHOLDER ENGAGEMENT**

The early Stakeholder Engagement theory (SET) is concerned with the understanding of relationships between organization and individuals and groups who can affect it or be affected by it, which could be engineered to achieve success (Freeman, 1983). Stakeholder engagement has become an important factor in organisations, both private and public, and findings from research have shown a strong link between engagement and outcomes of organisations. Studies by various researchers (Freeman and McVea, 2001; Greenwood, 2001; Saks, 2006; Ali and Sonderling, 2017) have shown that the key drivers of engagement are communication, bottom-up information flow, and proximity or close relationship between stakeholders and committed organisational leaders.

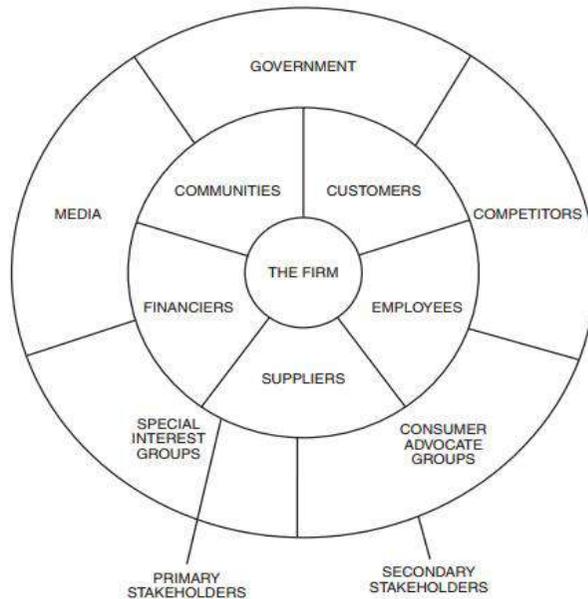
The word "stakeholder" first appeared, in this usage, in 1963 in an internal memorandum at Stanford Research Institute (Wang & Dewhirst, 1992) and has since become a prominent concept in the corporate and academic communities. The theory is defined as a person who holds a stake in the activities of the organisation in some way, is similar to shareholders. Stakeholders may include employees, customers, suppliers, the state, the local community, society, bankers, special interest groups, the environment and technological progress (Argenti, 1993). Freeman (1983) defined a stakeholder as any individual or group who can affect, or is affected by, the achievement of the organisation's objectives.

Freeman (1984) is generally attributed as the founding father of the Stakeholder Theory, a theory that had evolved over the years to be one of the most crucial theories in discussing value creation and trade in the business world. The main premise of the Stakeholder Theory is that if we could really understand the relationship between a business and the groups as well as individuals who can affect it or are affected by it, then we would be able to manoeuvre through any changes in the business world and emerge successful.

According to Freeman et. al. (2010: 10), "stakeholder theory has evolved to address the problems of (i) understanding and managing a business in the world of the twenty-first century (the problem of value creation and trade); (ii) putting together thinking about questions of ethics, responsibility, and sustainability with the usual economic view of capitalism (the problem of the ethics of capitalism); and (iii) understanding what to teach managers and students about what it takes to be successful in the current business world (the problem of managerial mind-set)."

Given the rapid changes in financial markets and regulation of public policy in an increasingly global business environment, the stakeholder theory is increasingly relevant to understand how capitalism, ethics, sustainability and social responsibilities can be combined into new ways of thinking about business.

The next question that needs to be addressed is therefore, what are the important components of Stakeholder Theory. Figure 1.1 below is the figure by Freeman et. al. (2007) as the standard picture of value creation and trade among stakeholder's theorists.



**Figure 1:** Creating values for stakeholders by Freeman et. al. (2007)

Freeman (2007) stated that business can be defined as “set of relationships among groups which have a stake in the activities that make up the business. Business is about how customers, suppliers, employees, financiers (stockholders, bondholders, banks, etc.), communities, and managers interact and create value.”

The main person in a business therefore must be the owner or financiers who expect a financial return based on their investments. The employees are dependent on the firm for their jobs and livelihood. With a special skill offered to the company, employees expect wages, benefits and job satisfaction from the company. Certain levels of employees such as the management teams would be expected to participate in decision making and shoulder greater responsibility in comparison to the others.

Customers and suppliers on the other hand trade resources of products and services with the firm and receive the benefits of the resources given by the firm. Customers are expected to be satisfied with products or services given, otherwise the firm must rectify whatever dissatisfaction raised by the customers. Suppliers that are committed to help firms perform better are assets to the company.

Finally, the local community grants the firm the right to build facilities and, in turn, it benefits from the tax base and economic and social contributions of the firm. Concepts such as

business ethics, social responsibility and sustainability of the environment become the main discourses involving the local communities.

While the employees, suppliers, customers and local community make up the core or primary stakeholders of almost every business, there are other stakeholders that need to be considered as well. These are the secondary stakeholders or the larger group of stakeholders that can affect the business as well. Their impact may not be seen as direct and immediate, but they are important components that would ensure the viability of a business. These are groups such as the government, the media, competitors, special interest groups as well as non-governmental organizations.

According to the Towers Perrin survey, building engagement is a continuous process and that the vital factors for engagement include strong leadership, accountability, autonomy, a sense of control over one's environment and opportunities for development. The research also showed evidence that the most important driver of engagement is a leader's interest in the people's well-being. In the current globalised world, with the proliferation of new media technology, there is a tremendous improvement in information dissemination. The Internet has become a preferred mode of communication and resource for the people especially among the younger generation (Samsudin, 2018).

Creating proximity with the people and providing adequate information are one of the ways to engage with the people. Hong (2013) found that a vast majority of US politicians have a Twitter account as an instrument of engagement. Ali Salman et al. (2018) reiterated that people have moved to a new internet-based medium and digital media for political engagement and support in Malaysia. Other scholars (Ika Karlina, 2018; Ali et al., 2018 & Ali & Sonderling, 2017) viewed that communication and information technology has changed the way the government communicates with the public. Social media has the potential to promote a positive perception of the government through the dissemination of information which enhances citizen and government relationship. Ali et al. (2018) found that social media plays a role and has the advantage in channelling the information compared to the traditional media.

Apart from the cyclical relationship in the stakeholder model propagated by Freeman, evidence also suggests that engagement is related to emotional experiences and wellbeing (May et al., 2004). These researchers have found that emotional factors are linked to an individual's personal satisfaction and the inspiration they obtained from their involvement with organization. Robinson (2006) identified some key areas in stakeholder engagement among organisation's employees. Their research found that engagement was closely linked to feelings and perceptions about being valued and involved. Among the drivers of engagement included effective leadership, a commitment towards employee well-being, two-way communication between stakeholders and employer/government. Along similar line, Lawler and Worley (2006) argue that in order for organisations to have a positive impact on stakeholder engagement, people need to be empowered.

Gomes (2006) studied the management of stakeholders in local government decision making. Using the triangulation study method of case study, interview and document analysis, Gomes (2006) concluded that decision making by the government is a stakeholder-based process. The stakeholders influence the decision making based on their powers and interests in the operation's success and outcomes. Gomes (2006) built on the work of Mitchell (1997) that the model of the Stakeholders Theory is based upon three dimensions, namely power, legitimacy and urgency. Mitchell (1997) said that there are three types of powers involving public policies. Firstly, normative power results from laws and requirements over which the organization has no control. Secondly, coercive power issues from physical means. Thirdly, utilitarian power results from dependence because the organization has to behave against its own will in order to achieve

resources.

In terms of Kahn's (1990) classic definition of engagement, employees feel obliged to bring themselves more deeply into their role performances as repayment for the resources they receive from their organisation, and in the context of this study, the government and youth relationship. When the government fails to provide these resources, individuals are more likely to withdraw and disengage themselves from their roles. Hence, the amount of commitment and engagement an individual is prepared to devote toward their citizen role may be contingent on the economic and socio-emotional resources received from the government.

#### **4. ROLES, TYPES, AND BENEFITS OF STAKEHOLDER ENGAGEMENT**

Stakeholder engagement is a process, which includes identifying, mapping, and prioritizing stakeholders to determine the best tactics for effective communication that utilize the available resources a company should implement in listening to, collaborating with, or informing their stakeholders. It is a proactive approach in taking into consideration the needs of stakeholders, which can lead to fostering positive relationships, trust, confidence, and buy-in for the company's key initiatives, which can be systematically done by developing a RACI (Responsible, Accountable, Consulted, Informed) matrix to provide clarity about who is the person in charge of executing the stakeholder engagement strategy and individual responsibilities

Effective stakeholder engagement could ensure the visibility and control of stakeholder engagement actions and outcomes by ensuring that the assigned team members are clear and confident about executing the communications plan. The strategy will also efficiently engage the stakeholders with the people who have the skills, detailed knowledge, or experience required to achieve the required outcomes. By doing so, issues are clearly analyzed, and insights and feedback are communicated correctly, therefore, risks can be avoided. Thus, engaging with stakeholders is a form of risk management because it can mitigate potential risks and conflicts with stakeholder groups, including uncertainty, dissatisfaction, misalignment, disengagement, and resistance to change.

Failure in implementing an effective engagement strategy could lead to the wasting of precious resources because priorities might be put on those who have little to no impact on the company's objectives while ignoring the most crucial stakeholders. Stakeholder engagement could be improved with digital communication tools based on the different levels of engagement the stakeholder groups require.

Stakeholder engagement strategies must be developed to engage stakeholders in long-term relationships rather than focusing on a simple instance of communication or exchanging goods. The first type of stakeholder engagement is done by informing stakeholders about the company's project, decision, or program. This method is called informational communication strategy, which is a one-way symmetrical model of communication from an organization to its stakeholders with no attempt to listen to stakeholders or to gather feedback. The main aim is to make information available to stakeholders by objectively reporting the information to create awareness of company decisions and make people understand the reasons for these decisions. Examples include reporting to investors on the progress of the project and explaining to affected groups how they will be affected by the company's decision and what they need to do, and publishing information on the company's completed projects or achievements to the public via mass media channels.

The second type of stakeholder engagement is consultation or persuasive strategy. It is

also known as the two-way asymmetrical model of communication. This is a two-way discussion aimed to change and tune the knowledge, attitude, and behaviour of stakeholders in a way that is favourable to the company or to sell a particular kind of understanding of the company's decisions, its corporate values, and its products and services. The consultation strategy will give the stakeholders the opportunity to contribute ideas, suggestions, and opinions in the planning and decision-making parts of the project. Through this approach, the company is taking the initiative to introduce the ideas early and giving people time to consider proposals. Allowing stakeholders time to understand about the ideas could avoid suspicion and the formation of a negative view that becomes hard for them to change. Examples include conducting discussions on upcoming projects with relevant groups, gathering feedback on the information given via online surveys, interviews, and publishing advertisements on the latest promotions.

The third stakeholder engagement type is participation or dialogue strategy, which is also known as the two-way symmetrical model of communication. In this strategy, both parties (company & stakeholders) are mutually engaged in an exchange of ideas and opinions, involving active consultation of stakeholders and incorporation of important stakeholders into the company's decision-making. The collaboration process involves the high-interest/high-influence stakeholders of the company's project and they must be treated as part of the team. The information must be shared, and changes must be notified every time a change is made.

Effective stakeholder management could benefit a company in various aspects such as education, effective decision-making, trust, cost-saving, risk management, and accountability. Ensuring effective communication directly with stakeholders allows a company to understand not only their perspective but provide new insights on a product or issue to help the company gain a competitive advantage.

Based on the information and insights gathered from the stakeholders' perspectives may change the company's way of looking at an issue and allow it to rethink and make a more informed decision. On top of that, hearing from stakeholders may reinforce a company's decision as it is being analyzed and discussed from different approaches and angles. Reaching out to stakeholders indicates that the company values their perspective, thus, this collaborative approach helps build trust and goodwill toward the company. This can be especially useful during a crisis as rebuilding trust can be a long, arduous process, but it starts with making sure all stakeholders feel like they have a seat at the table.

Engaging with stakeholders can ultimately save time and money because by engaging stakeholders chances of finishing a project on time and on a budget could be improved. That savings can come from the elimination of roadblocks, and the mitigation of surprises that can slow your organization's process. Groups and individuals may help a company to identify potential risks before they become threats to the company. Improved stakeholder engagement allows for greater collaboration and communication which allows stakeholders to highlight or the company to discover potential risks.

Lastly, engaging with groups and individuals is key to improving accountability within a company as well as with external audiences. Transparency is important and truthful communication must be ensured to be clear about the outcomes that the company is trying to achieve and the steps taken toward it.

## 5. EFFECTIVE STAKEHOLDER MANAGEMENT

In the age of social media activism and online media, reaching out to stakeholders effectively is vital for success in developing and protecting a company's reputation. Thus, choosing the best interactive communication channels and planning and organizing impactful programs for stakeholders based on their gender, race, culture, language, age, location, disability, interest, needs and concerns, demand and expectations, opportunities and challenges is fundamental to establishing effective stakeholder management.

Stakeholders must be identified and addressed for the stake that they hold. Therefore, a thorough stakeholder analysis is required to identify those who are directly or indirectly affected by the company's decisions and actions and/or have influence over it. The stakeholders' identification, which is done based on their salience to the company in terms of power, legitimacy, and urgency, could help in mapping out them accordingly, thus, understanding them better. Understanding levels of influence will allow a company to predict how a particular stakeholder may interact and respond to the communication program.

Every stakeholder group has different expectations, while will some demand highly specific information, others might require high-level insights from the company. Once all company's stakeholders have been classified according to their salience, the company will have an overview of which stakeholder groups require attention and need to be communicated with.

Prioritization in determining which are the main stakeholders and which groups have less influence or interest would allow a company to create different communication strategies for different groups accordingly. Effective communication strategies must be developed based on prioritization because using a blanket approach to communicating and engaging with stakeholders is ineffective as it might underestimate the impact of certain stakeholders and stakeholder resistance is a major risk.

Once the stakeholders have been identified and mapped out, the engagement plan can be put together. The stakeholder engagement plan, which is primarily used to ensure continuous and effective communication, should include information on the frequency of communication, the number of people to be engaged with in each program, and how to engage. It is also important to use this plan for relationship building and to gain the trust of stakeholders.

The stakeholder engagement program should assist in monitoring and communicating the commitments made to them as they expect to be updated regularly. Communication must be early and with as much transparency as possible. Acting with consistency and integrity is essential in building stakeholder trust to create more productive relationships.

Different stakeholders will react in different ways to different projects or programs, therefore, identifying triggers and mitigation measures can avoid preventable complaints. With a solid understanding of stakeholders, their influence, and triggers, the company should then develop a mitigation plan that detailed the risks and outlines how the negative impacts could be reduced.

Communication with them must be clear and consistent. Stakeholders are now empowered with more information; thus, they can easily spot inconsistencies. As a result, an inconsistent message can lead to public outrage, loss of trust, and a negative reputation.

Should there be any resistance to change from the stakeholders, the company must be open to meeting, listening, and discussing with them using appropriate communication channels

because avoiding them might worsen the problems. Involving stakeholders in decisions and listening to concerns empowers the company to navigate the change management process more effectively and strengthen the positive relationship with them.

## **6. SUSTAINABILITY AND DIGITAL CITIZENSHIP**

### **6.1 Sustainability**

Sustainability development is an organizing principle for meeting human development goals while also sustaining the ability of natural systems to provide the natural resources and ecosystem services on which the economy and society depend. Where stakeholders are concerned, their overriding concern is to ensure whatever they are doing today will have a great beneficial impact on society today and the future. The impact of the programs should be positively helping today's generation and future generation. With that in mind, the implementation of their programs is considered sustainable and beneficial for societal and human race.

In effect, sustainability forces us to face the consequences of our behaviour. And as a result, developing an understanding of the ethical underpinnings of sustainability is fundamental to applying it as a solution for the many problems that societies are facing and will be facing in the future. On a general basis, sustainable development is defined as "development" that meets the needs of current generations without compromising the ability of future generations to meet their needs. The Brundtland definition of sustainable development was a broad ethical principle with two key components namely The Social Equality and Equity as pillars of sustainable development that focus on the social well-being of people.

Sustainability is now a well-known and commonly accepted framework for guiding a wide variety of choices. Sustainability suggests that in the decision-making process, societies that have a good Quality of Life (QOL) have an obligation to ensure that both future societies and contemporary, and less well-off societies are also able to achieve a standard of living in which their basic needs are met (United Nations General Assembly, 1987, p. 43).

The main features of sustainable development are:

- It respects and cares for all kinds of life forms.
- It improves the quality of human life.
- It minimises the depletion of natural resources.
- It enables the communities to care for their own environment.

Communities are applying sustainability to solving urban areas and reinvigorating the local economy. Corporate companies are using the concept of sustainability to expand the measure of success for their endeavours from the financial bottom line to triple bottom line. Whilst universities are applying sustainability to guide changes to their campuses, curriculum, governance, investments, procurement policies and relationships with their local communities. Hence, sustainability is a framework upon which specific strategies could be used to guide decision making. These are areas that bring in the important roles of stakeholders from organizations and government. It has become their important tasks and priorities to ensure that the programs they are implementing will be beneficial to the people and future generations.

Inherent in the definition, the notion of 'sustainability' is the proposed responsibility of contemporary society for the QOL of today's population plus the preservation of resources, the environment, and the ingredients needed for future populations to also experience a good QOL. This is a disheartening task that requires enormous changes in thinking, policy and basic

assumptions about the economy for its full implementation. In the field of agriculture, the word 'sustainable' implies the relationship to an ecological balance such as conserving an ecological balance by avoiding the depletion of natural resources (Zakaria et al. 2017). Maintaining an ecological balance will help the country to stay within the boundary of sustainable development. One may question why there is a need to apply the sustainability framework? To answer this, then several terms need to be considered such as rights, obligation, accountability, ethical and interdependence.

Currently, this notion of sustainability brings forward the idea that wealthier, more technologically sophisticated societies would have to contribute materially and through a wide range of assistance programs to increase the wealth of poorer nations, to help them to develop their capabilities to provide basic needs to their population. So, the question of obligation comes into play. Does the present generation have an obligation to the future generation? Who is controlling the fate of poorer societies and everyone else? Without a doubt, there is a strong relationship between stakeholder and sustainability. In fact, stakeholder engagement is a fundamental principle of sustainability. A business must be able to communicate with the external stakeholders in order to stay relevant, and better meet the needs of its customers. Stakeholder engagement provides opportunities to further align practices with societal needs and expectations helping to drive long-term sustainability.

Hence one can see that the application of sustainability framework requires a better understanding of ethical dealings and social responsibility of stakeholders. At its core, sustainability is about ethics because it calls on present people to consider the condition of future populations who are at the mercy of our current production and consumption patterns (Kilbert et al. 2012). Citizens of the world will have their rights to question whether their countries and other countries of the world are taking care of the well being of the current generation and the interest of future generations. They would want to know whether the countries of the world are practicing sustainability to the fullest in normal time and during a crisis period, such as in a pandemic.

## **6.2 Digital Citizenship**

Besides the pertinent and relevant relationship between sustainability and stakeholder, with the current situation where technology has a prevailing influence on the decisions of stakeholders, the questions of digital citizenship's impact on stakeholder cannot be underestimated. Stakeholder is someone who has an interest in the way technology develops and being utilized to meet their goals. They are also a consumer of technology perhaps used for socializing, playing games, communicating, shopping and handling business transactions and et cetera.

In other words, stakeholders are considered Digital Citizens who often use digital technologies and develop skills and knowledge online in order to effectively use the internet, and also positively participate in society and politics through the internet. According to the Council of Europe, digital citizenship can be defined as: "The competent and positive engagement with digital technologies (creating, working, sharing, socializing, investigating, playing, communicating and learning); participating actively and responsibly (values, skills, attitudes, knowledge) in communities (local, national, global) at all levels (political, economic, social, cultural and intercultural); being involved in a double process of lifelong learning (in formal, informal and non-formal settings) and continuously defending human dignity." (Council of Europe 2022)

Both Internal and External Stakeholders are important leaders of digital citizenship. They usually have good communication skills and know various kinds of communication channels, and

they can effectively affect the thoughts and perceptions of the receiver of information.

Due to the Covid-19 epidemic during 2020 to 2022, the population of digital citizens has increased tremendously. Not only young people, even the elders have become digital citizens. People prefer to study and work online, and digital technologies can no longer leave people's lives. With the increase of internet users, internet access has become the main activity in human society. Therefore, the internet world needs good communicators such as the stakeholders both internal and external, to lead large digital citizens, to build a healthy digital environment, promote human rights, and protect the security of digital citizens.

In the age of digital citizenship, stakeholders play an essential role in shaping the consciousness of digital citizens to learn how to responsibly use technologies, how to protect themselves on the internet, and make them qualified for digital citizenship. For example, report some illegal behaviors or activities to warn citizens and inform them of the risks or negative impact. Digital citizenship is described as the empowerment of societies through learning and active engagement in the digital society to exercise and defend their rights and obligation, as well as promote and protect their human rights (Choi et al., 2017). Indeed, the essence of stakeholder engagement principle is to enhance participation and involvement among the people.

## **7. STAKEHOLDER ENGAGEMENT, SUSTAINABILITY AND IMPACT**

Based on a local study on stakeholder that was carried out (Faridah et al. 2019), several findings are highlighted in the following paragraphs to show evidence of the importance of stakeholders' engagement:

### **7.1 SOCIETAL IMPACT**

For the community integration domain, stakeholders across all levels agree that they belong to the community; know the rules, feel accepted by the community; can be independent, feel close to others, know the people well and like where they lived.

For the current issues domain, much has been highlighted on the stakeholders' agreement on several political, economic and social factors such as rate of employment, corruption, crime, rise in petrol prices, Sales and Services Tax - SST 2.0, and media freedom. In addition, a factor that also plays an important role in engagement is their level of community integration that dwells into their sense of belonging and comfort living in the environment. Apart from that, how they perceive the current situation in the country politically, economically and socially, also spelled out their engagement.

**Housing projects** - the stakeholders were aware that Perbadanan PR1MA Malaysia (PR1MA) is the main provider of homes in urban and suburban areas which are considered affordable to the Rakyat particularly the middle-income (M40) group.

**Transportation** – the stakeholders identified several transportation projects which they knew had been implemented by the current and previous government. This includes: Mass Rapid Transit (MRT), Express Rail Link (ERL), Bus Rapid Transit (BRT) System, Light Rapid Transit (LRT) and e hailing. The stakeholders also highlighted their reactions towards transportation:

S3: not rare, but MRT is very convenient.

S1: I'd have to say MRT is very convenient, the buses are 1 Ringgit, the places they go are very convenient, it goes to Damansara, I never had the opportunity to go and have internship at

Damansara before, but when they had MRT, I had the opportunity, I had the chance, oh I can do this, I can go to Damansara...

S1: because right now I rely on GRAB and you can't cheat either, (GRAB, yes yes I agree) (is it cheaper to take GRAB) (cheaper faster convenient than public transport I do agree) (cheaper, I always thought GRAB is still more expensive than public transportation) you have to look at the time.

S2: I grab it when I'm overseas of course, but talking about the ERL meaning from KL Sentral to airport, from my point of view, yes at one time the price was cheaper, and now it's increasing.

S2: So, let's say if you really take the LRT, and you want to take monorail, you have to walk a distance, but now they consolidate and they make it interchange (you have to walk from Jalan Hang Tuah), yes correct especially the Hang Tuah, because I taught at Sun Jing High School, so I remember I took bus from PJ, I alighted in KL Sentral, I took monorail, I reached Hang Tuah, and then you will see they have to walk a distance and then to take Ampang line or Sri Petaling line. But now they consolidate under a station, so that's the interchange lah, I see this as convenient

**Healthcare** – the stakeholders expressed their appreciation for the healthcare support provide by the government namely Klinik 1Malaysia which is now rebranded to Klinik Komuniti under the new government and the public hospitals.

In terms of healthcare, the stakeholders expressed satisfaction with the programmes such as Klinik 1 Malaysia and Public hospitals that they felt were convenient and affordable.

S1: I think Klinik 1 Malaysia is really helpful, cuz it's like 1 Ringgit, but the con was if you want MC, you have to go to an established clinic, which ... (ok) so I saw when I worked, when I start my internship, it's like adults can't afford to get sick, unless you have panel clinics, but if not, you can't afford to get sick.

S4: 1 Ringgit, just 1 Ringgit, and how I know about this I have Klinik 1 Malaysia right behind my house, and it doesn't trouble us, no long wait, because it's Kampong Baru. It's like I always go there because no long wait.... There was this clinic called Klinik Wawasan, and Klinik 1 Malaysia, the medicine was the same. My dad has his panel, so he just swipes the card, so medicine the same and he paid 200 something. At Klinik 1 Malaysia he only paid 5 Ringgit or 8 Ringgit (that's a huge difference ah).

**Financial support** – Majority of the stakeholders interviewed agreed that Bantuan Rakyat 1Malaysia (BR1M) was helpful for short term support. The government's effort to alleviate the suffering of the lower income groups through BR1M was well received by the majority although there were voices among the stakeholders of the need for the government to strategize and offer long term solutions.

S2: The BR1M, yes brim, brim definitely, one point I agree, another point, em no. (ok, so why you do agree, why you don't agree) now brim it is good that you helped those families who are really in need, alright, and then like my parents, my grandparents they are very happy, even though the amount is not really that sufficient 1000+, but still, you know at least they appreciate. A feeling of appreciation among the stakeholders goes a long way in terms of creating commitment and engagement among the youth.

In a study, Faridah Ibrahim et al. (2019) investigated the application of the stakeholder theory in government policies and the engagement of the Malaysian youths. Using the focus group discussion methodology, the study compiled the perspectives of respondents of different ethnicities in the age group of 20–29. The findings reveal that youths are very aware of

government programmes and are consistent in monitoring the policies that affect them. Interestingly, the findings also found that youths are appreciative of government initiatives and have a positive reciprocal relationship with these policies.

The MRT project was identified by both groups of the professionals as one of the policies that is visible to them.

“The MRT project that goes all the way to near my house in Jln Reko, I think that has impacted a lot on the way I travel to work because finally I don’t face too much of a traffic jam because the commuters are now using MRT to go to work in KL so they don’t clog the highway.”  
— Respondent SMM

The older professionals also discussed the housing policy at length similar to the young professionals.

“I think something has gone wrong somewhere that you know normal people cannot afford houses here in Malaysia, normal people cannot afford to have you know basic necessities.”  
— Respondent SMM “One of the most important things is welfare of the people, welfare of the people from the aspect of ownership of house and job opportunities.” — Respondent NMZ

Both groups mentioned safety and social illness as some of the main concerns within the country. It is interesting that both groups presented a wide perspective on the term of safety by looking not only at physical safety, but also environmental safety.

“Malaysia really needs to improve; I give the reason because we can see Malaysia has a lot of social problems ...” — Respondent T

“Ok, my concern about the future, definitely about our children, whether or not they can find jobs, whether or not they can have houses, but I think most importantly is for us to have a safe working environment you know, safe environment from the aspect of health, from the aspect of air pollution, from the aspect of crime because happy people make happy nation.” — Respondent SMM

It is interesting that the problem of lack of nutrition was also highlighted by the older professionals. Respondent SMM continued his statement with:

“They (the government) are revamping the feeding the children program, because they notice the children who come from poor families are so hungry, when they are in school, they cannot learn. Even though there is a food program at school, it is not nutritious enough to sustain their attention for the 5 hours that they are in school. So now they are concerned that what they are trying to do is trying to improve the quality of free food provided to the poor children in school.”

One obvious difference noted in the older professional group discussion was that they related education policies to career opportunities for the younger generation, because their children are affected directly. This was an aspect that was not brought up among the younger professionals.

“I’m looking at it, it's more concerned about the job opportunity for our younger generation.” — Respondent CPK

“Like me right now, I think how can my child buy a home, when my child graduates, will my child get a job?” — Respondent NMZ

The younger professionals and activists group talked mainly about the activities that they were personally involved in or experienced as can be seen from the following responses.

“First thing is, my dad passed away, we never knew if you have a dad you can go claim the money, 2500 ringgit at that time, the state provides you, so which is funeral expenses they provide, then they got *kad warga emas*, for senior citizens, then you can go and get some benefits, my daughter was born in 2010, they gave a ... you go and get the card Selangor, they will put 100

dollars every year, so when she is 18 years old, she will have about 1500 ringgit.” — Respondent T

They are also more concerned with global and national economic situations on the macro level compared to the younger professionals.

Interestingly, both groups of professionals emphasized on the importance of balanced nutrition for school children. On 26 August 2019, the Minister of Education announced a free breakfast scheme for primary school children starting from January 2020 which echoed the sentiments of these stakeholders (Bernard, 2019). However, certain issues which the professionals believe are not being sufficiently addressed by existing government education policies include the ongoing brain drain and education loans for the future generation.

Both groups also emphasized on the importance of public safety, especially crimes. Regardless of their industry, public safety is a major concern raised by this group of stakeholders. Suggestions from the respondents included relooking at the education system to reduce social ills and by extension, crime. At the same time, safety in terms of working environment and health safety was also raised. In this aspect, the professionals disagree with the direction taken by the current government policies. In their efforts to reduce crime, the government’s proposed initiatives such as setting police response time to eight minutes, getting more public participation for crime prevention and more cooperation among enforcement and security agencies (“Govt to improve”, 2019) seem to have not gotten much support from this group of stakeholders.

Affordable housing was also discussed by both groups of professionals and this again, is in line with the government policy whereby the Housing and Local Government announced that it is committed to building 100,000 affordable housing by the end of 2019 and plans are being made to lower the prices of houses (“Government to build”, 2019).

Public transportation such as the MRT project was also discussed by both groups. Bearing in mind that both groups were made up of respondents who were financially capable of owning cars, public transport nevertheless was one of the policy areas that they were concerned about. Any development in the public transport system therefore remains to be seen based on the National Transport Policy.

## **7.2. EDUCATIONAL IMPACT**

The stakeholders indicated their awareness of the educational support namely PTPTN and MyBrain provided by the government. Where education is concerned, the stakeholders believed that the programmes were of benefit to them.

S1: I think for my diploma, it was private university, but it was for me affordable, it was 24k for 2 years and a half, but I still use PTPTN, because at that time you also have to look at your family, like can they afford it or not, and that time I can’t afford it, so PTPTN was very helpful, because not only say they’d pay your loan, they also pay your pocket money.

S2: I remember when I studied for my bachelor, and I asked PTPTN, I haven’t got a job, so I couldn’t pay back, they say never mind, you can pay 20 Ringgit. Sedikit sedikit lama lama jadi bukit. Better than none right. So why can’t you just pay 10 Ringgit and 20 Ringgit, you just let the account flow, correct or not?... MyBrain was a good program, and should continue.

The younger professional group discussed their hopes for the education system extensively. The discussion on the education system ranged from the need for better moral

education, to tackling racial and social issues as well as the brain drain inflicting Malaysia.

“But in Malaysia, we are so scared, we are living in fear, why do we need to live in fear, because it goes back to our education system. Really its broken down. Education must bring up people to realize how to be a good human being, it is not the subject that is not really important, the subject is to get a good job and all that, but how to be a human being.” —Respondent T

“I tell you why because the brains from Malaysia went to Singapore, my brother was a straight A STPM scholar, he didn’t get a scholarship here, he got an ASEAN scholarship, so he’s now a Singapore PR. The respondents expressed their desire for transparency in the implementation of the government's programme.” — Respondent M

“One is sex education, and the other thing is nutrition for children needs to be improved a lot, I think we have a long way to go especially in schools. The education is one part, educating the kids about nutrition, and the nutrition in school itself.” — Respondent M

The older professionals also discussed education policies at length. When discussing the current government policy, respondent SMM stated:

“They are trying to improve access to education because the philosophy behind education is that everyone should be able to access education, so what they have done is that they have given voice to the teachers to the stakeholders to the parents and so on, now parents can link directly to the teachers, they can say things openly and so on, and then the latest one in the news they have also given voice to the lecturers you know especially the lecturers who have got opinions that are different from the ruling party.”

One obvious difference noted in the older professional group discussion was that they related education policies to career opportunities for the younger generation, because their children are affected directly. This was an aspect that was not brought up among the younger professionals.

“I’m looking at it, it's more concerned about the job opportunity for our younger generation.” — Respondent CPK

“Like me right now, I think how can my child buy a home, when my child graduates, will my child get a job?” — Respondent NMZ

In terms of education policies, both groups of professionals are concerned about the education system. The younger professionals’ focus is on quality education, issues of ethnic-based education and the brain drain of the country’s talents. In contrast, the older professionals are more concerned with the long-term effects of education policies such as job opportunities and also the salary scale when their children have grown up. Suggestions from the respondents included relooking at the education system to reduce social ills and by extension, crime.

The stakeholders showed their awareness of the government's efforts to improve schools and institutions of higher learning and were aware of the educational support namely PTPTN and MyBrain provided by the government.

Examples:

S3: alright I think since the new government has taken over, I have been paying a lot of attention to the education sector, ... I like most is that they are trying to improve access to education because the philosophy behind education is that everyone should have equal access education, so what they have done is that they have given voice to the teachers, to the stakeholders, to the parents and so on, now parents can link directly to the teachers, they can say

things openly and so on, and then the latest one in the news they have also given voice to the lecturers... you know especially the lecturers who have got opinions that are different from the ruling party...

S 1: I really like the one the present minister Dr Maszlee he talked about the freedom, and especially he talks about the higher education institution, university and college university, and I think the output previously has given a lot of restriction, to the student, of course now they have actually gone through a few rounds of amendments

### **7.3 POLICY IMPACT**

Stakeholder Theory and its Importance to Government Policies Studies on Stakeholder Theory and its link to Government policies are not new. Flak and Rose (2005) studied how the stakeholder theory can be adapted to understanding the concept of e-government. One of the interesting arguments made by Flak and Rose (2005) is that Stakeholders Theory is appropriate to be considered in relations to government policies as government can be conceptualised as the management of relationships and interests of societal stakeholders. He also argued that government agencies face increasing demand to run a government like a business with budget optimising for their stakeholders. Stakeholder Theory is a better-fit of management theory for the government context than the conventional profit-maximising management theories.

The researchers agree to the observation of Flak and Rose (2005). The government programme was very much business-like with its focus on achievement economically with many key performance indicators to be achieved as well as key areas to be tackled. Therefore, it would be refreshing to reflect upon the implementation of government programmes from the perspectives of Stakeholders Theory to evaluate the budget-optimising aspect of government programmes and its benefits to its societal stakeholders.

Government/public policy can be defined as purposive course actions by groups of people on matters which are of public interest (Meier & Bohte, 2007). In the implementation of public policies, there are two different groups of actors, namely the official actors and the unofficial policymakers. Olufemi (2016) defined the official actors as the ones who are empowered by law to engage in the formulation and execution of policy. The unofficial actors, on the other hand, are people who do not have legal authority to make policy decisions, but they derive their relevance from government policymaking. These unofficial actors can include interest groups, political parties and citizens. The role of the unofficial actors is often neglected

The opinion, ideas or information provided by them can assist the government in making decisions or updating an act, policy or plan that involves citizens' interest. From the perspective of the stakeholder theory, the implementation of programmes by a country or company will generate fruitful outcomes if the plans and programmes are well received by the stakeholders.

Very few studies have looked at the application of the stakeholder theory in the context of government policies. Flak and Rose (2005) argued that government agencies are managed like a business entity as they are required to make the best decisions for their stakeholders and ensure budgets are optimised. In this context, the stakeholder theory has proven to be a reliable and practical solution as it takes stakeholders' interests into consideration. The researchers found this to be an interesting gap, as there have not been many applications of the stakeholder theory in Malaysian government policymaking to enhance stakeholder engagement. Therefore, it would give a fresh perspective of the stakeholder theory with regard to government policies.

The notion that the Malaysia government policies are often top-down approach (Hunter, 2013; Kanapathy & Hazri, 2013) and the insufficiency of public engagement can be negated if government policies continue to align with the public's sentiments as shown in this study. This study found that the professionals are very aware of government programmes and are consistently monitoring policies that affect them. This concurs with the findings of Faridah Ibrahim et. al. (2019) among the youths.

#### **7.4 PRACTITIONER/PROFESSIONAL IMPACT**

For the media dependence domain, the computed mean for the traditional media and new media do not show a big difference. The stakeholders used both media to get information regarding government programs and also to update their knowledge and get in-depth and instantaneous information. They also seek the media for clarification on information pertaining to the government programs.

One of the important stakeholder groups in this context are the professionals who put their skills and knowledge into a profession and are considered as experts in their fields. Many discourses have transpired on the important role of professionals in policymaking (Powell, Garrow, Woodford & Perron, 2013; Amrita, 2018). Therefore, this study investigates the engagement of professionals with government policymaking and their perceptions with regards to those policies.

Various scholars have examined how different organizations use the stakeholder theory (May, Gilson & Harter, 2004; Robinson, 2006; Harrison et. al., 2015). Even so, there lacks research on stakeholders and how they perceive the implementation of government programmes. In the context of this study, the stakeholder theory would be crucial in informing the government the perception of professionals towards their policies.

The change of government in 2018 heralded drastic changes in policies. There is a gap in understanding how the new government policies are affecting its stakeholders, namely the public. This input is crucial for the new government administration that has been in place for more than a year. With major changes taking place, the views of professionals are important in ensuring that the government is moving on the right track.

At the same time, stakeholder engagement can also be considered as pay-off for the resources that they received. Thus, the context of this study also looks at the benefits that professionals have reaped from government policies that could compel them to be more engaged in policy making. In turn, failure of government in providing resources would lead to disengagement from the stakeholders who will withdraw from their roles.

In her study on the role of educators in education policymaking in Europe, Amrita (2018) highlighted the importance of understanding the viewpoint of professionals. The long-term sustainability of reform efforts is directly linked to the degree of inclusion in decision-making among professionals. In fact, the scholar pointed out that top-down issued policies stand little success in the long term even if they seem successful at first.

Powell et al. (2013), on the other hand, investigated the role of health professionals such as social workers in policy making by identifying the policymaking opportunities that can be accorded to the "frontliners" of mental health services. Very often, the important role of professionals in enhancing policy outcomes for the people that they serve is overlooked.

Professionals were the stakeholders chosen for this study as they are deemed to be more vocal in expressing their opinions on political matters and government policies.

“The MRT project that goes all the way to near my house in Jln Reko, I think that has impacted a lot on the way I travel to work because finally I don’t face too much of a traffic jam because the commuters are now using MRT to go to work in KL so they don’t clog the highway.” — Respondent SMM

The older professionals also discussed the housing policy at length similar to the young professionals.

“I think something has gone wrong somewhere that you know normal people cannot afford houses here in Malaysia, normal people cannot afford to have you know basic necessities.” — Respondent SMM

“One of the most important things is welfare of the people, welfare of the people from the aspect of ownership of house and job opportunities.” — Respondent NMZ

Both groups mentioned safety and social illness as some of the main concerns within the country. It is interesting that both groups presented a wide perspective on the term of safety by looking not only at physical safety, but also environmental safety.

“Malaysia really needs to improve; I give the reason because we can see Malaysia has a lot of problems with a social...” — Respondent T

“Ok, my concern about the future, definitely about our children, whether or not they can find jobs, whether or not they can have houses, but I think most importantly is for us to have a safe working environment you know, safe environment from the aspect of health, from the aspect of air pollution, from the aspect of crime because happy people make happy nation.” — Respondent SMM

The younger professional group discussed their hopes for the education system extensively. The discussion on the education system ranged from the need for better moral education, to tackling racial and social issues as well as the brain drain inflicting Malaysia.

“But in Malaysia, we are so scared, we are living in fear, why is it are we need to live in fear, because it goes back to our education system. Really its broken down, education must bring up people to realise how to be a good human being, it is not the subjects it is not really important, the subjects is to get a good job and all that, but how to be a human being.” -Respondent T

“I tell you why because the brains from Malaysia went to Singapore, my brother my brother was a straight A STPM scholar, he didn’t get a scholarship here, he got an ASEAN scholarship, so he’s now a Singapore PR. The respondents expressed their desire for transparency in the implementation of the government's programme.” — Respondent M

“One is sex education, and the other thing is nutrition for children needs to be improved a lot, I think we have a long way to go especially in schools. The education is one part, educating the kids about nutrition, and the nutrition in school itself.” — Respondent M

The older professionals also discussed education policies at length. When discussing the current government policy, respondent SMM stated:

“They are trying to improve access to education because the philosophy behind education is that everyone should be able to access education, so what they have done is that they have given voice to the teachers to the stakeholders to the parents and so on, now parents can link directly to the teachers, they can say things openly and so on, and then the latest one in the news they have also

given voice to the lecturers you know especially the lecturers who have got opinions that are different from the ruling party.”

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One obvious difference noted in the older professional group discussion was that they related education policies to career opportunities for the younger generation, because their children are affected directly. This was an aspect that was not brought up among the younger professionals.

“I’m looking at it, it’s more concerned about the job opportunity for our younger generation.” — Respondent CPK

“Like me right now, I think how can my child buy a home, when my child graduates, will my child get a job?” — Respondent NMZ

For the young professionals, good policy implementation was reflected as “Policy makers need to formulate policy or implement programs based on needs.” (Respondent M).

Another respondent concurred with this by adding “The government must remember that what is being done is for the people, so you can’t do for political interest, he needs to do it for the people.” (Respondent I).

The young professionals also discussed the need for transparency in future government programmes. “They demand for transparency in government contract tender. That is what we want to see the change lah the new government, we want to know the details, why this person got a contract, we want to know, there must be some benefit to us, not benefit for someone else.” — Respondent T

The older professionals also brought up the fact that transparency would mean open tenders. This can be attributed to the fact that the older professionals work at the management level where they are personally involved in tenders.

“Transparency I feel I see the tender system from close to open tender, that shows transparency lah from one of the ways to show that Government is transparent.” — Respondent H

The younger professionals and activists group talked mainly about the activities that they were personally involved in or experienced as can be seen from the following responses.

“To speak about is probably what I’m personally involved in which was the government under BN which was the SEDIC program which is a program meant for the socioeconomic, to uplift the socioeconomic status of the indian community, because I’m heavily involved in NGO work and we received, my NGO received a grant...SEDIC is the main program I am personally involved in.” — Respondent M

Grievances voiced by the young professional group were often related to their job. One of the respondents, DRH is a medical doctor. He voiced his dissatisfaction on the government salary scale for medical doctors, with low increments which are not equal to the number of hours they work. He lamented, “I calculated before, doctor’s salary by the hour, is lower than factory workers”.

One of the respondents shared her appreciation for the new policy whereby husbands can contribute to their wives' Employment Provident Fund account as she is personally impacted by it. "So as a freelancer, I don't have any EPF SOCSO nothing, no benefits at all, so the last 10 years I had no EPF contribution...so of course you have that options of wanting to do your monthly contribution on your own and all... it hit me recently that you know I had no backup emergency savings for myself, and to have something like this is a compulsory thing, I think it's good." — Respondent M

## **7.5. GOVERNMENTAL AND LEADERSHIP IMPACT**

It was found that leaders at these highly engaged organisations, created a trusting and challenging environment, in which employees were motivated to innovate in order to move the organisations forward. This indicated that good leadership is an important element in enhancing engagement among organisational members and people as a whole. According to the Towers Perrin survey, building engagement is a continuous process and that the vital factors for engagement include strong leadership, accountability, autonomy, a sense of control over one's environment and opportunities for development. The research also showed evidence that the most important driver of engagement is a leader's interest in the people's well-being.

For the governmental proximity, the stakeholders agreed that the government's work positively impacted their lives, satisfaction with the benefits package, mutual trust and respect, and the government-people work relationship. In terms of leadership, the agreement level is for teamwork, concern for the people's wellbeing, commitment to work, bridging the people with the government and practicing uniform rules.

The study supports earlier findings by Kahn (1990) and Seijts & Crim (2006) that emphasized on the importance of leaders' encouragement and proximity between leaders and people in enhancing engagement among organisational members and people as a whole. Trad

The findings of the study revealed that governmental proximity, which is an indication of close government-citizen relationship, had formed a catalyst that made stakeholders want to be engaged with the government in the implementation of various governmental programs. The good and positive relationship was basically due to trust, respect, inclusivity of the government, satisfaction with work culture and the benefits package provided. Another important factor is that the stakeholders believed that the government's work had positively impacted their lives. According to Nalick (2016) Stakeholder Engagement theory stressed that there is a point of intersection between the government and the stakeholders on certain programs and activities. Such a situation had encouraged acceptability and triggered engagement among the stakeholders which in turn will sustain collaborative governmental-citizen relationships (Nalick et al., 2016).

The stakeholders were positive and accepting towards the efforts made by the government to enhance their wellbeing. This is in line with various studies in this area which have found that stakeholder engagement can positively benefit both the organisation and society (Freeman & McVea 2001; Greenwood, 2007; Ihugba & Osuji 2011). Similarly, the findings of this study supported the views expressed by these scholars that proximity and closeness of the government-citizen relationship had positively led to engagement. This study also found participation which stressed the stakeholder's involvement in decision making, the freedom to voice out complaints about pressing issues as well as giving feedback and suggestions is an important element in engagement. Ali and Sonderling (2017) had identified in their study that genuine participation is the missing link in the development process that had caused failure of development projects in achieving their goals. Bahtiar et al. (2018) also suggested that participation provides citizens of a country to express their views and aspirations and be able to

participate in decision making that may affect their future.

This study also identified the prevalent role of leadership as an enhancement factor in stakeholder's engagement in the implementation of GP. The findings showed strong leadership that emphasised mutual trust and respect, commitment to a good work culture, teamwork and a sense of social responsibility, and the use of uniform policies are essential elements that had charted a positive path towards engagement. This is similar with the views by Robinson et al. (2004) who identified key factors associated with stakeholder engagement included behaviours such as effective leadership, two-way communication, high levels of collaboration and teamwork, a commitment to stakeholder wellbeing and clear, accessible policies and practices (Simmons, 2003).

## **8. CONCLUSION: THE WAY FORWARD**

The importance of stakeholder engagement in drafting and implementing policies, schemes and initiatives by the government cannot be overly emphasised. The reality is that stakeholders are the ones who would be the beneficiaries of successful policies and schemes and the most negatively affected should these initiatives fail.

Regardless of the positive and negative aspects of the government programmes, the effectiveness of the programmes implemented weigh heavily on the stakeholders' mind, be they seasoned professionals or young people beginning their lives as adult members of society (Faridah et al., 2019a)

Especially for the youths, it would be best to reaffirm their beliefs that their support for the government programmes was crucial in making the programmes a success and obtaining a reciprocal reaction from the government in initiating appropriate actions in improving the programmes. Stakeholders, including the youths and the professionals, should be reassured that their opinions played vital roles in prompting continual improvement in government programmes. Affirming this is an argument by Lawler and Worley (2006) who stated that in order for organisations to have a positive impact on stakeholder engagement, people need to be empowered. For this to happen, they should not be limited in voicing their opinions and grievances. For the youths, this feedback could now be easily obtained through online interaction via various social media platforms. (Faridah et al., 2019b; Nurzali, 2016).

Indeed, young people made up an important component of stakeholder. Young people are now extremely active in keeping track of government programmes and are very much aware of the programmes, especially those that have a direct impact on their lives. Many are very open and accepting towards the efforts made by the government to enhance their wellbeing. Though young, they are not naïve. They may display strong support for government programmes, especially those that benefit them, but at the same time show maturity in recognising the shortcomings and limitations. Nalick (2016) highlighted that there is a point of intersection between the government and the stakeholders which will encourage acceptability among the stakeholders and sustain collaborative relationships. It is this sustainability in stakeholder's engagement that would benefit both the government and the community that it has sworn to serve (Freeman & McVea, 2001; Greenwood, 2007; Ihugba & Osuji, 2011).

In general, stakeholders are appreciative of government programmes that have benefitted them. With this appreciation, stakeholders are willing to return the favour back in terms of supporting the government's efforts, which they view as a reciprocal obligation. Saks (2006) and the earlier work of Kahn (1990) suggested that people are more likely to exchange their

engagement for resources and benefits provided by their organisation, and in this context, the government. In addition, stakeholders also demand transparency, inclusivity, fairness, corruption-free establishments and fulfilment of promises (Siti Maziha & Faridah Ibrahim, 2019). Understanding stakeholders' perception towards the government programs is absolutely significant as the government-people collaboration will result in a win-win outcome.

The focus of the studies by Faridah Ibrahim et al. (2019a), Faridah Ibrahim et al. (2019b), Kho et al. (2019), and Siti Maziha and Faridah Ibrahim (2019) are mainly on professionals and youths as stakeholders. It is important that the participants of future studies be diversified (Kho et al., 2019). Stakeholders from special-interest groups such as parents, civil servants, captains and other players of the industry, media personnel and non-governmental organisations should also be called upon to participate in similar studies. In addition, longitudinal studies could also be conducted based on the fact that the only constant in life is change. A study on the changes in stakeholders' perceptions over the years in terms of government policies would make an interesting and impactful study, especially in terms of changing trends. It is also important that quantitative research measuring the level of engagement by different stakeholders for different sets of government policies be conducted regularly. Such findings can help the government formulate more policies and programmes that are more effective in catering to the people's needs.

Although traditional media is preferred by the more senior professionals due to trust and confidence issues, the move towards digital media is fully embraced by the youth. Samsudin (2018) highlighted the preference of the younger generation in embracing digital amenities which influences and changes the way they participate in social issues. In engaging stakeholders, the digital platform is not a choice but instead is a necessity. Even without legitimisation, social media platforms have been used by stakeholders to voice their views, opinions, beliefs and judgements. It is thus best for the powers that be to capitalise on the use of digitalisation in obtaining feedback.

The government needs to consistently find alternative ways to actively engage with the stakeholders. The government needs to be proactive in addressing the problems and making strategic moves to ensure continuous, sustainable improvements for the future of the nation. (Kho et al., 2019; Siti Mazihah & Faridah Ibrahim., 2019) Good governance and sensitivity towards the needs of the stakeholders would help in reducing grievance, aloofness and indifference towards the acceptability of government programmes. Understanding the stakeholders' reasons for engagement will help the government to fulfil their needs and hence create cost effectiveness in the implementation as well as achieving a win-win situation. Often, just the chance to sound off and feel that their voices are being heard is all that people are looking for and this can easily avoid problems before they arise. The government must continually empower stakeholders by involving them in the planning and decision making related to programmes that affect their wellbeing and future.

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# AMBER HEARD AND JOHNNY DEPP DEFAMATION SUIT: AN ESSAY ON PROPAGANDA, MISINFORMATION AND FAKE NEWS ON DIGITAL PLATFORMS

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## 1. INTRODUCTION

The terms ‘propaganda’, ‘misinformation’ and ‘fake news’ often overlap in meaning. These terms are used to refer to a range of ways in which sharing information causes harm, intentionally or unintentionally – usually in relation to the promotion of a particular moral action, cause or point of view. This essay discusses the role of propaganda, misinformation and fake news orchestrated on digital platforms by social media users in the recent Amber Heard and Johnny Depp Defamation Suit, identifies the manner in which propaganda, misinformation and fake news messages were constructed and spread and the consequences of these messages to Amber Heard and Johnny Depp.

## 2. DISCUSSION

Johnny Depp, a renowned Hollywood actor first filed his suit three years ago where he claimed defamation over an opinion editorial article written by his former wife, Amber Heard in 2018 in Washington Post, supporting the Violence Against Women Act. In the article, Heard openly wrote though without referring to Depp on how she herself had become “a public figure representing domestic abuse” two years prior and “felt the full force of our culture’s wrath for women who speak out.” Depp claimed trial claiming that the article was written on him and that she is perpetrator of domestic abuse rather than the victim. He went on to file a lawsuit for \$50 million in damages while she countersued Depp \$100 million. After six weeks of arguments from either side, and about 12 hours over three days of deliberation, the Fairfax County, Virginia jury reached a unanimous verdict against Heard because she could not substantiate her allegations and acted with actual malice when writing her opinion editorial article. This resulted in Depp being awarded \$10 million in compensatory damages and \$5 million in punitive damages, totaling a \$15 million payment. However, due to damage caps under Virginia law, the punitive damage payment was capped at \$350,000, resulting in a total payment of \$10.35 million. The jury also found Depp liable for defamation and awarded Heard \$2 million in compensatory damages, though nothing for punitive damages.

In one of her first public remarks since the verdict, during a sit-down interview with NBC’s Savannah Guthrie, Heard stated that though she does not blame the jurors for ruling against her, she does however believe that propaganda, misinformation and fake news orchestrated on digital platforms by social media users did in fact heavily influenced the verdict of the entire case. During the interview, she said,

*“I don’t care what one thinks about me or what judgments you want to make about what happened in the privacy of my own home, in my marriage, behind closed doors,” Heard said. “I don’t presume the average person should know those things. And so I don’t take it personally. Even somebody who is sure I’m deserving of all this hate and vitriol, even if you think that I’m lying, you still couldn’t look me in the eye and tell me that you think on social media there’s*

*been a fair representation. You cannot tell me that you think that this has been fair."*

Data collected by Newswhip from April 4 to May 16, 2022, indicated that news articles about the trial had generated more social media interactions per article in the United States alone. To add on, Twitter, TikTok, and Instagram users took upon themselves to openly express opinions about the case. An NBC article which accompanied the preview of Heard's interview with NBC's Savannah Guthrie reported that TikTok hashtag #justiceforjohnnydepp had nearly 20 billion views in comparison to #justiceforamberheard which only had about 80 million views in total. To add on, negatively themed hashtags like #amberheardisguilty had almost 900 million views. BuzzFeed News also reported that, between April 25 and 29, 2022, there were 1,667 posts uploaded to Facebook using the hashtag #JusticeForJohnnyDepp, with over 7 million total interactions, i.e., likes and shares between them.

Amelia Tait, a journalist from The Guardian said that entire defamation trial had indeed turned into "trial by TikTok", stating that the case had become "a source of comedy" on digital platforms of social media. Amanda Hess, a critic who writes for The New York Times on the other hand stated that propaganda, misinformation and fake news was elatedly tailored by Depp's public relation team to viewer's whim to character assassinate, harass and create hatred and rejection towards Heard. Shannon Keating, a culture writer and editor for BuzzFeed News, also reported that the "social media frenzy around this case was clearly fueled by savvy PR", bots, and conservative media advertising, resulting in "lots of people have happily accepted the propaganda as sacrosanct." Bill Goodykoontz from The Arizona Republic criticized the coverage of the trial on social media, and went on record to state that "Depp and Heard are real people with real problems, after all, not just meme fodder and hashtag subjects," and that "the vile nature of some of the misogynistic tweets and TikTok videos posted about Heard were toxic masculinity at its worst."

The intense coverage of the trial and the fact that it was live-streamed also made it an unusual case. Paula Todd, a lawyer and media professor criticized the fact that jury members in the trial were not sequestered and believe that the social media coverage may have had an influence on the final verdict. Although the jurors were strictly instructed to refrain from reading about the case online, the question remains on whether the jurors listened and obeyed the given instructions and avoided accessing online coverage. Carl Tobias, a University of Richmond law professor is in the opinion that due to the live streamed trial and the influences on digital platforms a person's right to a fair trial was definitely effected.

There is also hard evidence of propaganda, misinformation and fake news widely shared, with researchers identifying bots artificially spreading content. In May 2022, The Citizens and Vice World News reported that the conservative website The Daily Wire had spent between \$35,000 and \$47,000 on Facebook and Instagram advertisements and promoted "misleading information about the trial" and "anti-Amber Heard propaganda" through advertisements and written articles. The website which was founded by Ben Shapiro, ranks as the second most popular news publisher on Facebook reported elicited about four million impressions through one-sided news articles, reports, commentaries and videos with a clear bias against Heard. There is one famous article on the website titled "The Attempted Character Assassination of Johnny Depp", which repeatedly advocates the notion that Depp was indeed a great person that is until he married Amber Heard. The article is also said to included false claims on amber Heard and the relationship she shared with Depp. To add on, The Daily Wire also reportedly spent between \$10,700 and \$15,799 promoting another article titled "The 14 Most Shocking Revelations In The Johnny Depp, Amber Heard Defamation Trial" which gives a biases partial account of the entire trial."

### **3. PROPAGANDA, MISINFORMATION AND FAKE NEWS ON AMBER HEARD**

1. Amber Heard literally left her feces on their bed: This statement was heavily discussed on all major digital platforms by individual users and the piece was covered also covered as a sensational news by all media authorities. Everyone seemed to have an opinion about this and were committed to agree that amber Heard did indeed left her feces on their bed in 2016 as part of her revenge for their big fight on her birthday celebration the night before. This statement can be passed of a propaganda, misinformation and fake news because in reality, nobody knows who in fact left the feces and during Depp's lawsuit in the UK, even the judge determined that is was most likely left by a dog. There is no forensic evidence to support the statement that Amber Heard literally left her feces on their bed.
2. Amber Heard got caught lying about the makeup she allegedly used to cover up bruises: This statement added on to the hatred that Heard was receiving from the users of digital social media because people became convinced that she used a correction makeup palette which allegedly covered up her bruises. Her lawyer Elaine Bredehoft made the grave mistake of holding up a generic correction makeup palette as a prop during the trial and that caused everyone to jump and state that the prop in use was released only in December 2017 when in fact the alleged abuse took place between 2014-2016. This automatically caused readers and listeners to instantly label her as a liar. Later on, Newsweek conducted a research on this matter and reported that Elaine Bredehoft during the trial did not even once mentioned the brand of the makeup brand and kit.
3. Elaine Bredehoft is a fan of Johnny Depp: there was a video that circulated on TikTok of an elderly woman at Johnny Depp's Lone Ranger movie premiere in 2013 and this woman resembled Elaine Bredehoft. The narrative behind this video was that Elaine Bredehoft actually took the responsibility of being Heard's lawyer so that she would be close to Depp as she was a dying fan. This Tiktok video garnered over 11 million views and yet there is no evidence that the woman in the video is Elaine Bredehoft herself because of the poor quality of the video.
4. Amber Heard has borderline personality disorder: This label was used by Shannon Curry, a forensic psychologist who was hired by Depp's team to diagnose Heard. Curry, who spent only 12 hours in total with Heard came to the diagnosis that Depp himself often used to use on Heard during their relationship, after reviewing documents provided to her, again by Depp's team and spending just 12 hours with Heard. It is important to note that this statement and diagnosis was rooted in stigma and emotion and often is not factual because it was not proven to be truthful medically during the trial. Heard's potential mental health concern was used against her as a weapon in effort to tank her credibility in court.
5. Johnny Depp a male victim of abuse: Again, there is ample textual evidence produced in court by Heard's team of lawyers where Depp in his WhatsApp messages before, during and after their marriage complained about her, called her horrible names, slandered her character, and made facetious jokes on her and her character. he even many a times spoke about her alleged affairs and wrote that he felt that she was too ambitious about her career. Interestingly, there are no convincing text exchanges discussing the notion that Amber had in fact abused him and Heard was never once singled out as a problem or an abuser in any of these exchanges. Depp however has repeatedly written about Heard in vicious, abusive and malicious ways, proving that he hated and was jealous, disgusted and even revengeful towards her, but definitely did not fear her as how an abused partner would.

6. Heard copied quotes from films like *The Talented Mr. Ripley* in her testimonies: Individual social media users also for their own personal gains falsely alleged that Heard copied quotes from films like *The Talented Mr. Ripley* in her testimonies. There is to date no evidence of this, and if both videos are compared, it is evident that Heard did not say the lines word for word, as claimed.
7. Amber Heard snorted cocaine concealed in a tissue she was using to blow her nose: First and foremost, it is important to note that there are harsh penalties in place for consuming or carrying drugs in a courthouse. To add on, the security teams are determined to make sure there no illegal substances can be brought into the courtroom. However, for this context, Heard as an actress has in the past admitted that she is unable to cry and that is indeed a real challenge in her line of work. Anna Faris a fellow actress once revealed to James Corden during *The Late Show with James Corden* that she too faces this problem and to solve the challenge she often uses menthol crystal to help her with her crying scenes. Hence, there is a possible chance that Heard was sniffing menthol crystal and not cocaine during the trial in attempt to cry as tears often help convince the jurors.

#### **4. THE ROLE OF THE DIGITAL IN THE TRIAL**

Media through its digital platforms deliberately took sides and crafted propaganda, misinformation and fake news for their personal gain and agenda. It is evident that the media fed propaganda, misinformation and fake news to their viewers who believed it and then went on re-producing propaganda, misinformation and fake news without fact checking on their own personal handles, thus resulting in believing and supporting Johnny Depp while reputable news resources and published professionals leaned in more towards Amber Heard's defense.

Media and digital media users cleverly used tools like hashtags to state and spread their propaganda, misinformation and fake news. For example, #JusticeForJohnnyDepp amassed over 21 billion views on TikTok, while #JusticeForAmberHeard only gained just over 100 million. Other hashtags like #AmberHeardIsAPsychopath and #JusticeForAllWomen were also profoundly used.

Memes TikTok trends, and parodies were also used as propaganda tools to demean and humiliate Heard while deeming Depp as victim and a true hero. There were many with re-enactments mocking Heard's testimony and rhyming parodies of her words and body language—when Heard smirked in the courtroom, she was projected as cruel and mean but when Johnny literally smirked as well, he was instead called out to be witty, intelligent and child-like. Heard was also mocked when she was taped on camera to write notes, but Johnny was equated to be innocent and sweet when he was taped drawing doodles during the trial. The bias of the media was clear and it was evidently in favor of Johnny Depp.

To add on, this public trial saw political groups taking advantage of the media coverage to push their agenda and gain attention from the general public by spreading fake news and misinformation namely the Daily Wire who evidently spent between \$35,000 and \$47,000 on Facebook and Instagram to spread the anti-Amber Heard narrative.

Political propaganda was also added on by the feminist movement and men's rights movement who took advantage of this trial to justify their conflicting grounds. These two movements communicated their stand and thoughts by citing unverified examples from the digital media. This resulted in viewers—rational adults, young teens and even children being manipulated into believing propaganda, misinformation and fake news and passing off the propaganda, misinformation and fake news as facts.

## 5. CONCLUSION

It is evident that digital platforms did indeed play a major role in the spread of propaganda, misinformation and fake news in relation to the Amber Heard and Johnny Depp Trial. It has successfully portrayed Heard as the ultimate manipulative and deceptive woman, a liar and a gold digger who deceitfully manipulates her victims into submission. This narrative misleads the public and possibly the jurors themselves leading to Heard being labelled as a horrible and characterless woman, losing her reputation in society, facing the general public's hatred and criticism and possibly dampening her career prospects in Hollywood, while Depp received supportive messages and encouragement and is now given various creative opportunities in areas of performing arts and cinema.

The tsunami of propaganda, misinformation and fake news on the litigants, their lawyers and witnesses, surged through the digital platform immersing any real facts. The entire defamation trial further tarnished and smeared the litigants' character and reputation, in this case Amber Heard's .

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# **ETHICAL ADVERTISEMENT IN THE CASE OF SHARIAH-COMPLIANCE CLAIMED PRODUCTS**

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## **1. INTRODUCTION**

Nowadays, there are a lot of advertisements that has being publicized nowhere. It is either advertisement on products or services, both are using the same method as the company in spite of attracting consumers to buy their products or services. However, this is literally the most effective way for the company to introduce their products and services worldwide. It gives chance to people to know the products or services closely. In addition, it also gives necessary information and knowledge on good products or services that the company offers itself. On the other hand, there is a little component of the advertisement that we need to be alert of. The element of Islamic claims that are being used in the advertisement, especially in Islamic products is likely to be out of our concern recently. This is part of ethics in the advertisement that demands compliance by the business owner. Business owners today use Islamic claims in their advertisement in a new way to attract people to buy their products. This phenomenon has become a common trend for business owner. Most of the time, they use Quranic verses, the Sunnah words or quotations claimed by the Prophet and the halal logos just to grab people's attention to the products.

Advertising according to Moriarty, Mitchell and Wells (2012), “ is a paid form of persuasive communication that uses mass and interactive media to reach broad audiences in order to connect and identified sponsor with buyers (a target audience), provide information about products (goods, services and ideas), and interpret the product features in terms of the customer's need and wants”. While claims in this term paper are referring to the Sunnah or shariah compliance which means the way of life including teaching, practising and preaching of Prophet Muhammad (S.A.W). Muslim manufacturing products, on the other hand, is the products produced by Muslim company to be marketed to the public. Thus, there is a need to study the claims that have been made by Muslim manufacturing products through their advertisement and to analyse how far it complies with ethical advertisement.

## **2. ADVERTISEMENT AND ETHICS IN GENERAL**

Advertisement is a commercial way that is used by business makers nowadays to promote their products. As what has been claimed by Laczniak (2008) mentioned by Bari and Abbas there was \$300 billion of spending on the advertisement in 2005 around the world. This shows that advertisement is one of the popular tools for promoting products. Before going further, it is really important to know the meaning of the advertisement as well as the ethics in the area of business. According to Wells, et. al (2007), cited by Bari and Abbas, Advertisement is a “unidirectional and paid form of communication that is used to disseminate the products or services information”. Dunn (1995) added that advertising is referred to activities that aimed to increase the product and enhance the image of a product or business. In addition, it is a way to “inform the potential customer of the availability of the products, when they are in season, where you are located and anything special about the products”. As stated by Singh (1998), the main focus of the advertisement is to gain profit. There are many approaches used by companies to persuade their targeted consumers to react to their products. Some of them use television commercial, newspapers, magazines, radio and social media to advertise their business and services. They want

to influence consumer's minds in putting trustees for such products. For some companies, advertisement is their main instrument to make people aware of their products. In addition, they want to grab people's attention to consider buying their products. Similarly, Nooh (2009) points to advertising he mentioned that advertisement is one of the tools specifically functioning to promote the product globally. Other than that, Ekramol and Zahedol (2013) suggested that advertising is an important tool in making marketing effective in the present highly competitive market. Without advertising, there will be a minimum number of people that know the existence of the products.

Recently, with the advancement of technology, the issue of unethical advertising has been a concern for some religious scholars. Several studies from different perspectives have been done in order to understand this phenomenon with the fact that it has been ethical controversies for some people (Noorizuddin, n.d). Ethics is one of the branches of Philosophy. Spence and Heekeren (2005) pointed out the views of Noorizuddin Noh (n.d), ethics can be defined as "a set of prescriptive rules, principles, values and virtues of character that inform and guide interpersonal and intrapersonal conduct". Schlegelmitch further argued that ethics is hard to give the interpretation because of the element that cannot be directly measured and the influence of the internal and external environment on it. Christians, Fackler, and Rotzoll (1995) added that the interpretation of ethics is difficult because it requires deliberation, careful distinction, and extended discussion.

Furthermore, it has been claimed that Dr H. Hamza Ya'qub in his book, *Etika Islam, Pembina Aklasqulkarimah* cited by Noh (2008), ethics as the body of knowledge which observing human behaviours and perceived that behaviour whether it is good or bad, right and wrong. It differs from others' views of ethics because it is based on the foundation of the sources of the Quran and Hadith (p.2). The Western ethical standard shared similarities with the Islamic principles where the values of trustworthiness (Amanah), honesty (truthfulness), equality, equality, mutual consent, respect, sacrifice, caring, sharing, and concern for legality. The difference between these two principles is only in terms of god-consciousness and sincerity (Noordin,2009).

Through the observation from the previous findings, religion seems to influence the perception of consumers in seeing the ethics used in advertising. As what has been stated by Famm, Waller and Erdogan (2004), "there is a significant difference between the four controversial product groups and the four religious' denominations. Evidently, the Islamic followers found the advertising of gender/sex-related products, social/political groups, and health and care products most offensive relative to the other three religions". It shows that what is been stated in the advertisement are usually been evaluated by most Muslims as ethical or unethical based on the contents of the advertisement. The result is cannot be applied to any type of Muslim manufacturing products. This is because, the advertisements are chosen only based on controversial products group which are gender or sex-related products, social or political group products, addictive products and health and care products.

Based on the article by Saeed, Ahmad and Mukhtar (2001), stated that "according to the Islamic perspective, such pursuits based on satisfying material objectives alone will impede the rational thinking of people and will make them slaves of marketing firms. Islam, above all, respects freedom and offers a means of freeing human beings from all shackles of enslavement including that of international marketers." It is also asserted in their research that Islamic business ethics prohibited Muslims from doing harm to others and spreading unethical practices which include unethical marketing methods. Islam & Alam (2013) suggested that "Islam has permitted the things that are useful for the community and forbade the things that are harmful". Thus, it means that as long as the things will give benefit the people, it is alright to use them. The element of fairness also is very important in identifying the ethical system in advertisements. "By fairness, it means that the features and quality that is being advertised and perceived by the people should

be there in the product” (Bari & Abbas, 2011).

Another finding it can be seen that Muslims should not be slaves and easy to be influenced by marketing tricks with the fact that many international marketers used various unethical ways in advertising and marketing their products. Using unethical marketing which caused harm to others as well giving a bad effect on Muslims is not part of Islamic ethics of marketing and advertising. It has been mentioned by researchers Barri and Abbas (2013, p. 154), “Islam does not tolerate selling a product by using sexual appeals or un-discussable concepts”. Any exaggerated pictures are not allowed in Islam as it falls under unethical advertising.

On the other hand, the consumer also plays an important role in producing ethical advertising. This is because the consumer is the targeted audience of the product’s company. To full fill consumer needs, the company have the tendency to advertise its products based on consumer needs. They will consider their consumer demands in a way to attract their targeted audiences’ attention through their advertisement. Thus, the advertisement will be designed according to consumer preference. That is how the ethical practices of business also depend on the consumer. The consumer who demands a product which is halal, good in quality, and contains safety features, moderation elements and the intelligence of the products will lead business owners to be more ethical in marketing their products. These situations will also lead to the ethical business, advertising and marketing of products (Kamri, 2008).

Most of the advertisements claimed that their products are inline with Syariah or comply with the Quran or the Sunnah of the Prophet. A study reveals that 93 per cent of the advertisement claims that the product comply with Syariah. However, it is found that only 7 out of 30 advertisements support their claims with proper citation of Quranic Verses, Sunnah, or hadith whereby the rest only put the words of ‘Sunnah’, ‘Quran’ and other Islamic claims without the supporting documents to prove the claims. This amounting to fraud case under the Contracts Act 1950 and issue of non compliance with the implied condition as to description under the Sale of Goods Act 1950.

In addition, the study also reveals the word ‘Sunnah’ is being used in 21 out of 30 advertisements. It is followed by the use of the word ‘Quran’ which it is used in 8 of the advertisements. The words ‘hadith’ is also used in 3 of the advertisements. There is one of the advertisements uses all those three words and 5 of the advertisements used a combination of the words ‘Quran’ and ‘Sunnah’. From the analysis, the word ‘Sunnah’ is the most frequent word that have being used by these Muslim manufacturing products as their syariah compliance claim in their advertisement. Another word used in the advertisement is ‘Insyallah’ and other mostly describing on the ingredients and the benefits of the products. Most of the advertisements are using an attractive font to highlight the syariah compliance claim.

On the other hand, in terms of photos or figures used in the advertisement, 29 of the advertisements are using photos and only one of the advertisements uses full words without any pictures describing the advantages and the benefits of the product. The pictures used also include the photos of the products, the figures of men, women, kids, fruits, and the ingredients such as habbatus sauda, honey, date palm, raisin, milk and many other ingredients. The pictures used are usually related to the ingredient of the product. In addition, it can be seen that the element of cartoons is also used by the Muslim business owner in their advertisement which seems to be inappropriate.

Other than that, there are some logos used in the advertisement. Specific logos such as the Halal logo, the clarification of the Muslim product logo and the Malaysian product logo also include in the advertisement. In contrast, it is also found that there are some of the advertisement

are not even put any logo including Halal logo, even though it is a Muslim product. They even used plain colours and only pictures of their products.

The study shows that most of the products have included Syariah compliance claims in the advertisement as for them, the shares are nothing but the truth, as they believed their products can give benefits to the people. The researchers suggested print ads that contain headlines, sub-lines, body copy, and visual illustrations are permitted in Islam except the elements of music and photography which is not encouraged and disallowed (Islam & Alam, 2013). They also mentioned that "Islam has permitted the things that are useful for the community and forbade the things that are harmful" (2013, p.4). The Syariah compliance claims in advertisements are the element that can give a positive impact on the people. Bari and Abbas in their research mentioned that the aspect of fairness is the most important in the Islamic ethical system. "Fairness means that the features and quality that is being advertised and perceived by the people, should be there in the product" (Bari, Abbas, 2011, p.154). If not, then the business owner can also be charged in court for breaching the law. Thus, the advertisement is not only unethical but also illegal under the Sale of Goods Act 1957.

Some researchers were in view that such contents and the claims are ethical because of the purpose of portraying it as promoting the Sunnah or the Islamic value that we have in our religion. This is consistent with Nooh (2009, p.10), when he claimed that advertisement is the process that uses the propagation of information and religious preaching to the people. Scholars believed that such advertisement can be the medium to gain knowledge and get themselves nearer to God. It is suggested that most people accept the advertisement of Muslim products in which the content of the Islamic advertisement must be in line with two sources, the Quran and Hadith. Furthermore, the product picture must not be exaggerated. It has been stated by researchers that "Islam does not tolerate selling a product by using sexual appeals or undiscussable concepts" (Barri & Abbas, 2013, p. 154). Thus, it means that Islam does not allow exaggeration in the product pictures as it show as bluffing and cheating.

### **3. CONCLUSION**

Overall, it can be concluded that most business owners who market the Muslim products used Syariah compliance claims in their advertisement. However, there are some of the advertisements did not specifically support the claims with Quranic Verses and Hadith, which might lead to the unethical advertisement. The claims in the advertisements are acceptable as long as it is in line with the main Islamic sources and also the laws. If not, this kind of advertisement need to be filtered and prohibited by the authorities as this can cause slander against the Islamic religion, harmful to health, can even destabilize the belief of a Muslim if customers rely too much on upon and believes in the greatness of products labelled with Syariah compliance claim. Therefore, this activity needs to be curbed to maintain the purity of the Islamic religion.

In Malaysia, there are certain laws that regulates this issue for example, Contracts Act 1950, Sale of Goods Act 1957, The Communications and Multimedia Act 1998, Trade Description Act 1972, Electronic Commerce Act 2006, Medicines (Advertisement And Sale) Act 1956, Indecent Advertisement Act 1953, Food Act 1983 and the Food Regulations 1985. Advertisement must comply with in every respect with the law. Advertising should not propagate fraudulent trade practices. The law enforcement becomes the next issue that need to be considered to ensure the advertisement is an ethical advertisement.

With ethical advertisement, making the business owner answerable for all its activities, reducing the chances of getting pointed out by the critics or any regulatory body, helping gain

confidence of the customers, making them trust the company and their products and finally, eliminating severe violations of ethics. Thus will help the business owners to prosper.

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# ON-DEMAND DELIVERY SERVICE: AN OVERVIEW ON NETFLIX AND FOODPANDA

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## 1. INTRODUCTION

On Demand Delivery Service or ODDS has seen to be one of the important solutions to online orders nowadays looking at global pandemic situation whereat people are relying on online orders to get foods, groceries, and other things as well, to be delivered right in front of their doorstep.

Since on-demand delivery is the delivery of services or products to the client immediately or based on the schedule of the ordering, regardless of where the client stays, the concept of on-demand delivery applications also revolves around this concept. In definition, an application is a program or collection of software that the end-user perceives as a single entity that serves a specific function. The application is commonly referred to as an application program or a software application. As a result, an on-demand delivery application is a program that provides users with quick access to and immediate delivery of a product. On a side note, this is done either immediately or on a set schedule.

Before the Covid-19 pandemic happened, on-demand delivery services (ODDS) had already started, getting more popular, and more people use them often in Malaysia. ODDS is getting people's attention and customers are willing to pay for this ODDS because people are enjoying everything fast. They want to receive their parcel, food, groceries, gadgets, and so on in a short time.

ODDS business mainly develops and focus on its own mobile apps and website to launch business feature. Users now can easily access the apps and choose options available offered by the delivery service provider. On-demand delivery service in this day and age offers a number of benefits in terms of discount price as well as other user benefits, especially to online businesses. With technology growth and business partnership between business sellers and on-demand delivery service providers, users can now have an easy experience tracking delivery, live tracking, customer review, order cancellation, or complaints through one-stop center apps.

Online websites and application-based digital platforms are major drivers behind the rapid growth in the on-demand delivery market. According to Statista, revenue from platform-to-consumer delivery is expected to witness an annual growth rate (CAGR 2021-2024) of 6.76%. The projected market volume is expected to be US\$96,864 million by 2024. Having said that, technology platforms are not the only thrust behind this booming industry. (fareye, n.d.)

In short, we can say that ODDS will be the fastest delivery speed for a product or service. For example, when a customer has placed an order from an application or website, the particular company or restaurant will receive the order. After that, the staff from the company or restaurant will start preparing the order that they received. Once they finish preparing the order, third parties such as FoodPanda or GrabFood rider will send the products to customers.

Besides this face-to-face delivery method, ODDS also involves the delivery of digital products. This method is specifically referring to the delivery of digital goods which does not

involve the courier service handling the process. This delivery process involves information being transferred among electronic devices such as mobile phones, computers, iPads, and more. In the current trend, this kind of delivery could easily happen through the download of digital products like software, games, audio, video, etc.

This chapter is to discuss the overview of ODDS that covers some ODDS services that are available in Malaysia and their business model. Two (2) examples of companies were chosen which represent physical and digital product delivery. The discussion also covers customer satisfaction with their service.

## **2. RISING OF ODDS IN MALAYSIA**

Because of the pandemic, many companies or restaurants are slowly changing and switching to digital-oriented. This is where they will upload their product's pictures, description, price, and so on into a website so that people can purchase it online. When we think of ODDS, we can relate it to companies such as Grab Holdings Inc and FoodPanda Malaysia Sdn Bhd.

According to an article from The Malaysian Reserve, they interviewed a few delivery service companies in Malaysia. When Malaysia first implemented Movement Control Order (MCO) in March 2020, companies or organizations switched to freelance digital-based services. The adaptation and adoption rate to the digital economy or gig economy now has been tremendous at all levels. The minimal contact and social distancing behaviors have forced people to adjust their preferences and go for services that provide digital solutions and options. (KAMEL, 2021)

In 2021, FoodPanda company said there was a 7.5% increase in new riders during MCO and a 37% increase in rider applications. GrabFood has also been enjoying a surge, with deliveries increased by 30% compared to the previous week before the MCO. In September 2020, almost 25% of food deliveries were completed by GrabCar drivers and over the period, the platform created earning opportunities for those in need with over 10,000 people joining Grab as drivers and delivery partners. (KAMEL, 2021)

Switching business to online or digital already become a new norm. If companies did not adapt to this new norm, it might be difficult to survive during this pandemic. For example, we can see that Grab company, at the very beginning with the major service of GrabCar, now they have expanded into GrabCar, GrabFood, and GrabMart coverage in several small towns in Peninsular Malaysia in the same month. Similar cases to FoodPanda, now they have expanded into PandaMart (grocery delivery in Malaysia) as well.

## **3. FIVE BUSINESS MODELS OF ODDS**

There are five business models for ODDS, which are peer to peer model, B2C, B2B, three-sided marketplace model, and subscription model.

### **i. Peer-to-peer model**

When an individual delivers a product to another individual, this is a peer-to-peer model. In this model, normally it is the delivery between individuals, rather than dealing with any large company or business. In a peer-to-peer model, the person doing the delivery exchanges products or services directly with the customer. (Miles, n.d.) For example, a carpooling application that is being used in Europe, BlaBla Car. When a user is using this

application, it is actually connecting two users. The actual handling of the task or the delivery is left up to the people involved in the transaction. (Miles, n.d.)

**ii. Business-to-consumer model (B2C)**

When the transaction is happening between a business and an individual or customer, this is what we call a B2C model. We can think of many different examples of B2C. For example, KFC, Starbucks, PizzaHut, and many more restaurants are using this model. Customers can choose whether they want to go to the physical store and make an order or customers can order through a website or application on the phone. As the pandemic is happening, nations try to avoid going out, therefore normally customers will make an order online. Sometimes, ordering food online is cheaper because the government or the shop is encouraging customers to order online (to reduce the chances of infection) and they will provide some discount coupons.

**iii. Business-to-business model (B2B)**

Two companies that conduct transactions of products or services are known as the B2B model. Normally, product producers and wholesalers are examples of B2B and their sales are in huge quantities. For example, Top Glove companies produce gloves and they send their products to pharmacies, shopping malls, some grocery stores, and so on. When these shops find that they are running out of that product, they will order from Top Glove company and Top Glove company will send the products to them.

**iv. Three-sided marketplace model**

On-demand delivery services such as FoodPanda or Grabfood is one example of a three sided business model. In these cases, the on-demand delivery service connects the driver, the restaurant, and the customer with its technology platform. Revenue comes from restaurants, which usually pay a commission on the orders, and customers, who are often required to pay a small delivery charge when they use the service. (Miles, n.d.)

**v. Subscription model**

With the subscription model, on-demand delivery companies will offer to make an unlimited number of deliveries for a fixed monthly price. For example, Netflix, The Star, Spotify, and so on are popular and use subscription models. Whether this model is effective for long-term growth depends on how frequently subscribers are using the service once they sign up for unlimited deliveries, as well as the number of customers who are willing to subscribe. (Miles, n.d.)

#### **4. EXAMPLE OF COMPANIES THAT PROVIDE ODDS IN MALAYSIA**

There are many on-demand delivery services in Malaysia and we can distribute the ODDS into a few categories. The categories can be transportation, groceries, laundry, food or meal delivery, and entertainment.

**Table 1:** Example of companies that provide ODDS in Malaysia

No.	Category	Company
1.	Transportation	 
2.	Groceries	     
3.	Laundry	 
4.	Food or meal delivery	   
5.	Entertainment	   

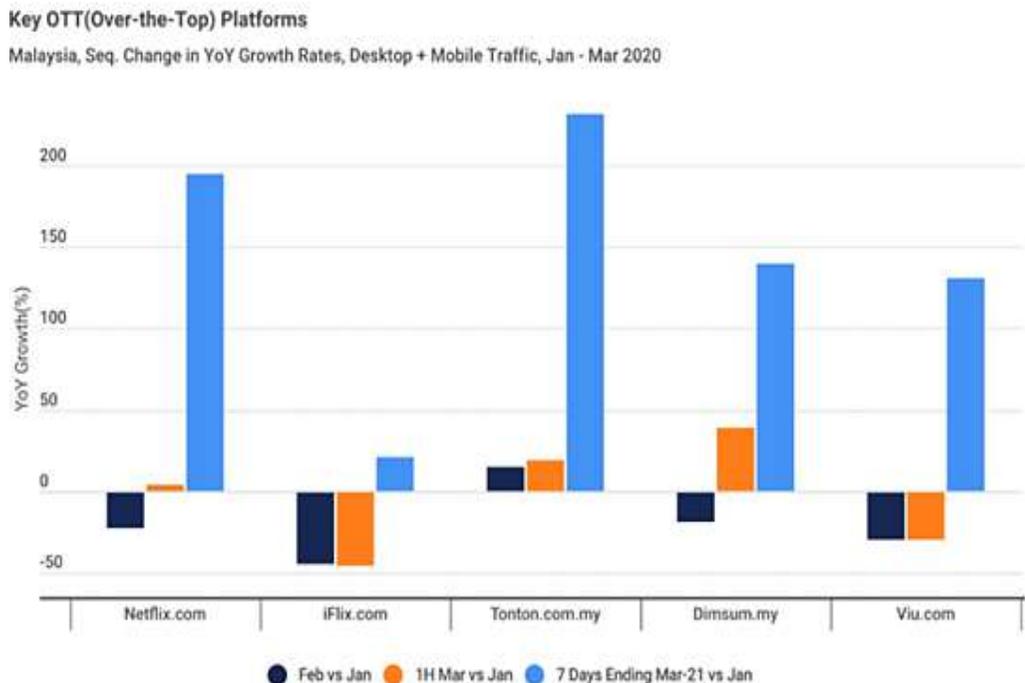
Based on the above examples, two (2) companies are chosen to compare them in terms of customer satisfaction. The chosen companies are **Netflix** and **FoodPanda**

#### 4.1 NETFLIX

Netflix is a video/movie/drama streaming platform that survives based on a subscription model. A news article from Malay Mail, there was a news article titled “MCO: Malaysians stuck at home give Netflix, Tonton biggest traffic growth rates against competitors” also shows that ODDS is going viral in Malaysia. Video-streaming platforms such as Netflix and Tonton enjoyed the highest traffic growth rates among other rivals recently, as Malaysians heavily spurred demand for online entertainment while being stuck at home to slow the Covid-19 spread, a new study has shown. (Lim, 2020)

In the study by the Malaysian Digital Association (MDA) produced by its market intelligence partner SimilarWeb, the report noted Malaysians’ “mass migration” to online services for various needs such as news, grocery shopping, and even entertainment during the third week of March. In the study, a comparison was made on the flow of internet traffic in Malaysia using desktop and mobile devices to five key over-the-top platforms or streaming services that deliver videos directly to viewers, namely Tonton, Netflix, Dimsum, Viu, and iFlix. (Lim, 2020).

As Malaysian kept indoors, it gives Netflix a great opportunity to grow its sales. In the third week of March, Netflix had as expected gained 195 percent in year-on-year growth in traffic, which is a great amount in their sales. (Lim, 2020).



**Figure 1:** Sequential change in year-on-year growth rates in traffic in Malaysia to key over-the-top platforms. - Screengrab of the Malaysian Digital Association and market intelligence SimilarWeb's report

***Customer’s satisfaction in Netflix:***

As the subscription rate of Netflix is high, we can say that overall customer satisfaction is high as well. This is because Netflix has various types of movies and dramas. For example, Netflix not only has American movies/dramas, they also have UK, Thai, Korean, Japanese, German, Turkish, Spain, and many more. Malaysian audiences were able to view thought-provoking original Western or other countries’ content without having to wait for it to come on TV or using illegal means to download and watch a film or series. (Raj, 2019).

Besides, the Netflix platform also provides multilingual subtitles where subscribers can choose what subtitles they need. Not only that, but Netflix also updates its application, which provides Netflix’s smart downloads. Subscribers can download any movie or series and watch it anytime, anywhere. For example, they can download movies or dramas at the airport before they

are on board.

Next, Netflix members worldwide can enjoy any newly released original content at the same time. This will definitely increase customer satisfaction as customers will not think about “why other countries released the movie before my country”.

## **4.2 FOODPANDA**

FoodPanda is another established food delivery service that offers its customers a wide variety of choices. FoodPanda plays an important role during the Covid-19 pandemic and it helps many people by obtaining food and beverage as easily as possible. These days we have a CoronaVirus pandemic and these services helped us to avoid this virus. In similarweb, there is a ranking of the most popular and most used applications in Malaysia. FoodPanda is getting the first place in that list.

Customers can make orders via the FoodPanda website or mobile app, and make payment via cash on delivery, credit/debit card, or online banking. While FoodPanda does not have an established loyalty program like GrabFood, it does offer discount vouchers and free delivery deals on the regular.

### ***Customer Satisfaction with FoodPanda:***

Customer satisfaction with FoodPanda is high as well. This is because compared to FoodPanda’s competitor, GrabFood, FoodPanda allows customers to make orders on a different platform (website or using a phone application). GrabFood only provides its service in phone applications. Besides, FoodPanda also supports different payment methods (make payment via cash on delivery, credit/debit card, or online banking).

Besides, FoodPanda offers free delivery for purchases that are more than RM25. As FoodPanda is the first food delivery platform, they are the first in the market. Hence, they cover the market quite well. FoodPanda also provides different promotions such as vouchers and promo codes for users.

## **5. ADVANTAGES OF ODDS**

### **i. Large customer base**

As everything is online, the product or services can reach different customers. Hence, the company's sales can boost.

### **ii. Able to understand customer behavior and demand**

As companies can generate sales reports monthly or weekly, they can analyze the sales. For example, they can see what food they received the most order and what food received the least order. From this analysis, they can know the customer's preference.

### **iii. Boost customer loyalty**

For some platforms such as FoodPanda or Grabfood, they will provide promo codes or vouchers to customers. When a customer is given some promotion, they will try to re-purchase from the same shop or use the same application when they need to order food.

- iv. Provide competitive pricing  
Businesses can provide highly-competitive pricing as modern on-demand delivery strategies significantly reduce investment in human resources, storage, and store operations.
- v. Eliminate infrastructure cost  
For certain small businesses, they will operate their business in their house. On-demand delivery means selling via online platforms. The need to invest in a physical store and pay for its everyday operational expenses, including staff compensation, is greatly reduced by on-demand delivery models.

## 6. DISADVANTAGES OF ODDS

- i. Short time frame but high delivery volumes  
During peak hours such as lunchtime, platforms such as FoodPanda or Grabfood will experience this problem. There are many orders during the same time where the rider might not afford them. On-demand deliveries have very short time frames between orders being accepted and being sent out, leaving little room for human error.
- ii. Higher cost  
High operational costs are a direct result of attempting to deliver at high speed and volume, without full digitization, automation, and visibility into data. Common examples include choosing delivery drivers, fleets, or contractors without taking the cost to deliver into consideration.
- iii. Lack of customer focus  
The entire value proposition of on-demand delivery is the speed and quality of the delivery experience. If customers experience one time being late or delaying their product or service, they will change to another shop.
- iv. Managing peak demand post-pandemic  
Issues around demand have never been greater than in the post-Covid-19 world, where parcel delivery providers see packages stacked up in warehouses, waiting for logistics providers to have enough resources to deliver them. If same-day or even next-day delivery is promised, then brands and the logistics providers who service them must ensure that orders are delivered on time.

## 7. CONCLUSION

Based on the above discussion, we may predict there will be more and more businesses conducted online. From now we can see food, beverages, laundry or entertainment also provided by ODDS in many countries. Conducting business online has already become a basic boundary to compete with others. We can see that in this pandemic period if the shop or businesses did not conduct their business online, most of them would close their business because they cannot survive anymore. People cannot go out and reach them, causing the shop to not have any customers.

Besides, conducting online business also can save a lot of expenses. As we mentioned above, some people conduct their businesses in their house, they will save money in terms of renting an office and paying extra electricity and water bills. But, when conducting business in your own house, these expenses can be reduced.

Next, purchasing products online can save time. Technology is more advanced and people are busier. Instead of going to a physical store, people may choose to buy things online. Because online shopping does not need to face the following problems: traffic jams, being late because of the condition on the road after buying something, fuel money, maybe driving to the store but finding that the store is not open today, and so on. The trend of the future may be that more things are solved and conducted online. Having a physical store and running an online business at the same time is essential if a business wishes to continue to survive in this market.

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# DIGITAL FINANCE: A BRIEF OVERVIEW

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## 1. INTRODUCTION

The financial system in Malaysia is categorized into two major categories; Financial Institutions and Financial Markets. The financial markets category comprises the money and foreign exchange market, the capital market, the derivatives market, and the offshore market, while the financial institutions category includes banking institutions, non-banking financial institutions, and non-bank financial intermediaries.

The commercial banks and Bank Negara Malaysia (BNM) make up the banking institutions. The role of BNM (the Central Bank of Malaysia), which has been formed on January 26, 1959, is to enhance financial and monetary stability to enable the long-term progress of the Malaysian economy. The largest and most significant institutions providing financial deposits in Malaysia are commercial banks. Currently there are eight (8) Malaysian national banks—excluding Bank Islam—such as Maybank, CIMB, Hong Leong Bank, and others—as well as eighteen (18) foreign banks, including Citibank, OCBC Bank, Bank of China, and other foreign banks are currently in operation.

The Non-banking financial institutions on the other hand consist of Islamic banks, merchant banks and discount houses. The banking activities of Islamic banks namely Al Rajhi Bank, Bank Islam Malaysia, CIMB Islamic Bank Berhad are based on the Islamic principles. To date, there are eighteen (18) Islamic banks both local and foreign banks in Malaysia. Merchant banks like Alliance Investment Bank, RHB Investment Bank are mostly known to as investment banks; these institutions offer assistance and consultation to corporations as well as financial management and portfolio management. Currently, there are eleven (11) merchant banks in Malaysia. Discount houses like Affin Discount Berhad, Maybank Discount Berhad, and CIMB Discount Berhad on the other hand provide short term loans in Financial Markets to the general public with high interest rates.

Insurance providers, Provident and Pension Funds (PPFs), and Development Financial Institutions (DFI) represent examples of non-bank financial intermediaries. The core objective of Insurance companies is to cover the expenses of policyholders. Accordingly, to Bank Negara Malaysia, there are twenty-two (22) licensed and registered insurance companies namely the Great Eastern Life Assurance, Prudential Life Insurance and even Takaful operators in Malaysia. PPFs on the other hand are schemes designed to provide registered members and their dependents with a measure of social security. The Employees Provident Fund (EPF), the Social Security Organization (SOCSO), the Armed Forces Fund, and the Teachers Provident Funds are the four important PPFs in Malaysia. Additionally, the Malaysian government launched DFIs to encourage investment in the sectors of agriculture and industry. In Malaysia, DFIs comprise Agrobank, Bank Rakyat, Lembaga Tabung Haji, among many others.

The Financial Markets in Malaysia mainly includes of The Money and Foreign Exchange Markets, and the Capital and Derivatives Markets. In the Financial Markets, short term financial assets that have a liquidity of one year or less are traded on stock exchanges. The Foreign Exchange Market on the other hand is a market where the currencies of other countries are bought

and sold respectively. For medium to long-term financial assets, Malaysia has both conventional and Islamic capital markets. The conventional markets in Malaysia are divided into two key areas of the economy: the equity market, which deals in corporate stocks and shares, and the public and private debt securities markets.

The Malaysian government also established statutory bodies to monitor and promote the aforementioned marketplaces. The formation and regulation of the Capital Market are the responsibilities of the Securities Commission (SC), which was incorporated in 1993. Bursa Malaysia, originally known as Kuala Lumpur Stock Exchange (KLSE), serves as one of the largest stock exchanges in ASEAN. It provides comprehensive transaction integration, a variety of foreign exchange services, and related services including trading, settlement, clearing, and savings.

The Commodity Exchange (COMMEX) and the Kuala Lumpur Options and Financial Futures Exchanges (KLOFFE) amalgamated to create the Malaysian Derivative Exchange (MDEX), which is a component of Bursa Malaysia. As a distinct security market, MESDAQ (Malaysian Exchange of Securities Dealing and Automated Quotation) was established in 1997 with a focus on companies that do not fulfill Bursa Malaysia's fundamental requirements but are nonetheless crucial to the country. It gives these high-potential businesses, the majority of which are focused in relevant technological disciplines, listing and investment options.

The Malaysian bond market is one of the most established markets in the region. Both conventional and Islamic forms of corporate debt securities are associated with the Malaysian government. The market includes bonds issued by private companies, referred to as Private Debt Securities (PDS), as well as bonds issued by the Malaysian government, known as Malaysian Government Securities (MGS). Malaysia has two rating agencies: Malaysian Rating Corporation Bhd (MARC) and Rating Agency Malaysia Bhd (RAM). These organizations advise the respective investors of the credit ratings of private debt securities. The Islamic Capital Market (ICM) is another element of Malaysia's capital market. For the general public, specifically the Muslim community, who only wish to invest in and trade in items with an Islamic foundation, ICM offers a variety of capital market products.

## **2. FINANCIAL DIGITALIZATION IN MALAYSIA**

By and large, the digitalizing of the financial industry in Malaysia hastened as a result of the restructuring of the banking industry emanating from the late nineties East Asian Financial Crisis which almost caused the financial system to collapse due to the severe liquidity crunch.

Prior to the 1997-1998 financial crisis, Malaysia experienced average 8.89% growth in the economy from 1986 to 1995 which was really commendable earning itself the moniker The New Asian Economic Tiger. The prosperity years brought increase Foreign Direct Investment (FDI) along with large short term capital flow in the form of portfolio investment beginning from the late 1992.

In the aftermath of the crisis, the banking system experienced increased loan impairment which, based on the Central Bank Malaysia (BNM) report, rose from about a low 2.18 per cent non-performing loans (NPLs) in June 1997 to 4.08 per cent in December 1997, and then to a high of 11.45 per cent in July 1998 (Malaysia, EPU 1999). Due to the increase in loan impairment in the banking sector there was a big drop in the bank lending bringing about tight liquidity conditions.

Around 50 financial firms were forced to consolidate into ten sizable banking groups in the two years leading up to 2001, with each group consisting of a commercial bank, typically, a finance company, and an investment bank. Contrary to voluntary mergers, the government gave the go-ahead for the merger because it was worried about the systemic stability of the nation's financial markets in the wake of the 1997–1998 crisis. There was hope that, as a result of the mergers, domestic financial institutions' level of productivity and efficiency would significantly increase. After the completion of the mergers in 2002 there was increased digital banking to offset the reduction in brick and mortar institutions.

The nation's historic National Strategy for Financial Literacy, 2019, a five-year programme aimed at improving the country's low levels of financial literacy, was formally announced on July 23, 2019, by the country's then-Prime Minister, Dr. Mahathir bin Mohamad. Dr. Mahathir emphasised the significance of the strategy, which is to continue until 2023, in encouraging more knowledge and responsible attitudes toward finance while speaking to a group of financial experts, stakeholders, and journalists.

Since Malaysia's consumer or retail debt stood at 82 percent of GDP, higher than industrialised nations like Japan (58 percent), Italy (40 percent), and the United States, it is crucial to have knowledge of financial management in order to avoid borrowing (76 percent). The ability to make wise financial decisions, which have a significant impact on both an individual's and society's financial well-being, is frequently viewed as essential for financial inclusion. The financial education initiatives list five main areas of emphasis: to foster values in teenagers (under 18); to increase access to financial management information, tools, and resources; to foster positive behaviour among targeted groups; to foster long-term financial and retirement planning; and to foster and protect wealth.

### **3. DIGITAL FINANCIAL LITERACY**

Along with the rapid pace in technological advancement the traditional financial economy has evolved towards a digital financial economy. The transformation was accelerated further during the Covid-19 lockdowns as larger group of individuals, even those who were not exposed to digital finance, began to move towards digital transactions. It is true that younger people have participated more actively in the digital economy through online purchases, but this does not mean that they necessarily have the necessary knowledge, skills, and understanding to effectively use technology. They may be completely engrossed in the digital economy, yet they may not be digitally literate.

The digital financial system would undoubtedly provide more obstacles for the more disadvantaged groups, such as older folks, those who aren't computer savvy, and groups who have less access to knowledge, skills, and the tools needed to use technology efficiently and responsibly. Malaysians are rapidly using fintech, which uses software, applications, and digital platforms to provide financial services to customers and businesses through digital devices like smartphones and iPhone.

To effectively use them and to prevent frauds like phishing, hacking attacks, unauthorized use of data, and social economic issues like excessive borrowing due to the ease of the transactions that are available to consumers right at their fingertips, higher levels of digital financial literacy are needed. This is because Fintech has improved access to financial services, but doing so also requires higher levels of financial literacy. Therefore, digital finance will present a significant potential as well as a practical method of reaching the underserved; yet, its adoption requires consumer education and knowledge.

Financial literacy in the digital age will undoubtedly become a more significant component of education. Consumers will need a higher level of financial sophistication to utilise financial technology goods and services successfully, avoid costly mistakes, and scams. Also, due to the decentralized nature of Fintech show that users must have increasing financial complexity to analyse financial information. This points to the requirement for a country such as Malaysia to have digital financial education in our national financial education programs. Financial product and service knowledge, awareness of digital dangers and the capability to reduce those risks, understanding of consumer rights and recourse options are all implied by the term "digital financial literacy."

With Fintech Malaysians are empowered to manage their financial resources such as managing their retirement planning through savings with EPF, choices of myriad financial products made available through the various online channels. These online financial services can essentially be divided into three groups. First, payment methods such as remittance services, mobile wallets, and electronic money. Second, asset management services include will writing, insurance, and other services like online stock trading and personal financial management.

Consumers must evaluate the advantages and disadvantages of each online option. Such information would enable users to comprehend the fundamental operations of various sorts of digital financial services for private use. They should be aware of the risks associated with digital finance as well as the precautions to take. Digital customers must be aware of the extra hazards, which are more varied yet occasionally more difficult to identify than those related to conventional financial goods and services. Cybersecurity risks and online fraud should be known to users of digital financial services.

There are a variety of potential risks, including phishing (where a hacker poses as a company in an effort to trick a user into disclosing personal information like usernames and passwords via emails or social media), pharming (where a virus directs a user to a fake website in order to obtain personal information), and spyware (where malicious software infiltrates a user's computer or mobile device in order to transmit personal data).

The users of the services should also be aware that their digital footprint, including the data they provide to the service providers, may also pose a risk, even if it does not directly cause a loss. Examples include profiling, in which users may be denied access to certain services based on their online data and activities, and hacking, in which con artists steal personal information from their online activities, such as those on social networks.

#### **4. DIGITAL LENDING**

Digital lending applications are known for providing easy and fast loans without much fuss, but are in the news recently for all the wrong reasons like exorbitant service charges, high rates, defaming defaulters etc.

While the quickness and simplicity of digital financing are advantages for borrowers, they can also lead to destructive consumer behaviour. Digital financing encourages irresponsible behaviours like impulsive borrowing and spending because borrowings are now easily accessible with the press of a few clicks. Customers may waste money or recklessly use up loans due to easy access to credit. Additionally, customers borrow more often as a result of easy access to finance online. The usage of personal devices, a feeling of anonymity, and privacy fosters covert behaviour that could ultimately be detrimental to one's finances and emotional well-being.

In addition, the exponential rise of online lenders over time has led to an increase in cases of criminal actors fooling innocent consumers in need of small loans. Exorbitant interest rates are charged by these organisations, and customers are also harassed when loans are late or not paid for. These illicit organisations operate outside of legislation and lack registration as non-banking or banking finance corporations. Numerous clients turned to unlawful digital lenders as a result of the pandemic's severe job losses and financial problems, which permanently damaged their lives.

## 5. CONCLUSIONS

The pivot of a country's economic success greatly hinges on the development and sophistications of its financial system. Malaysia's financial system has over the years undergone major developments with the 1997 – 1998 economic crisis being its watershed moments. It was the wake-up call for the country to have a resilient financial system attuned to the globalized future.

Along with the developed financial infrastructure, financial literacies have been greatly emphasized in view of the market and product sophistications. The two-year movement control order (MCO) have demonstrated the importance of financial planning in the individual life plan. Commendably, the Malaysian government have prioritized financial literacy training from the basic primary education level right up to the tertiary institutions.

The traditional economy has now moved to digital economy which have greatly altered the way commercial transaction are conducted. While the ease and sophistications in conducting our financial transactions open a lot of opportunities, there remain a lot of challenges. The digitalized environment necessitates a quantum leap in how we understand and interact in the financial system.

A point to note with the development of our economy towards being a fully developed nation, the government through the Employee Provident Fund (EPF) has empowered the participants by giving them greater liberty in managing their savings whereby the issues touched in this chapter all the more relevant

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# **ECOLOGICAL BEHAVIOUR OF GREEN APPLIANCES PURCHASER: THE MEDIATING AND MODERATING ROLES OF ECOLOGICAL BELIEFS AND VOLUNTARINESS**

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## **1. INTRODUCTION**

The study of ecological behaviour has shifted focus from a macro level (industry and community) to a micro level (individual) (Nkamnebe, 2011). This shift arose from an awareness that human actions cause many environmental problems. Therefore, enabling change in such harmful human actions could help mediate and moderate environmental problems (Chan & Lee, 2016).

According to Axelrod and Lehman (1993), ecological behaviour is those actions that will contribute towards environmental preservation or conservation. This includes the act of purchasing and consuming environmentally friendly products (also referred to as green products) (Choi & Johnson, 2019). Despite various studies discussing consumers' behaviour regarding the purchase of green products (Smith & O'Sullivan, 2012), there is a dearth of articles in the context of energy-efficient household appliances (Leonidou, Leonidou & Kvasova, 2010).

In the past, energy efficiency programmes were planned at the industry level. However, implementation of such programmes were found to be difficult and ineffective (Lawrence, Nehler, Andersson, Karlsson & Thollander, 2019). Consequently, now plans to alter the execution of these programmes at the consumer and household levels are being developed instead (Cherry, Hopfe, MacGillivray & Pidgeon, 2017). According to in Yang and Lin's (2016) study, energy-efficient technology was proven, from 1985 to 2011, to be capable of reducing energy-related emissions in China by 13.54%.

The Value-Belief-Norm (VBN) theory was the first theory established to explain the influence of personal values and beliefs on behaviour in an environmentalist context (Ghazali, Nguyen, Mutum & Yap, 2019). This theory posits that belief component is an important antecedent of ecological behaviour (Lopez & Arango, 2008; Stern, Dietz, Abel, Guagnano & Kalof, 1999). The concept of ecological beliefs in VBN theory is represented by three different levels of variables namely ecological world view (NEP), adverse consequences for valued objects (AC) and perceived ability to reduce threat (AR) (Chan & Lee, 2016; Dunlap, Van Liere, Mertig & Jones, 2000). Therefore, measuring a person's belief towards the environment becomes more complex and complicated. Therefore, a simpler and straightforward approach in measuring this construct is needed.

According to Beck (2008), an individual's belief will influence their behaviour. Thus, if a consumer believes that energy-efficient appliances can save utility costs as well as protect the environment, the consumer is more likely to purchase these type of appliances. However, the usage of energy-efficient appliances in reality is remains unsatisfactory where many consumers are not replacing their household appliances that equipped with energy-efficient feature (Tan, Ooi & Goh, 2017) In this case, an individual's belief does not necessarily drive the actual behaviour. This is inconsistent with findings from the perspective of the behavioural theories (Biagi &

Mariano, 2011). This discrepancy therefore suggests that there could be another factor that could moderate and weaken the normal belief-behaviour relationship which has been not been explored so far.

Guided by the VBN theory (Stern, 2000), the present study attempts to examine: (i) the effect of ecoaltruistic values and openness to change on ecological beliefs and ecological behaviour; (ii) the effect of ecological beliefs on ecological behaviour; (iii) the mediating role of ecological beliefs in the relationship between personal values and ecological behaviour and (iv) the moderating role of voluntariness in the relationship between ecological beliefs and ecological behaviour.

This research aims to pioneer the search for more simplified methods to measure the ecological beliefs variable. Moreover, this simpler version of the belief variable is examined as a mediator between personal values and ecological behaviour and as the antecedent of ecological behaviour which is relatively new to the existing body of literature. In addition, the voluntariness variable has been included as a moderator between ecological beliefs and ecological behaviour which is rare in pro-environmental study.

This chapter is structured as follows: first, it provides an introduction and background of the study. Second, a review of the existing literature followed by the postulation of the study hypotheses and development of a conceptual framework. Then, the discussion on the methodology and findings of this study. Finally, the conclusion of this chapter is presented accompanied by the managerial implications as well as future research suggestions.

## **2. LITERATURE REVIEW**

### **Underpinning Theory**

This study uses VBN theory as the foundation for its conceptual framework. According to Ghazali et al. (2019), the VBN theory is a well-known theory applied in many environment-related studies. Furthermore, while some researchers adopted and tested the entire model (Steg, Dreijerink & Abrahamse, 2005), others adopted partially only (Kaiser, Hubner & Bogner, 2005; Nordlund & Garville, 2003). The VBN theory postulates that personal values and beliefs influence pro-environmental behaviour (Chou, 2014; Huang, 2016). As such, ecological beliefs should be considered as mediators between personal values and ecological behaviour.

### **Ecological Beliefs as Mediator**

Researches on environmental studies usually focus on ecological beliefs, considering these the result of a thorough cost and benefit analysis derive from ecological behaviour (Gray, 1985). Ecological beliefs are about the relationship between human beings and the natural environment that taking consideration the consequences of ecological protection based on personally valued aspects (Lopez & Arango, 2008). In other words, ecological beliefs describe the human-environment relationship (Stern, 2000).

The available studies on ecological beliefs can be primarily divided into multiple-component and single-component theoretical referents. The prominent VBN theory (Stern, 2000) follows the school of thought that considers that ecological beliefs are formed by multiple variables – NEP, AC and AR. Schultz (2001) quoted that these belief components are the attitude related to the effect of environmental problems on oneself, other human beings as well as other forms of life in the environment. There is a direct relationship found between ecological beliefs

and ecological action/behaviour (Chan, Quoquab & Rohaida, 2021). Indeed, this is further evidenced by several past studies (Chou, 2014; Huang, 2016; Raineri & Paille, 2016) that observed that these belief components could influence different ecological behaviours.

Steg et al. (2005) criticized that the direct values-beliefs relationship in VBN theory is not measured and tested. Furthermore, the three different belief components are causing complexity and complication to the measurement of a person's belief toward a specific environmental issue (Gonzalez, Felix, Carrete, Centeno & Castano, 2015). Even Stern et al. (1995) concluded that NEP, AC and AR measure only a single belief construct. No study has yet investigated the possibility that NEP, AC and AR scales measuring different cognitive processes in explaining ecological behaviour (Ryan & Spash, 2012). Based on the findings from Ryan and Spash (2012) and Snelgar (2006), the ecological beliefs component cannot be similarly separated into three components. As such, a revised model is required and this relationship should be explored further.

For this reason, another school of thought has emerged that considers ecological beliefs as a single variable. For instance, Chua, Quoquab, Mohammad and Basiruddin (2016) consider the NEP as the general beliefs of individuals towards the environment in studying agrochemical purchase. Conversely, a single and specific ecological beliefs variable was utilised in Singh's (2011) study exploring the Indian ecological consumer market profile. Both pioneer studies found that ecological belief directly influences ecological behaviour. This single-component theoretical stream aims to simplify the belief variables in the environmental studies but further validation is required (Mezghenni & Zouari, 2016). Hence, this study attempts to adopt this latter approach in handling the belief variable.

### **Voluntariness as Moderator**

In the technology acceptance field, voluntariness is defined as the willingness (non-mandatory) of an individual towards using or adopting an innovation or technology (Venkatesh & Davis, 2000). However, it has been found that the perception of voluntariness influences an individual's behaviour but not the actual voluntariness (Moore & Benbasat, 1991). Researchers found a positive relationship between voluntariness and behaviour such as Angel and Sumi's (2010) study on online shopping and Chen, Lai and Ho's study (2015) on technology teaching blog.

The assumption of attitude or consequences of an action that drive the human behaviour is not always true (Kollmuss & Agyeman, 2022). Instead, the amount of effort required will influence the actual behaviour (Ramayah, Lee & Mohamad, 2010). If a behaviour is easy and requires less effort, people are willing to practice it very often. If it is difficult and requires more efforts, people might choose to give it up. Both Chiu and Ku (2015) and Chen et al. (2015) found that voluntariness moderated the system usage among their respondents.

Due to these scenarios, factors that influence the normal relationship between belief-behaviour in VBN theory is being ignored and such moderating effect need to be included in pro-environmental study. As such, voluntariness should be appropriately considered as the moderator as most ecological behaviours are not regulated.

### 3. HYPOTHESES DEVELOPMENT AND RESEARCH FRAMEWORK

Behaviour is a function of the expectations one has and the value of the goal which one is working towards (Fishbein & Ajzen, 1975). A person will act appropriately when acting upon something deemed important and valuable to the person. In other words, given a specific scenario, a person will evaluate the degree of positive or negative values for a particular act which in turn will affect the actual behaviour the person decides to adopt (Lucian, 2017). This theory helps link the value-behaviour relationship. For instance, if a person values the act of protecting the environment as a highly positive value, then they are more likely than to more ecological behaviour. Therefore, environmental attitudes or concerns and willingness to accept changes are essential in explaining the purchase behaviour of a person towards energy-efficient appliances. Hence, the following hypotheses are proposed:

H1: Ecoaltruistics values positively affect ecological behaviour.

H2: Openness to change positively affects ecological behaviour.

Stern's (2000) VBN theory suggests that a strong ecological value orientation could influence ecological beliefs and determine the practice of pro-environmental action. Therefore, this theory helps explain the relationship between ecological values and ecological beliefs (Jahangiri & Zarei, 2016). In brief, personal ecological values can be thought of as a cognitive process or a way of thinking related to environmental beliefs, so that individuals in turn act in a manner advantageous to other social beings (Steg, Bolderdijk, Keizer & Perlaviciute, 2014). Values are used as antecedents for variables such as attitudes and behavioural intention (Perrea et al., 2014; Stern & Dietz, 1994). These then shape beliefs and consequently reflect in behaviour including purchase of energy-efficient appliances as a way of caring for the environment and benefiting society at large. Hence, the following hypotheses are proposed:

H3: Ecoaltruistic values positively affect ecological beliefs.

H4: Openness to change positively affects ecological beliefs.

Ecological beliefs were found related to various environmental behaviours (Al-Taie, Rahal, Al-Sudani & Al-Farsi, 2015). Research conducted by Amerigo, Aragones, Sevillano and Cortes (2005) in Spain revealed that environmental beliefs, both anthropocentric and eco-centric concerns, are related to the natural environment. While in another study by Schultz (2001), beliefs were found to be related to the consequences of environmental problems towards oneself, other human beings and other forms of life in the environment. As such, consumers who believe in the importance of protecting the environment will be more willing to purchase energy-efficient appliances and would be less reluctant to pay for the higher price of an energy-efficient appliance compared to other rational consumers. Hence, the following hypothesis is proposed:

H5: Ecological beliefs positively affect ecological behaviour.

Different theories have attributed different roles for personal values. For instance, under the Social Cognitive Theory (SCT), an individual's behaviour is directly influenced by personal values (Bandura, 1997). Gifford and Nilsson (2014) argued that personal factors significantly influence ecological behaviour. However, under the Cognitive Behavioural Theory (CBT), an individual's feeling about a situation will influence their belief which in turn will be reflected in their behaviour (Beck, 1979). Hence, a person's belief mediates between personal values and behaviour (Beck, Rush, Shaw & Emery, 1979).

Some previous ecological behaviour studies found mixed results on the predicting power of personal values. Gatersleben, Murtagh and Abrahamse (2014) claimed that personal values

describe the more stable factor that affects a wider range of ecological behaviour. In contrast, Corral-Verdugo, Fraijo-Sing and Pinheiro (2006) contended that individuals, despite having environmentally friendly values, might also present ecological behaviour. Additionally, a study conducted by Paille and Mejia-Morelos (2014) found that organisational support was a valid mediator in the relationship between personal values and ecological behaviour.

The consumer's personality or the knowledge they possess might not be sufficient to drive purchase behaviour (Beck et al., 1979). Gonzalez et al. (2015) reported that environmental beliefs, seen as a system or worldview, can be direct antecedents of ecological behaviours. The authors argue that ecological beliefs contribute to positive expression actions in favour of the environment. Despite the fact that energy-efficient appliances tend to be more expensive than conventional ones, these consumers are willing to spend the amount. This willingness to spend more is driven by the consumer's personal belief system.

By adding the mediating variable of ecological beliefs, the cause-effect relationship between personal values and ecological behaviour can be strengthened (Jose, 2013). Indeed, the mediating effect of ecological beliefs towards the relationship between personal values and ecological behaviour is still neglected in academic research. Thus, it is necessary to study this relationship in an environmental action context. Therefore, the following hypotheses are proposed:

H6: Ecological belief mediates the relationship between ecoaltruistic values and ecological behaviour.

H7: Ecological belief mediates the relationship between openness to change and ecological behaviour.

Belief is an important factor for understanding human behaviour. For instance, several attitude/belief-behaviour theories suggest that positive attitudes are closely related to human behaviour (Hagger, Chan, Protogerou & Chatzisarantis, 2016; Paul, Modi & Patel, 2016; Teo, 2016; Venkatesh Morris, Davis & Davis, 2003). Moreover, the VBN theory has also proven that a person's belief systems affect their ecological behaviour (Poortvliet, Sanders, Weijma & Vries, 2018). These theories essentially connote that if a consumer believes that energy-efficient appliances can save utility costs while also protect the environment, they will be more likely to purchase these appliances without hesitation.

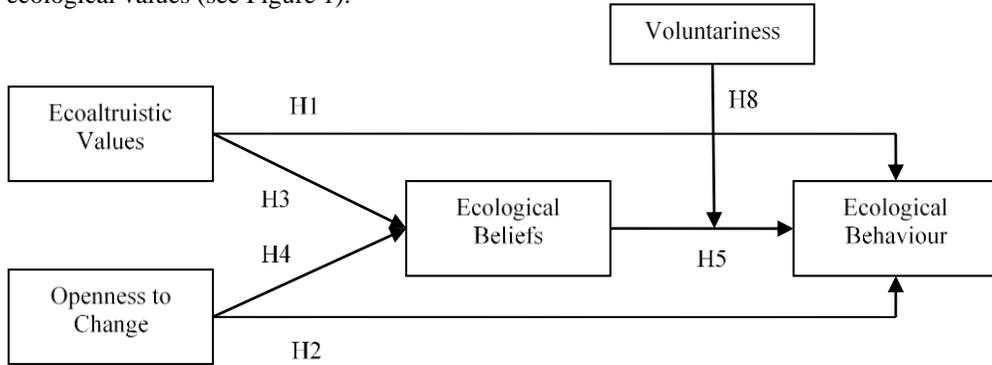
However, this belief-behaviour relationship is not always validated. Individual beliefs do not necessarily drive the actual behaviour as reported in Alcock et al.'s (2017) study on air travel and Balabanis and Siamagka's (2017) study on expensive brand purchase. In a study of water conservation, Biagi and Mariano (2011) found that ecological belief is not an indicator of the exercise of ecological behaviour concerning water conservation. This evidence is observed in the usage of energy-efficient appliances in Malaysia that remains below satisfactory level despite most of the consumers being aware of its benefits (Tan et al., 2017).

Most human behaviour is volitional (involving the power of choosing or determining) in nature (Wegner & Wheatley, 1999). Due to this scenario, it is important to study the factor, especially the level of voluntariness, that might weaken the normal belief-behaviour relationship (Jose, 2013; Tajeddini & Ratten, 2017). A statistically significant moderating variable can weaken the correlation between ecological beliefs and ecological behaviour (Hayes, 2013). This helps understand how ecological beliefs influence ecological behaviour when it is linked with consumer voluntariness level. The Theory of Apparent Mental Causation explains that an individual usually experiences "conscious will" when they interpret their own thought as the cause of their action (Wegner & Wheatley, 1999). Conscious will can be viewed as the thought before the action (Wegner, 2002). This theory helps explain the appearance of situational variables to moderate the

attitude-behaviour relation (Davidson & Jaccard, 1979). Based on the aforementioned rationale, the following hypothesis is proposed:

H8: Voluntariness moderates the relationship between ecological beliefs and ecological behaviour.

Thus, this study proposes the following research model that presents ecological behaviour as a consequence of direct and indirect relationships between ecological belief and ecological values (see Figure 1).



H6: Ecoaltruistic Values → Ecological Beliefs → Ecological Behaviour

H7: Openness to Change → Ecological Beliefs → Ecological Behaviour

#### 4. METHODOLOGY

##### Population and Sample

Due to the absence of the entire sampling frame, the non-probability judgmental sampling method was employed to gather the required data from respondents. Judgmental sampling was utilised to ensure that the appropriate respondents were targeted (Calder, Philips & Tybout, 1981). The researcher might outline criteria needed to be fulfilled for a person to qualify as the respondent (Sekaran, 2003). The population of interest in this research is the Malaysian consumers who have bought green household appliances within the last six months. To ensure that the respondents met the pre-determined criteria, a filtering question on such purchase was included in the questionnaire. The sampling area was the Klang Valley as it is the highest populated state (40.2% of population) in Malaysia (Household Survey, 2010). The method of distributing the questionnaire was through personal administration. Three electrical shops in Klang Valley allowed the researcher to distribute and collect data in their shops for four weekends in November 2018. The sample size was decided based on Hair, Hult, Ringle and Sarstedt's (2014) rule of thumb, i.e. to have five times the observations of the number of questionnaire items to be analysed. The present study has 23 items, hence a minimum collection of 115 (23 x 5) usable questionnaires was required.

##### Measurement Instrument

All measurement items for the present study were adapted from existing literature (refer to Appendix). Ecological behaviour was measured using four items adapted from Sinnappan and Rahman (2011), ecological beliefs was measured with six items adapted from Singh (2011), the measures of ecoaltruistic values were adapted from Kaiser, Michael, Hartig and Bowler (1999), openness to change was measured by adapting six items from Susskind, Miller and Johnson

(1998) and voluntariness was measured using three items adapted from Venkatesh, Thong and Xu (2012). A five-point Likert-scale ranging from 1, strongly disagree, to 5, strongly agree, was used to measure each item.

### **Demographic Information**

Of the 250 distributed questionnaires, 152 were returned and were found usable for further analysis, representing a response rate of 60.8%. Most of the respondents were male (52.0%) in the age group between 20 to 30 years old (57.2%). Most of the participants were Malay (55.3%) and single (71.1%). Regarding the respondents' religion, the majority were Muslim (57.2%). Most respondents have a bachelor's degree (53.9%) and income level of RM2001 to RM3999 per month.

## **5. DATA ANALYSIS**

The presence of common method variance (CMV) was needed to be checked when data were collected from the same respondents for both predictors and criterion (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). CMV is said to occur when one variable explains more than 50% of the total variance (Malhotra, Kim & Patil, 2006). As suggested by Podsakoff et al. (2003), Harman's single factor test was used to determine the presence of CMV. This was done by entering all measures into principle component analysis and subsequently performing factor analysis without rotation in SPSS. The output of this analysis reveals that none of the generated factors explained more than 50% of the variance, suggesting that CMV was not an issue in this study (Malhotra et al., 2006).

To assess the model, this study used SmartPLS 3.0 to estimate the parameters in the measurement model and the structural model. PLS is a variance approach that attempts to maximize the explained variance in the endogenous variables (Hair et al., 2014). Additionally, it can handle the complicated mode that has both reflect and formative constructs. PLS path modelling with path weighting scheme for the internal approximation was applied (Quoquab, Pahlevan, Mohammad & Thurasamy, 2017) followed by nonparametric bootstrapping approximation with 5000 resamplings to obtain the standard error of the estimate (Chin, 1998).

### **Measurement Model**

The measurement model which represents the relationship between the construct and its relevant indicators was estimated in terms of its validity and reliability. The reliability was assessed based on factor loading and composite reliability (Hair et al., 2014). Table 1 reveals that factor loading for all items surpassed the threshold value of 0.60 (Chin, 1998), and composite reliability for all constructs exceeded the cut-off point value of 0.70 (Henseler, Christain, Ringle & Sinkovics, 2009). Therefore, the reliability of the measurement model was found to reach a satisfactory level.

**Table 1:** Factor loadings, composite reliability and AVE

Construct	Item	Loadings	Composite reliability	AVE
Ecoaltruistic Values	EAV1	0.844	0.902	0.697
	EAV2	0.871		
	EAV3	0.865		
	EAV4	0.753		
Ecological Behaviour	EB1	0.605	0.828	0.549
	EB2	0.840		
	EB3	0.754		
	EB4	0.746		
Ecological Beliefs	EF1	0.741	0.860	0.554
	EF2	0.746		
	EF3	0.850		
	EF4	0.711		
	EF5	0.662		
Openness to Change	OTC1	0.750	0.845	0.576
	OTC4	0.782		
	OTC5	0.733		
	OTC6	0.770		
Voluntariness	VL2	0.713	0.779	0.641
	VL3	0.880		

Notes: Item EF6, OTC2, OTC3 and VL1 were deleted to improve AVE.

Thereafter, the validity of the model was estimated based on convergent validity and discriminant validity. Convergent validity was assessed based on the values of average variance extracted (AVE) and composite reliability (Hair, Hult, Ringle & Sarstedt, 2017). Table 1 demonstrates that both values i.e., AVE and composite reliability for all constructs exceeded the satisfactory level of 0.50 and 0.70, respectively (Fornell & Larcker, 1981; Henseler et al., 2009), thereby indicating that convergent validity was established.

To evaluate the discriminant validity, two methods were used. First is Fornell-Larcker's (1981) criterion method which required the square root of the AVE of a construct to be greater than the correlation between other constructs in row and columns. Table 2 shows that this condition was fulfilled. Thus, discriminant validity at the construct level was ascertained.

**Table 2:** Fornell-Larcker's discriminant validity

	EAV	EB	EF	OTC	VL
EAV	<b>0.835</b>				
EB	0.055	<b>0.741</b>			
EF	0.489	0.240	<b>0.744</b>		
OTC	0.539	0.276	0.555	<b>0.759</b>	
VL	0.186	0.298	0.212	0.285	<b>0.801</b>

Second is Henseler, Ringle and Sarstedt's (2015) Heterotrait-Monotrait (HTMT) method which was used to represent the ratio between construct correlations within construct correlation. HTMT values of less than 0.90 for the construct that was conceptually similar and less than 0.85 for the construct that was conceptually different are necessary conditions to establish discriminant validity (Henseler et al., 2015). As shown in Table 3, all HTMT values were less than the cut-off point of 0.85, thereby indicating that discriminant validity was established.

**Table 3: HTMT's discriminant validity**

	EAV	EB	EF	OTC	VL
EAV					
EB	0.115				
EF	0.581	0.299			
OTC	0.669	0.351	0.700		
VL	0.310	0.483	0.339	0.473	

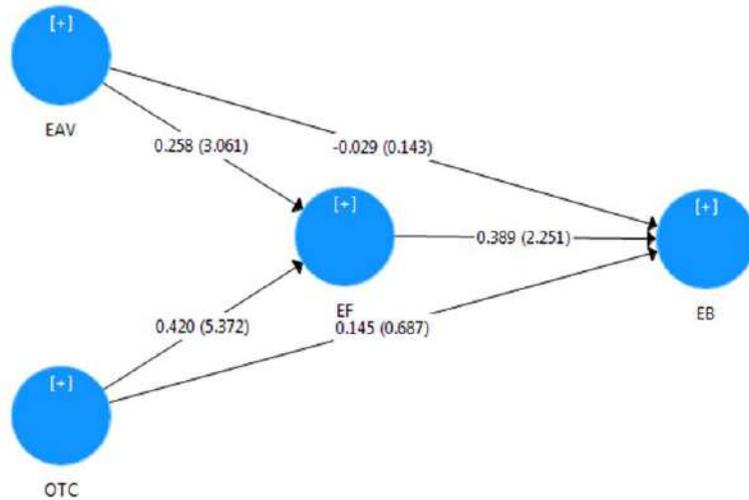
### Structural Model

In the next stage, the structural model which represents the causal relationships among the constructs in the hypothetical model was evaluated (see Figure 2). The evaluation of the structure model was based on certain criteria suggested by Hair et al. (2014) i.e., significance of path coefficient, coefficient of determination (R<sup>2</sup>), effect size (F<sup>2</sup>) and predictive relevance (Q<sup>2</sup>) values. First, PLS algorithm followed by bootstrapping procedures with 5,000 resamples were executed to generate R<sup>2</sup> and F<sup>2</sup>, the path coefficient, and their corresponding t-values.

In order to conclude that a relationship is significant, the t-value of that path must be greater than 1.645 (Hair et al., 2014). As shown in Table 5 and Figure 2, EAV (B=0.258, P<0.01) and OTC (B=0.42, P<0.01) were positively related to ecological beliefs and explained 38% of its variance; thus H3 and H4 were supported. Additionally, EF (B=0.389, p<0.01) exerted positive and significant effects on ecological behaviour and explained 19.3% of its variance, which validated H5. Contrary to expectation, H1 and H2 were not supported.

Subsequently, this study assessed the effect size which represents the individual effect of the exogenous variable in explaining the variance in the endogenous variable (Mohammad, Quoquab, Makhbul & Ramayah, 2016). To measure the effect size, Cohen's (1988) equation i.e.  $F^2 = R^2_{included} - R^2_{excluded} / R^2_{included} - 1$  was used. Values of 0.02, 0.15, and 0.35 represent small, moderate and substantial effect, respectively (Cohen, 1988). From Table 5, it can be observed that the effect size of EAV on EB as well as the effect of OTC on EB was trivial. On the other hand, the effect size of other exogenous variables ranged between small and moderate.

Furthermore, this study also evaluated the predictive relevance (Q<sup>2</sup>) of the PLS path model using the Blindfolding procedure. The Q<sup>2</sup> represents a measure of how well observed values are reconstructed by the model and its parameter estimates (Hair et al., 2017). A Q<sup>2</sup> value greater than zero implies that the model has predictive relevance (Hair, Ringle & Sarstedt, 2011; Henseler et al., 2009). The model of this study has predictive relevance which is supported by the Q<sup>2</sup> values of 0.212 for ecological beliefs and 0.099 for ecological behaviour (Table 4).



**Figure 2:** PLS path model for direct and indirect effects.

**Table 4:** Direct relationships

Hypothesis	Path	Coefficient	SD	t-value	R2	F2	Q2	Supported
H1	EAV→EB	0.029	0.202	0.143	0.380	0.001	0.212	No
H2	OTC→EB	0.145	0.150	0.687	0.193	0.016	0.99	No
H3	EAV→EF	0.258	0.096	3.061		0.073		Yes
H4	OTC→EF	0.420	0.162	5.372		0.193		Yes
H5	EF→EB	0.389	0.142	2.251		0.124		Yes

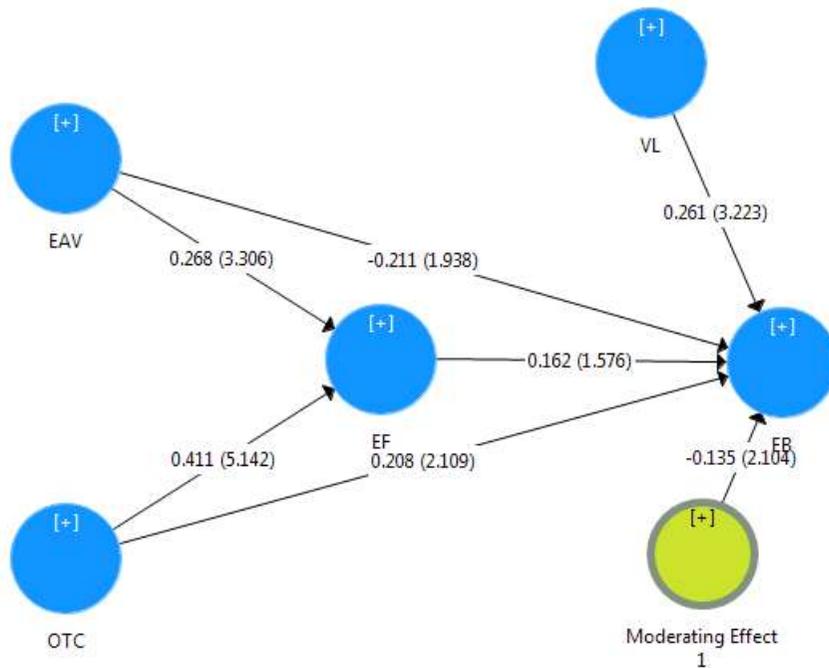
Next, this study examined the presence of the mediation effect using the bootstrapping procedure as suggested by Preacher and Hayes (2004). In order to conclude that a mediation relationship is significant, the t-value of that indirect path must be greater than 1.96 (Hair et al., 2014). The results showed that the indirect effect of  $\beta_2=0.164$  (95% CI: 0.074, 0.123) was significant with a t-value of 2.071, indicating that ecological beliefs could mediate the relationship between openness to change and ecological behaviour. This result validates H7, while H6 was not supported (Table 5).

**Table 5:** Indirect relationships

Hypothesis	Path	Coefficient	SD	t-value	Supported
H6	$\beta_1$ :EAV→EF→EB	0.100	0.065	1.786	No
H7	$\beta_2$ :OTC→EF→EB	0.164	0.031	2.071	Yes

Next, the presence of the moderating effect of voluntariness on the relationship between ecological beliefs and ecological behaviour was tested. First, voluntariness was introduced to the model and assessed in term of its validity and reliability. A close look at Tables 1, 2 and 3 demonstrates that discriminant validity and convergent validity were ascertained for voluntariness. Thereafter, the interaction effect was created using the product indicator approach which involved multiplying all items of ecological beliefs with all items of voluntariness (Hair et al., 2017). To reduce multicollinearity problems, the indicators of exogenous and moderator were standardised before creating the interaction effect. In order for a moderating relationship to be significant, the t-value must be greater than 1.645 (Hair et al., 2014). The bootstrapping result shows that the paths coefficient that connects the interaction construct with EB ( $\beta=-0.135$ ,  $t=2.104$ , 95% CI=-0.310,

0.384) was statistically significant at 0.05 (Table 6 and Figure 3). This signifies that voluntariness could moderate the relationships between EF and EB. This provides support for accepting H8.



**Figure 3 :** PLS path model for moderating effect.

**Table 6:** Moderating relationship

Hypothesis	Path	Coefficient	SD	t-value	Supported
H8	EF→VL→EB	-0.135	0.065	2.104	Yes

## 6. CONCLUSION

This chapter aimed to examine the direct and indirect influences of personal values and ecological belief towards ecological behaviour in the Malaysian consumer context. Based on the results, it can be concluded that ecoaltruistic values and openness to change are positively related to ecological beliefs only. These findings are aligned those of Chua et al. (2016) (in the agricultural context) and Jansson, Marell, and Nordlund (2010) (in the alternative fuel vehicles context). This result is consistent with VBN theory (Stern, 2000) according to which a person who cares for others and open to new ideas is more likely to develop a positive attitude towards protecting the environment and its natural resources.

Overall, relationships between ecoaltruistic values and openness to change towards ecological behaviour were not supported. Theoretically, this relationship reveals that a person who has high ecoaltruistic values is likely to adopt ecological practices in their daily life. Certain previous studies have found this ecoaltruistic values-ecological behaviour relationship significant (Nordlund & Garvill, 2002). However, the outcomes of this research contradict those previous studies and theories. This was primarily due to cultural and environmental differences. The previous studies were conducted in developed countries in which the consumers had better financial standings and went through a different educational system (Quoquab et al., 2017).

Additionally, the relationship between ecological beliefs and ecological behaviour was also found to be significant. This result was in line with existing theory such as Theory of Planned Behaviour (TPB) (Ajzen, 1991) which states that a person's belief or attitude shapes their behaviour. Consumers who highly value the importance of protecting the environment and its resources are willing to spend more in purchasing energy-efficient appliances as a small gesture of contribution to the society.

Additionally, ecological beliefs were found to mediate the relationship between openness to change and ecological behaviour only. This result is consistent with CBT (Beck et al., 1979) according to which an individual's beliefs affect their behaviour. An individual who is more open to new ideas or practices in energy saving will be more likely to purchase energy-efficient appliances (Venkatesh et al., 2003). Such findings also simplify the measurement of ecological beliefs and validates this relatively new variable in another study.

The Theory of Apparent Mental Causation reveals that human beliefs do not necessarily drive the actual behaviour (Wegner, 2002). This was proven as the moderating effect of voluntariness on the relationship between ecological belief and ecological behaviour was found to be significant. This suggests that even if a person realises the benefits of energy saving, it will not drive them to practice energy saving behaviours (Chen et al. 2015). Instead, the behaviour mostly depends on one's willingness to act after consciously thinking about it.

## **7. THEORETICAL AND PRACTICAL CONTRIBUTIONS**

This chapter provides a wider perspective of the relevant aspects pertaining to ecological behaviour, particularly in the purchase of energy-efficient appliances in the Malaysian context. Insights from this study emphasise the significant influences of ecoaltruistic values and openness to change on a consumer's ecological belief towards the environment. In addition, a consumer's perception of the environment exerts influence towards the adoption of energy-efficient appliances. Therefore, communication and education strategies can be critical in cultivating the appropriate perceptions among mass consumers. The implementation of effective educational programmes might encourage consumers to support the energy efficiency labelling programme which ultimately aims to bring positive change towards the environment.

Furthermore, ecological beliefs were found to mediate the relationship between openness to change and ecological behaviour. Therefore, the environmental beliefs aspect should be implemented at all levels as it is the major driver of ecological behaviours. Finally, the moderating effect of voluntariness was found to influence the adoption of energy-efficient appliances among consumers. Government bodies or the industry should ensure an effective and seamless adoption process to encourage more consumers to purchase and use energy-efficient appliances.

This chapter also highlights the key factors that promote and hinder ecological behaviour which can help companies formulate appropriate strategies to tap into the market. For instance, information on individual differences and purchase reasons will help companies segment their market and formulate different strategies to cater to various consumer groups. By effectively segmenting the market, purchase motivations can be identified more clearly, which would in turn helps in creating more targeted marketing strategies to achieve the objective more efficiently.

In addition, companies can provide more educational and after-sales service programmes to reduce some of the risks that consumers might face when using such appliances. Hopefully, the insights from this study will help explain the ecological behaviour of consumers in Malaysia, particularly in the context of the purchase of energy-efficient products. The results from this study

might be useful for future strategic plans in promoting the adoption and acceptance of energy-efficient appliances among consumers.

## 8. LIMITATION AND FUTURE RESEARCH DIRECTION

The study has several limitations that could provide research directions for future researchers. For instance, the scope of this study was limited to examining the posited relationships among electrical appliances consumers only. Future research might use other study contexts such as recycling of old materials, purchase of organic products and water conservation to extract different insights and perspectives regarding human behaviour. The present study is a cross-sectional study in which the data was only collected once. As the influences of the situational factors were being studied, a longitudinal approach could be feasible in studying individuals' perception over time. In addition, more cross-cultural research is required to compare whether the factors analysed in the present study will have similar results with different segments and cultural groups.

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# **CORPORATE GOVERNANCE: AN OVERVIEW OF THE MINORITY SHAREHOLDERS PROTECTION UNDER THE OLD COMPANIES ACT 1965 AND THE COMPANIES ACT 2016.**

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## **1. INTRODUCTION**

Investor confidence in Malaysia was severely affected during the 1997/98 Asian Financial Crisis. Policy makers learnt valuable lessons and focused their attention, amongst others, on the need to raise corporate governance standards. Since then, the journey to improve Malaysian corporate governance framework started.

The Code on Corporate Governance was revised; securities and companies laws were amended. The Audit Oversight Board was established to provide independent oversight over external auditors of companies. The Securities Industry Dispute Resolution Center was established to facilitate the resolution of small claims by investors. Statutory derivative action was introduced to encourage private enforcement action by shareholders. Some of these are the outcomes of the Corporate Law Reform Committee that was set up by the Securities Commission of Malaysia. The CLRC make recommendations to strike a balance between the majority shareholders' right and the right of the minorities to be treated fairly. The key recommendations made by the CLRC are the introduction of the statutory derivative action and clarifying section 181 of the Companies Act 1965.

The Securities Commission Malaysia has launch's five-year Corporate Governance Blueprint (Blueprint) on 8 July 2011, which provides the action plan to raise the standards of corporate governance in Malaysia. It sets out the desired corporate governance to achieve excellence in corporate governance through promoting good compliance and corporate governance culture. It engenders a shift in corporate governance culture from mere compliance with rules to one that strengthens the relationship of trust between companies and stakeholders.

The Blueprint focuses on six connected themes of the corporate governance ecosystem namely shareholder rights, the roles of institutional investors, boards, gatekeepers and influencers, disclosure and transparency as well as public and private enforcement. The Blueprint was open for public consultations from 8 July 2011 to 15 September 2011. Additionally, the SC had issued a consultation paper on 15 November 2011 to obtain views on independent chairman and poll voting. The *Malaysian Code on Corporate Governance 2012* (MCCG 2012) is a key deliverable of the Blueprint after going through layers of consultation process.

## **2. CORPORATE GOVERNANCE: AN OVERVIEW**

The first code on corporate governance was issued in March 2000, known as *Malaysian Code on Corporate Governance* (Code). The Code marked a significant milestone in corporate governance reform in Malaysia. The Code was later revised in 2007 (2007 Code) to strengthen the roles and responsibilities of the board of directors, audit committee and the internal audit function. In 2012, the *Malaysian Code on Corporate Governance 2012* (MCCG 2012) was issued and the code focuses on strengthening board structure and composition recognising the role of directors as

active and responsible fiduciaries. The directors have the duty to be effective stewards and guardians of the company, not just in setting strategic direction and overseeing the conduct of business, but also in ensuring that the company conducts itself in compliance with laws and ethical values.

Boards and management must be mindful of their duty to direct their efforts and resources towards the best interest of the company and its shareholders while ensuring that the interests of other stakeholders are not compromised. Disclosure and transparency are essential for informed decision-making. The timely availability of quality and accurate information including the reporting of financial performance are key facets of investor protection and market confidence.

In drafting the MCCG 2012, the views of many stakeholders were sought to understand the practicalities, challenges and expectations of inculcating high standards of corporate governance in listed companies and to ensure we have the necessary principles and recommendations of best practices to meet those standards. Among others are Bursa Malaysia, Federation of Public Listed Companies, Malaysian Institute of Corporate Governance, Malaysian Directors Academy, Minority Shareholders Watchdog Group, Malaysian Institute of Chartered Secretaries and Administrators, Malaysian Alliance of Corporate Directors and international corporate governance experts.

### **3. THE MALAYSIAN CODE ON CORPORATE GOVERNANCE 2012 (MCCG 2012)**

The MCCG 2012, consistent with the Blueprint, retains the definition of corporate governance as set out in the *High Level Finance Committee Report 1999*.

Corporate governance is defined as: “The process and structure used to direct and manage the business and affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate objective of realising long-term shareholder value, whilst taking into account the interests of other stakeholders.”

The MCCG 2012, which supersedes the 2007 Code, sets out the broad principles and specific recommendations on structures and processes which companies should adopt in making good corporate governance an integral part of their business dealings and culture. The MCCG 2012 encourages the adoption of standards that go beyond the minimum prescribed by regulation. The observance of the MCCG 2012 by companies is voluntary. Listed companies are however required to report on their compliance with the MCCG 2012 in their annual reports.

### **4. EIGHT PRINCIPLES OF CORPORATE GOVERNANCE**

There are eight principles under MCCG 2012 that focus on clarifying the role of the board in providing leadership, enhancing board effectiveness through strengthening its composition and reinforcing its independence. The MCCG 2012 also encourages companies to put in place corporate disclosure policies that embody principles of good disclosure. Companies are encouraged to make public their commitment to respecting shareholder rights.

The first principle is to have clear roles and responsibilities for the board and those delegated to management in discharging the fiduciary and leadership functions. The board should formalise ethical standards through a code of conduct and ensure its compliance.

The second principle is to strengthen composition of the board of directors by

establishing a Nominating Committee. This committee will be responsible to develop, maintain and review the criteria to be used in the recruitment process and annual assessment of directors.

The third principle still focus on board of directors to reinforce independence by undertakes annual assessment of its independent directors.

The fourth principle is to foster commitment between the board and the members. Next is to uphold integrity in financial reporting where the Audit Committee should ensure financial statements comply with applicable financial reporting standards and the independency of the external auditors.

The next principle is for the board to recognise and manage risks by establishing a sound framework. The seventh principle is on ensuring timely and high quality disclosure by establishing appropriate corporate disclosure policy. The company needs to leverage on information technology for effective dissemination of information.

The last principle is to strengthen relationship between company and shareholders .The board should take reasonable steps to encourage shareholder participation at general meetings for example by serving notices for meetings earlier than the minimum notice period as required under the Companies Act 1965.

General meetings are an important avenue for the shareholders in exercising their rights. The board should direct the company to disclose all relevant information to shareholders to enable them to exercise their rights. The board should also consider adopting electronic voting to facilitate greater shareholder participation by publishing these measures on its corporate website.

The board should encourage poll voting and make an announcement of the detailed results showing the number of votes cast for and against each resolution. Companies are encouraged to employ electronic means for poll voting. The chairman should inform shareholders of their right to demand a poll vote at the commencement of the general meeting.

Traditionally, voting has taken place at general meetings on a show of hands but in recent years there has been a move towards routinely conducting voting by a poll. Poll voting is more accurate and fairer to holders of shares because the count is made on the numbers of share held by the respective voters. Each share held will command a vote, and therefore the major shareholders will have an advantage over the smaller shareholders.

The significance of a poll is:-

- (i) to ensure a more accurate voting system;
- (ii) to extend the poll to proxies who may be appointed by absent shareholders.

The board should promote effective communication and proactive engagements with shareholders. Direct engagement with shareholders provides a better appreciation of the company's objectives, quality of its management and challenges, while also making the company aware of the expectations and concerns of its shareholders. This will assist shareholders in evaluating the company and facilitate the considered use of their votes. In addition board members and senior management are encouraged to have constructive engagements with shareholders about performance, corporate governance, and other matters affecting shareholders' interests.

The board need to take into account while making corporate decision, fiduciary duties and oversight processes undertaken by the board to protect shareholder. The board should consider appropriate level of transparency and openness in shareholder communication. Next is to take into

account the extent to which debate on contentious issues is embraced and prepared for and the implementation of shareholder proposals approved by a majority of votes cast at a general meeting.

## **5. MINORITY SHAREHOLDERS PROTECTION UNDER SECTION 181 OF THE COMPANIES ACT 1965**

Under a company, there are two organs, namely the members of the company at the general meeting and the board of directors. But in the case where the directors are also holding the majority shares in the company, the directors will be in control since the director is primarily responsible for the management of the company.

The minority may face the situation where the majority abuses their powers and positions in the company. The member cannot take action against the wrongdoer under the doctrine of separate legal entity and privity since the wrong is committed against the company. So long as the wrongdoers are in control and is authorised by the company's articles of association to decide whether the company should take action or not, no action will be taken against them. This is called proper plaintiff rule principle as decided in the case of *Foss v Harbottle (1843)67 ER 190*.

This rule can also be abused to the detriment of the company as a whole. Thus the common law has developed remedies to protect their interest. The principles governing the rule in *Foss v Harbottle* lead to the enactment of section 210 of the English Companies Act 1948. In Malaysia the shareholders are also protected under the Companies Act 1967 and other legislations (statutory protection).

The main section that provides protection on the minority shareholders in Malaysia is section 181 which states that:

(1) Any member or holder of a debenture of a company or, in the case of a declared company under Part IX, the Minister, may apply to the Court for an order under this section on the ground—

(a) that the affairs of the company are being conducted or the powers of the directors are being exercised in a manner oppressive to one or more of the members or holders of debentures including himself or in disregard of his or their interests as members, shareholders or holders of debentures of the company; or (b) that some act of the company has been done or is threatened or that some resolution of the members, holders of debentures or any class of them has been passed or is proposed which unfairly discriminates against or is otherwise prejudicial to one or more of the members or holders of debentures (including himself).

There are four main elements emerge from the section that are oppression, disregard of interest, unfair discrimination and prejudice. This section is quite different from section 210 of the English Companies Act 1948 where under this section requires the finding of oppression or disregard and the court has been given a discretionary power as to the relief which it may grant, including the option to wind up the company.

The terms 'oppression' and 'disregard' is not defined under the Companies Act 1965. And in the case of *Jaya Medical Consultants Sdn Bhd V Island & Peninsular Bhd 7 Ors [1994] 1 AMR 381*, the learned judge stated that any case of oppression need to be decided based on the facts of each case. Oppression does not necessarily mean illegal or fraudulent nor does it require fraud.

The first reported case in Malaysia on oppression is the case of *Re Chi Liung & Son Ltd; Tong Chong Fah v Tong Lee Hwa & Ors* [1968] 1 MLJ 97.. In this case the court that there had been lack of probity and fair dealing in the affairs of the company to the prejudice of at least some members of the company and the reliefs under section 181 (2) and (4) were granted by the court. In this case the petitioner was dismissed from his position as a managing director and position was given to the first and second respondent. The respondents were appointed as assistant director of the company which is against the article of association of the company. The petitioner's shares were registered in the name of the first respondent.

The leading case governing section 181 is *Re Kong Thai Sawmill (Miri) Sdn Bhd; Kong Thai Sawmill (Miri) Sdn Bhd & Ors v Ling Beng Sung* [1978] 2 MLJ 227, PC. The company in this case was a family business where the elder brothers were the majority shareholders had abused their power as directors when they withdrew money from the company's fund for private purposes. They gave donations to political parties and advanced the company's fund for investment purpose. The Privy Council in this case set aside the judgement of the Federal Court and restored the trial judge judgement on the grounds that all the transactions were duly authorized by board meetings and the sum taken from the company's fund was treated as a loan was repaid.

Lord Wilberforce had highlighted three points in delivering the judgement. First is, the section is not a substitute for a minority shareholders' action. Second, the section requires 'oppression' or 'disregard' to be shown. The mere fact that one or more of those managing the company possess a majority of the voting power and reliance upon that power, make policy or executive decisions with which the complainant does not agree is not enough. Thirdly the wording of section 181 (1) (a) 'are being conducted' and 'are being exercised' relates to a present state of affairs.

Section 181 (b) of the Companies Act 1965 requires the conduct complained of to be 'prejudicial' and the word 'unfairly' is absent in the prejudice provision. But looking at the decision In *Jaya Medical Consultants Sdn Bhd V Island & Peninsular Bhd & Ors* [1994] 1 AMR 381 the 'unfairness' is required. In this case Siti Norma Yaakob J states that mere discrimination against or prejudice to such a member is insufficient to attract the court's jurisdiction to intervene. The question of unfairness is one of fact that requires the court to determine based on objective test. Mere proof of discrimination or prejudicial conduct under section 181 (1) (b) by a petitioner is not enough to attract the invocation of section 181 (2).

## 6. CONCLUSION

Looking to the principles of corporate governance and the history behind it, we should consider relooking at the provisions under the Companies Act 1965 to have a better protection for the minority shareholders of a company.

This study showed even we have statutory protection under section 181 on the minority shareholders but still there is a need to improve the law so that the rights of the minority shareholder will be protected. This is because looking at the decision of the courts we can see that the existing provision does not really protect them because as long as the transaction was allowed by the board of directors then there will be no oppression even the minority treat it as oppression. Thus beside statutory provision, the Board of Directors of a company should play their role in exercising his duties in accordance with the first principle under the MCCG 2012. In exercising their duties they need to adhere to the eight principle of the MCCG 2012. We really hope that the MCCG 2012 will promote transparency and accountability on the part of directors in protecting the minority shareholders.

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## **KEPENTINGAN ZAKAT PERNIAGAAN KE ATAS SYARIKAT**

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### **1. PENGENALAN**

Institusi kewangan Islam misalnya perlu memahami jenis zakat yang mempunyai kaitan dengan harta syarikat. Jenis zakat adalah zakat perniagaan, zakat saham, zakat mal al-mustafad dan zakat almustaghallat. Seterusnya, jenis zakat syarikat juga adalah penting untuk diketahui umum. Hal ini berikutan syarikat yang dikenakan zakat masih tertakluk kepada jenis harta zakat.

Zakat hutang juga adalah relevan untuk memberi gambaran kesan hutang terhadap pembayaran zakat. Perbincangan utama apabila menyentuh zakat perniagaan ialah berkenaan kewajipan mengeluarkan zakat oleh sesebuah syarikat. Malah, konsep syarikat itu tidak hanya menjurus kepada persoalan syarikat sebagai *legal entity* dalam perundangan sivil tetapi termasuk juga konsep syarikat fiqhi seperti perbincangan syarikat sebagai syakhsyiyah i'tibariyyah dan hubungannya dengan syarikat moden.

### **2. KATEGORI PENERIMA ZAKAT**

Di Malaysia, undang-undang zakat telah dikanunkan di bawah Undang-Undang Pentadbiran Agama Islam negeri-negeri dan bagi Wilayah-wilayah Persekutuan, ianya tertakluk di bawah Akta Pentadbiran Undang-undang Islam (Wilayah-wilayah Persekutuan) 1993 (Akta 505)10. Kuasa undang-undang ini diperuntukkan di bawah Enakmen Pentadbiran Agama Islam dan Adat Istiadat Melayu atau Enakmen Zakat Negeri. Terdapat 8 kategori penerima zakat seperti berikut:

1. Faqir - Golongan ini mempunyai harta di bawah nilai nisab. Mereka ialah golongan yang benar benar miskin dan memerlukan bantuan orang lain untuk meneruskan kehidupan samada disebabkan oleh ketidakupayaan fizikal, lanjut usia, dan sebagainya.
2. Masakin - Mereka adalah golongan miskin yang tidak menzahirkan kemiskinan mereka.
3. 'Amilin - Mereka adalah golongan yang bekerja untuk mentadbir dan mengurus hal-hal berkaitan zakat.
4. Muallafat Al-Qulub – Mereka yang hatinya dipujuk untuk mendekati Islam. Secara prinsipnya, golongan ini meliputi mereka yang persahabatan dan kerjasama dengannya akan membantu memperkuat Islam.
5. Riqab – Membebaskan hamba.
6. Gharim - Penghutang Muslim yang tidak mempunyai sumber untuk menjelaskan hutang yang diharuskan oleh syara' pada perkara asasi untuk diri dan tanggungan yang wajib ke atasnya.
7. Fi sabilillah - Perjuangan, usaha dan aktiviti untuk menegakkan dan meninggikan agama Allah (Islam) di dunia.
8. Ibn al-Sabil – Musafir

### **3. KATEGORI UTAMA BERKAITAN SYARIKAT DAN ZAKAT**

Beberapa isu yang timbul berkenaan zakat institusi kewangan Islam juga termasuk hubungan institusi kewangan Islam dan pendeposit atau peserta. Harta institusi dengan peserta adalah harta

yang terpisah. Bayaran zakat ke atas harta peserta tidak boleh dilakukan melainkan dengan keizinan daripada zakat yang wajib dikeluarkan oleh Institusi kewangan Islam juga termasuklah peserta dan ia dilaksana berasaskan prinsip rangkuman zakat.

Adalah perlu untuk memahami tiga kategori utama seperti syarikat sebagai muzakki, syarat zakat institusi kewangan Islam dan kaedah pembayaran zakat institusi kewangan Islam. Ketiga-tiga kategori ini mestilah difahami atas dasar yang jelas iaitu institusi kewangan Islam merupakan *legal entity* atau syakhsyiyah i'tibariyyah yang mempunyai kapasiti dan hak tersendiri seumpama manusia biasa dan bertanggungjawab untuk membayar zakat. Hal ini bersandarkan kepada kedudukan harta institusi kewangan Islam yang bertepatan dengan prinsip harta wajib zakat. Kewajipan zakat pada harta syarikat adalah berasaskan prinsip zakat *al-khultah*, *damn al-amwal* dan *al-nama'* disamping nas-nas umum yang mewajibkan zakat.

Asas pembayaran zakat syarikat wajib mengeluarkan zakat berasaskan aktiviti yang dijalankannya. Jika menjalankan aktiviti perniagaan, maka hendaklah ia mengeluarkan zakat perniagaan. Zakat perniagaan boleh diertikan sebagai mengeluarkan zakat daripada setiap sesuatu yang dimiliki melalui perniagaan apabila ia telah cukup haul dan mencapai nisab pada akhir haul dengan kadarnya adalah 2.5 peratus meliputi modal dan keuntungan.

Daripada Maimun Ibn Mihran: Apabila sudah tiba tempohnya kamu berzakat (cukup haul), maka hitunglah berapa jumlah wang tunai yang ada padamu, dan bagi barang perniagaan yang ada, nilailah ia dengan matawang, begitu juga segala hutang pelangganmu yang mampu (diharap kembali) hendaklah diambilkira dan kemudian tolakkan hutangmu sendiri, barulah dikeluarkan zakat atas bakinya itu.[Riwayat Abu Ubayd al-Qasim Ibn Salam, Kitab Al-Amwal]

#### **4. SYARIKAT BUKAN ISLAM**

Dalam masalah ini, pendapat pertama ialah ia diharuskan berasaskan riwayat Rasulullah menggadaikan baju besinya kepada seorang yahudi. Pendapat kedua, perkongsian tersebut hukumnya adalah makruh bersandarkan kepada Athar Ibn Abbas dan kerana terdapatnya unsur-unsur syubhat. Pendapat ketiga, hukum perkongsian antara orang muslim dan kafir adalah haram kerana hak tasarruf kedua-duanya adalah berbeza yang memungkinkan orang kafir tersebut melakukan transaksi kepada perkara yang diharamkan.

Di Malaysia perkongsian antara orang Islam dan orang kafir melalui sebuah syarikat adalah sesuatu yang telah lama diamalkan sama ada perkongsian biasa ataupun perkongsian dalam syarikat atau institusi. Perbantuan ulama juga yang mengharuskan (atau setidaknya memakruhkan) perkongsian antara orang Islam dan orang kafir. Perkongsian ini mempunyai kesan terhadap penentuan zakat kepada institusi dari dua sudut, Pertama; dalam menentukan syarat Islam bagi sesebuah institusi jika konsep syakhsyiyah i'tibariyyah diterima dan implikasi milik orang kafir juga dikira dalam taksiran zakat. Oleh yang demikian, semua perbankan Islam yang menjalankan pengurusan perniagaan berlandaskan syarak wajib mengeluarkan zakat dan adalah sesuatu yang amat digalakkan semua kaunter yang menjalankan perniagaan berlandaskan syarak yang induknya bukan Islam juga bertanggungjawab membayar zakat.

Kewajipan institusi kewangan misalnya membayar zakat boleh dilihat dari dua aspek. Sama ada kewajipan zakat tersebut berasaskan konsep entiti perundangan (*legal entity*) atau syarikat hanya membayar bagi pihak pemegang saham, pemilik ataupun pendeposit? Adalah sesuatu yang muktabar untuk menyatakan konsep entiti perundangan atau syakhsyiyah i'tibariyyah menjadi asas keputusan pembayaran zakat ke atas institusi kewangan Islam.

## 5. SUMBER PENSYARIATAN ZAKAT PERNIAGAAN

### i. Al-Quran

Allah SWT berfirman dalam surah al-Baqarah ayat 267;

Hai orang-orang yang beriman, nafkahkanlah (di jalan Allah) Sebagian dari hasil usahamu yang baik-baik dan sebagian dari apa yang Kami keluarkan dari bumi untuk kamu. Dan janganlah kamu memilih yang buruk-buruk lalu kamu nafkahkan daripadanya, padahal kamu sendiri tidak mau mengambilnya melainkan dengan memicingkan mata terhadapnya. Dan ketahuilah, bahwa Allah Maha Kaya lagi Maha Terpuji. (2:267)

Menurut para 'ulama' bahawa firman Allah s.w.t : iaitu "*hasil usaha kamu*" adalah bermaksud iaitu "*perniagaan*". Pendapat ini telah diriwayatkan juga oleh segolongan daripada 'ulama' salaf antaranya ialah al-Hasan dan Mujahid. Manakala menurut al-Maraghi pula, ayat ini menunjukkan bahawa zakat wajib dikeluarkan daripadaharta-harta yang baik-baik iaitu yang diperolehi daripada matawang, barang-barang perniagaan dan haiwan ternakan.

### ii. Hadith

Rasulullah SAW bersabda yang diriwayatkan oleh Abu Dawud;

Maksud : Maka sesungguhnya Rasulullah SAW menyuruh kami supaya mengeluarkan zakat perniagaan daripada apa yang kami sediakan untuk diperniagakan.

Hadith di atas dengan jelas menunjukkan bahawa setiap barang perniagaan, wajib dikeluarkan zakat ke atasnya apabila telah cukup nisab dan haul. Ini disebabkan telah menggunakan lafaz *al-amar* (kata perintah) yang menunjukkan hukum wajib. Mereka yang enggan mengeluarkan zakat daripada hasil perniagaannya, dianggap mengingkari perintah Rasulullah s.a.w sepertimana yang terdapat di dalam hadith di atas.

Dari Abu Hurairah RA, sesungguhnya Rasulullah SAW telah bersabda: Tidaklah ada ganjaran bagi orang yang memiliki harta simpanan namun tidak menunaikan haknya, melainkan Allah SWT akan melemparkannya ke dalam api neraka jahanam pada hari kiamat, hingga dahinya, tepinya serta punggungnya dibakar, sampai Allah memutuskan perkara di antara hamba-hambanya di hari yang lamanya sekitar 50,000 tahun di bumi, kemudian dia melihat jalannya, baik ke syurga mahupun ke neraka. [HR Muslim]

### iii. Ijma' Ulama'

Zakat adalah diwajibkan dalam nilai barang-barang perdagangan berdasarkan pandangan sebahagian besar daripada 'ulama'. Menurut Ibn al-Mundhir pula, para 'ulama' telah bersependapat bahawa barang-barang yang mahu diperniagakan hendaklah zakat dikenakan ke atasnya setelah ia cukup haul.

Maka, berdasarkan sumber-sumber pensyariatkan kewajipan zakat perniagaan ke atas syarikat tersebut, Muzakarah Jawatankuasa Fatwa Kebangsaan Bagi Hal Ehwal Ugama Islam Malaysia kali ke-3 turut mengeluarkan fatwa berkaitan hukum zakat ke atas syarikat. Fatwa ini telah menetapkan hukum zakat perniagaan ke atas syarikat adalah diwajibkan.

Adapun begitu, hukum kewajipan ini tertakluk kepada syarat-syarat yang telah ditetapkan seperti berikut :

1. perniagaan yang dimiliki oleh orang Islam,
2. perniagaan yang dimiliki oleh orang Islam yang merdeka,
3. sempurna milik,
4. cukup nisab,
5. cukup haul (genap setahun *qamariah* atau 354.3 hari),
6. kadar zakat ke atas syarikat tersebut adalah 2.5 %, dan
7. syarikat yang dimiliki bersama antara orang Islam dan bukan Islam, maka wajib ke atas jumlah saham yang dimiliki oleh orang Islam sahaja berdasarkan pendapatan bersih yang diperolehi.

Nisab zakat wang simpanan sama bersamaan nilai 85gram emas Zakat dikenakan sebanyak 2.5% ke atas jumlah baki terakhir dalam tempoh setahun simpanan apabila cukup nisab dan haulnya serta menyamai atau melebihi nisab.

Terdapat pelbagai jenis pemilikan perniagaan yang bertanggungjawab dalam menjalankan aktiviti-aktiviti pengeluaran dan pengagihan barang-barang dan perkhidmatan.

#### **i. Perniagaan Persendirian (Tunggal)**

Bentuk perniagaan ini dimiliki oleh seorang pemilik secara persendirian. Modal diperolehi daripada simpanan sendiri atau pinjaman daripada saudara mara, kawan-kawan atau bank. Sumber kewangan lain ialah sewa beli, pajakan dan kredit perdagangan. Pemilik bertanggungjawab mengawal dan menguruskan perniagaan secara sendiri atau dengan bantuan daripada ahli-ahli keluarga dan pekerja-pekerja yang diupah.

#### **ii. Perniagaan secara Perkongsian**

Ciri-ciri bentuk perniagaan perkongsian sekurang-kurangnya terdapat dua orang tetapi tidak melebihi 20 orang bergabung untuk menjalankan perniagaan dengan tujuan mendapat keuntungan. Orang yang menyumbangkan modal kepada perkongsian merupakan pemilik sah perkongsian dan mereka dinamakan ahli dan rakan kongsi. Modal diterima daripada sumbangan rakan kongsi mengikut kadar yang dinyatakan dalam perjanjian perkongsian. Dalam perkongsian, rakan kongsi aktif mengambil bahagian yang aktif dalam mengurus dan mentadbirkan perniagaan.

#### **iii. Perniagaan Syarikat**

Syarikat adalah entiti yang berdaftar di bawah Akta Syarikat 1965. Ia mempunyai status undang-undang yang mengasingkannya daripada pemilik. Ini bermaksud bahawa sebuah syarikat boleh, antara lain, memasuki sesuatu kontrak atas namanya, boleh menyaman dan disaman atas entitinya. Pemilikan syarikat adalah melalui pegangan saham. Syarikat boleh daripada jenis Sendirian Berhad ataupun Awam Berhad. Syarikat Sendirian Berhad menghadkan pemilikan sahamnya kepada bilangan pemilik yang kecil sedangkan Syarikat Awam Bhd.(ataupun disebut Syarikat Berhad) menawarkan sahamnya dimiliki oleh masyarakat awam. Sesebuah syarikat boleh disenaraikan di Bursa Saham setelah memenuhi syarat-syarat yang tertentu. Perniagaan yang besar lazim dijalankan melalui bentuk syarikat.

#### **iv. Koperasi**

Koperasi merupakan satu bentuk organisasi bercorak perniagaan yang dibentuk oleh sekumpulan orang dengan sukarela berasaskan hak-hak yang sama demi kepentingan bersama bagi mengatasi masalah ekonomi yang mereka hadapi. Terdapat beberapa jenis koperasi iaitu koperasi runcit, koperasi borong, koperasi kredit, koperasi perumahan, bank koperasi dan lain-lain. Modal koperasi terdiri daripada yuran dan unit-unit syer yang dimiliki anggotanya. Ahli-ahli akan dibayar

dividen. Koperasi ditadbir oleh satu Lembaga Koperasi yang dilantik oleh anggotanya dalam Mesyuarat Agung Tahunan.

## **6. HARTA PERNIAGAAN YANG DIKIRA DALAM PENENTUAN ZAKAT**

- Barang perniagaan (stok akhir dinilai mengikut harga jualan semasa)
- Wang tunai di tangan
- Wang tunai di bank
- Hutang niaga yang timbul daripada jualan secara kredit dan dijamin dibayar semula
- Pelaburan dari hasil perniagaan (jangka pendek)
- Peniaga atau pihak syarikat seperti SDN BHD dan seumpunya boleh menikmati rebai cukai korporat atau dinamakan potongan cukai ke atas zakat perniagaan yang dibayar adalah tertakluk kepada had maksima 2.5% daripada pendapatan agregat syarikat tersebut (yang tidak mengambil kira cukai, inflasi, hutang piutang dan sebagainya).

Dari sudut fiqh, hukum berkaitan zakat adalah ketat berasaskan kepada pandangan para ulama seperti Qardhawi dan Rashid Ridha. Hukum berkenaan zakat ini adalah begitu ketat sehinggakan ada pandangan untuk membina majid dari dana zakat pun tidak dibolehkan. Walau bagaimana pun, sekiranya sesebuah negara yang minoritinya Islam dan dengan niat untuk mendaulatkan Islam dan menegakkan agama Qardhawi mengatakan ia dibolehkan dalam hal hal tersebut untuk menggunakan dana zakat. (atas konsep fi sabilillah)

## **7. KESIMPULAN**

Kewajipan sesebuah syarikat membayar zakat adalah berteraskan dalil Al Quran dan hadis Rasulullah S.A.W itu sendiri. Malaysia telah menunjukkan rekod syarikat terbesar mengelurakan zakat seperti rajah di atas. Kefahaman tentang kewajipan membayar zakat yang merupakan rukun Islam harus lebih difahami oleh syarikat yang menjalankan perniagaan patuh syariah.

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# **USEFULNESS & BENEFITS, CHALLENGES, AND ATTITUDES TOWARDS ONLINE LEARNING DURING COVID-19 PANDEMIC**

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## **1. LITERATURE REVIEW**

The COVID-19 outbreak in Malaysia has caused the Malaysian government to forbid any physical or face-to-face teaching process that can lead students to meet in a large group. Due to this matter, the Malaysian government has enforced all educational institutions to close temporarily until further notice. This can be viewed as a positive perspective where educators are given the chance to be creative by searching for alternative ways to complete the syllabus of the subjects they are teaching, including the assessment that the students are required to complete. Online teaching refers to a method of teaching in which learners are learning in distance by utilizing the use of technology to gain access to the learning materials, which is another way for students and educators to communicate with one another (W. Bao, 2020).

Other issues that students experienced were mainly related to lecturers, having limited tool use, a lack of necessary skills and motivation to improve and adapt their teaching styles to the digital environment, insufficient support for students' learning processes, and the assignment of an excessive number of tasks and poor adherence to the learning process (R. E. Baticulon et al., 2020).

A study by K. Mukhtar et al. (2020) identified learning boundaries that was encountered by a total of 670 medical students in which was divided into five categories consisting of technological issues, individual issues (such as health and difficulties adjusting to the learning style), domestic issues (such as a hostile environment and family and financial problems), institutional barriers, and community barriers. Similarly, A. Illias et al. (2017) found that a total of 147 students from 16 universities in Malaysia expressed concerns about administration, social interactions, technical issues, Internet access, learning time, learning support, and motivation. Similarly, another study discovered there was a lack of interaction (N. Arifiati et al., 2020; A. A. Kamal et al., 2020). Generally, these studies found that students faced similar challenges regardless of their nationality or background, but there were also differences.

On the positive side, there are the existence which students recognise the advantages of online learning, such as to continue with their learning process at home as it is due to the comfort of their homes, the advantage of being able to watch recorded videos in order to help them to study and revise, as well as to develop their self-directed learning skills (A. Farooq et al., 2020). One of the most major benefits of online education according to other research is due to the flexibility of learning whichever time or location without worrying on the transportation time and cost (N. Arifiati et al., 2020; M. Al Balas et al., 2020). According to K. Mukhtar et al. (2020), in which students propose that interaction needs to be enhanced, and the workload must be lowered in order to cultivate online learning. However, there are studies that revealed students were satisfied due to the positive interactions through their online learning experience as well as their high academic performance during the pandemic (N. Arifiati et al., 2020).

Furthermore, online learning appeals to a varied community of students with varying academic needs that traditional education classes are insufficient to address. It has also been determined that the demand for online courses stems from a desire to give quality education to

all students, regardless of location or time. Specifically, students who completed all or part of their class online outperformed those who took the same course through traditional face-to-face education on average (Tareen & Haand, 2020).

When there is a positive combination in between students' perception between learning and satisfaction, it would result in a higher achievement towards online learning success (DiLoreto and Gray, 2016). Richardson & Swan (2013) believes that there is a strong relationship between student satisfaction with online learning and their overall perception of learning. According to Marks, Sibley, and Arbaugh (2005), a satisfied student is an immediate result of a successful learning experience, and the perceived student learning outcome is a good predictor of student satisfaction in online learning. The perception related to the learning outcomes is able to contribute and provide a positive impact on the student satisfaction in the online environment (Ikhsan et al., 2019). Thus, student satisfaction is positively influenced by students' perceptions of learning in an online class.

When it comes to online learning benefits, it is more like learner-centered learning over the internet using various forms of educational material such as video, audio, texts, photos, and animations, and learners have some freedom to choose their favourite learning activities. Learners, for example, can quickly view a video instead of reading lengthy texts by selecting the video icon on the page. Furthermore, learners and instructors can communicate with one other both asynchronously and synchronously, and interaction between learners and instructors in online learning has been quite favourable when online courses are taught (Kong et al., 2006, as cited in Tareen & Haand, 2020). To be more specific, with online learning, learners and teachers can communicate online at any time via video conferencing, webcasting, chatting, forums, and emails. Similarly, interaction and participation are two crucial components assumed to improve learning in asynchronous courses, and engagement in online learning necessitates interaction between students and contact between students and teachers. Researchers have also demonstrated that an increasingly popular type of distance education involves the use of asynchronous computer-mediated communication (Tareen & Haand, 2020). Most importantly, teachers are more accessible in online learning, which benefits students by providing an additional layer of instructor availability, and students will no longer be concerned until they attend an instructor's usual office hours, unlike in classroom learning (Tareen & Haand, 2020). According to the study, students can still submit concerns by e-mail at any time, and instructors can respond comfortably at any time rather than being tethered to a desk or office, especially when a student's schedule conflicts with office hours if a query comes unexpectedly.

On the contrary, less than pleasant experiences with online courses have been reported in the literature. Students have expressed feelings of isolation. They felt isolated because they believed they lacked peer support (Tala & Karkar-Esperat, 2018). Some students did not provide constructive criticism, and the linguistic and cultural exchanges were lacking in online sessions. In addition, in an asynchronous, online course, there is little interaction with students. If instructors are unable to check their emails every day, they are less likely to react to student inquiries immediately. This frustrates students because if an urgent response is required for an upcoming assignment, pupils do not receive the timely assistance required to complete the weekly assignments (Frimming & Bordelon, 2016).

## **2. METHODOLOGY**

The total respondents of this study consisted of 90 undergraduate students from IUKL who were pursuing bachelor's degrees. They were students in Faculty of Architecture and Built Environment (FABE), Faculty of Business, Information & Human Sciences (FBIHS), and Faculty of Engineering, Science & Technology (FEST) of IUKL. 47 respondents were female students, and 43 others were male. Majority of the students were local students from Malaysia, and the rest were international students.

The questionnaire used for the data analysis was adopted and adapted from five sources and combined to meet the purpose which were the three research objectives and the three research questions of this research study.

The analysis of the data was conducted using SPSS 10.0. Standardized residuals were used to locate differences when more than two categories of identity were compared. To examine group differences for continuous measures, t tests and one-way ANOVAs were used. As of the exploratory nature of this study, no adjustments were made for multiple analyses. Alpha values are given for all significant tests at the  $p < .05$  level.

## **3. RESULTS AND FINDINGS**

### **Perceived Challenges of Online Learning During COVID-19 Pandemic**

Based on the result obtained, IUKL undergraduate students that were pursuing their bachelor's degree did perceive the usefulness & benefits of online learning during COVID-19 pandemic. A total mean score of 3.51 in which students perceived convenience as the usefulness & benefit in online learning. This means that students agree that online learning is easy and convenient to be used during COVID-19 pandemic.

In line with this result, Mokhtar et al. (2018) that convenience of use is a significant factor that influences the use of a Learning Management System (LMS). According to a study on the factors of digital content uptake, convenience has a large indirect effect on consumer satisfaction with digital content (Hidayat-ur-Rehman et al., 2020). As a result, user satisfaction eventually leads to the continuance of use. These findings show that if users find digital information easy to use, they are more able to adhere to the technology.

In similar findings that was discovered by Ozturk et al. (2016), an online technology study including mobile hotel bookings, it was discovered that convenience has a favourable effect on user loyalty to technology. As a result of using the LMS, convenience refers to a student's feeling of freedom in terms of time, location, and execution that is perceived as a result of using the LMS. Therefore, students perceive convenience as a result of technology's capability, particularly the ability to make study information available and to enable easy and quick contact with professors and other students (Mokhtar, Katan and Hidayat-ur-Rehman, 2018).

## **Perceived Factors that Influence Attitudes Towards Online Learning During COVID-19 Pandemic**

From the result obtained, there are three challenges that are perceived by the undergraduate students that are pursuing their bachelor's degree. The highest mean score is a total of 3.85 where the students agree that the learning environment is the first challenge that they perceive during online class.

The findings in which was discovered by the researcher can be supported by a study performed by Agarwal et al. (2021), that while the lesson is still in session, students utilise social media such as WhatsApp, Twitter, and Facebook, play games, and send text messages. Another similar study conducted by Emerick et al. (2019) found the students themselves admit that they utilise social media up to 32 times every day on average. They argue that this use is not only ineffective, but also distracting.

Kalman et al. (2020), found that most of the students from the study conducted that they experience increasing distractions from family members, as well as struggling to find a quiet place to study when their family members are at home. Additionally, students experience family obligations at home which could limit their work on courses or place their classwork as a secondary priority.

The next challenge is followed by a total mean score of 3.63, in which the students agree that there is a low student engagement throughout online learning classes. Engagement is the main factor that leads to learners' isolation, dropout, retention, and graduation rate in online learning. Martin & Bolliger (2018) believes that there is an importance of student engagement in online learning because it is an indication of students' considerable effort that is essential for their cognitive development and their given ability to create their own knowledge, leading to a high level of student success. Thus, learner-to-learner interaction is crucial for online learning, and it promotes student engagement.

## **4. IMPLICATIONS**

### **Theoretical Implications**

According to the framework of this study, Technology Acceptance Model by Davis (1989), it includes factors related to users' technical experiences and perceptions about how using technology might affect their perceived usefulness & benefits, and challenges in using technology through online learning (Wingo et al., 2017). This statement is supported by the results produced by the current study and that is, based on the result obtained, IUKL undergraduate students that were pursuing their bachelor's degree do perceive the usefulness & benefits of online learning during COVID-19 pandemic. Moreover, based on the summary of findings in table 4.15 the total mean score of 3.51 in which students perceived convenience as the usefulness & benefit in online learning. This means that students agree that online learning is easy and convenient to be used during COVID-19 pandemic.

Wingo et al. (2017), stated that Davis's TAM (1989) model of framework explained on the use of technology could affect users perceived challenges in utilizing technology through online learning. Based on the findings in Chapter 4 that was produced by the researcher, one of the challenges that was perceived by the IUKL undergraduate bachelor's degree students was related to the learning environment. This meant that students agree they experience distractions at home as a learning environment which was stated in questionnaire item number two.

Other findings discovered by Davis et al. (1989, p. 984), were that the influence of attitude towards the use of information systems disappeared when perceived usefulness (PU) was measured to predict the use of IS. This statement is in line with the findings from chapter four in which students agree that they perceive high satisfaction together with low motivation as the factors that influence their attitudes towards online learning.

Based on the theory as well as the results of this study, it can be concluded that the use of technology has an impact on the users' perceived usefulness & benefits, and challenges towards online learning. Therefore, the theory used in this study is indeed purposeful to the outcomes of the research findings as well as research objectives one, two, and three along with questions one, two, and three itemized in this study.

### **Pedagogical Implication**

The purpose of this study is to identify the IUKL undergraduate bachelor's degree students' perceived usefulness & benefits, challenges, and factors that influence their attitudes towards online learning during COVID-19 pandemic. The findings revealed that students agree that there is perceived usefulness & benefits and challenges towards online learning. However, the findings say otherwise for the research question number three. In reference to the perceived factors that influence attitudes of the IUKL undergraduate bachelor's degree students towards online learning whereby the findings revealed that there is a low motivation together with high satisfaction as factors influencing their attitudes. Therefore, there could be a possible gap in this study which will be further discussed in the recommendation section of this study.

Based on the findings from Chapter 4, there are several pedagogical implications that should be taken into consideration by the educators which can be applied in online learning. The implications below are as suggested by Kennedy (2020):

Learner-instructor, learner-learner, and learner-content interactions should all be planned for and prioritised. While there is a propensity for distance education or online learning to focus on a single form of student connection and engagement, Moore (1989) points out that this is not always the case. It is "*vitaly important that distance educators... do more to plan for all three kinds of interaction*" (p. 6).

Keep in mind that engaging and interacting with competent educators is vital for students, and this is true even in online learning situations. While some researchers believe that providing students with any type of contact and engagement is sufficient (see Anderson's [2003] Equivalency Theory), educators and educational research from Bloom (1984) to Hattie (2011) have demonstrated the value of learner expert interaction. Move forward by building simple behavioral interaction for students online through log on, access, and download to create various and more cognitively engaging tasks and activities for students to complete online. Educators should keep in mind that by developing engaging activities and tasks for students does not necessitate the use of advanced technologies as tools, although the LMS features do cater what educators require. Instead, educators should plan carefully on the learning design of the course as well as the tasks and activities related to it. Educators are encouraged to think on how to design and build online tasks and activities which would be cognitively engaging for the students. This means that educators are required to be creative and innovative since it is much more than simply utilizing digital resources (PPTs, videos, PDFs) in presenting them to students. Instead of providing digital tools for students that revolve around direct instruction and more passive student activity, educators are encouraged to use inquiry-based, simulation-based, and peer-based learning strategies to engage students fully. These learning design models might be useful

to guide the design of entire weeks of the course, or they could be applied to individual tasks and activities embedded within weeks of the online subject. As stated in Chapter 2, the findings revealed that students agree that there is perceived usefulness & benefits and challenges towards online learning.

## 5. CONCLUSION

Based on the findings, the researcher discovered that students agree there is perceived usefulness & benefits and challenges towards online learning. Furthermore, the researcher included teachers' pedagogical implication which could be applied by educators during online learning. Therefore, perceived usefulness & benefits, and challenges results towards online learning may be studied from the perspectives and perceptions of future generations.

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# **PERSPECTIVES AMONG ENGLISH LANGUAGE TEACHERS OF RELUCTANT ESL/EFL LEARNERS DURING THE COVID-19 PANDEMIC**

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## **1. INTRODUCTION**

One of the main purposes of language learning such as the English language is for learners to acquire knowledge and use the language practically in the real working world. Language acquisition (LA) involves a language learner to start using another language, in which it is a different language other than the native language (L1), for different scenarios and in different environments. Thus, language learners have opted to rely on schools, universities, language centres, and tutors to assist them in learning a particular language. Normally, before the pre-pandemic of Covid-19, language learners would often meet their language teachers face-to-face or physically be in presence. However, due to the Covid-19 pandemic during the earlier year of 2020, the scope of English language teaching (ELT) has been witnessing considerable adjustments and developments in its theories and practices. In addition to this, teaching methods and other pedagogical approaches were in need of a revamp to keep up with the situation. Moreover, language teachers had to revise their lesson-planning, teaching methods, content, activities, approaches, and teaching materials in order to implement to the new learning environment.

Ultimately, on-going efforts have been implemented throughout this period yet finding the right formula to create an optimal English-language learning in virtual learning has not been an easy task. As attempts were made, one glaring issue in which the problem lies is the reluctance of language-learners to adapt to the new learning environment. As an attempt to highlight this issue to help further understand and eventually improve students' learning experience, the present study proposes to explore English-language teachers' experiences and perspectives throughout their efforts during their times teaching language-learners in a virtual setting. Similarly, the authors propose to analyse the data collected and find a correlation with ELT theories.

## **2. RATIONALE**

Theories and studies of language acquisition are commonly familiarized in order to implement it inside and outside classrooms. English plays an important role in the everyday community. ESL and EFL are keen to acquire the English language (L2) for many different reasons such as education, job opportunities, career development, personal matters and other related reasons. Many would argue that language learning is best acquired during their childhood experience but some ESL and EFL learners are students who are already in their youths or even at a mature age in which they tend to acquire it after their primary, secondary and in some cases, tertiary education.

Ever since the Covid-19 pandemic started, many language learners have left no choice to but to learn in a virtual setting, or online classes. Due to this sudden change of learning environment, on-going online classes have created little to no opportunities for English language teachers to apply their teaching practices. Despite spending much time teaching English, students who were only available virtually find it difficult to cope with this new environment. Thus, English language teachers were facing with real-life communication issues and it was increasingly

important that English language teachers to adapt to the situation and play an essential role in order to achieve success in English language teaching and learning in the ESL and EFL contexts.

### **3. EMPIRICAL DISCUSSION**

Based on interviews conducted with 10 respondents, it was found that there are various constraints that prevent students from learning English as a foreign language. The problems faced by students can be divided into several factors, namely translation, grammar, and vocabulary.

#### **Translation**

The translation factor is one of the constraints faced by students who study English as a foreign language. The translation that students try to do is either translate Arabic, French, and Hindi (source language) to English (target language) or vice versa. This is so because a word cannot be directly translated by students. In addition, it is also emphasized that the context used in English is the backbone of the meaning of a word. Therefore, literal or direct translation cannot be done without first understanding the context. A word depends on the context in which the word is used. According to Puteri Roslina Abdul Wahid (2005), context plays a role when determining the appropriate definition for each entry that needs to be explained. Translation is the presentation of the same meaning in the target language, but not all meanings and information in the source language can be translated into the target language clearly (Syed Nurulakla Syed Abdullah, 2015). This is so because the utterances need to be compatible with the socio-cultural context of the target language.

#### **Grammar**

Another problem that students also face is the difficulty of mastering grammar. According to students, English grammar is difficult to master and understand. Referring to this finding, it is clear that grammar is one of the constraints faced by students in learning English. Heida and Maserah (2012) also found that grammar is a difficulty faced by students in learning a foreign language. Difficulty in mastering grammar causes students to not be able to master the English language well. According to Zaliza Mohamad Nasir, Zaitul Akma Zainon Hamzah, Normahdiah Sheikh Said and Norizan Che Su (2013), grammar is the foundation that determines whether a sentence is right or wrong. This is so because grammar is a rule in a language. Therefore, mastery of the English language is measured through the students' level of grammar mastery.

#### **Vocabulary**

Vocabulary is the other constraints that students also face. Students were found to lack English vocabulary. This causes students to be unable to use a variety of vocabulary either orally or in writing. According to Asma Abdul Rahman and Nik Mohd Rahimi (2012), the main aspect of learning in foreign language learning is vocabulary learning. The more vocabulary students learn, the faster students can understand texts in English and the more often students use vocabulary either when speaking or writing (Nik Mohd Rahimi, Zahriah Hussin & Wan Normeza, 2014). Based on the findings, students easily lose vocabulary because students do not have the opportunity to use the vocabulary in class. Students see more that the use of vocabulary in speech helps students to remember new vocabulary more than in writing. According to Zamri Mahamod, Nik Mohd. Rahimi Nik Yusoff, Mohamed Amin Embi, Jamaludin Badusah and Sharala (2014), students who excel or have good command of the language, are students who use more vocabulary learning strategies. Students who master a lot of vocabulary more easily understand a sentence. Therefore, activities in the classroom during the teaching and learning process should be varied and not focused on one skill only so that students can use the vocabulary that has been learned.

#### 4. CONCLUSION

This study discusses the constraints faced by students who learn English as a foreign language. There are several main constraints faced, namely translation, grammar, and vocabulary. The constraints faced by the students are solved by the students themselves by taking various actions, including repeating some vocabulary, learning more vocabulary, writing and memorizing vocabulary, understanding the context of a situation, using a dictionary and trying to speak using English. Overall the findings shows that linguistic problems are the main problems faced by students in learning English as a foreign language. Therefore, the Ministry of Education, educational institutions and lecturers should be aware that teaching and learning English as a foreign language is different. It is without a doubt that learning the English language requires a learner to put in a lot of effort and may use a lot of different learning techniques to be proficient in it. Many secondary language learners and foreign language learners who are learning the English language applied many kinds of practices in order to achieve a basic grasp and usage of the language. Unfortunately, due to the change of learning environments that happened during the Covid-19 pandemic, language-learning acquisition have changed quite drastically. Hence, English teachers have to adapt to new teaching environments and language learners have to cope with virtual learning.

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# CHALLENGES IN TEACHING STEM AND NON-STEM STUDENTS DURING THE COVID-19 PANDEMIC: A CASE STUDY AT IUKL

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## 1. INTRODUCTION

In March 2020, Malaysia was hit with the COVID-19 emergency crisis. The Malaysian government had administered the Movement Control Order (MCO) effective 18 March 2022 as a measure to curb the COVID-19 virus spread. This action did not only affect the economy, business and medical sectors, but also the principal root of our knowledge which is our education sector. No physical classes were possible at this time, where all educationists and students were left with no choice but to shift from the traditional way of teaching to online teaching. Hence, online teaching and learning has become a necessity [1].

Transition from physical classes to online classes has its struggle to adapt, explore, and implement the teaching methods successfully to ensure the learning process takes place among our students. In general, instructors faced challenges such as ineffective teaching, unproductive communications, technology incompetence and failure, and also low engagement between instructor and students, and attitude issues [1]. During the online class, acceptance of the method is important. When the end receiver, the student, has a low level of acceptance, the challenges by the instructor increase. Teaching online is a two-way communication as well as how it used to be during face-to-face teaching and learning. Students having poor internet connection or not having technology devices such as smartphones, notebook, tablets, etc disrupts the instructor's delivery process. This is one of the most common challenges faced by instructors [2, 3]. There is no way to ensure that instructors and students stay connected the whole time of the lecture. The connection may get lost between instructors and students. At such moments, either instructors or students are required to solve and manage the connection issues which will have an impact on the teaching and learning process. A short duration of time will be missed here while getting back the connectivity. Aside from this, in the case when the instructor has prepared a video presentation for his/her students, the video projection will be lagging. Indirectly this puts off the student's interest to pay attention in the class.

The COVID-19 pandemic had forced both instructors and students to switch to online web-based learning. This sudden change affects teaching and learning activities for both STEM and non-STEM courses. This chapter presents a case study in a private higher learning institution, Infrastructure University Kuala Lumpur in Selangor that discusses the challenges faced by STEM and non-STEM instructors and gathers the information on the strategies implemented during online web-based teaching and learning activities during the lockdown period.

## **2. GENERAL CHALLENGES FACED BY STEM AND NON-STEM INSTRUCTORS IN IUKL**

During the pandemic times the online teaching was conducted from home, where every instructor's home was converted to office with minimum requirement. However, not every instructor has a private and sound proof room at home to conduct the online class. Since the basis to this online class was from home, instructors could not avoid the background noises from their family members' daily routine, doorbell rings, kids playing, Nasi lemak sellers on the road, bread vendors, and many more disturbances. Lectures given were mixed with all these background sounds which on the other hand reduces the students interest to be engaged in their class.

The surrounding environment might not be conducive for students during online learning. Thus, students prefer to keep their video camera off during the classes. Also, it came to our attention that students voiced out that by opening video cameras dried out the internet data for them. It was an unavoidable scenario for them, however their interest to be learning was still observed among few students when they stayed in the online class till the end. It is undeniable that we do have some students who take advantage and not concentrate in class. When instructors called out their name in class, no response was received. For these groups of students who did not turn on their video, instructors were not able to trace whether the students were paying attention in the online class.

Regardless whether it's an online teaching or face to face teaching, conducting assessment is a necessity for the educators and instructors in general. Delivering a topic to a group of students does not ensure that they do understand the content and are able to apply the knowledge. Instructors are required to test the understanding and application of their knowledge transfer to the students. Also, it is a requirement for us as educators to evaluate the achievement of the course learning outcome (CLO) for students. During the online teaching, instructors were not able to conduct the face-to-face assessment. As an alternative, the assessments were modified for example special assignment, projects, e-portfolio. These methods can be practised successfully for non-STEM subjects. However, for STEM subjects, the nature of these subjects are based on knowledge and calculation, where students will be tested with calculative questions similar to tests, quizzes, and assignments. Students are to answer this assessment at their home. This being the case, instructors were not able to ensure that the assessment given to the students were actually answered by the students themselves and without referring to any external sources for the answer.

One of the major issues in assessment during the pandemic time is plagiarism. Mainly this plagiarism issues are seen among the students during online tests and final assessment examinations. There are online platforms providing services to help solve tutorial, homework, assignment and test questions. For example, platforms such as Chegg.com have been misused rampantly by the students to answer their tests and examinations. Several steps have been taken to curb such incidents however very minimal effect could be seen. Although instructors change the questions, students capture the new questions and post them into Chegg.com and the experts behind these platforms will provide the answers. The ironic part of this is, some students take the picture of the answers with the experts handwriting and send it in as their own works.

During the pandemic online teaching, all students' coursework was submitted online. It was very difficult for the instructors to do the marking on the screen. Instructors needed to have the pen tablet for them to mark the softcopy coursework on the screen. It made the marking task miserable when students did not submit their coursework in a single pdf file, instead they submitted each question in multiple pdf or in picture format of their answer script. Imagine that if a student submitted 10 pages of the writing in 10 different pdf files, instructors will need to open 10 different files just to mark his coursework. It was also very troublesome for the instructors to

return the marked coursework back to the students. instructors needed to email the student one by one to let them know their performance in the respective coursework.

In IUKL, the population of international students is about 50%. Most of the international students are from the middle east countries like Yemen, Syria, Oman, Iran, etc. where their time zone is about 5 hours behind Malaysia time. During the pandemic, Malaysia and other countries' borders were closed, thus, most of the international students were trapped in their home countries. All the subjects' time tables were set according to the Malaysia time zone. Due to the availability of instructors and subjects clashing matters, we had no choice but certain subjects were to start at 8:00 am morning Malaysia time. It was quite a pitiful situation for these international students to follow the 8:00 am morning Malaysia time online class. They would have to keep themselves awake at 3:00 am in their home countries to follow the online class. Their focus and concentration were surely affected by their sleepiness. They may miss some important points during the lesson and not be able to answer the questions raised by the instructors correctly during the class. Many of these international students were not able to attend the morning class due to body exhaustion. instructors had to give leniency and could not consider them absent for the class. Leniency was given for the students to watch the recorded videos shared in the Microsoft Teams later and this action is considered as attending the online class.

Pandemic period restricted our movement to the office, hence instructors are required to setup their home office for the online classes where internet access has become the primary asset to conduct online class. Not every instructor has the luxury to install UNIFI (or other internet provider) at their home. Some just used their own limited data to conduct classes, and usually it will be finished after 1-2 weeks in the month. To ensure the smooth running of the online class, it requires the instructor to purchase more data or upgrade their existing data package which adds up to the financial burden of the instructor by increasing the cost of the internet bill.

A sudden change from conventional teaching methods to online learning had taken us by surprise. instructors struggled to meet the new requirement to go online since at this moment of early pandemic, we were limited to free of charge online substitutes for the traditional 'chalk & talk' setting. It is our strong opinion that 'chalk & talk' is still a better and effective method to explain the basic and fundamental concepts in science (Physics and Chemistry) or mathematics that involve calculations. Khan Academy is a proof of such a method in an online setting albeit it is a one-way interaction.

Effective teaching and learning require the flexibility of two-ways interaction such as that of Khan Academy. However, in IUKL we were able to use the Microsoft Whiteboard, Tablet, Zoom and Google Meet as a good replacement for actual physical whiteboard experience albeit with certain limitations. Nevertheless, the seamless process of learning and teaching highly depends on the internet connectivity. Communication breakdowns were frequently seen during the class time due to low internet connectivity. Heavy data consumption is also a great setback.

Besides having the privilege of working from home, instructors do face massive side effects on their health. Having to face the computer screen for a long duration daily, instructors easily get fatigue, drowsy and face difficulty to sleep at night as classes can stretch from a minimum of 4 hours – 6 hours of teaching in a day. instructors were not only using the computer and online devices to teach, but also when we do online marking, finding materials, admin works and reading for research also consumes our time span in front of the computers. Consequently, eye-sight problems arise as eyes are focused on the screen most of the time. Alongside this, we face stiff muscles in the shoulder, neck and other parts of the body as body is fixed at one position and place most of the time. Lastly, breaking internet connection could add up to the stress and frustrations.

Other than the general challenges discussed, authors of this chapter would like to bring out specific experience and challenges faced by the instructors according to STEM and non-STEM subjects mainly from Biology, Chemistry, Mathematics and Physics, and MPU - Moral, Drug Abuse, Malaysian Studies, Psychology respectively.

### **3. CHALLENGES FACED BY BIOLOGY INSTRUCTORS**

Tremendous time was spent on preparing materials for web-based learning activities due to the sudden hasty switch from using traditional text books in face-to-face settings to fully using online web-based settings. Instructors had to spend time to create and search for online resources for teaching materials, which includes: web-based review centres provided by text publishers, online quizzes, animations, links to web content, discussion chat groups, etc. These online resources created opportunities for students to better understand the subject content. But these online platforms must be carefully employed to ensure effectiveness as many students complained of no hardware and devices such as laptops, no stable internet connections when it rains to support their distance learning activities. This further complicated the issue when students are required to attend the lectures synchronous to Malaysia time zone while many international students are having different time zones, some behind while some ahead of Malaysia time. This issue was curbed by having the lectures recorded using Learning Management System (LMS), for example using Panopto and later Microsoft Teams to enable students in a different time zone to view the lectures at a time which is more convenient for them. Instructors also need to change the task completion deadline to be more flexible.

Remote lectures have many set-backs, such as reduced interaction and lack of response which normally assist instructors to assess students' comprehension [4]. Difficulty arose when students reported having faulty devices and instructors were unable to trace student engagement without their cameras turned on. Students from different learning backgrounds (locals vs internationals) may have very vast differences in their level of understanding. Specifically, for some international students, the syllabus applied is beyond their current learning level. Hence, the pace of the lesson may be difficult for some to keep up. Proper benchmarking and tests may be needed for international students of certain countries.

Science naturally involves frequent laboratory work, a fact that is emphasised in most biology courses. Especially true in providing laboratory experiences in virtual learning [5]. The quality of the laboratory classes suffers as students do not get the actual hands-on experience. Students were directed to watch related animations and videos related to the labs conducted, these ended up with reports submitted often lacking in authenticity as all students watched the same video having the same delivery content and results. In some of the laboratory experiments which require detailed methodology, instructors opted to film their own demonstrations [5]. For example, students were guided to monitor yeast respiration using recycled plastic bottles and balloon apparatus. Also, students were provided with specific guidelines based on the previous students' work. From their homes, our students have completed labs concerning scientific measurement and observation. Another approach is the use of a pre-lab safety quiz which could be easily integrated into many distance learning platforms. Students are also encouraged to refer to journals that are available online. IUKL's library provides access to databases for retrieving articles for respected journals with collaboration with other universities. Additionally, free full articles can be obtained from the internet. Some of the examples include Google Scholar, ResearchGate, BioOne Journals and Scirus: For Scientific Information Only.

Common misconceptions among students about STEM subjects is being hard and boring

learning materials. Students find it hard to score these subjects as compared to their peers who took the non-STEM subjects. Also, students are not able to connect the importance of learning these subjects with real life applications of the knowledge that they have learnt. Game-based lessons may potentially enhance students' engagement.

Lack of support from the university posed a problem when everyone has to conduct web-based lectures. Not all instructors received laptops from the university. Lectures teaching Mathematics for example were not provided with tablets for showing Maths's equation, writing, etc. Some teachers may lack the technical knowledge or support to teach online [5]. Web-based teaching needs a different style of teaching in which training and learning curve are required.

The job opportunities in the country which relied on STEM subjects, eg. Physics, Mathematics and Biology are bleak and not as what was promised by the government. Graduates often find themselves without a proper job and end up working in a different field than what they major in university.

#### **4. CHALLENGES FACED BY CHEMISTRY INSTRUCTORS**

In general, teaching Chemistry online or face to face, have its own challenges. In this chapter, instructors will focus on challenges specific to online teaching of chemistry subjects. Chemistry consists of fundamental knowledge, concepts and applications. The activities conducted during physical classrooms are difficult to be recreated in an online class. Besides, academic integrity during assessment is also a big challenge for the instructors to monitor and assess with the open access to online platforms available. [6]

In response to the COVID-19 outbreak, the educational activities were adapted to a new shift, where remote teaching stepped in. Remote teaching requires high usage of technology-based equipment such as smartphones, tablets and laptops for the students [7]. Similarly, instructors at IUKL also immediately shifted to online class.

At IUKL, chemistry is taught for Foundation in Science, Diploma and Bachelor students of various programmes. While chemistry is synonymous with the idea of memorization and theoretical aspects of chemical formula and bonding, the Chemistry courses actually encompass a wide aspect of teaching and learning including calculation and explicit drawing skills. Similar to other courses, the sudden move to remote teaching during pandemic equally posed unique challenges to Chemistry academics for both teaching and assessment [8, 9]. Conducting lab activities faced the biggest challenge. Using multimedia lab-works as a tool to teach online lab activities, does not engage students to achieve hands-on practices which leads to lack of process skills [8]. In common, at IUKL the practical classes are heavily dependent on video classes. This limits the knowledge transfer of laboratory activities, where only the instructor is able to conduct or demonstrate the activities while students view online.

Synchronous teaching methods via zoom had shown difficulty in monitoring student attendance, technology competence, accessibility to technology equipment, and student engagement. On the other hand, during asynchronous teaching methods where the instructor uses video or notes for reference in future learning on student own time, also brings back the same problem in terms of student monitoring, technology competence, accessibility to technology equipment, and student engagement. Content delivery has been shown to be effective by employing both synchronous and asynchronous teaching methods [10, 11].

## 5. TEACHING

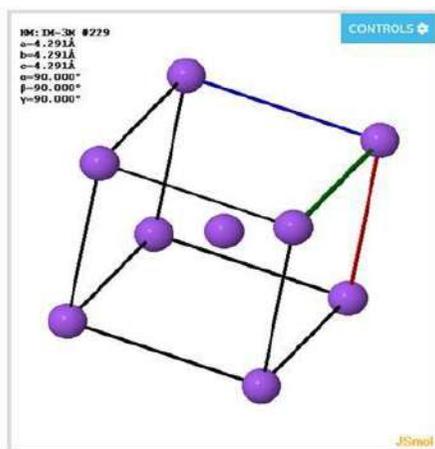
The first hurdle to execute online teaching for Chemistry was selecting the most suitable online video conferencing platforms from the myriads of options. Early in the pandemic lockdown, Zoom and Google Meet are the two primary options due to being well-known and with widespread usage. Zoom is a very user-friendly interface (UI) with a lot of useful features like cooperative sharing space and modifiable settings. The ability to auto-record with scheduling options is a very big plus point. The caveat is the free Zoom account has the 40-minute time limitation that interrupts the flow of the lesson. While some instructors adapted by providing it as a break, a two-hour class session ended up with three breaks that are not conducive for learning. A subscription may solve this issue but is not the universal solution for every instructor if the cost has to be borne by oneself. Google Meet in the meantime is simpler since it is part of the Google ecosystem and does not even require software installation. It requires less internet bandwidth which is advantageous but understandably with lower video resolution. Additionally, it has way less features and unless subscription is made, no recording feature is available.

Panopto is the first dedicated remote teaching platform that IUKL has officially subscribed to. An important key feature of Panopto is the integration with the learning management system (LMS) that IUKL is using, which is Moodle. The auto-recording allows students to directly review the video directly from Moodle. Instructor has the option to edit the recorded video with built-in Panopto assessment (fill-in-the-blanks, multiple choice questions or even short paragraph) which is crucial for asynchronous learning outcome when uploaded in the Moodle. However, Panopto does not allow live video feed from the students during the online class which deter live and interactive teaching models as the instructor is not aware of the students' immediate response. The UI is also complicated, outdated and not as intuitive as Zoom. The next subscribed platform that IUKL used is Microsoft Teams (MST). Being part of the Microsoft ecosystem does have a lot of perks and the platform itself is very much loaded with features. MS-Team for IUKL is also integrated with Moodle, allowing students to be directly enrolled into the respective class in MS-Team with up-to-date direct link to the scheduled online class. However, there were many complaints from non IT-savvy instructors that MS-Team is complicated to use. It also requires very heavy bandwidth to operate resulting in many issues related to frozen frame or login sync failure. A continuous stable internet connection is paramount for MS-Team to work flawlessly.

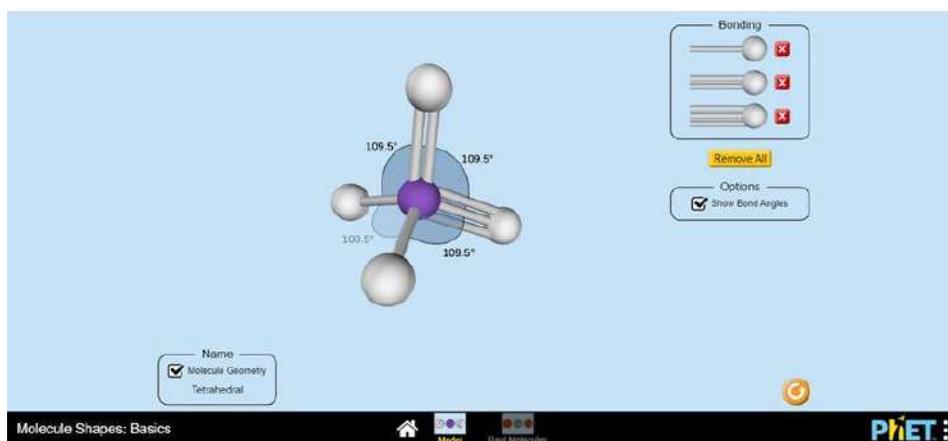
When it comes to the teaching aspect itself, calculation is a difficult teaching element to execute during online teaching. Calculation in chemistry is usually required for relative molecular mass calculation, finding number of moles and particles or even complicated ones like stoichiometry, limiting reactant and equilibrium constant problems. Early attempt for calculation delivery was conducted by employing an external webcam attached to a tripod with the lenses focused on a paper or white board. Students watched in real time when the instructor demonstrated the calculation steps on the paper or white board. However, not all online video conferencing platforms can be used for this set-up since it requires a platform that allows a second video feed. The second video feed also should have an adjustable mirroring feature otherwise the calculation video will be shown as a reversed video from students' perspective. However, only Zoom has this crucial feature for this set-up to be successful. Clearly, this set-up is not sustainable with different platforms which necessitate an investment with a drawing tablet or touch screen laptop. Both come with styluses and are normally done with Microsoft One Note software. However, students' participation and understanding in terms of calculation is difficult to gauge. Evaluating and pointing out their calculation mistakes requiring them to join online collaborative features offered by many of the platforms. Nonetheless, IUKL students are not equipped with a standardised device (touch screen with pen input) that will allow them to actively engage in real-time calculation. The only workaround for this problem is by requesting them to submit their work

through a dedicated social media like WhatsApp group or similar so it can be discussed together. This is definitely not an intuitive option as it takes longer time.

Drawing skills are one of the most important Chemistry aspects particularly when solid state cubic structures, Lewis structure or molecular structure using VSEPR are involved. Content delivery during online class was done using the assistance of pen input in the Microsoft One Note or Microsoft Whiteboard. Another way of introducing molecular drawing was conducted by embedding interactive videos from ChemTube3D (chemtube3d.com) [12] via JSMol or PHET Interactive Simulations (phet.colorado.edu) [13] website content into Moodle via H5P package. 3D views of solid-state cubic structures like simple cubic, body-centred cubic and face-centred cubic can be interactively visualised by the ChemTube3D integration. The PHET integration allows both instructor and students alike to view and manipulate molecular structure models in 3D that displays the effect of bonding number and lone pair to the molecular geometry. The simulation is also able to replicate real chemical molecules with bonding angles which enrich students' understanding especially for the complicated VSEPR theory.



**Figure 1:** Body Centred Cubic as viewed on ChemTube3D



**Figure 2:** Interactive VSEPR model as seen on PHET

However, live evaluation of students' understanding is still a challenge and students again resorted to submitting their exercises via WhatsApp group. A specific tool employed for this purpose was by using an online chemistry drawing tool OpenOChem (openochem.org) [14] which was still free to use during the pandemic in 2020-2021. While there are multitude of drawing tools available online like PubChem Sketcher, ChemDraw and ChemSketch, none can be integrated with Moodle via the External Tool. The OpenOChem with LTI (Learning Tools Interoperability) installation allows the students to practise and submit the attempt via Moodle. Since it uses digital drawing tools, a short learning curve is needed and while it actually allows pen input, students without access to stylus may proceed with digital drawing tools. The automation in the system allowed students to understand the drawing mechanism and rules related to a correct Lewis structure that satisfies the Octet Rule. However, LTI embedding into Moodle requires an IT-savvy instructor for a successful integration. Once installed however, it provided an amazing platform for instructors to demonstrate the correct way of drawing Lewis or molecular structure albeit by using the digital tools.

Lab practical courses however were the most difficult to implement during the pandemic [15]. The first method employed was by embedding experiment videos related to the lab syllabus in Moodle and have the students view and proceed with the follow-up adapted questions. In order to allow hands-on engagement by students, additional experiments that can be done at home were given. Case in-hand was the "Homemade Natural pH Indicator" experiment. Guidelines and video were given to the students to execute the experiment. Due to the Restricted Movement Control Order, this is the best option with the main ingredient required is simply a purple cabbage as the Ph indicator while the various solutions to be tested can be freely selected from any of the household items.



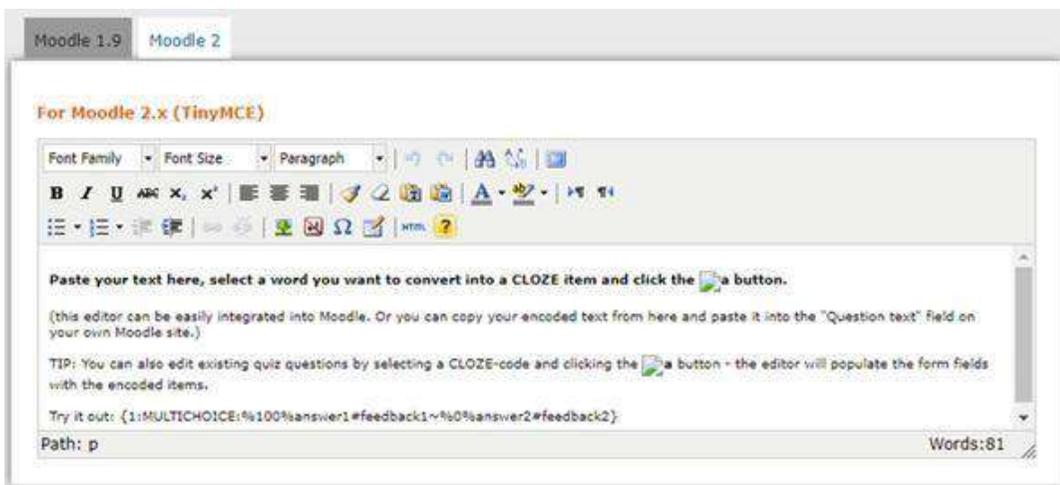
**Figure 3:** Homemade Natural pH Indicator prepared by the instructor

## 6. ASSESSMENT

While IUKL management was flexible in the assessment method chosen by each instructor, Chemistry courses assessment during the pandemic was deliberately conducted using asynchronous formative and summative format. Both formative (Tutorial, Quiz, Mid-Term Examination) and summative assessment (Final Assignment and Take-Home Test) were completely conducted via Moodle. Tutorial was set from the Assignment tool in the Moodle and was marked digitally within Moodle. Students can view the marked submission and discussion on

the mistakes was done via the Forum features even though many prefer to directly interact using social media like WhatsApp.

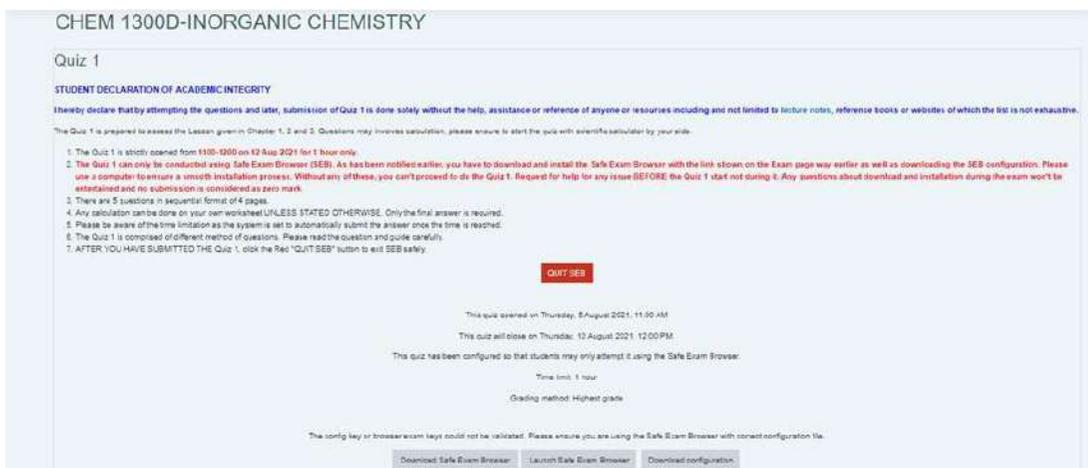
Quiz and Mid-Term were more challenging to administer. The type of questions given from the Moodle option includes the multiple choice, short answer, matching, essay, drag-and-drop and embedded answers (Cloze) format. Cloze format was particularly useful because of its availability to be given as part of branched questions under an umbrella of one major question. This made calculation-based questions like stoichiometry to be easier to assess. For example, a limiting reactant problem might request for the number of moles of both reactants, the moles and mass of the product and the yield percentage. Setting one question for each using short answer format will require at least five separate questions while it can be lumped in one for Cloze format. The Cloze format however requires encoded text and having a Cloze editor like the online Moodle Cloze editor is very helpful.



**Figure 4:** Cloze Editor

Closed-book format was chosen for both quiz/mid-term but clearly it was nearly impossible to be implemented. In order to restore a slight integrity, any quiz or mid-term that did not require drawing, Safe Exam Browser (SEB) was employed. SEB is a proctoring software to carry out e-assessments safely with a built-in plugin in the Moodle. When a quiz or mid-term with SEB was attempted, the SEB module kicked-in and locked the students' computer into a secure web browser environment that only allowed the questions to be displayed and answers to be submitted. The software turns any computer temporarily into a secure workstation. It controls access to resources like system functions, other websites and applications and prevents unauthorised resources being used during an exam. While students may use other available devices to access resources or communication with other students, there are caveats. First is that there are at least two sets of quiz/mid-term given at the same time. Students were randomly grouped into at least two different groups in Moodle with different sets of questions and they do not know which group they belonged to. A question one student attempting will be different than another one from a different group. Secondly, while there is a possibility of communicating students happen to be in the same group, time limitation for the quiz/midterm discourages deep discussion between students and forces the students to focus on their own attempt. While the assessment method seems harsh, this is a fundamental tool to understand each student's learning needs and allow unique adjustment to their learning instruction. The issue with SEB is that while the plugin is already available in Moodle, SEB software still needs to be installed for both instructor and students' computers. It is also not available yet for smartphones or tablets.

Students only need to install and download the SEB configuration file for the specific quiz/mid-term. There was an issue however when a student from Inorganic chemistry subject used a workstation with Windows 2000 operating system which is not supported by SEB software. A normal quiz in Moodle without SEB has to be conducted in this case. Additionally, setting up quiz/midterm via SEB was not the easiest task. There was much technical tweaking required and the various technological jargons means instructors lacking IT competence might find SEB application to be challenging. When drawing is an important component for a quiz/mid-term, the assessment was conducted via OpenOChem. As mentioned in the previous subsection, the OpenOChem can be integrated via the LTI External Tool in Moodle. OpenOChem has the flexibility to be given as practice or even test. Students were simply needed to login into the Moodle and attempt the quiz/mid-term in the OpenOChem via an embedded page in Moodle.



**Figure 5:** Example of SEB page for a quiz as viewed by a student

Final Examination is completely replaced with summative assessment in the form of Final Assignment and Take-Home Test. Final Assignment is based on several topics related to the chapters in the syllabus designed to help students to think critically and academically. Each student chose a unique topic and had to answer some of the questions posed and submit it in a research paper format. Students were assessed according to a rubric that emphasised higher cognitive function of C4 and C5 in terms of how the students approach the questions and how they generate their opinion based on their literature review. To avoid plagiarism, the assignment is Turnitin-checked which is also a built-in Moodle plugin. A percentage level for Turnitin similarity is set and students are informed on the Turnitin requirement at the beginning of the assessment. If a student answer script exceeds the similarity percentage allowed, then penalty marks will be given. This step is taken to ensure that students abide by the rule and to reduce plagiarism. Take-Home Test is an open-ended question which is designed to specific learning outcomes such as knowledge of acid/base reactions, hypothetical chemical equilibrium, limiting reactants and planning synthesis reaction all-in real-world settings. Students were graded based on a flexible marking scheme which took into account students' creativity in presenting the answer [16].

## **7. CHALLENGES FACED BY MATHEMATICS INSTRUCTORS**

The sudden move from physical classes to remote learning for mathematics poses some challenges to the instructors. It is a necessity for instructors to have a pen tablet in order for them to write the formula, equation and solution on the whiteboard to present to students. Instructors also faced problems to ensure that students truly understood the subject matters and concepts well. During the face-to-face class, the instructor could check students' step by step solutions and to point out their mistakes on the questions given to the students. Correct answers do not mean the students understood the subject matters and concepts. Rather, the correct step by step solutions by the students confirm the understanding of matters and concepts. It is not practical for the instructor to ask the students to show their step by step working during the online class. Students may not have external tools to write on the online platform whiteboard and not every student uses the laptop or desktop to go for the online class. Some students might use a handphone or tab to join the online class where there was nothing they could do apart from listening to the lecture. The correct solutions provided by the students in the coursework could not be 100% used as true evidence that the students truly understood the subject matters and concepts well unless the originality of the coursework is proven to be produced by the students themselves [17, 18].

## **8. CHALLENGES FACED BY PHYSICS INSTRUCTORS**

Teaching and learning physics in IUKL had been greatly impacted during the Covid-19 pandemic. The conventional 'chalk & talk' lecture method is known as an effective way to explain the basic and fundamental concepts in physics that involve calculations. However, such a method of teaching was impossible due to the non-physical restrictions on classes and lectures imposed during the Movement Control Order (MCO) or lockdown moreover for physics laboratory subjects. Thus, the only viable method to carry out the physics learning and teaching processes optimally was through the online or virtual settings [19]. Although various examples of online lectures that predate the Covid-19 pandemic are proven to be viable such as the 'Khan Academy' during the lockdown, the lack of and difficulties in finding adequate virtual applications had inhibited the implementations of such classes or lectures. These difficulties include finding a medium to communicate as in to establish instructor-students interaction or face-to-screen (FTS), finding a virtual substitute for 'whiteboard', hardware and internet connectivity and data issues, as well as adapting and adjusting to online mode of teaching [20].

To establish instructor-student interaction, Zoom and Google Meet were among the virtual tools used in conducting the classes at least for the first three months since the beginning of the pandemic. With the proactive step taken by the IUKL ICT Team, the Panopto application was made available and the learning and teaching experiences were made better, where lecture recordings were made easier. When the MS Teams application was then introduced after about a year of the online classes commencement, all of the vital solutions in Zoom or Google Meet with Panopto were replaced in a single application. Thus, the process of learning and teaching were seamless and ran with less hiccups.

In the first few months since the beginning of the implementation of the online lectures, the meeting or interaction platforms functions were coupled with camera functions to carry out the 'chalk and talk'. Cameras would be set on papers on which writings were carried out simultaneously with the explanation. This was due to the unavailability of the electronic writing tablet and the virtual 'whiteboard' at the earlier stage of the online classes. Such shortcomings were however overcome by using the Microsoft Whiteboard with writing tablet coupled with MS Teams. Thus, the teaching and learning of physics have become more fruitful where students could interact with and ask their instructors on the spot on topics or lesson materials that they could not

fully comprehend.

Since restrictions were imposed on physical classes, it was therefore not possible for the students to come to the campus and conduct practical classes such as the laboratory experiments. Thus, the implementation of physics laboratory subjects was carried out in the similar manner as the other non-laboratory subjects. Actual experimental data which were collected from the laboratory experiments conducted prior to the pandemic time or second hand experimental data were shared to the students during the discussion of the experiments and the students were to use them for their data analysis, and laboratory reports. However, students were instructed to conduct and collect their own data for experiments that are feasible to be carried out at home. These methods of teaching and learning for physics laboratories were reported in a study by Klein et al. [21].

Another significant hurdle in conducting the classes online was assessment of students. It was rather difficult for the instructors to gauge students' participation and actual performance in a distance learning setting. The non-participation of students was manifested in their non-responsiveness during online classes. As most of the assessments were carried out in the conventional manner, i.e. quiz, assignments, mid-term examinations and final assessment examinations; distance learning poses a threat of plagiarism and cheating among the students and it was quite rampant among the students taught in physics and other physical sciences subjects at IUKL during the pandemic. This was due to absence of actual or physical monitoring by the instructor and it happened either via communications among the students i.e. copying and exchanging answers; as well as by paying online homework solutions service providers during the examination time or also known as contract cheating [22, 23].

Difference in time zones had also caused a hurdle in the implementation of the online classes as some of the students who were stuck in their countries after the announcement of the lockdown had no choice but to attend their classes off campus. However, students were still able to follow the lessons by using the recorded lecture videos which were uploaded on to the learning management portal.

## **9. CHALLENGES FACED BY NON-STEM INSTRUCTORS**

Students taking the MPU subjects are exposed to the knowledge of language, politics, sports, moral and good values, as well as the constitutional development in Malaysia. The students learn through a physical class where the teaching and learning process happens in a direct contact using face-to- face interaction.

Once the Covid-19 hits Malaysia in December 2019 and MCO was implemented in March 2020, this method of teaching and learning changed dramatically for all areas of studies, including MPU subjects. Both instructors and students are forced to adapt faster to the new method, which is through online. Students are not required to go to campus and by using only online platforms, they can attend the classes. This situation might be convenient to the students as they don't have to go to the campus to attend the lecture. On the other hand, the instructors were reported in previous studies as having the most challenges due to this new situation. For example, one of the challenges faced by the instructors is managing the emotion of the students in MPU subjects [24]. The MPU subjects were usually registered by a huge number of students up to 120 students per subject. Taking into consideration the number of the students, the instructors are deemed to maintain a positive tone and mood during the lecture. This is due to the reason some students might have a different perception towards the tone, language as well as humour used by the instructors which might be misperceived by them.

Other than that, the challenges faced by the MPU instructors could be the issue of connectedness among students. One of the ideas in MPU subjects is empowering students for their hard and soft skills, including communication. However, this could be a challenge to the instructors. To maintain an interactive and interesting class, instructors usually used a different platform on the internet such as using YouTube or online games for the students. These platforms could help the students to understand better on the topics and they could become more independent during the learning process [25]. However, there is a weakness in this process. The students hardly communicate with each other and they rely more on the instructors to provide them with the subjects' information. They are more keen to text using personal WhatsApp to the instructors instead of communicating with the other students to get information. This situation has led to the issue of dependency towards the MPU instructors and lack of team spirit among the students. For MPU subjects that have to handle a number of students, the instructor usually gives group works as the assessments. However, by having the issue of dependency and low connectedness among the students, the assessment could bring a negative experience to the students and also the MPU instructors.

## **10. CONCLUSION**

Online web-based learning adds values to learning in terms of reaching parts of the curriculum that traditional teaching methods do not. Online web-based learning is the current new norm and this practice will be continued in the future which combines both online learning and face-to-face learning, such as blended learning or flipped learning. Web-based teaching and learning can offer many advantages over traditional settings for those willing to explore the possibilities. Based on the challenges experienced by the instructors during online classes, there are various coping strategies implemented by the instructors. For example, recording the lecture video and uploading it into the online platform served as one of leniency towards the students. The online students came from a different background and time zone, therefore leniency during the learning process is very important for the students' performance. Other than the lecture video, the other coping strategies done by the instructors to overcome their obstacle is by encouraging independent study among the students. During the pandemic Covid-19, many educators from all around the world became more creative in teaching, which led them to produce more educational and interactive videos, as well as online games. These materials were then uploaded into the online platform such as YouTube where anyone can access the videos and lessons, thus helping students to become more independent in getting more information on the subject or topics. At IUKL, instructors are now going towards the blended learning direction. In the future planning, it is highly recommended for a green room for instructors to produce a quality recording of their lesson. The desktop or the laptop of instructors should be upgraded periodically so that it can support the newer version of the online teaching tools. In sum, online learning may bring challenges to the instructors, nevertheless with technology and creativity, the teaching and learning online can be a significant experience to the students.

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# **OBSERVING THE INFLUENCE OF LEARNING STYLES ON COMMUNICATIVE STRATEGIES USED BY STUDENTS INSIDE A COLLABORATIVE ESL/EFL UNIVERSITY CLASSROOM; A DISCOURSE ANALYSIS**

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## **1. INTRODUCTION**

The modern education landscape emphasizes student-centredness as its thrust for educational initiatives as well as student-oriented research to increase comprehension on the learners to maximise the learning efficiency as well as effectiveness of pedagogies practiced in the classroom. The notion of teachers and instructors as facilitator of knowledge rather than the supplier is more prominent as well, with weightage of instruction falls onto the enabling the learners' active learning, rather than passivizing the students into receivers of knowledge.

Therefore, a dearth of research has been prospectively considering the students' ability to acquire information efficiently through multiple perspectives. Cognitively, models of learning such as Piaget's constructivist theorem regards learners as active agent of learning through cognition and sensory information. Horwitz, Horwitz and Cope (1986) take into account the affective domain as a moderator to learning processes where they studied the impairing effect of anxiety on language learners inside classroom. Learning style theories also became prominent movers of student-centred learning as profiles of students' learning styles assisted instructors in integrating responsive pedagogies to the students' preferred learning modes. This allowed instructors to maximise learning capabilities of the students as they can construct their lessons in a way which their students can best receive the contents taught in the classroom.

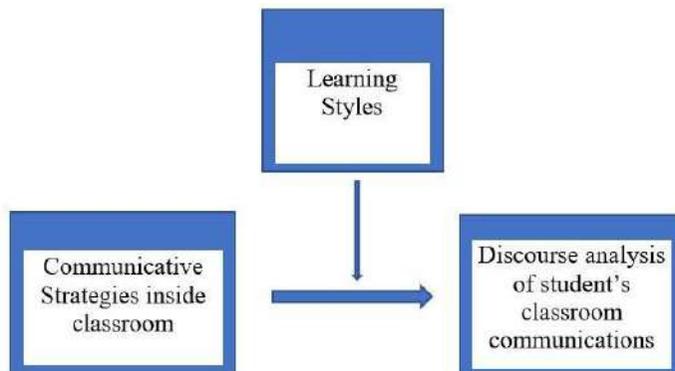
Consequently, pedagogies inside classroom have been tailored to involve students' participation in the learning process; group discussions and brainstorming, group presentations, peertasks and group assignments. These are all collaborative in nature; they require cooperation between the members for completion. Collaborative learning centres itself as a part of the 21<sup>st</sup> century learning as sociocultural theory, spearheaded by Vygotsky (1978) motioned that learners are active society members, and learn from the society around them of ideas, concepts, values and culture. The society also becomes a "scaffold" for their learning where the conception of their schema and knowledge about the world around them are incumbent on the observations as well as understanding they have from the society. Other than that, they reside in whether through direct indoctrination/instructions/roles they play in the society or indirect exposure to community's inherent values such as trust, cooperation, mutual respect and tolerance by communal activities.

One way this knowledge about the world and their perceptions about concepts that is taught in the classroom can be manifested through their discourses. The conversations they have about ideas and perceptions and thoughts behind those ideas can be extrapolated by the use of discourse analysis in order to gauge their understanding about the content taught inside the classroom. This can be invaluable information because this allows the instructor to make adjustments or reinforce the taught materials inside the classroom based on the extent of understanding shown by the students through their discourses in the classroom. Hence, the application of communication strategies in their discourses will be an interesting element to

observe as these strategies are often used in order to effectively deliver the message and its meaning to the receiver/audience whether towards their peers or even to instructors themselves. Communication strategies can be specific to each individual and their conception of the most effective way to convey meaning. The question then arose; does learners' individuality in terms of their learning styles affect their communicative strategies?

In the context of Malaysia, the students in the tertiary education institutes are mostly ESL/EFL speakers due to the national policy of English as the medium of instruction. Academic activities are often conducted in the English language, and this includes the classroom activities and other academic tasks. Non-native speakers will have restrictions in their ability to use the target language compared to native speakers, and this requires the ESL/EFL speakers to rely on specific strategies, including communicative ones, to finish any tasks which require cooperation. Considering the nature of student-centredness of tertiary education where it also encourages student's participation in knowledge building, the challenge becomes additive where not only the students need to complete the tasks collaboratively, they also need to complete them in their second/foreign language. Hence, the chapter intends to observe and explore how the ESL/EFL speakers, and their learning styles can influence their communicative strategies inside the tertiary education collaborative classroom through observation and dissection of their conversations via discourse analysis.

## 2. CONCEPTUAL FRAMEWORK



**Table 1:** Conceptual Framework

Referring to the above conceptual framework, a learner's learning style preference mediates the optimal input of the lesson inside the classroom, and this also includes the way learners process information gained from the instructors or their peers vis-à-vis the collaborative classroom environment. The very communicative nature of the collaborative classroom environment warrants the production of language during the classroom session. Therefore, the interaction between the input (learning styles) and the output (communication during collaborative classroom among learners) might be interesting to focalize in the study. This can be dissected with precision using the discourse analysis method.

### 3. LEARNING STYLES

Several definitions of learning styles have been suggested by various researchers. Jaya (2019) refers learning styles as the strategies that learners use constantly to process information while learning. Dunn and Dunn (1979) define "learning styles to the characteristics of different ways of learning that biologically depend on individuals, to which they have their own preferences." (cited in Chavosh & Davoudi, 2016). Learning style is the preferred ways of learning of individuals and it depends on every individual's personal preference. Hence, scholars agree that learning styles is one of the significant factors that can affect learners' performance in learning.

There are also various models of learning styles proposed by scholars. James and Gardner (1995) classify learning styles into three areas: perceptual, affective, and cognitive. Keefe (1979) also explains that learning styles is the perception, interaction, and response of an individual towards the learning that is based on his/her affective, cognitive, and physiological elements. From another point of view from several scholars, learning styles are also studied according to the environmental factors that are sociological and physical. For example, studying in a group, pair or individually are the variables for sociological dimension while sound, food, temperature, classroom management and time are the variables of physical learning style that could increase learners' motivation in learning (Razawi et al., 2011). Thus, these variables would affect their learning performance.

Meanwhile, from a psycholinguistic perspective, learning styles are categorised according to the dominance of the brain hemisphere. The right hemisphere of the brain processes visual information while the left hemisphere is generally for analytical functions (Belecina & Jose, 2019). As a result, learners would be dominant in the activities that are controlled by the dominant part of the brain. Therefore, the brain has a major influence on learners' learning style that can affect their learning process from psycholinguistic perspective (Atmowardoyo & Salija, 2019).

The diversity of every learner may also affect his/her learning styles differently due to their social background, sex, psychology and age (Payaprom & Payaprom, 2020). Deporter and Henarcki (1999) claim that every learner prefers different styles of learning and the styles are unique (cited in Atmowardoyo & Salija, 2019). A learner could have one type of learning styles as the most preferred style for them to learn best, but he could still learn with other types of learning styles (Chavosh & Davoudi, 2016). In other words, an individual would absorb new information better with their dominant learning style. For example, an individual who prefers to learn visually the most would show better performance rather than with his/her minor learning styles like auditory or group. Hence, a learner could have one or more dominant or minor learning styles at the same time based on their personal preferences.

#### **Reid's Learning Styles**

Reid (1995) mentions that learning styles is the learners' inner feature and it is unconsciously utilized in the process of learning. Reid's (1995) definition of learning styles has been recognized by most current scholars (Peacock, 2001). It consists of six types of learning styles that are visual, tactile, kinesthetic, auditory, group and individual. Reid's (1987) perceptual learning style evolved from Dunn and Dunn's learning style model where she added individual and group learning styles (Moo & Eamoraphan, 2018). By analyzing preferences of learners' learning styles, material development, teacher training and designation of the curriculum could be improved (Reid, 1987). Reid was one of the prominent researchers investigating perceptual learning style preferences among ESL learners. In 1987, she carried out a study and discovered that ESL learners preferred kinesthetic and tactile learning styles the most. However, they favoured the group learning style the least. She also noticed that more male ESL learners favoured tactile and visual

learning styles compared to female ESL learners. Her research became a significant reference by researchers until today due to the contributions to the ESL area.

A lot of scholars have been investigating Reid's (1987) perceptual learning styles in the area of English language learning. Chen (2009) discovered that there is a significant correlation between English learners' grade level and their learning style preference, specifically the kinesthetic, individual and tactile learning styles. Her study also revealed that there is a significant relationship between English learners' visual learning style and the use of memory, affective, cognitive, metacognitive and social language learning strategies. In Moo and Eamoraphan's (2018) research, they identified that the kinesthetic learning style is preferred the most by EFL learners. Besides, the findings also showed that there is no correlation between EFL learners' learning styles and their learning performance.

Furthermore, Peacock (2001) applied Reid's (1987) PLSPQ in his research to determine the relationship between the English learners' learning style preferences and their grade level, proficiency and field of study. The participants favoured kinesthetic and auditory learning styles and disfavoured to study collaboratively as well as individually. The result also showed that low performance learners preferred group learning style. Besides, the research also revealed that kinesthetic learning style is less preferred by first-year students compared to second-year students. Moreover, she explored that learners from the humanities field of study favoured individual and auditory learning styles better. Therefore, this chapter tried to observe the effects of ESL/EFL learners' learning styles on their communicative strategies in the classroom by employing Reid's learning style model.

### **Kolb's Learning Styles**

Another well-known learning styles model was developed by D. A. Kolb in 1984. According to Kolb (1984), learning styles refer to the preferences of learners in receiving and processing the new knowledge that they learn (cited in Derakhshan & Shakki, 2018). Derakhshan and Shakki (2018) claim that Kolb's (1984) learning style model is frequently applied in the educational psychology area. He also developed the Learning Style Inventory (LSI), a simple questionnaire with 12 items to assess how people comprehend and deal with new knowledge, which shows their learning styles (Sunggingwati & Havaluddin, 2019).

There are four classifications of Kolb's (1984) learning styles that are diverger, assimilator, converger and accommodator. The first one is diverger which consists of concrete experience and reflective observation. In other words, individuals who are divergers would prefer to learn by feeling and watching, such as analyzing from different perspectives, suggesting specific ideas and having an open mind by listening to others (Kuo, Chu & Huang, 2015).

The second type of Kolb's (1984) learning styles is assimilator. Assimilator refers to a person who has abstract conceptualization and reflective observation. Individuals who have the assimilator learning style would learn the best by thinking and watching. For instance, assimilators would demand straightforward and rational thinking and need direct and understandable clarification on new knowledge.

Next, the other learning style suggested by Kolb (1984) is converger. It is a combination of abstract conceptualization and active experimentation that require individuals to do and think during the learning process. Convergents would be able to complete technical works. However, they prefer to work individually and avoid discussions with other people (Kuo, Chu & Huang, 2015).

Lastly, Kolb (1984) also suggested accommodator as another type of learning styles. It combines concrete experience and active experimentation. In other words, accommodators would prefer to perform a task with actions and prefer working in a group. They also dislike tasks that require logical thinking.

### **Dunn and Dunn's Learning Styles**

Dunn and Dunn (1992) define learning styles as a set of individual features that are developed biologically in selecting the most appropriate styles for some learners and inappropriate for other learners. A learning successfully happens when the learners start to pay attention and grasp new and difficult knowledge (Dunn & Dunn, 1992). Therefore, it is significant to identify learners' learning styles before assigning approaches and materials to make sure they could learn in their best state.

In Dunn and Dunn's (1992) learning style model, there are 5 stimuli and 21 attributes that could impact learners' learning process. One of the stimuli is the learners' environment. This includes light, sound, temperature and seating design. For example, a learner might learn better when he seats in a cold room with soft background music while another learner might prefer to study in a silent and warmer room (Derakhshan & Shakki, 2018).

The second classification of Dunn and Dunn's (1992) learning style model is the emotions of the learners. Motivation, responsibility and task persistence are among the elements of this feature. For instance, a learner with positive emotion and attitude toward learning would show better performance compared to those with a negative emotion and attitude.

Next, there are learners who prefer to learn either alone, in pairs, in a group of peers, as a part of a team, or with an adult and other variations. This type of learner shows strong responses to sociological stimuli that could positively or negatively affect their learning. Learners differ in their learning preference. When young learners learn in a teacher-centred classroom, they tend to feel pressured and cannot pay attention well (Dunn & Burke, 2006).

Besides, some learners prefer physiological stimuli while learning, such as perceptual preferences, the time for learning, food intake and mobility (Dunn & Burke, 2006). For instance, a morning individual would prefer to study and do their work early in the morning. Meanwhile, for someone who always stays up late at night to study might encounter difficulties to learn in the early morning as it is not the best time for them to study.

The last stimuli of Dunn and Dunn's (1992) learning style model is cognitive or psychological processing inclinations. In this type of stimuli, it explores the analytical/global and reflective/impulsive ways of thinking (Dunn et al., 2009). Dunn et al. (2009) also assert that learners are either global or analytical individuals and there are also integrated learners who prefer both of them.

### **Fleming's Learning Styles**

Neil Fleming (2006) introduces a self-explanatory model known as the Visual, Aural, Read/Write, and Kinesthetic (VARK) Learning Style model (Othman & Amiruddin, 2010). It is actually a model that was modified from the Visual, Aural and Kinesthetic (VAK) model in the programming of the neuro-linguistics area (Yassin & Almasri, 2015). Fleming (2006) added R (Read/Write) as he posits that individuals can retrieve information better when they read letters compared to by just looking at images (Derakhshan & Shakki, 2018). The model suggests that it is significant to categorize learners according to their modes of learning.

The learning style model proposed by Fleming (2006) is quite similar to Reid's (1987) model. It also suggests that visual learners tend to gain knowledge by looking at graphs, charts, symbolic arrows and circles. However, the visual learning style suggested by Fleming (2006) excludes images, videos and animations as they are multimodal materials that combine the use of more than one mode (Yassin & Almasri, 2015).

The second classification is aural. Aural learners are more interested in learning by using their speech and hearing. For instance, learners who are dominant in the aural learning style tend to absorb new information better by learning from group discussions and listening to lectures given by their teachers. By interacting and listening to other people, it enhances their learning process.

The additional style that Fleming included in the model is R that stands for read/write. The read/write learning style refers to the preference to learn by looking at texts and printed words displayed by a teacher on a whiteboard or from a book. Yassin and Almasri (2015) mention that aural learners learn best by comprehending information that is portrayed visually for them.

Lastly, the kinesthetic style suggests that learners also have the ability to process information better when they depend on their behaviour like feeling, seeing, moving, touching and listening (Othman & Amiruddin, 2010).

Among all the different learning styles from several scholars, this present study applied Reid's (1987) Perceptual Learning Styles as the model to study the learners' learning style preferences. It was the most suitable and reliable learning style model that suited the sample and the objectives of this present study. PLSPQ developed by Reid (1987) is very reliable to assess ESL learners (Peacock, 2001; Wintergersta et al., 2001; Baghban & Zohoorian, 2012). Aside from that, Reid (1987) also claimed that experts from the United States and non-native scholars in the linguistic, educational and cross-cultural studies fields have checked and reviewed his PLSPQ's validity.

#### **4. DISCOURSE**

Discourse is connected to the use of language when human making meaning to it. According to Brown & Yule (1983), discourse analysis discovers the relationship between discourse and reality and understands hidden meaning. In other words, discourse is to be understood in the context in which it arises. Wetherell, Taylor and Ashley (2018) said that discourse also is associated with the language pattern. Besides that, in referring to Barbara (2018), discourse happens when the generalisation about language is made based on the discourse that they take part in and the outcome of it. In other words it is the knowledge and result of it. He added that "Conventional ways of talking that both create and are created by conventional ways of thinking". Normaliza Abd Rahim (2018) continues to say that discourse covers analysed utterances, interaction, writing and text for its meaning and it also covers symbols in language, signals and whatever that gives meaning to all that are involved in the situation. All in all, discourse is a diverse representation of social life which means that different social practices can be represented through different discourses. Like in the current study on the phenomenon of autism and other disability children is one example of a social practice that might have interesting discourse to be studied.

Furthermore, discourse analysis has been in the field with different disciplines since the 1960s and early 1970s and it includes linguistics, semiotics, psychology, anthropology and sociology. For this, McCarthy (1991) states that discourse is the study that displays the relationship between language and the contexts and how it is used. Nowadays, discourse analysis

has been used in answering many different kinds of questions and explaining about paragraph structure, texts and dialogues. Discourse analysis also has provided some lights on how interlocutors show their semantic intentions and interpret them and on their cognitive abilities to recognise each other's intention. Authors of "Introduction to Discourse Studies" book, Renkema & Schubert (2018) indicate that discourse analysis has helped society to understand the reasons of people telling stories, having discussion and to know how others acclimatise language to specialised situations especially in teaching. Until now discourse analysis is seen as relevant when it continues to be useful in providing answers to questions that came from all sorts of fields. Finally, Fairclough (2012) said that "Anyone who wants to understand human beings has to understand discourse so the potential uses of discourse analysis are almost innumerable".

### **Spoken Discourse**

Discourse can be divided into written discourse and spoken discourse. Spoken discourse always involves people doing something and these may involve multiple social practices. Rodney (2016) used to say studying spoken discourse involves reading between the lines as the transcription presented normally does not give the hearer/listener much information on 'how it was said.' Indeed to really understand any linguistic communication the hearer/listener needs to have the background or medium of what the interaction is based on. Bryant et al. (2016) continue by saying that spoken discourse can shift from a single word to multiword or even phrases. Additionally, spoken discourse can be examined in various layers as long as it embodies tools of communication.

Foucault (1971) argued that our practices of using language and creating regulating texts must end up in not just constraining the way we talk and write, but also the way we think, the kinds of identities we can have, and the kinds of relationships of power. Studying 'spoken discourse', therefore is about more than just studying language: conversation always involves an array of mediational means, both physical and semiotic. Nevertheless, in referring to Rodney (2016), spoken discourse involves interaction and context. According to him, actions within the contexts of social and cultural could be located when layers of spoken discourse are examined. He further investigated on how mediated discourse analysis could contribute to the construction and deconstruction of meaning. Through mediated interaction, people manage to do things cooperatively and spoken discourse is interactively understood.

### **Peer Collaborative Learning**

Peer collaborative learning as mentioned by Adene et al. (2021), is a learning approach that provides an environment for learners to have interactive social interactions with peers while absorbing new knowledge in the process of learning. Adene et al. (2021) also point out that peer collaborative learning usually happens in a classroom after learners are given explanations on the given tasks. Learners would need to sit together either in pairs or groups to grow their knowledge and skills together. In other words, peer collaborative learning allows them to learn from their peers' opinions and experiences. It is also the action of a group of people who put aside their individual goals to achieve their group goal. Hence, collaboration in learning with peers combines a multiple set of skills, knowledge bases, ideas and participation from peers to accomplish a specific goal.

Seabi, Cockcroft and Fridjhon (2009) compared the effectiveness of peer collaborative learning, tutor support and mediated learning on first-year engineering learners' intellectual and academic performance. The study used paired t-tests and Analysis of Covariances (ANCOVA) in analysing the data to compare the intellectual and academic scores of pre- and post-tests between the three groups of learners who received different approaches. The study revealed that mediated learning was the most effective approach that affected positively on both learners' intellectual

functioning and their academic performance. The study also showed negative findings on peer collaborative learning as the mean score of the learners in the peer collaborative group decreased significantly in the post-test. The result of this study supported the findings of Jung, Kudo and Choi's (2012) research on the factors of stress in peer collaborative learning. They concluded that self-efficacy, technology use, instructional design and collaborative process are the main factors that may lead to stress among English learners. Consequently, stress due to collaborative learning could affect learners' performance negatively.

Another experimental study on peer collaborative learning was conducted by Pattanpichet (2011) in examining the effects of peer collaborative learning on learners' English speaking performance. The findings of the study showed that speaking performance of the learners improved significantly with peer collaborative tasks. The learners were also interviewed and they gave positive feedback on collaborative learning. The results of this study were parallel to Chen's (2018) qualitative study. In the study, he evaluated the perceptions of EFL tertiary learners towards collaborative learning by collecting data through interviews. The learners realized that they could maximize their problem-solving skills when they worked in groups. Besides, peer coaching and review activities gave them satisfaction in learning collaboratively.

## **5. HISTORICAL BACKGROUND OF THE ENGLISH LANGUAGE IN MALAYSIA**

English in Malaysia existed mainly due to the colonization of the British. The British East India Company was the first colonial presence on the Malayan peninsula through trade of goods and raw materials (Stevenson, 1975; Wong & Thambyrajah, 1991; Ali, 2000). The British colonized South East Asia to secure trade and challenge the economic and political power of other European colonies. Originally a trade colony, British immigrants only stayed for the interest of their trade company and did not perceive themselves as settlers (Thirusanku & Yunus, 2012). The colonization of British since the 1800 till Malaysia's independence imprinted Malaysia with the English language, as it was used for functional purpose and also social purpose, and was also widely used in official affairs, and in administrative affairs (Subramaniam 2007; Ali, 2000) even though initially, the English language was the language for missionary works and education (Stevenson, 1975; Padian, 2008; Wong & Thambyrajah, 1991). Apart from establishing English-medium schools in the primary and secondary education, it also became the language used for business communication and transactional purposes including commerce and trade (Darmi & Albion, 2013; Ali, 2000; Ratnawati, 2004). English education became a privilege for to the indigenous population, epitomized by the establishment of the Malaysian College of Kuala Kangsar in 1920, which is a boarding school attended by the sons of Malay rulers and royal descendants (Stevenson, 1995; Wong & Thambyrajah, 1991, Darmi & Albion, 2013). These schools nurtured civil servants that allow for promotions and top positions in the British administrative government. The English education brought along incentives as it secured jobs, allows the further education of locals in the tertiary level and scholarships to complement the educational pursuit (Darmi & Albion 2013). Consequently, the English language becomes an important language in pre-independent Malaysia.

## **6. ENGLISH AS A SECOND LANGUAGE IN MALAYSIA**

The independence of Malaya in 1957 mobilized the need for a national language with the departure of the British. Bahasa Melayu was lifted as the official national language, as it is considered the language for national integration (Darmi & Albion, 2013, Padian, 2008, Ali, 2000). However, the English language was the co-official language alongside the Bahasa Melayu in government, administration, commerce and education (Subramaniam, 2007; Ali, 2000) before English was to be dissolved as an official language in formal and official purposes in a ten year period (Thirusanku & Yunus, 2012) and Bahasa Melayu was constitutionally inscribed as the official language in all official and formal affairs (Subramaniam, 2007). However, English in Malaysia held significant prominence even after the independence due to the widespread use of English among English educated locals and professionals (Ali 2000; Hashim, 2004), mostly occurring in urban environments where English is important for inter-ethnic communications (Thirusanku & Yunus, 2012, Wong & Thambyrajah, 1991). The existence of English language in the system allows for the balance between the national and international needs of Malaysia, as the language eases communication in many occasions, whether for trade and business, diplomatic relations, education and other communicative purposes (Subramaniam, 2007).

## **7. ENGLISH IN MALAYSIAN EDUCATIONAL SYSTEM**

English was considered as a second language after Malaysia achieved independence. In the year 1960, an educational reform was conducted with the purpose to review the previous reports which were used as the guideline for educational matters before independence. The review was overseen by Abdul Rahman Talib, in which the report was aptly named Rahman Talib Report, 1960. The notable recommendation influencing the position of English in Malaysia was to have a bilingual education system to unite the different races in Malaysia. (Darmi & Albion, 2012; Yew, 1992). This somehow cemented the position of English in the education system, as English was perceived as an interethnic communication tool (Subramaniam, 2007; Wong & Thambyrajah, 1991).

The following National Education Act 1961, implemented in 1970, affected English medium schools as it introduced the national-type schools, where the English-medium schools were gradually transformed into the new national type schools (Padian, 2008). The government phased out English as a medium of instruction in order to pave way for the national language and by 1980, all levels of education in Malaysia, including tertiary education, utilizes the Bahasa Melayu as the medium of instruction (Subramaniam, 2007, Hashim, 2004). However, the English language was still used in education, as it became a compulsory subject for formal education in the government schools (Darmi & Albion, 2013; Ali, 2000; Ratnawati, 2004) in both the primary and secondary schools. The period of English formal education experienced by every Malaysian attending national school is 11 years. However, recent decline in the English proficiency among Malaysians has become a concern for the society, especially among employers and parents.

Surplus to these 11 years of English education in the curriculum, most universities in Malaysia utilize English as the medium of instruction for classroom lessons. The syllabus in the universities often uses the English language as its medium of instruction due to the enrolment of students from different nationalities, as well as one of the means to improve English proficiency of the graduates after leaving the tertiary institute. As aforementioned, English proficiency affects the employability of the students after graduation. Therefore, universities included English as either a medium of instruction or as a subject to be taken by the students in order to fulfill the requirement of English proficiency and competency for their graduates. Often employed graduates become the benchmark of a university's program effectiveness. The

varsities' solution to the demand is to include English/make English as a language of instruction in order to immerse students with the language, as well as making the language to be essentially learned by every undergraduate student in order for them to complete their tertiary education.

## 8. CONCLUSION

As mentioned earlier, learning styles refer to a person's preferred way to take in, process, understand and remember information. Somehow, the learning styles could have the influence on the communicative strategies. Communicative strategies are indeed important in order to improve the overall productivity of students. Communicative strategies are being determined through the students' participation in the learning process. These are all collaborative in nature; they require cooperation between the members for completion.

This chapter proposes to employ Reid's learning style model and discourse analysis in observing and exploring the influence of ESL/EFL learning styles on their communicative strategies in collaborative classrooms in the tertiary education setting. Previous studies in the area of learning styles, discourse, peer collaborative learning and history of English Language in Malaysian education have been reviewed extensively. The existence of English language in the system allows for the balance between the national and international needs of Malaysia, as the language eases communication in many occasions. Thus, more studies need to be done to fill in the gaps and contribute to the body of knowledge in the areas of learning styles and communicative strategies among ESL/EFL learners in Malaysia.

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# A SCOPING REVIEW OF PEDAGOGICAL STRATEGIES FOR OVERCOMING THE MONTY HALL ANOMALY

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## 1. INTRODUCTION

The Monty Hall Anomaly (MHA) is also variously referred to as a Dilemma, Paradox, Problem, Game, or Experiment. It is based on a challenge from the game show “Let’s Make a Deal”. The host of the game show, Monty Hall, presents a contestant with three doors (let’s call them doors A, B, and C). Behind one of the doors is a grand prize (such as a new car). Behind the other two doors there is no prize (although in some versions there is a goat, which is considered a less desirable prize). The contestant is asked to choose a door (let’s say she chooses door A). The host then reveals that behind one of the other doors (let’s say door B), there is no prize. The contestant is given a choice: to stay with door A, or switch to the other unopened door (door C).

A mathematical calculation of conditional probabilities, using Bayesian inference, shows that a contestant who chooses to switch doors has a  $2/3$  chance of winning the big prize, whereas a contestant who chooses to stay with her initial choice has only a  $1/3$  chance of winning. Given Bayes Theorem:

$$P(H|D) = P(H) \times \frac{P(D|H)}{P(D)}, \text{ where H is a hypothesis and D is data.}$$

The posterior probability of winning by staying with door A is:

$$P(\text{A has prize} \mid \text{host opens B}) = 1/3 \times \frac{1/2}{1/2} = 1/3 = 33.3\%$$

But the posterior probability of winning by switching to door C is:

$$P(\text{C has prize} \mid \text{host opens B}) = 1/3 \times \frac{1}{1/2} = 2/3 = 66.7\%$$

The anomaly arises because, despite the clear advantage to switching doors, contestants consistently prefer to stay with their initial choice. In other words, people appear to be irrationally biased toward a suboptimal decision-making strategy. Even though people can learn to overcome this bias, they may still find it difficult to understand why their intuitive preference is suboptimal; and furthermore, they may persist in failing to make the rational choice (all or almost all the time) when playing the game through repeated rounds, or when playing alternative but structurally similar versions of the game.

The switching rate among subjects (before treatment or intervention) in previous studies of the MHA ranges seems to range from 10% to 22% (Morone, 2021). When Vos Savant wrote about the optimal solution in a magazine column, she was inundated with letters disagreeing with her; many of those letters came from university addresses (Vos Savant, 1990). And even Paul Erdős, the prolific 20<sup>th</sup> century mathematician, did not initially accept the explanation for why switching is the optimal strategy (Herbranson, 2010).

The MHA has been studied in a variety of fields over the years: in mathematics and statistics, game theory, quantum physics, economics, psychology, and so on. And it has a broad application beyond game shows and academic research. Fox et al. (2004) give an example of a MHA-type situation that would be common in the workplace: there are three equally qualified candidates for a job opening, but after interviewing two of them, it is decided that candidate A is stronger than B; so, without interviewing C, would it be reasonable to offer the job to A? (The optimal strategy, of course, would be to stay with candidate A.) Petrocelli (2013) discusses how doctors persist with suboptimal decision-making in both the MHA and the complex situations that arise in professional practice; unfortunately, medical training lacks adequate exposure to the statistical nature of judgment and decision making. Friedman (2010), in the context of financial engineering, finds that subjects who learn how to solve the MHA are able to value an asset close to its expected value (as based on actual probabilities). Bennett (2018) argues that the MHA can be a useful teaching tool in the classroom with wide-ranging applications in behavioral science and beyond.

As such, this chapter asks a pedagogical question. Based on experimental research, what are the various strategies for teaching (or otherwise inducing) others to overcome the Monty Hall Anomaly. There are two senses in which subjects can overcome the anomaly: first, they can learn how to make the optimal decision (specifically, that they should increase their switching rate); and second, they can learn why such a strategy is optimal. A third sense, not fully addressed in this chapter, is that subjects who learn how to optimally overcome the MHA are able to transfer their learning to analogous MHA-type problems and situations.

## **2. METHOD**

This scoping study uses the framework described by Arksey & O'Malley (2005), which consists of a five stage process: (1) identify the research question; (2) identify relevant studies; (3) analyze the selected studies; (4) tabulate the data; and (5) summarize and report the results.

The purpose of this study is to summarise research papers that have addressed the effect of pedagogical interventions (or treatments) on the ability of subjects to overcome the MHA, and make the optimal decision to switch.

Searches for research papers were conducted in three academic databases: EBSCOhost, Google Scholar, and Semantic Scholar. The search term was "monty hall", treated as an exact phrase in the title field (if available). Results were date limited to the period from 1975-01-01 to the 2022-11-01. EBSCOhost returned 411 results. Google Scholar returned 333 results. Semantic Scholar returned 724 results. Search results from the three databases were combined; and duplicates as well as irrelevant results were removed. Then the inclusion and exclusion criteria were applied to obtain relevant papers.

The inclusion criteria were:

- Experimental in its approach.
- Demonstrating any kind of strategy than could be learnt by subjects in order to improve their performance (decision making) and/or improve their understanding of the strategy.
- Obtainable within time and resource constraints.

The exclusion criteria were:

- Purely mathematical, philosophical, or theoretical in its approach.

- In a field unrelated to decision making.
- Opinion pieces, comments, reviews, conference posters, or similar.

The data extracted from the studies included:

- Authorship
- Date of publications
- Sample characteristics: sample size; description of subjects; and country of study
- Intervention or treatment studied
- Results of the intervention or treatment on performance (switching rate) and/or understanding of the strategy

### 3. RESULTS

Titles and abstracts were scanned for relevant papers. A total of 33 papers were identified. The full text of four papers were unavailable. After reading through the remaining papers, nine more were removed because they did not contain a clearly identifiable pedagogical strategy. Finally, 20 papers were selected for inclusion in this study. The characteristics of the selected papers are presented in Table 1.

**Table 1.** Characteristics of studies (N=20) examining strategies for overcoming the MHA.

No.	Author	Date	Sample	Intervention	Results
1	Gilovich, Medvec, and Chen	1995	N=120 (university students) (USA)	Dissonance reduction: the regret felt due to a negative outcome (losing) resulting from an action taken (switching) is reduced by giving a modest prize.	Switchers reduced dissonance more than stayers ( $p < 0.05$ ) and control group ( $p < 0.01$ ).
2	Friedman	1998	N=103 (university students) (USA)	Treatment 1 provided subjects with intense incentives of larger cash prizes for winning and cash penalties for losing. Treatment 2 required subjects to keep a track record of their results. Treatment 3 gave subjects written advice before playing on the merits of staying and switching. Treatment 4 showed later subjects (who had already finished six rounds) the results of the first 40 subjects.	For all treatments, switching rate rose from 39.8% (in earlier rounds 1–7) to 52.6% (in later rounds 8–15). Treatment 1 did not induce higher switching rate. Treatment 2 raised switching rate overall ( $p < 0.05$ ). Treatment 3 raised switching rate only in the later rounds ( $p < 0.1$ ). Treatment 4 raised switching rate in the later rounds to 59.4% vs 46.0% in the control ( $p < 0.001$ ).

No.	Author	Date	Sample	Intervention	Results
3	Franco-Franco-Watkins, Derks, and Dougherty	2003	Experiment 1: N=142 (university students) (USA) Experiment 2: N=259 (university students) (USA)	Learning transfer from playing similar 3-card and 10-card games. In experiment 1 the learning transfer was implicit; but in experiment 2, subjects were explicitly told they could use information they had learnt from the card game.	Most subjects did not improve their probability judgments of switching vs staying. Similarity between the card games and the MHA did not induce most participants to change their choice behaviour. The explicit hint did not change choice behaviours nor improve probability judgments.
4	Krauss & Wang	2003	Experiment 1: N=135 (university students) (Germany) Experiment 2: N=137 (university students) (USA)	Manipulation of cognitive aspects: natural frequencies, mental models, perspective change, and less-is-more effect.	Rate of switching and correct justification for switching were both significantly higher in the guided intuition treatment (in which all manipulations were combined).
5	Tubau & Alonso	2003	N=62 (university students) (Spain)	MHA was presented as a game between two adversaries (decision maker and informant) in order to make the underlying structure more explicit.	Adversary game presentation increased switching rate and facilitated correct reasoning.
6	Palacios-Huerta	2003	N=217 (university students) (USA)	Social interaction between stages 1 and 2, during which time participants can exchange information.	Switching rate increased 15.9% in stage 2. Subjects with higher ability increased the learning of those with lower ability.
7	Burns & Wieth	2004	4 experiments: #1 N=326; #2 N=379; #3 N=614; #4 N=280. All university students. (USA)	Using versions of the MHA that involve competition in order to emphasize causality.	Competition manipulation increased switching rate. Providing training on the collider principle also increased switching rate.

No.	Author	Date	Sample	Intervention	Results
8	Fox & Levav	2004	7 experiments : #1 A N=104 ; #1B N=126 ; #2A N=129 ; #2B N=122 ; #2C N=76; #3 N=68; #4 N=71. All #1 visitors to a university. All #2, 3, 4 university students. All USA.	Manipulation of the use of a partition– edit– count strategy by subjects in conditional probability assessment.	Tendency to engage in subjective partition editing increases when information is communicated visually rather than verbally. Rewording the problem induces more refined partitioning which increases switching behaviour. Partitions can be constructed from an ad hoc grouping of items.
9	Stibel, Dror, and Ben-Zeev	2009	4 experiments : #1 N=32; #2 N=152; #4 N=61. All university students (USA)	Manipulation of memory load to force adoption of a short-cut strategy.	Exceeding working memory limits increased switching rate. This strategy is situation- specific.
10	Petrocelli & Harris	2011	Experiment 1: N=57 (university students) Experiment 2: N=65 (university students) (USA)	Manipulation of counterfactual salience.	Subjects counterfactualised switch losses more than stay losses. Strategy reversals made it harder to discover the association between decisions and outcomes. Learning was less likely when counterfactual salience was high.

No.	Author	Date	Sample	Intervention	Results
11	Mazur & Kahlbaugh	2012	Experiment 1: N=12 (pigeons) Experiment 2: N=36 (university students) (USA)	Discerning reinforcement probabilities. This study is a comparison of pigeon and human performance.	When the reinforcement percentage increased (from a 67% condition to a 90% condition), switching rate also increased. But there was wide individual variation in both people and pigeons.
12	Petrocelli	2013	N=10 (practicing physicians) (USA)	Using functional reference points.	Professional experience is unlikely to improve medical decision making.
13	Kaivanto, Kroll, and Zabinski	2014	N=71 (university students enrolled in a program requiring quantitative skills, and having completed at least one course in mathematics or statistics) (Germany)	Task-form recognition and understanding among sophisticated subjects.	Task-form recognition is necessary but not sufficient for making the rational choice to switch. Task-form understanding is both necessary and sufficient to overcome the biases against switching.
14	Efendic & Drace	2015	N=36 (university students) (Bosnia and Herzegovina)	Awareness of affective reactions (paying attention to subject's own feelings).	Reliance on feelings when making a decision induced more staying behaviour, and so was less successful than the control group ( $p=0.01$ )
15	Saenen, Van Dooren, and Onghena	2015	N=77 (university students) (Belgium)	Cumulative feedback that is constantly available.	Feedback given in the form of frequencies (rather than percentages or probabilities) on the number of wins and losses for staying and switching (as opposed to just the number of wins and losses) induced significantly more switching behaviour.

No.	Author	Date	Sample	Intervention	Results
16	Saenen, Heyvaert, Van Dooren, and Onghena	2015	N=385 (students from primary, secondary, and tertiary levels) (Belgium)	Higher number of alternatives (more doors).	Switching rate increase as the number of alternatives increased: 89.8% switched with 50 alternatives; 66.7% switched with 10 alternatives; and 40.3% with 3 alternatives.
17	James, Friedman, Louie, and O'Meara	2018	N=77	Merging probabilities: The host can tell the player, if she chooses to switch, that she will win the prize if it is behind either of the two doors not initially chosen.	Switching rises 44% ( $p < 0.01$ ). Since erroneous probability updating accounts for most observed irrationality, merging probabilities enables subjects to immediately understand the advantage of switching.
18	Hirao, Murphy, and Masaki	2017	N=12 (university students) (Japan)	Repeated trials with positive feedback (in the form of the current amount of gains and losses after each round).	Rate of switching increased from 53.9% in the first half of the experiment to 66.7% in the second half. Learning is manifest in a higher affective-motivational state in anticipation of feedback.
19	Chen & Wang	2020	N=40 (university students) (Taiwan)	Treatment group played a 100-door version 15 times (stage 1) and then played the 3-door version 15 times (stage 2). A small cash prize was given for winning, and feedback was given at the end of each round.	Switching rate of 86% in the treatment group vs 77% in the control group in stage 2. The effect was significantly positive ( $p < 0.001$ ).
20	Morone, Caferra, Casamassima, Cascavilla, and Tiranzoni	2021	N=681 (mall-goers) (Italy)	Removal of biases: illusion of control/ gambler's fallacy and bayesian updating bias.	Removal of bayesian updating bias raised switching rate 17.78% ( $p = 0.034$ ). Removal of illusion of control raised switching rate 25.23% ( $p = 0.001$ ). Removal of both bayesian updating bias and illusion of control was not cumulative and raised switching rate 25.44% ( $p = 0.0001$ ).

## 4. CONCLUSION

A wide range of strategies have been studied by researchers in their attempts to understand the irrational and suboptimal behaviour that characterises the Monty Hall Anomaly. We can extract those strategies and analyse them individually and in combination for their pedagogical effectiveness.

There is unlikely to be one strategy that outshines all others. Santos & Domingos (2015) analysed the learning outcomes of students in a pre-service teacher education class in statistics. The students attempted to find and share solutions to the MHA. One student initially used a decision tree but found it was too confusing; she then decided to work out the calculations in Bayes theorem. Another student chose to simulate the solution using a spreadsheet. Each student found a solution that agreed with her own particular background and interests.

On the other hand, researchers do agree that learning from experience through repeated plays of the 3-door game, without any other kind of feedback or intervention, results in only modest improvements in performance. Better, more effective strategies are needed.

On the surface, the Monty Hall game seems to be a simple matter of probability. But a deeper look reveals a curious anomaly in which a majority of players consistently and persistently make an irrational decision to play a suboptimal strategy. It is even more curious how difficult it is for players to learn to do otherwise.

Future versions of this scoping study will include a wider range of papers. It will also go into more detail on research papers that contain multiple experiments. For example, Fox and Levav (2004) contains seven separate experiments, each of which can (and should) be considered separately. Findings will be compared and discussed more thoroughly.

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# **EMBRACING EFFECTIVE TECHNOLOGY IN HE ENHANCES THE QUALITY OF TEACHING AND LEARNING**

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*It's not faith in technology. It's faith in people.*

Steve Jobs, Co-founder of Apple.

## **1. INTRODUCTION**

Malaysia is an education hub in the region and international students from various countries around the world. The Malaysian political stability now is an encouraging situation to support this national ambition. As a measure to maintain quality education, internationalization and digitalization are efforts that are promoted across the board at all levels of education. In higher education (HE), various government agencies are involved to maintain the quality of the teaching and learning process i.e. Ministry of Higher Education (MOHE) and Malaysian Qualification Agency (MQA).

The Malaysian Blue Print 2013-2025 (MOE, 2013) states ‘education is a major contributor to the development of our social and economic capital. It inspires creativity and fosters innovation; provides our youth with the necessary skills to be able to compete in the modern labour market; and is a key driver of growth in the economy. And as this Government puts in place measures under the New Economic Model, Economic Transformation Plan and Government Transformation Plan to place Malaysia firmly on the path to development, we must ensure that our education system continues to progress in tandem’.

Hence, the quality of teaching and learning is crucial to sustaining Malaysia’s drive to be an educational hub in the region. The trend is a slippery slope as there are a number of definitions in academia. United nation coined the term ‘quality education’ for the first time on 2012 with reference to attaining their Sustainable Development Goals (SDGs). Aagaard and Lund (2019) claim that changes in students are not evident and suggest that a major shift must occur in access to education and assessment. They also call for transformation of education at tertiary level (Aagaard & Lund, 2019).

Moving towards quality in Malaysian HE, the need to integrate technology and tools to engage students in the learning process is critical. Technology should be seen as a teaching assistant that is ‘helpful to relax and happy learning of students and stimulate their desire to learn’ (Yang, 2021).

This paper explores embracing effective technology in HE to enhance the quality of teaching and learning in Malaysia and to keep pace with the digital transformation that is currently trending globally in all aspects of our lives and our students’ lives.

## **2. PROBLEM STATEMENT**

The use of technology in education has always been a challenging issue for a myriad reasons. According to Carstens et al. (2021), further research need to be carried out as the use of technology is ‘a management concern’. They also highlight that although technology enhances students’ learning experiences, it can affect students active involvement in the learning process, and there is a need for more training for teachers and students.

The above perspective is not a new concern in education. Kulesza et al. (2011) claimed that there has been no conclusive research on the effectiveness of technologies used in the classroom. Carstens et al. (2021) further claim that ‘there are some negative outcomes of using technology including too much information that is incorrect or not appropriate and this makes it difficult to monitor’. They also highlight that connectivity and time management are a major issues in the digital transformation in education.

## **3. DIGITAL LITERACY**

There is serious concern that as the nation is moving towards digital transformation, the divide between rural-urban and haves-have-nots is ever widening. Khan et al. (2018) claim that some groups are falling behind and some into crevices in the race to achieve digitalization due to lack of access to new technology. They further emphasise that to be able to achieve digital transformation successfully one must have access to the technology tools and skills.

Research as shown that unlike popular assumptions, digital natives are not digitally literate although they are tech savvy (Khna et al., 2018). They proposed that digital literacy be implemented in Malaysian HE to ‘identify set of digital skills and styles that young adults should have in order be digitally literate so as to enhance in academic performance and employment opportunities.’ Policy and practices should be pushed forward at the same pace to achieve commendable success. The use of technology in education has improved in recent years, especially with the Covid-19 pandemic affecting education at all levels globally. The need for students to be trained to use technology effectively and the benefits of digital technology is also asserted by Vassallo and Warren (2018). Khan et al. (2018) also contributed to policy and practices by providing a digital literacy framework that can be implemented in the higher education sector in Malaysia.

With the aim to improve the quality of education, Wang (2021) propose the use of mixed media to impact performance strategies. He asserted that the use of interactive media can be used to cultivate extensive knowledge in various areas.

## **4. E-LEARNING AND TECHNOLOGY**

In recent years, colleges and universities have paid more and more attention to the utilisation of information technology to manage multimedia teaching resources, which aims at making better use of the Internet technology, improving the level of information management, and emphasising on solving the problems and difficulties caused by the diversity of ethnic minority students and the diversity of their learning levels (Yang, 2021). It is important to note that it may be not how often but how effectively ICT is used to support teaching goals that makes its use successful (Kervin et al.,2013).

In the area of e-learning, there are new challenges to be overcome. One of them is to allow students to self-regulate their learning. Within this self-regulation process, students and teachers use technological tools to carry out their tasks but generally, these tools do not consider pedagogical aspects. Emerging approaches propose the use of electronic portfolios and semantic technologies to provide pedagogical characteristics that make tools more user-friendly for both teachers and students. This paper presents a conceptual model of an intelligent system to support self-regulated learning. This model is based on semantic technologies and uses the concepts of learning paths and student e-portfolios. For learning path generation, the system considers the different learning levels that a student should achieve and metrics that measure student progress. In this way, it proposes a learning path with the intention that the student achieves as highest a learning level as possible (Romero et al. 2019).

Abdulrahaman et al. (2020) pointed out that, for the application of multimedia in teaching, in addition to text and image, the existing tools also include multimedia components, such as audio, video, and animation. It is a time of remarkable transformation for education. Everyone recognizes the need to improve teacher effectiveness, improve student engagement, and create a twenty-first-century education system that maximises the potential of every student (Vinay et al. 2013). Educators have long known that the most effective teaching method is one-on-one tutoring. Ever since Benjamin Bloom's famous study (Bloom, 1984), education researchers have aspired to mimic the holy grail of one-on-one tutoring — to achieve a two-sigma improvement in students (Chaudhri et al., 2013).

Hu et al. (2022) found that performance expectancy is the top critical dimension, and the top five critical criteria pertain to enhancing learning performance, increasing learning participation, altering learning habits, ensuring access at all times, and enabling prompt use of learning resources.

The universal expansion of digital technologies had an impact on the educational system, too. Schools and higher education institutions have a vital need to reorganise themselves and apply new technologies efficiently. At the same time, this process entails a number of challenges. This paper is devoted to studying the influence of digital technologies on the educational process. It dwells on two main issues: 1) what the features of educational process changes under the influence of technologies and the main stages of its evolution; 2) what opportunities and problems are generated by active implementation of digital technologies in education. The methodology foundation of the research consists of a series of methods (analysis, synthesis and more) and approaches (systemic, conceptual and discursive). Three periods of technological integration are identified: 1) pre-digital, 2) implementation of personal computers, 3) Internet era; their specific features are analysed. It is established that inflated social expectations were not always met with the implementation of each new technology. Actual use of devices was low, while teachers did not fully master the new tools. It is established that despite a number of opportunities provided by digital technologies in education (flexibility, inclusion, and personalization), a series of problems emerge (inequality, confidentiality, safety), as well as some technical and socio-psychological challenges. In conclusion, teacher's figure cannot yet become a thing of the past and digital technologies are best used as a supplement to regular learning, not its replacement (Kovba, 2019).

Zhang et al. (2021) believed that if the multimedia teaching management system is successfully developed, it can break through the limitations of students in the classroom, and learning of students will not be affected by time and space. Regarding the teaching mode and teaching design, Huang (2021) emphasized that the overall improvement of teaching and learning experience of teachers and students urges teachers and students to break away from traditional teaching concepts and modes and achieve two times the result with half the effort.

Han and Yin (2021) started with the development of the multimedia teaching platform, analyzed performance of students before and after using the system, investigated satisfaction of students with the system, and obtained the impact of the system on English learning motivation of students. It can also provide a set of effective teaching management tools for teachers. Ding et al. (2020) proposed that teachers can choose teaching methods, including synchronous teaching and asynchronous teaching. When students and teachers are online simultaneously, they can carry out synchronous teaching. When only a student or a teacher is online, asynchronous teaching can be chosen.

## **5. PORTFOLIO AS A DIGITAL ASSESSMENT TOOL**

Assessment in education is a core components to assess learning to support decisions related to pedagogy, curriculum, teaching and learning (Daniels, 2019). He asserts that well-designed assessments support effective teaching and learning to engage students in the classroom in a meaningful and relevant manner.

The portfolio has been considered an effective and empowering tool in education to be used at all levels. Portfolios are used extensively in various areas of studies including the medical field (David et al., 2001). It supports individual as well as group group with extensive collaborative tasks. Numerous researches have highlighted the advantages on the use of portfolio for writing and reading tasks. Based on multiple portfolio tasks, the practical implications and a load of information for HE in using portfolio was confirmed (van Wyk, 2017). Portfolio are used extensively in HE as evidence of the students' learning experience (Clarke and Boud, 2018; David et al., 2001).

However, a few research has focused on the challenges of assessing portfolio, although the use of portfolio in education and for professional development is evident (Daugherty & Cumberland, 2018). In summary they confirmed the following as things to consider when implementing portfolio: how it will be used, who will review it, and what resources will be needed to sustain the project. However, they concluded that more research needs to be conducted to establish the effective use of portfolio in education. The merging of technology and portfolio is feasible in the virtual as well as face-to-face classrooms. Clarke and Boud (2018) assert that the use of portfolios is diverse and can be used for both formative and summative assessments, however, they are concerned with the effectiveness of portfolios as assessment tools. They urge educators can use digital portfolios in a more comprehensive manner to embrace both formative and summative assessments, with the use of feedback as an effective component of portfolio practice. Clarke and Boud, 2018) also proposed the implementation of a planning framework of programme-wide portfolios.

Digital portfolios or eportfolios are promoted as assessment tools to enhance the quality of the learning process sin HE as they tap into the self-monitoring, self-evaluation, sharing of learning aspects of eportfolios (Yang et al., 2017). They too highlight the challenges faced by lecturers when using portfolios in HE. David et al. (2001) highlights in their case study the use of portfolio for a range of assessments, contents, and outlines the advantages of portfolio assessment and psychometric issues. They also provide a practical guide to design and implement portfolio assessment in HE with five steps to effective portfolio assessment process: documentation, reflection, evaluation, defence and decision. It is concluded that portfolio assessment is an important addition to the assessor's toolkit, inclusion the assessment of professionalism which is a challenge to assess (David et al., 2001; Carsten et al., 2021).

According to Carsten et al. (2021) There were areas that teachers felt like they could use

more support, but that they felt that student motivation and engagement were higher with the use of technology in the classroom. Moving forward, teachers would benefit from more personal training on implementing the technology in the classroom so that they feel more comfortable with the inclusion of technology. Educators also felt that students need more training with the provided technology to help promote more independence. The researchers believe that there needs to be more research completed to determine the effects technology has in the classroom (Carsten et al., 2021).

## **6. PADLET AS AN EFFECTIVE ONLINE TOOL (IMPERIAL COLLEGE LONDON)**

Padlet is a free application that is used by many teachers in online classes. Padlet is an online post it wall. It allows individuals (and large/ small groups) to post their comments, questions, and resources in one place that is easily accessible to everyone.

The advantages of using Padlet include availability of free version, easy access for the students, ease of set up for the tutors, pedagogically varied as user can utilize it for different purposes, a lot of useful functions (including privacy settings, comments, reactions - likes, grading, stars), able to show real time updates, and user can easily change the web address. The advantages of using Padlet include easy access for the students, easy set up for the tutors, free version, pedagogically varied as you can use it for different purposes, a lot of useful functions (including privacy settings, comments, reactions – likes, grading, stars), shows real time updates as you can easily change the web address which makes it easy for your participants to type in the address if the link is not provided.

The disadvantages of Padlet are that under the free version, it has only three active walls per account at a time. Next, there is a 25MB limit on direct video uploads. The disadvantages of padlet is that although it is a free version it only has 3 walls per account, and you can delete and clear walls as you wish but you will only have three active walls at a time, but once posted and once you've left the wall you can only go back and edit if you have the account. Finally, there is a 25MB limit on direct video uploads.

Padlet can be a good way of gathering students' ideas during either a recorded lecture (when for example you ask them to pause and think about something) or during a synchronous session when one of the activities is asking students to post their answers/ opinions. If you have a small group, you can review responses as they are being posted and identify any that you might want to discuss. If you have a bigger group, you can identify couple to discuss during the session and afterwards go through the rest, identifying common trends and post a response in the form of an overall comment or video to the group.

Padlet can offer a quick anonymous way of collecting student feedback at crucial points in time. Mentimeter can allow you to do the same thing, however, in Padlet the comments option can be enabled and is a very useful addition that Mentimeter doesn't have. The comments option allows you to reply to certain comments and this reply will be visible to all users. This way you can immediately demonstrate how you act on feedback and encourage more of a dialogue with your students. There are a couple of ways in which you can track students' progress and check their understanding in an online setting. You can formatively assess with a short online quiz (either on Mentimeter or Blackboard), you can embed short quizzes into your Panopto recordings or you can ask your students what the muddiest point of the session was, i.e., what is the aspect of the material that they still don't fully understand or they struggle with. In this instance, Padlet could be a good way of gathering student feedback as: - it can be anonymous (usually only students who have Padlet accounts can be recognisable, but you can turn on the option that will allow everyone

to be anonymous). Anonymity will encourage more students to come forward with what they still do not understand - the comments sections allow students to help each other by posting their own explanations – this removes the responsibility for you to provide all the answers and encourages students to form more of a learning community where they can share knowledge and resources (anonymously) - the like buttons can allow students to vote on what the most common issues are. You can use this either to provide supplementary resources, or you can ask students to vote what they would want further explanation on that can be a starting point of the next session or the topic of a short video recording.

You can use Padlet as a platform for showcasing group work. For example, if students' task is to research a topic, Padlet can be a good outlet for showcasing the main results of their research. It has the potential to gather all of the relevant resources in one place that can be shared with the whole class. A Padlet resource is also one that can be expanded upon by others and developed further. Reflection can be a difficult thing for students to understand. Reflection is often assessed through reflective writing which can be even more difficult. Allowing students to create reflective Padlet walls where a lot of sources can be incorporated – audio, video, image – has the potential to help them be more reflective through other means than reflective writing.

In recent years Padlet introduced a free version and a paid version. The free version has restrictions on the number of walls you can create. If you mostly want to use the wall for whole class, use to gather students' ideas and responses (i.e., the first three uses above) then the free version will suffice. If you need more than three walls running at the same time you will need the paid version that will allow you to create and store multiple walls.

Padlet has a range of privacy settings: 1. Private – Padlet is hidden from public. Even if someone manages to get it, they should not be able to access it. This is a secure setting that will only allow the owner to have access to the wall. You can show it to others but only through displaying it through the account the wall was created in. 2. Password – the Padlet is hidden from the public. It can be shared but only people who have the password will be able to access the content. 3. Secret – the wall is hidden from the public but can be accessed by others by sharing the link. 4. Public – the wall can be accessed by everybody even without the link (it can be searched via the Padlet site and Google). It is important to consider the nature of the assignment (how personal it is), the audience it is aimed at (is it a resource that will be open to everybody, is it in the students' interest to reach a wide audience outside of their tutors/ cohort – for example is it a resource for outreach?) and quality assurance (will the assessors and external examiner be able to see the work) in relation to these privacy settings.

Reactions buttons – these can be a good way of engaging the audience. You have an option of the following: none, like, vote, star and grade. Like and vote options work very well and they carry no judgment as can be mostly used for indicating which questions should be answered or where further support is needed. Comments – you can decide whether you want to enable or disable this option. Having comments can be a good tool for encouraging communication, collaboration and sharing of ideas between your students. Attribution – you can decide whether students with Padlet accounts will be associated with the posts they are making. If you turn this option on, their username will appear. For all the others the comments will appear as coming from 'anonymous. It is important/good?' to consider how important recognition of individual contribution is. If it's a muddiest point/ feedback type of activity then this option is best turned off to encourage students to be honest and speak freely. If you are using Padlet for group work and want some way of tracking contributions, then that option can be useful. If you still want to acknowledge individual contributions but don't want your students to get an account, ask them to indicate in each post they make who the author is. This needs to be explained early on to make

sure everybody understands and will follow the guidelines. Filter profanity – as the name explains any inappropriate language can be flagged up. If needed, you can always set the settings so that the posts need to be approved first.

There are several rights that your audience (Padlet wall users) can have: Can read – this means that your audience will only be able to view your posts. They can't post, modify or edit or approve others' posts, delete and modify walls, or invite collaborators. Can write – your users can view and add posts. They can't add and approve others' posts, can't delete or modify walls, or invite collaborators. Can edit – can view and add posts, edit and approve others' posts. They can't modify or delete walls, or invite collaborators. Can administer – can view and add posts, edit and approve others' posts, modify and delete walls, and invite collaborators. If you want to encourage collaboration, sharing and discussion the most appropriate setting is 'can edit'. If you assign individual walls to students or groups of students and want them to have greater control over what it looks like (e.g., the background that they use) then make them administrators.

If you have an account then you can edit a post anytime as long as you are logged on to your account. If you do not have an account, your editing rights will be limited. You will be able to edit your own posts as long as you have the wall open. If you want to go back to it later and edit a question, you will not be able to do that. That is something that applies to using Padlet with large groups when they post comments or questions. Blackboard can sometimes look like a repository for links and resources which might not look visually appealing. Padlet has an embed code which means you can embed your wall in the same way it appears in your browser. Any posts can be made from there and will be reflected live.

If you would like a copy of your wall stored somewhere locally (or you run out of your limit but want to keep a record on the questions that were asked) you can save your wall. You can save it as an image, pdf, csv or excel spreadsheet

Padlet can be used for both forms of assessment. The majority of purposes and examples above relate to formative assessment and facilitating further learning. However, reflection and groupwork could be gathered and assessed on Padlet. If you want to use Padlet as a platform for showcasing summative assessment there are two things to consider: - the criteria – they need to be well developed and communicated to the students and the tutors. As Padlet is a visual tool it is important to decide how/ if this is to be incorporated into the criteria. If this is not important then you need to design the criteria in such a way that students who take the less creative route are not disadvantaged. - Record for quality assurance – summative assessment needs to have a permanent record so these walls will need to be stored. This can be done through downloading a pdf version of the wall for records.

## **7. RESEARCH METHOD**

This study takes on an explorative paradigm using the qualitative approach and online interview design using padlet. The responses from the students were converted into pdf formats for close and in-depth analysis.

A total of 14 students from different programmes responded to 4 questions on the use of padlet as an online tool used regularly in class., and 1 lecturer were involved in this study. The undergraduate students were from language and business programmes, while the postgraduate students were from education, business, IT, and engineering programmes.

Of the 14 students, only the 4 undergraduate students had used padlet in the classroom

before. Padlet was a new experience for the 10 postgraduate students who were mostly from China. These students were interviewed at the end of the semester after using padlet for 14 weeks.

The data was collected over 2 different semesters from 1 lecturers' class. Padlet was used in a slightly differently manner by the 2 lecturers. The lecturer introduces padlet on the first day of class for the semester as the tool for the online class and provides a clear guideline for students to register for a free account. Students are reminded to use their own first name to register so that all consecutive responses in the class padlet notebook will carry their name and not the generic 'Anonymous'. Only upon registering, do students access the class notebook.

This lecturer uses padlet as a teacher created and managed class notebook, and also as a platform for the final class eportfolio project. As a class notebook, students respond to all task assigned in their respective shelves. Shelf is the design of the padlet selected by Lecturer A. Students take their shelf (column) in the order of their names in the Class Attendance list. This goodpractice highlights the absentees in the online class with much ease, especially when it is a big class of 30-35 students.

As the final assessment eportfolio, the padlet is individually created and managed by the students. Each week the complete the task assigned and write a reflection on their experience learning the topic for the week. Lecturer A also provides guidelines on writing good reflections. At the end of the semester, students convert the padlet eportfolio into the pdf format and submit for assessment.

Data is collected for this research from May-Dec 2022 over 2 semesters using the padlet as well.

The four research questions below were posted on a padlet and students were given about 2 weeks to respond:

1. What are the advantages of using the padlet in the classroom?
2. What are the disadvantages of using the padlet in the classroom?
3. State 3 ways how teachers/lecturers can use Padlet for teaching and learning.
4. What advice would you share with other teachers/lecturers on the use of the padlet in the classroom.

## 8. FINDINGS AND DISCUSSION

Responses from the students for the 4 research questions are tabulated (Appendix A).

### **RQ1: What are the advantages of using the padlet in the classroom?**

Based on the analysis of responses to the RQ1, the Figure 1 Word cloud was created. This word cloud highlights keywords that were teased out from the responses which include students, ideas, share, teachers, interactive, understand, feedback, etc. in the order of emphasis. Students' response using these words repeatedly confirms the order in size as shown in the Word cloud.

The most important criterion is that padlet is an effective student-centered digital technology in the classroom. **Students** are able to **share ideas** with their **teachers** in an **interactive** manner.



**Figure 2:** Responses highlighting the disadvantages of using padlet in the classroom

**RQ 3: State 3 ways how teachers/lecturers can use Padlet for teaching and learning.**

All the students were able to share some insightful ways for lecturers to use the padlet for effective teaching and learning. Below is a summary of all the respondents' responses verbatim:

- For icebreaking among participants, for some opening questions, interesting games like words solitaire
- For brainstorming sessions, Thinking Maps, Open discussion, Craft ideas
- A good platform for giving homework, especially writing tasks group writing in one notebook, one weblink as a storage of teaching and learning materials, creating a story, and asking students to help you decide where it should go next. Students can add their thoughts to the Padlet. Continue the story using student ideas
- To encourage students to read mates' ideas or opinions, and build up a good way to learn from each other
- For collecting students' feedback and suggestions, students can create their own individual Padlets to store research ideas, sources, and so on. They won't lose important documents this way, and everyone will have access even if someone is absent.
- Think - pair and share - Using a picture to get students engaged, Groupwork - using WALL option in, the padlet, and each group can work on a different task assigned.
- Data-based learning – Present a pie-chart/,graph, images, or stats to implement a student-centered classroom approach, and while listening to a presentation, students can collaborate to create a resource by adding notes to a Padlet.
- When the teacher gets to the key content and needs to check whether students have mastered it and when classroom response is not positive
- Reflection - when students need to give feedback on their personal situation. What did you discover today? What made no sense? What other questions do you have? Students can respond to those questions on a Padlet and reference it later. Ask students about what they remember from the previous day's lesson. The padlet should summarize what remains to be taught and serve as a good place for students to review material.
- Lecturers can conduct spontaneous Q&A, collect students' answers, share the pictures and some questions with students in class, open communication with students, Share the teaching materials, and emphasize important knowledge points.

It is good practice to engage with students to share ideas on how the teaching and learning process can be more effective. Taking on ideas from students to use in the classroom supports learner autonomy and gives students a sense of belonging in classroom activities.

Responds have shared ideas for lecturers to use technology in the classroom. Thus, lecturers must be trained and willing to upgrade their own knowledge and skills to use technology in the classroom. These findings concur with other research such as improving teachers' expertise and confidence in integrating technology into their everyday teaching and providing them with the resources and support to do so may have benefits for students (Vassallo & Warren, 2017).

**RQ4. What advice would you share with other teachers/lecturers on the use of the padlet in the classroom?**

Based on their experience of using the padlet in their class, students were asked to advise lecturers on the use of padlets in the classroom. It is interesting to note that the students had a few perceptive and discerning advice.

Below are some of the advice students had for their lecturers (Summarised and shared here verbatim):

- allow more time for slower students, this will encourage their participation and give them more confidence to answer questions openly, give students more time to refine ideas, give more time when doing exercises on padlet since some students may spend more time in typing than others, give slow students more time to complete it.
- ask students to reload the web page regularly to update mates' information in time because each one's internet speed may be quite different (some may be so slow)
- let the students keep thinking, and then write their idea on the pallet.
- effective tool for group work. The students feel involved if you let them give peer feedback on padlet. It's very helpful in engaging all students at the same time and teachers can follow up with the slow learners.
- use to interact with students, but the frequency of padlet use can be controlled, as it is possible that for some students it may not be easy to log in. There are many software that is blocked to Chinese students, and Chinese students cannot register from his/her country, and often register from a foreign IP through a friend who is studying abroad. In addition, there are some software registrations that have a chain reaction, it requires registration of one software in order to register the current software.
- students can share content and knowledge in ways that are most comfortable for them thanks to the flexible interface.
- accessibility features are somewhat lacking, and while almost any media can be included, options for adding character to a Padlet's appearance are limited.
- it's incredibly simple to use, with an intuitive customizable interface and help at every turn.
- excellent tool for keeping track of class updates. By using it in the classroom, you can track current and upcoming class assignment topics and their due dates.
- when the lecturer submits a task it can be visible separately in student subject writing

The major concern for students seems to be time and thus the advice to lecturers to '*allow more time for slower students, this will encourage their participation and give them more confidence to answer questions openly, give students more time to refine ideas, give more time when doing exercises on padlet since some students may spend more time in typing than others, give slow students more time to complete it*'.

The above is a huge message to lecturers to always be mindful of students' need for time to respond to slow internet connection and time for students to get used to the technology that has been introduced in the classroom. It is good practice to go slow for the first few lessons giving time and space for students to engage with the technology introduced by the lecturer.

When introducing new technology, both lecturers and teachers need training, time, and space to explore the new application, software, or equipment.

The findings of this study concurs with other scholars who have made in-depth research on multimedia tools, teaching methods, and other aspects. Through multimedia teaching, the structure of a teaching classroom, the teaching effect, and the quality of teaching have been effectively improved (Abdulrahman et al., 2020).

## 9. CONCLUSION

The use of technology in the classroom to enhance the quality of teaching and learning in HE has to be strategically planned and managed such that the lecturers and students

are well-trained and prepared to use the selected technology effectively. The findings of this study confirm that the use of technology tools such as Padlet can be effective provided the lecturer concerned takes in consideration the needs of the students including infrastructure needs such as stable connectivity and equipment such as laptops and iPads.

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# **INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION: GUIDELINES FOR EDUCATORS FOR SMOOTH TEACHING AND LEARNING**

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## **1. INTRODUCTION**

Information and Communication Technologies (ICTs) can be positive forces in education sector especially in the Institute of Higher learning (IHLs). In the endless search for effective ICTs applications and tools for learning and teaching, pandemic Covid19 was the test of its usefulness when traditional classroom was impossible due to the infection, quarantine and government restrictions of movement. In this writings, we are going to report on the efforts done by IUKL management, ITLU and ICT academic support to ensure the delivery of classes successfully. Prior to pandemic, IUKL already have the Learning Management System in place originally as Interaction in LMS then progress to Infraplus. The unit head and teams served as catalyst to ensure ICTs implementation to assist teaching and learning by providing various trainings to the educators in using the ICTs facilities.

## **2. ICTS IMPLEMENTATION**

### **Efforts and Initiatives**

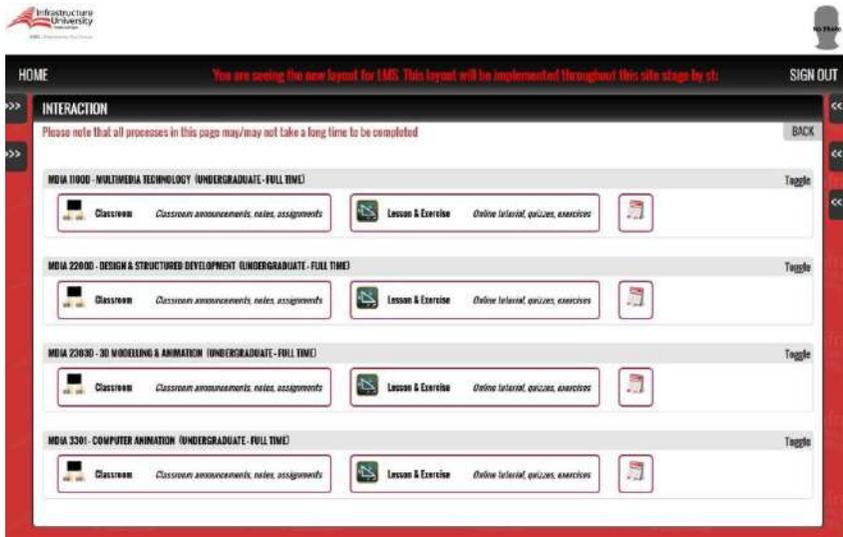
There are several efforts done by the Academic Support and Institute of Teaching & Learning of Infrastructure University in the ICTs implementation since 2014 until now. We have done the ICTs implementation in stages. In 2014, ICT started the implementation of Interaction module in Learning Management Systems. In 2018, we implemented Infraplus powered by Moodle. In March 2020 we implemented Panopto until March 2021. Alternatively educators may choose to use Zoom or Skype. We replaced Panopto with Microsoft Teams for Education for better coverage of tools within the platforms. The following are the discussion on the initiatives done as follows:

Understanding acceptable practices for continuing use is crucial for teachers and students. These will differ from institution to institution, but we advise the educators to think about these abilities when creating content for their courses. Among them are the advantages of recording (availability to sick individuals, ability to search through spoken content), ability to see the subtitles while the educator deliver the lecture, drawing whiteboard and sharing the materials in chats/ conversation. The following are the various ICTs implementation in IUKL with sample User Interfaces of each ICT tools:

### **LMS Interaction**

Interaction within Learning Management System (LMS) allows the educators to share teaching materials with students. As shown in Figure 1, the educators can upload announcements, lecture notes, assignment instructions, online tutorial, quizzes and exercises.

Figure 1: IUKL LMS Interaction



### Panopto and Zoom/Skype:

IUKL implemented Panopto in March 2020 after receiving the instruction by MOHE to ensure university implemented the classes fully online due to Covid19 pandemic hit. According to Panopto (2022), Panopto and Zoom create a powerful workflow that helps teachers, students and employees raise their productivity. This is especially true in cases where individuals are working remotely or are catching up after being ill. Using Panopto or alternatively Zoom or Skype will help the educators to conduct class and record it for future reference. This can minimize confusion among individuals and maximize productivity across their organization. As shown in Figure 2, IUKL implemented Panopto with training provided by Panopto trainer.

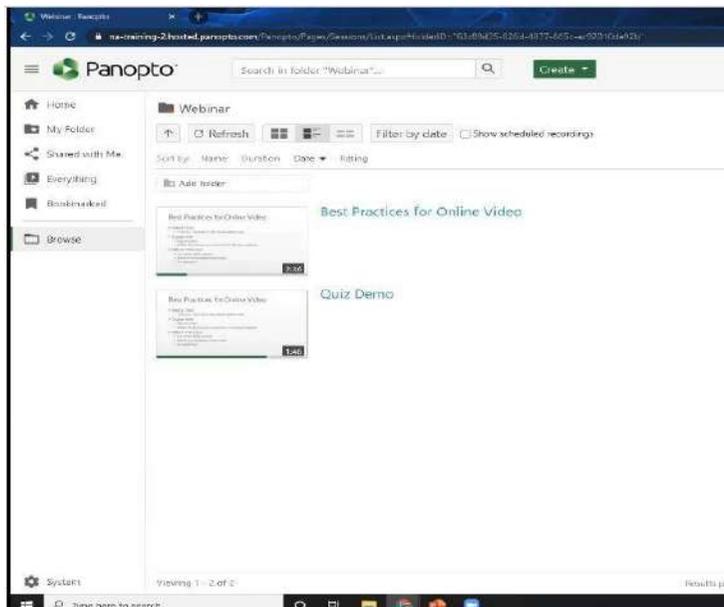


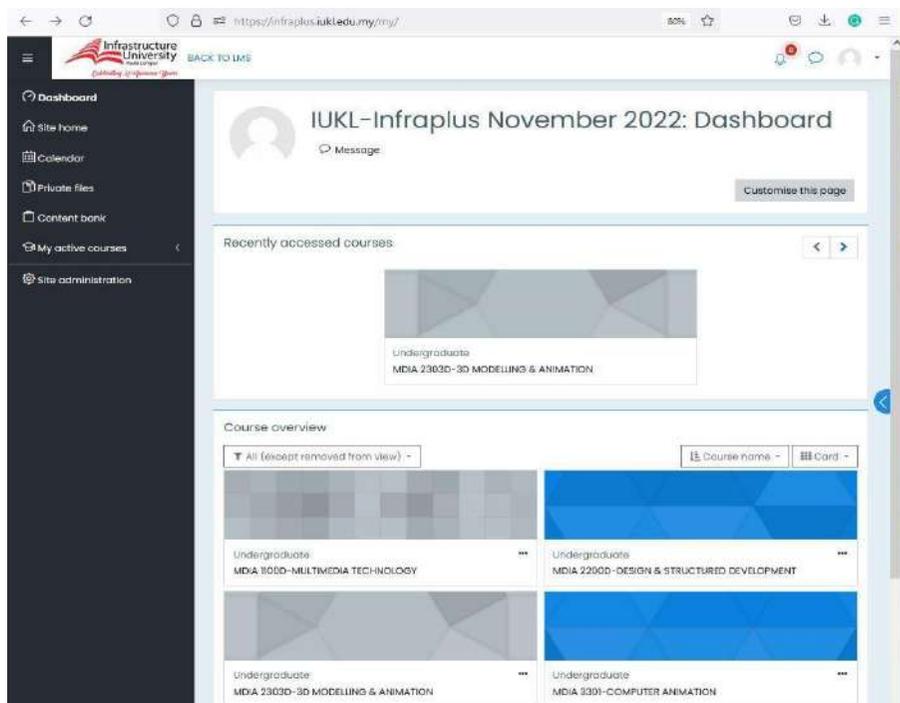
Figure 2: IUKL Panopto Dashboard

## IUKL Infraplus powered by Moodle:

Moodle is a platform for online learning that enables you to create online courses, add assignments, and keep an eye on your students' progress. It also allows you to communicate with the students and encourage communication between them in forums and discussions.

There are five major standard user types in Moodle:

- Administrator is a host of a party who can do everything with the system.
- Manager has similar capabilities as an Administrator, but unlike the Administrator, this role can be assigned and the capabilities can be customized.
- Course Creator can create new courses.
- Teacher can add and edit content and activities within a course.
- Student can access available courses. (Moodle,2022)



**Figure 3:** IUKL Infraplus Dashboard

Learning management systems like InfraPlus powered by Moodle as shown in Figure 3, allow educators to create an online class, add assignments and assessments, and communicate with students. The LMS allows students to access the course and course resources online, complete assignments, and communicate with the instructor. Learning management systems can be used to facilitate online courses, or to foster a blended learning experience.

## Infraplus Workshop for Educators

This is a compulsory training to help the IUKL educators (lecturers/instructors, etc.) with necessary and sufficient skills in using InfraPlus. The workshop is directed primarily at educators and its main aim is to give them a solid preparation in the use of the platform and all its features, in order for them to enhance their teaching and add more interactivity to their lessons.

The following **Figure 4: Program Details** is a snapshot of the proposal for upcoming Infracplus training for educators.

<b>3.0 Program Details</b>
<b>3.1 Program</b> InfraPlus Workshop
<b>3.2 Organizers</b> Innovative Teaching and Learning Unit, Academic Development & Quality Assurance Department and Partnership and Special Projects Office
<b>3.3 Dates and Time</b> 26 January 2023 (Thursday) Time: 9:00am – 1:00pm
<b>3.4 Trainers</b> Ts. Dr. Robiatul A'dawiah, Jamaluddin (Trainer) & Hasnani Hassan (Facilitator)
<b>3.5 Duration</b> 4 hours
<b>3.6 Location</b> Block 11, Lab 301
<b>3.7 Participants</b> 25 Lecturers

**Figure 4:** Infracplus Proposal (Source: ITLU IUKL, 2022)

The Table below is the sample schedule for the training organised by IUKL for educators.

**Table 1:** Tentative Program (Source: ITLU IUKL, 2022)

Time	Session
8:45am – 9:00am	Participants Registration
9:00am – 10:45am	Session 1: Introduction to InfraPlus
10:45am – 11:00am	Break
11:00am – 12:45pm	Session 2: Course Editing
12:45pm – 1:00pm	Q&A
1:00pm	End

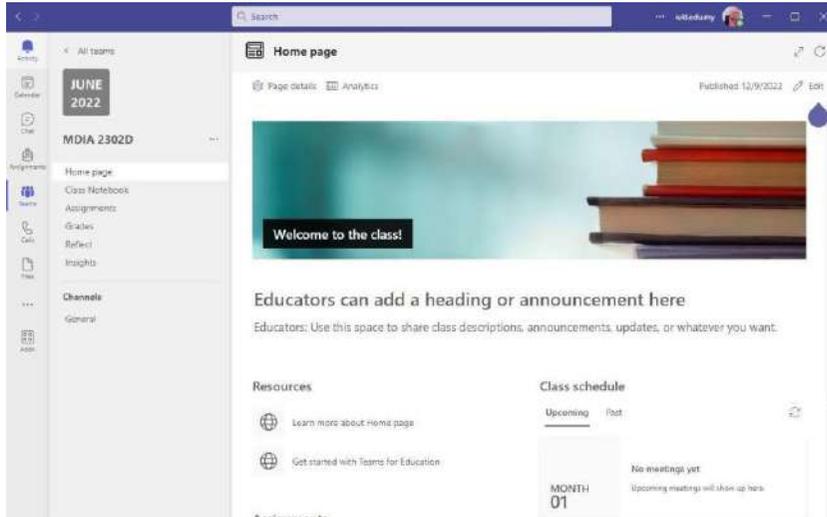
### Microsoft Teams

According to Communication Square (2022), Teams for Education is a digital hub that brings all your favorite collaboration tools in one place. Because Teams is built on Office 365, schools benefit from integration with their familiar Office apps. It delivers enterprise-grade security and compliance that can be customized to fit the needs of org-wide teams. Among the features of Teams for Education, the educator can:

- Create collaborative classrooms
- Connect in professional learning communities
- Communicate with school staff and Administration
- Coordinate research across institutions
- Professional Development
- Easily facilitate student life efforts like clubs or extracurricular activities and student membership

## Microsoft Teams LMS Integration

In IUKL we integrate our LMS called Infraplus and MS Teams as shown in Figure 5, for ease of teaching and learning. In order to fulfil the vital demand for online lectures, discussion, and effective collaboration, teams can work hand in hand with a variety of LMSs and apps. The university can therefore continue utilising its current Infraplus in conjunction with the Teams features like meeting chat, online meetings, live events, assignments, teams video meetings, and more. To establish a multi-tool solution that enables students, educators, and staff to perform their best work using PCs, Tablets, and Mobile devices, Team owners and Users with rights can easily switch off the Teams elements that are not pertinent to your institution and exploit the ones that are.



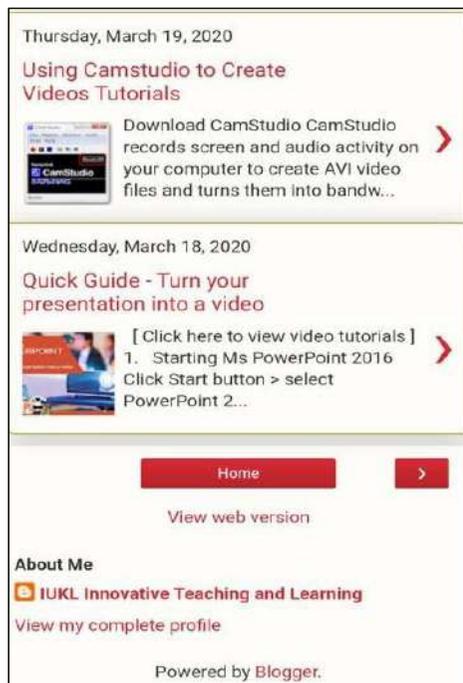
**Figure 5:** MS Teams Course Homepage

### 3. GUIDELINES FROM ITLU FOR EDUCATORS

As part of our effort to ensure the educators able to use the tools, we provide guidelines in a form blog post with links shared via email. The educators can access as self-paced learning whenever they are having free time



**Figure 6:** ITLU Blog for Self-paced Learning Homepage



**Figure 7:** ITLU Blog for Self-paced Learning Homepage

The educators were given guidelines on the content and necessary steps to take while preparing the course content to be uploaded. The following Figure 7 to 10 are samples of the guidelines provided which can be accessed at <https://iukl-itl.blogspot.com/>

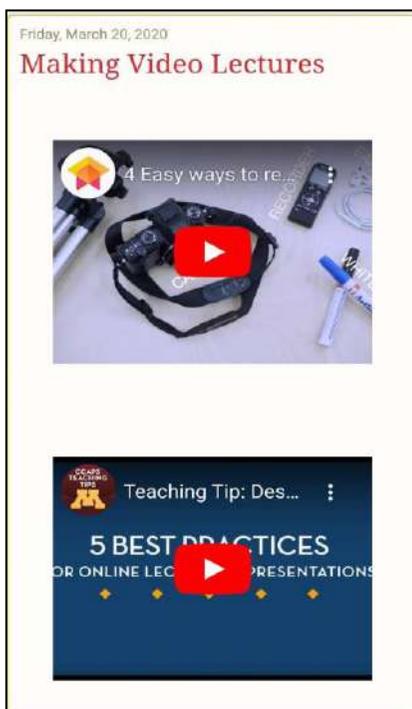
**Recommendation for online class implementation  
at IUKL due to COVID-19 Outbreak**

The Transition from Face-to-Face to Online Learning	
Face to Face Learning	Online learning
Physical and face-to-face lectures	<b>Live streaming classroom:</b> Web conferencing YouTube Live Facebook Live
Tutorial – Instruction	<b>Pre-recorded video:</b> Screen casting YouTube video  <b>Softcopy material:</b> .doc file .xls spreadsheet .ppt presentation, etc.
Tutorial - Assessment or exercise	<b>Google Form</b> or any related Google Apps  <b>Softcopy material:</b> .doc file .xls spreadsheet .ppt presentation, etc.
Quiz	<b>Infraplus:</b> Multiple Choice Question True/False
Assessments & submission	<b>Infraplus:</b> Assignment Project
Class discussion	<b>Infraplus</b> Forum
Presentation	<b>Live:</b> WhatsApp Skype  <b>Pre-recorded:</b> Video from digital camera Video from mobile devices

**Figure 8:** Recommendation for class implementation

FUNCTIONAL IN INFRAPLUS USED IN COMPUTATION OF BLENDED LEARNING (BL)			
Category	Minimum requirement of items to achieve BL status.	Description	Module in IntraPlus and Indicator / Icon (Click Add an activity or resource)
<i>(Strictly follow the spelling, so that the system can capture and generate the report of your blended learning completion)</i>  <b>Course Information</b>	<b>1 item</b>	Synopsis / Lesson plan / Guidance / Learning Objective / Synopsis / Study planner / Scheme of Work (SOW) / Proforma / Guideline / Description	Information is taken directly from the syllabus.  <b>Note: DO NOT post the syllabus.</b>
<b>Resources</b>	<b>7 items</b>  For example: 7 files or a mixtures of modules such as 2 Files, 3 Pages and 2 URLs.	Files / Folders / Topics / Chapters / Unit / Page / Modules in doc / ppt / pdf / xls / swf / video / audio / URL.	 Book  File  Folder  Page  URL  IMS content package
	<b>3 items</b>  Lecturers can choose any module to meet the	Webinar / Video Conferencing / Chat /	 Panopto  Chat  Forum  Choice

**Figure 9:** Recommendation for Infraplus course content upload



**Figure 10:** Tips on how to create video

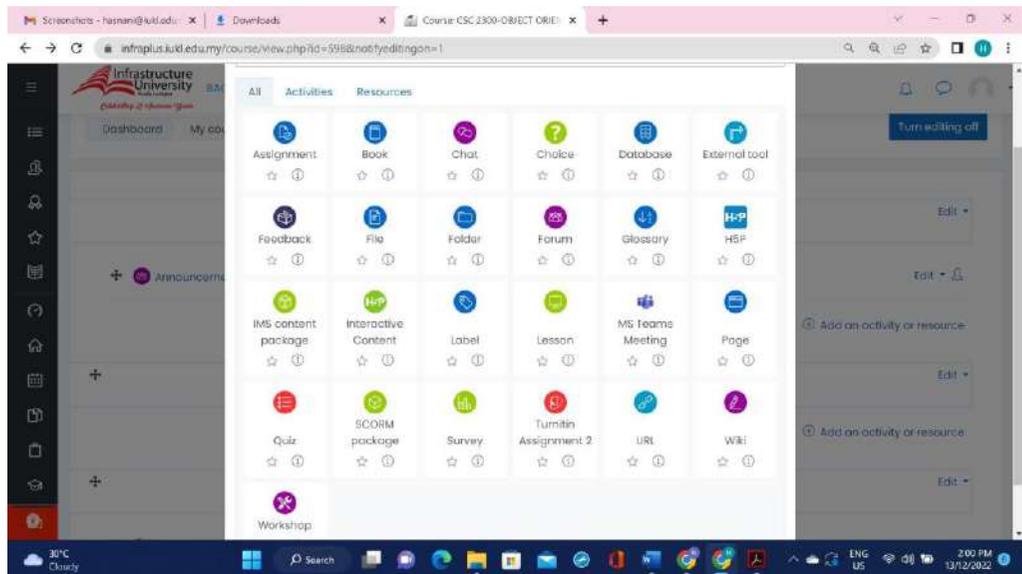
#### **4. ISSUES AND CHALLENGES**

Among the issues and challenges identified are on how to move beyond just sharing content and deliver lectures. There are four main concerns received from the educators such as:

1. The importance of bandwidth / internet access especially when working from home
2. The use of specific tools across applications (know how)
3. The ability to replicate the previous courses from previous semester
4. The provision of training the specific tools to students

#### **5. SUGGESTIONS FOR IMPROVEMENT**

Based on the issues raised, we would like to recommend the management to consider some improvements such as incentives given for provision of high speed bandwidth for all students and educators. Some lecturers hoped that the system would have the ability to replicate the previous materials for the new semester. Most importantly, we envisioned more frequent trainings on specific tools know how as shown in Figure 11, in LMS with samples and its internal workings to both educators and students.



**Figure 11:** Tools within Infraplus to add an activity or resource

## 6. CONCLUSIONS

Of course, ICTs cannot replace 100% the effectiveness and liveliness of traditional classroom interaction and teaching and learning process, but it can provide new, authentic, interesting, motivation and satisfying educational activities. While ICTs clearly seem to have the potential to enhance teaching-learning process, classroom activities involving ICTs should be systematically and effectively structured by the educators, head of programme, dean and IHLs management. The Ministry of Higher Education has provided some initiatives to encourage innovation in Higher Education Institutions (HEIs) namely Higher Education Center of Excellence (HICoE), MyGRANTS For Researchers, Malaysian Research & Education Network (MYREN) and some others. It will be good if IUKL also will be part of this MOHE initiatives by taking the opportunities to apply the allocated grants.

If ICTs being systematically implemented, it will promote higher order thinking, analytical and critical thinking skills, problem solving skills, develop decision making capabilities and encourage creativity and research skills. The communication skills also can be enhanced with the usage of many applications such as MS Teams, Sharepoint, Google workspace such as Google Drive, office and Form, SurveyMonkey, Social medias like WhatsApp, Telegram, Tweeter, Instagram, Youtube, TikTok (just to name a few) , live streaming tools and ability to not only use the ICTs but be the content creators and influencers in information rich society.

## ACKNOWLEDGMENT

This work was supported by AP Dr Lim Hock Ann, the Director of Academic Development and Quality Assurance of IUKL and without the hard work of Academic Support and ICTs Unit Staff of IUKL, these implementation of ICTs projects will be impossible. We would like to thank IUKL management for the insights, directives and budget for ICTs implementation in IUKL. Thank you to all parties that have made ICTs for teaching and learning possible in IUKL.

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# DIGITAL LITERACY SKILLS FOR DIGITAL CITIZENS: ADOPTING HADITH METHODOLOGY FOR INFORMATION VERIFICATION IN FIGHTING MISINFORMATION

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## 1. INTRODUCTION

Digital citizenship describes the participation of the members of the digital space in the Internet and online activities regularly and effectively engaging themselves with the society and politics (Mossberger et al., 2007). Both widespread access to digital devices and the Internet may contribute to the phenomena of high online activities among the global population. The social media applications is another factor that raised the frequency of social interaction and engagement among the Internet users. The large amount of information exchange within this virtual social networking environment has become the impetus for the spread of misinformation (Cover et al., 2022).

Misinformation here is an umbrella term for both misleading information and false information or disinformation (Susman-Pena et al., 2020). The democratic nature of the Internet allows for the spread of misinformation, fake news, conspiracy theories and other types of disinformation, that some scholars named this era as the 'Misinformation Age' (O'Connor & Weatherall, 2019). Misinformation may cause harms not just by spreading the lies but may potentially cause the problem of mental health and in some extreme cases, lost touch with the reality and facts being in their own algorithm's 'filter bubble' (Pariser, 2011) or echo chamber effects (Underdal et al., 2021).

One of the main challenges of being a digital citizen is to navigate the correct information in the sea of misinformation. The same situation have also happened during early history of Islamic knowledge production i.e. around the second and third century after the emergence of the Islamic society (Azami, 2000). The scholars community at that time had created a methodology to filter the circulated information and knowledge – generally known as the *Usul al-Hadith* (The Principal of Hadith) or '*Ulum al-Hadith* (The Sciences of Hadith). The Malaysian Muslim community may easily be appealed to comprehend and practise the methodology linked historically with their religious root. The article here discusses how we may adopt this methodology focusing in online information searching and improve it in the context of the contemporary situation and challenges.

## 2. THE EARLY HISTORY OF HADITH SPREAD

The Arabic *khobar* same as *hadith* in its original sense refers to a piece of information, news, reports, announcements, accounts, etc. In Islamic literature, hadith specifically refers to the saying of the Prophet (al-Tahlan, 2021; Lane, 1877). Hadith and *khobar* are not just considered as knowledge, but the source whereby the important branches of Islamic knowledge such as theology, law, exegesis, history etc. being formulated and developed (Brown, 2010). The mode of the knowledge spread was usually by transmission in an oral or a written format from one person

to the other, and in the case of knowledge in early Islam, from one generation to the other (Siddiqi, 2006). The production of knowledge usually concentrated in certain locations e.g. Baghdad and Damascus. The nature of the knowledge production was democratic in a sense that anybody might generate and market their knowledge (Burnt, 2009). Two main groups of knowledge producers are the scholars (ulama) and the professional and non-professional preacher-storyteller (*qussas*). There were explosions of misinformation (hadith/*khabar* forgery) being spread and propagated among the community for various reasons such as fanaticism of a certain political, tribal or religious groups, or merely for the sake popularity by creating lores that might appeal to the public audiences (Siddiqi, 2006). These misinformation had affected the community in various ways such as heightening community's theological and political divisions and conflicts.

It was against this background during the second and third century of Islam that the methodology of hadith criticism actively grew and systemized in the following fourth century and beyond (Siddiqi, 2008).

### **3. COMPARING THE HADITH HISTORY AND THE CURRENT INFORMATION SPREAD**

The information spread in the modern era shared many similarities with the early hadith history. The Internet has become the medium in which information is easily and freely spread. But due to the democratic and decentralized nature of Internet, anyone may create, share and spread a content regardless of one's level of knowledge or civic responsibility, making the information grow exponentially. Internet especially through Social Media apps are the main source of knowledge and news among majority of people nowadays (MediaKlx, 2016).

Many participated in the creating and spreading misinformation such as fake news and conspiracy theories for various reasons – fanaticism, increasing influence or followers, monetary profit, etc. (Chiluwa & Samoilenko, 2019). Stories especially the false but good stories spread faster than real facts (Peter, 2018). The effects of these misinformation in the society is real too as demonstrated in the denial of science, rejection of COVID-19 vaccine or January 6 United States Capitol attack.

However, the Internet now has many stark differences with the knowledge spread from the Islamic medieval time. Information now can be presented in multiple formats, not just text but images, audio, video, animation, etc. The information now can be shared in a large amount that may also reach to large global audiences in a very short period of time. The information life duration can be infinite, as long as the storage provider is operational (Haslin & Hamdzun, 2019). This capability calls for more urgent action for the authorities to plan strategies for digital literacy, in this case the skill to search and verify Internet sources to fight misinformation.

### **4. ADOPTING THE HADITH METHODOLOGY**

We summarized here some of the hadith methodology techniques that could be adopted for our information searching activity:

#### **a. Verify Sources**

One of the main features of this methodology is *Isnad* i.e. verifying the source of the information. Each chain of sources (or everyone who transmitted the information) are investigated to ensure every event of information transmission are verified. An information will only be accepted when

all sources have been verified (Faisal, 2016).

But how do our users identify a source is authoritative or not? The hadith scholars overcame this difficulty by developing biographies of hadith transmitters (*ilm al-rijal*). This literature among others will address (i) the classification of the transmitters based on their reliability or other personal agreed qualities (*tarjih wa ta'dil*); (ii) classification based on religious, sect or political affinity to detect bias; (iii) classification based on expertise; and (iv) classification based on their generation period (*tabaqat*) to detect any timing anomaly (Azami, 2000).

Unlike the past, our Internet sources are not limited only to individuals, but entities representing user accounts, organizations (commercials or nonprofit), content publishers, institutions or government agencies. We may investigate our sources' reliability, qualities, personal/group bias, expertise and history. However, classifying source-reputable individuals or organizations requires a lot of commitment. Alternatively we may use Internet to research on their credibility. The important skill here is (i) finding the information relating to the source and then (ii) the procedures evaluating its authenticity and credibility.

#### **b. Publish Misinformation Sources and Materials**

The other way our past scholars facilitated the community to recognize forged hadith was by publishing the list of problematic transmitters (*dhu'afa'*) and questionable/false materials or text (*maudhu'at*) (al-Tahlan, 2021). We may adopt this by publishing both the non-reputable sources and contents/idea online. This will provide a simplified way for our users to identify and compare their sources and information with the list. Following our past scholars, we may also include in our publication the justifications or reasons for such classification. This will definitely help our users to understand the verification process and develop their own critical thinking.

#### **c. Assess the Content**

The hadith text or *matn* criticism is another important method employed by our past scholars since the beginning together with the *isnad* criticism (Brown, 2008). Some criteria for the *matn* assessment have been listed down e.g. those containing information that defy common logic, or text with high praises to specific tribes (Siddiqi, 2008). To apply this method, our digital literacy skill program should include the logical and critical thinking skills to facilitate assessment of the Internet content.

#### **d. Corroborate Content**

The practice of comparing both hadith text and *isnad* with other similar hadith(s) is another method that we may adopt (Brown, 2010). Comparison of content and sources will enlighten us on the intent, originality and authenticity of the information. In the hadith field, the activity of *takhrij* will find all the similar texts (*matn*), list all of their *isnad* channel (*turuq* or chain of transmitters) and compare them (Faisal, 2020). In our modern time, this practice of *matn* and *isnad* comparison can be adopted through cross-checking and lateral reading respectively (Susman-Pena et al., 2020). These activities should not be limited to only similar or agreeable content/idea/source, but also to the opposing content/idea/source (Novella, 2012).

#### **e. Context of the Content**

A text describing an idea or event can always be taken out of context. In hadith methodology there is a discussion of the reason or event during which the hadith occurred (*asbab al-wurud*) or the intent of the hadith (*maqasid*). Other important investigation is the definition of certain word (*lafz*) which carries different meaning in different situation (al-Talhan, 2021). Stripping the context

out of the text may render a different meaning or message of the information. Our users, therefore, should also be exposed on the skills of finding the context of the information - especially for truncated or multivocal messages, cropped images or edited/partialized/comparmentalized video clips - to avoid misleading and misunderstanding.

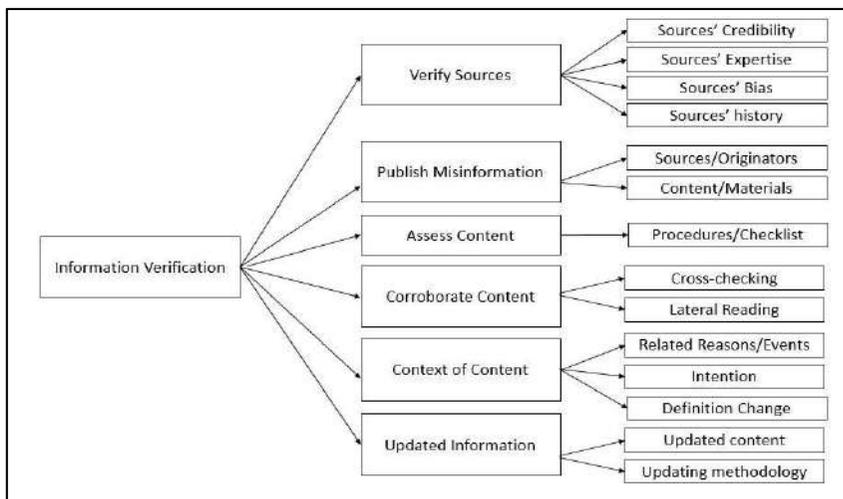
**f. Updated information**

In hadith, there is a procedure of *nasikh wa mansukh* whereby the latter hadith may abrogate the earlier hadith (Faisal, 2016). In this current online environment, the time chronology is more important than ever. Data and information are changing even faster that the older data are no longer relevant for our current knowledge or the future decision making. Our users must have the skill to ensure the information that they are looking for is the updated version.

Even though the original intent of hadith’s *nasikh wa mansukh* is targeted to the hadith text or content, in practice, our scholars also continuously update the methodology of hadith’s source- content verification in accord with the update of knowledge. This has been happening in hadith scholarship even until now (Umar, 2021).

**5. INFORMATION VERIFICATION METHODS**

Below is the illustration of information verification methods that we may adopt from the hadith methodology for the proposal of our digital literacy skills program.



**Figure 1: Information Searching Methods**

**6. IMPROVING THE METHODOLOGY**

In addition to the skills above, we may extend the methodology laid down by the past scholars to address the complexity of the current society that caused by the Internet – our main medium of information sharing. While the methodology of *Usul al-Hadith* is specifically meant for hadith, the method that we develop here is meant for general information.

#### **a. *Recognizing Cognitive Biases***

Cognitive biases refers to the unconscious errors in thinking that arise from problems related to memory, attention, and other mental mistakes (O'Connor, et al., 2019). One of the most common biases are the confirmation biases, unfortunately supported by the search engine algorithm causing the users trapped inside their own 'filter bubble' (Pariser, 2011) or echo chamber (Underdal et al., 2021). A study among around 600 Malay respondents show that the confirmation biases are a common problem among them in searching and verifying information (Haslin & Hamdzun, 2019). Biases were noted by our past scholars but now we have to include all type of negative biases that may affect thinking and information searching activity as detailed in the field of psychology.

#### **b. *Logical and Critical Thinking***

The method of verifying content or *matn* criticism includes rejecting the hadith text which dictates against the natural law (Siddiqi, 2006). However logical or critical thinking is not a common skills taught to common population. Logical or critical thinking here is the analysis of available facts, evidence, observations, and arguments to form a judgement. Some examples include identifying fallacies arguments posed by content creators. Lacking of this skill may cause users to consume their information without much questioning, making them easy to be the prey of misinformation agenda (Cover & Thompson, 2022). Usually though the reason for avoiding to think critically is the result of accepting chosen authority or preferences i.e. part of confirmation bias.

#### **c. *Scientific Method***

The Scientific method refers to the process of objectively establishing facts through testing and experimentation (Novella, 2012). Our users may not need to perform this process, but at least understand how the scientific community may reach their conclusion. Science sceptics are quite common now and have loud voice in the digital space. This is particularly important in the domain of personal and public health. They are a large amount of health-related misinformation currently spread through the Internet and have impacts on the population thinking. Reports show that Malaysia has a quite significant number of anti-vaccines (Mohd. Farid, 2020). During the COVID- 19 pandemic, they were a lot of feedbacks in social media openly against the government vaccine program. This is also a common phenomenon around the world (Bursztyn, et al., 2020). Health is a serious issue and one way to fight this is by including this scientific method thinking skills into our digital literacy program.

#### **d. *Reaction to Misinformation***

As we have seen, our past scholars published forged hadith (*mau'dhu'*) as their reaction to counterfeit the misinformation movement. This type of publication is known as *mau'dhu'at*, i.e. its own genre in hadith literature. Our experts and influencers today should be trained to publish or produce reaction materials explaining the misinformation preferably according to the way a professional of the field investigate the materials using proper logical or scientific methods. Ultimately our target for our audiences is to develop their own resilience and skills to critique this type of misinformation. Other than delegating this role to its proper individuals, it will also reduce the bias feeling of our audiences should the content produced by the government agencies.

#### **e. *Digital Ethics***

In the past, the seriousness of offences in forging hadith could be found in hadith literature (Siddiqi, 2006). Verifying information is of course not enough to fight misinformation. The users must also be made aware of their civic duty being a digital citizen to be ethical in posting and sharing only correct and true knowledge, and avoid to participate in spreading misinformation. They must be made aware of the consequences of spreading misinformation to

themselves and society. The education program must be effective enough to shape the individuals to act voluntarily so that the informational behavior become a long-term change.

#### ***d. SOP & Checklist***

Assessing information might be intimidating to some people. One way to simplify the methods is by preparing the Standard of Procedures (SOP) or checklists as a summarized guideline for users to perform their own assessment or investigation of the information. Creating SOP and checklists are a standard strategies now in many education or training program. The result has been proven and should not be ignored by our digital literacy program.

## **7. DIGITAL LITERACY PROGRAM**

Digital literacy refers to an individual's ability to find, evaluate, and communicate information through various digital platforms. In this chapter, we focus mainly on evaluating information. Our purpose here is to develop a program to build the skills of detecting misinformation and ultimately to be resilience to it. So far, few organizations have come out with a curriculum for digital citizenship and digital literacy (OECD, 2021). The authorities should implement such program to all walk of population due to fact that senior citizens are also active users of Internet (Susman-Pena, 2020).

Here are some recommendations for our digital literacy program based on the current trend of training program and information system:

#### ***a. Education at school level***

Teenagers and youths are among the most active Internet users and use Internet as their main source of information. However there is no known syllabus or training program provided to them to counter misinformation that will not just guiding them to search for correct information, but also facilitate them with safe decision making. This syllabus should be added into the school or university curricula under its own course of part of digital skills curricula. A study among teenagers in Malaysia demonstrated that this group of Internet users are among the lowest in critical thinking while searching for religious information (Haslin & Hamdzun, 2019). Therefore this skill should be considered paramount especially for the benefits of future generations.

#### ***b. Online Availability***

A version of training or materials for digital literacy should be made available online with different target audiences or different type of material (e.g. religious vs. medical information) for ready guidance to our users. The materials may contain: (i) The procedures on verification; (ii) Resources for references on this literature, including critical thinking; (iii) Resources or directories for sources and their misinformation status; (iv) Resources or directories of fake accounts in multiple digital and social media platforms; (v) Resources or directories of problematic materials/contents; and (vi) Resources for SOPs, checklists and tools.

#### ***c. Material Presentation and Distribution***

Our past scholars are limited to just oral and written communications to present and distribute their knowledge. The presentation of our digital literacy materials however (i) should be using the latest educational and multimedia technology e.g. visual, videos and animation format to appeal to the wider audiences to the content and internalize the content within the shortest time possible. The materials (ii) should be presented in the format and style of the current trendy digital and social media platforms (e.g. TikTok and Instagram), (iii) adjusting the presentation to follow the current trend strategies of the respective platform (e.g. the first five second to hook-up audience in TikTok

clips); and lastly (iv) collaborating with experts from appropriate fields who are influential in these platforms.

#### **d. *dTools, Application & AI***

Our past scholars are limited to theoretical guideline to their audience. However the current technology allow us to transform those guidelines into capabilities through digital tools or applications that may (i) practically help or guide the process of the source-content verification, or (ii) using its own algorithm to verify and suggest users the misinformation status; and ultimately (iii) a smart tool using artificial intelligent algorithm to suggest or provide users the misinformation status during the searching activity or before displaying the content, allowing the users to choose whether to continue with selecting or viewing the content; and finally (iv) tools to verify fake or manipulated multimedia files such as images, audios and videos (Susman-Pena, 2020).

#### **e. *. Search Engine Optimization (SEO)***

The online materials and resources have no worth if it is not being discovered. All digital marketing practice and strategies could not escape the application of SEO to ensure our contents shown at least in the first page or screen, if not the first entry, of the search result (Chaffey & Ellis-Chadwick, 2022). Marketing knowledge could not ignore this application as well. The SEO should not be limited to only web-based search engine, but other digital and social media platforms as well as these platforms are very likely using different algorithms for their search engine (Enge, et al., 2022).

## **8. CONCLUSION**

Misinformation is a real problem that have great negative impacts on individuals and society who are the members of digital citizens. We may compare this phenomenon with the history of early hadith history and learn how the scholar community of the past collectively developed frameworks and methodologies to filter misinformation in pursuant of the objective truth. The hadith methodology employed various methods to verify, analyze and corroborate the source-content of the information, to educate the populace by listing questionable sources and contents, and finally continuously updating the methodology.

In this chapter we propose the methodology adoption in fighting misinformation in our own era, how to improve the methodology to fit and serve our own situation and problems, and finally some recommendations on developing our own digital literacy program to fight misinformation. This chapter does not claim to be perfect. They are many gaps to filled up on the matter of methodology, the adoption, and the digital literacy skills development program specifically for the case of Malaysia. Censorship is not the way forward. Developing a digital literacy skills program to fight misinformation however is still not actively discussed and actioned upon here, and therefore this chapter is hoped to contribute filling up the gaps, as long as all the digital citizens are being respected, educated and protected (of their rights, security and wellness) – the three core principles of digital citizenship.

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# **DIGITAL CITIZENSHIP STRATEGIES FOR THE DEVELOPMENT OF VISUAL INTERACTIVE STORYTELLING APPLICATIONS**

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## **1. INTRODUCTION**

The Malaysian Education Development Plan 2015-2025, drafted by the Malaysian Ministry of Education (MOE), is an effort to meet the existing expectations and difficulties (MOE, 2015). The Fourth Industrial Revolution, (IR 4.0), which now stresses the use of the Internet in all areas and is also known as the Internet of Things (IoT), is one of the main difficulties requiring a change in education (Husin, et al., 2022). In line with this, the Ministry of Education has outlined an important change in the development plan, which is to use information and communication technology (ICT) to enhance the quality of education in Malaysia. This change is a supplement to the ICT Policy in Education, which aims to provide ICT to all students, utilise ICT as a tool for teaching and learning, and boost the productivity, efficiency, and efficacy of the management system (Maimun, Siti Rahayah, Tajul Arifin, & Sani, 2009). Consequently, it is necessary to incorporate ICT into teaching and learning at all levels of education to accomplish the goals of the Ministry of Education and Culture and establish an ICT-literate society (Nurul Aliah, Norela, Nabilla Waheda, & Mahsuri, 2022).

Digital access is the first factor that is widespread in today's school curriculum, according to Mike Ribble, an author who has focused on the issue of digital citizenship for more than a decade (Ribble, Mike & Miller, & Teresa, 2013). He underlined that in order to close the digital divide, educators must recognise that technology is crucial for all children, not just those who already have access to it. Several innovative strategies were implemented to improve the effectiveness of teacher instruction and the relevance of student learning (Yousef, Waheeb, Najeeb, & Hafiz, 2020). In 2002, the Ministry of Education implemented ICT in education, including preschool (Chan, 2002). The use of ICT in teaching and learning has the potential to significantly improve and enhance the quality of teaching and learning in preschool settings.

Under this ICT program, each preschool class receives educational software to be used as a learning-aided tool. To empower this big population to use ICT in teaching and learning, nearly two hundred thousand teachers received ICT training up until 2005. The government and the stakeholders have paid close attention to the issue of education because they are aware of the role and function that technology may play in education (Siavash, Maslin, & Harihodin, 2011) (Kamarulzaman, Che Anuar, & Mohd Noor, 2021). They believe that technology may help achieve educational goals and objectives, making the teaching and learning process more effective and meaningful (Maslin, Nazry, Wahyunah, & Amirul, 2022).

In China, for example, parents introduce Audiobooks to their children to learn English. Audiobooks are adopted as a practical intervention strategy for stressful students ever since books have been transformed into recorded format (Gilbert, Walker, & McLaughlin, 1996). Audiobooks also called spoken books, talking books, or narrated books, are recordings, on either a compact disc (CD) or digital file of a book being read aloud (Kartal & Simsek, 2017). It is used vastly at the primary, secondary, middle, high school, and university levels (Stevens, Walker, & Vaughn, 2017) because of the differences between reading with Audiobooks and traditional reading aloud, e.g.,

firstly, reading by Audiobooks is not restricted to time and space, it can be done on the portable devices anywhere.

It additionally says that guardians are happy with the Audiobook as it helps the kids in numerous manners and it is progressively intelligent for the kids to utilize it in light of the fact that the guardians see an alternate difference in feelings when their youngsters are utilizing those book recordings as their kids gets considerably more joyful and energized (Valente, 2019).

## 2. OBJECTIVE

This research aims to study the following main aspects:

1. Developing a science application with a visual interactive storytelling approach for the preschool level considering the following points:
  - identify the development methodology
  - build a directed design model
2. Perform usability testing of the application based on the following:
  - measuring the effectiveness construct for usability testing, based on Pre-and Post-Test among science process-based preschool students.
  - measuring the relationship between visual interactive storytelling approaches and preschool science skill achievement.

## 3. PRELIMINARY STUDY

This study and the educational content are limited to the Space Exploration. This theme has been determined to be the most difficult of the forty-three themes taught in pre-school, with Mean Value=4.64 and Standard Deviation=0.60, followed by Nature (M=2.27, SD=0.90), Machines and Machinery (M=1.27, SD=0.81), Body Parts (M=1.09, SD=0.55), Plants (M=1.00, SD=0.55), and Birds (M=0.91, SD=0.58), as shown in Table 1.

**Table 1:** Mean Difficult Preschool Science Themes According to Teachers' Perspective

Themes	N	Mean	Standard Deviation
Body parts	10	1.09	0.55
Plants	10	1.00	0.55
Birds	10	0.91	0.58
Machine and Machinery	10	1.27	0.81
Nature	10	2.27	0.90
Space Exploration	10	4.64	0.6

The findings of the statistical analysis of the questionnaire instrument completed by the teachers are shown in Table 2. The results indicate that students are weakest at predicting, with Min=3.91 and SP=0.36, followed by observing (M=3.82, SP=0.35), comparing (M=3.73, SP=0.34), investigating (M= 3.55, SP=0.32), predicting (M=3.46 and SP=0.31), recording (M=3.36 and SP=0.31), measuring (M=3.27 and SP=0.30), and hypothesizing (M=3.00 and SP0.27). This conclusion indicates that all participating teachers have the same opinion, namely that the ability to foresee is the most challenging skill for preschool kids to achieve. Prediction is a

talent that needs students to create connections, determine causes and consequences, and make appropriate matches.

**Table 2:** Mean Science Process Performance According to Teachers' Perspective

<b>Science Processes</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
Observe	10	3.82	0.35
Measuring	10	3.27	0.30
Compare	10	3.73	0.34
Guessing	10	3.46	0.31
Investigate	10	3.55	0.32
Hypothesize	10	3.00	0.27
Divination	10	3.91	0.36
Record	10	3.36	0.31

#### **4. MULTIMEDIA TECHNOLOGY**

One of the numerous factors contributing to the growth, development, and behavioural shifts of individuals of all ages, particularly younger ones, is exposure to various forms of multimedia. The five most important components or types of technology that makeup multimedia are text, graphics, audio, video, and animation. In addition, interactivity is one of the components that must be present to finish the interactive communication process that utilises multimedia (Xiaoyue, Han, & Lixim, 2019). To address the influence that multimedia technology has on these young people's growth, educators need to have a solid understanding of the material associated with multimedia technology and the ability to engage with it actively.

Learning via multimedia can transform how people learn and absorb knowledge significantly, allowing educators to build effective learning approaches. Learners tasked with achieving educational goals via multimedia resources also need a method for effectively ingesting knowledge. Resources are no longer focused on the content of a book exclusively but wider than that. If they have the requisite skills and are not guided in using them, educators may maximise the advantages and limit the negative impacts. Multimedia learning is an educational method that uses multimedia in interactive teaching materials, it integrates text, graphics, visuals, animation, video, and sound. Incorporating multimedia into education generates a clear atmosphere for multimedia learning, makes the learning process more interesting and can increase student motivation. Multimedia can stimulate more than one sense at a time, and in doing so, may be more attention-getting and attention-holding (Reeves, 1998).

#### **5. VISUAL INTERACTIVE STORYTELLING**

The term interactive story or interactive storytelling was first coined by Chris Crawford, a researcher and application developer. His research found that interactive stories are different from conventional linear stories. Interactive stories allow for non-sequential story plot movement with multiple possibilities in a dramatic world (Crawford, 2013). An early attempt to understand interactive stories was made in the 1970s, which was worked on by Roger Shanks through his research at Northwestern University. The first published interactive story app was *Facade*, created by Michael Mateas and Andrew Stern (Michael & Andrew, 2005). *Facade* was commercialized in 2006.

Typically, application builders use the interactive story model to build science applications in the form of computer games, movies, or virtual reality (Melek & Ayperi, 2020). Science application builders can use various teaching media such as multimedia, augmented reality, and 3D visuals, to provide a non-linear storyline. Movement from one layer to another, depending on the student's actions. Students need to be actively involved. For interactive stories based on game design, problem-solving, or finding answers, students need to actively interact with the system to continue learning. Students are also often asked various questions and given instructions that require student action. They are more active in their learning process.

The advantage of interactive digital stories for science teaching allows students to involve themselves in the journey of the story (Dondu, 2022) (Didik Dwi & Tsukasa, 2018). This makes them more actively involved and able to retain the lessons delivered more effectively. The story is displayed according to the students' instructions using input devices such as a mouse, keyboard, touch screen, and joystick. This technology has changed the concept of conventional interactive storytelling where students learn passively to the concept of digital interactive storytelling, where students learn actively (Evania, Besse, Lia, & Tri Sugiarti, 2020) (Rebecca & Jaclyn, 2020).

## 6. DEVELOPMENT METHODOLOGY

MyScience application development methodology is based on a life cycle model built called the MyScience Comprehensive Life Cycle model or MCLC-MyScience for short, as shown in Figure 1. The MCLC -MyScience model is designed comprehensively as follows:

1. External layer (L1): The life cycle contains five external entities namely: objective, learning outcome, multimedia in various digital environments, target user, and modification and improvement.
2. Inter-internal layer (L2): The life cycle contains four supporting elements namely: teaching and learning methods, strategies, techniques, and approaches.
3. Intra-internal layer (L3): The life cycle contains five phases namely: analysis, design, development, implementation, and evaluation.

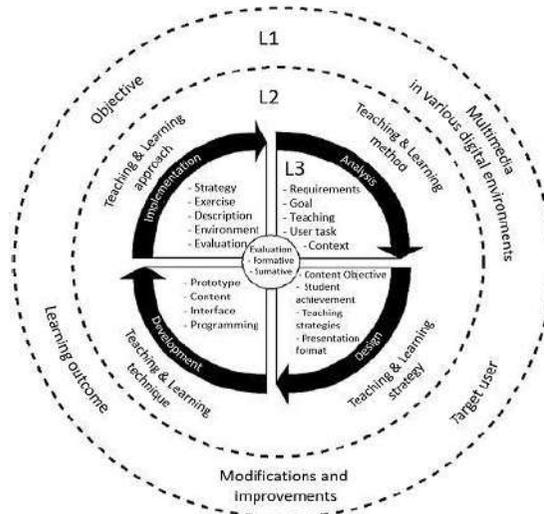
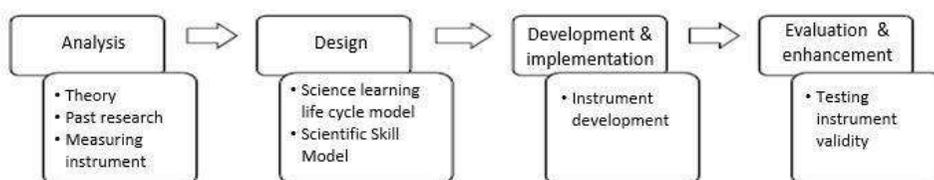


Figure 1: MCLC-MyScience Model

## 7. SCIENTIFIC SKILLS TEST

The Scientific Skills Test (SST) is designed to identify the level of mastery of preschool students' skills in performing science processes based on the tasks provided. The SST instrument is designed based on the Science Learning Cycle Model and the Scientific Skills Model. SST uses paper-pencil exercises that aim to assess student achievement in real conditions, focusing on process skills such as observation skills, comparison skills, prediction (guess) skills, and recording (documenting) skills. This test is based on the theme of Space Exploration. Validity in terms of language, content, pictures, diagrams, and sentence structure was obtained through a review with two experts from a school in Seremban, Negeri Sembilan. The acquisition of validity is important to ensure that the SST design is easy to understand and meets the learning needs of preschool students. Improvements are made to each instrument based on suggestions given by relevant experts. Figure 2 shows the workflow of the SST development process.



**Figure 2:** SST Instrument Development Process Workflow

SST is used to conduct in-depth observations of each preschool student. SST contains two parts namely: Part A is the construct and scale of student development. While Part B is to find out the development of students in doing the scientific process. The scientific process studied is the skills of observing, comparing, predicting, and recording. SST uses a Student Development Scale which is Scale One for Not Mastered (NM), Scale Two for Progressing (P), and Scale Three for Mastered (M). The SST used for this study uses the original content of the Preschool Performance Standard. Table 3 shows the student development scales used in the SST design.

Table 3: Student Development Scale

Score (Level of mastery)	Symbol	Criteria
Mastered	M	Know and be able to carry out the scientific process reasonably and ethically.
Progressing	P	Know and can perform with little guidance from teachers or researchers.
Not Mastered	NM	Knows some basics (minimum) related to the scientific process but can't do it alone (always needs guidance).

## 8. COURSEWARE DESIGN

MyScience software focuses on the introduction and understanding of nine planets. It has four main modules namely, the coaching module, enrichment module, reinforcement module, and assessment module. The coaching module is designed to assess whether children can recall and identify characteristics of each planet, such as its form, colour, and name. This module facilitates their creative and constructive growth. This module also provides assistance in the form of an interactive button that children may use to view and verify a real-world image; this button also

serves as a prompt for children to recall the name and shape of a planet that will be represented in colour.

The enrichment module is the learning module, which consists of a visual interactive narrative. This module's navigation is controlled by interactive buttons that feature a narrator's voice, a unique sound effect, and background music. The cognitive capacity of children can be improved using interactive animated storytelling. In the reinforcement module, students can colour and doodle. This is one of the science processes that preschoolers need to learn. The ability to record observations and discoveries is a crucial scientific procedure. Sketching and recording at the preschool level entail making pictures and writing brief words. This module gives tools for writing, typing, drawing, colouring, printing and the work can be saved. Finally, the Assessment Module seeks to test the comprehension and abilities of the students. Following the completion of each test, the results will be shown together with a reward, which is a key component of behaviourism theory. The incentives serve as inspirational remarks to encourage the students to go on to the next task. Voiceover and animation are used to help with each explanation and instruction.

The courseware design for this application is very interesting as a teaching and learning medium because it combines vision, sound, and touch (interaction). It is a great tool for teaching and learning. Using visuals or animations, for example, scientific education, will be more fun with the use of multimedia technology (Karina & Clara, 2020). Physical appearance affects the learning process; students are more motivated to learn with beautiful multimedia presentations, which affects their learning performance. The beauty, appeal, and interactivity of a learning medium make students always interested and make it easier for them to understand the content of the lesson. Multimedia technology can be used in education to improve self-learning and student engagement.

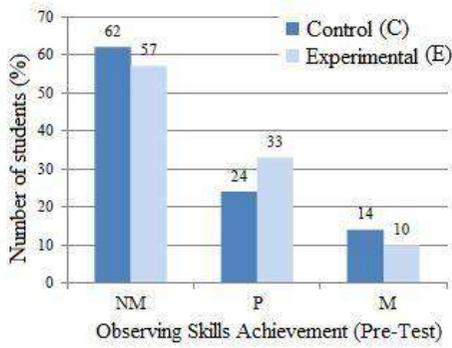
## 9. FINDINGS

This section discusses the partial experimental results of the Pre and Post Test. Students from the Control Group who were taught using conventional teaching and learning methods were labeled with the letter C. In contrast, students from the Experimental Group who were trained using the MyScience application were marked with the letter E. Pre-, and Post-tests were conducted to evaluate the performance of students' skills to perform four science processes based on the theme of Exploring Space, namely observing, recording, comparing, making predictions. The demographic distribution of a national school in Seremban, Negeri Sembilan, is shown in Table 4.

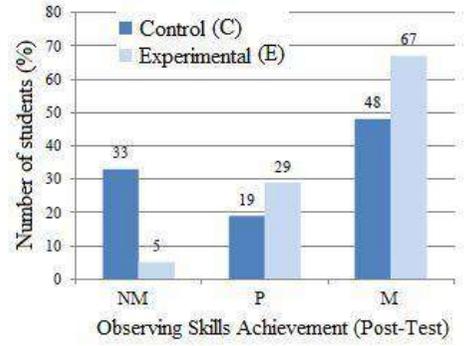
**Table 4:** Distribution of Preschool Students by Demographics

<b>Group</b>	<b>Girls</b>	<b>Boys</b>	<b>Total</b>
Control (C)	11	10	21
Experiment (E)	9	12	21
Total	20	22	42

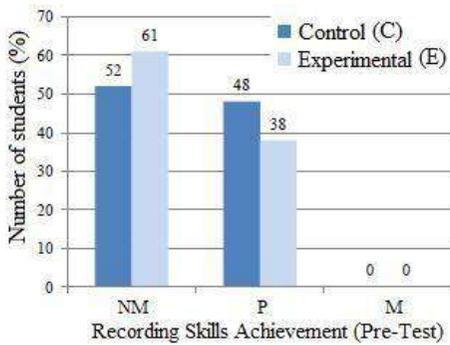
Figures 3 and 4 provide the findings from the Observation Skills Pre-Test and Post-Test, respectively. The results of the recording skills Pre-Test, as well as the Post Test, are shown in Figures 5 and 6. Figures 7 and 8 provide the findings of comparing abilities based on performance on the Pre and Post Tests, respectively. Figures 9 and 10 illustrate the results of the Pre-Test and the Post Test regarding predicting ability. The Pre and Post Test comparison reveals that the students' observing, recording, comparing, and predicting skills have improved.



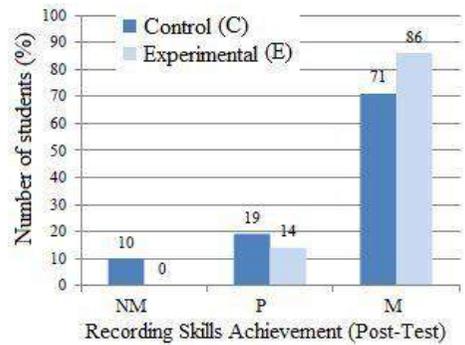
**Figure 3:** Pre-Test Observing Skill Distribution



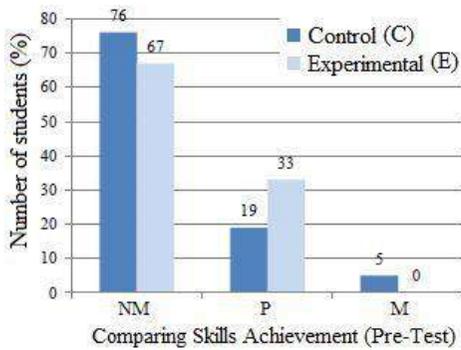
**Figure 4:** Post-Test Observing Skill



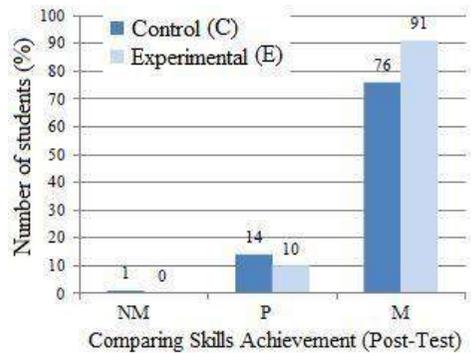
**Figure 5:** Pre-Test Recording Skill Distribution



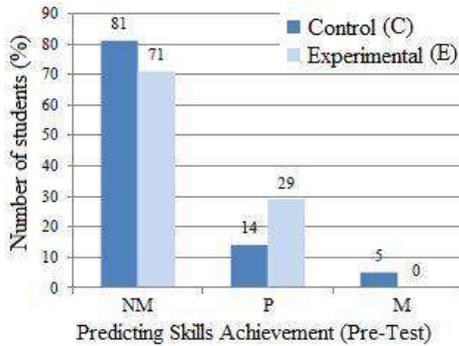
**Figure 6:** Post-Test Recording Skill



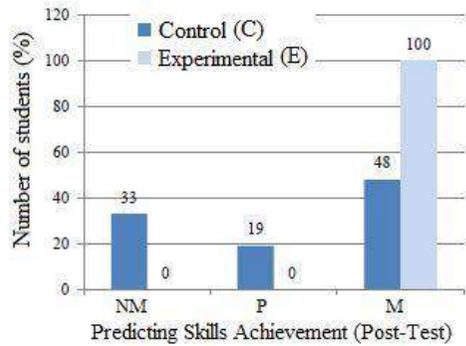
**Figure 7:** Pre-Test Comparing Skill Distribution



**Figure 8:** Post-Test Comparing Skill



**Figure 9:** Pre-Test Predicting Skill Distribution



**Figure 10:** Post-Test Predicting Skill Distribution

The following are the findings of studies that examined the use of multimedia applications for scientific teaching and learning on the topic of Space Exploration with preschoolers.

1. MyScience may increase preschoolers' scientific process abilities in Space Exploration-themed learning compared to standard teaching and learning approaches.
2. The design of multimedia components in MyScience is connected to student accomplishment in Exploring Space.
3. MyScience's usability testing demonstrates it can assist students to learn about space exploration.
4. The usage of the Science application for teaching and learning on the topic of Exploring Space elicits good responses from students, instructors, and specialists.

Using ICT, education has become more child-centered. They can explore, discover materials, and have fun while doing so. This teaches children independence and helps foster a positive mindset. They have more possibilities for learning activities, learn at their own pace, and are self-directed, causing them to listen more and follow the teacher's instructions (Siavash, Maslin, & Harihodin, 2011). ICT also assists children in learning by providing more realistic examples (Aliza, Mahani, & Tee, 2021). In the past, the teacher would use pictures of stars or the planets to demonstrate the stars and planets in the sky. However, with ICT, teachers can display not only static images of the sun and planets but also moving stars and planets. Evaluation can be done using ICT as soon as the activity is complete.

## 10. CONCLUSION

This study has developed a prototype application named MyScience-Space Exploration Series. This application utilizes a student-centered method and blends thematic and eclectic approaches. The method of instruction is based on natural language and the notion of indirect teaching and learning, which is implemented via a sequence of visual interactive tales. All MyScience application modules assist the development of scientific process skills, such as observing, comparing, predicting, and recording, on the topic of Exploring Space. The scientific process skills must be acquired by all individuals, even preschoolers, since they may be applied to daily tasks and the discovery of new information. Students' capacity to perform science procedures will also foster scientific thinking and scientific literacy, which will eventually lead to academic and professional success.

This courseware is an alternate medium for changing textbook-reliant conventional teaching and learning into a more effective learning environment. It is envisaged that this courseware will be a major contribution to the study and teaching of science and a catalyst for the use of ICT in preschools. It is also anticipated that this curriculum would stimulate children's interest in science education in order to better prepare them for primary school. Consequently, the software might contribute to the advancement and improvement of preschool education in Malaysia, with the aim of supporting the development of professionals in a knowledge-based society.

The use of ICT in early childhood education looks to be on the increase in most countries nowadays. This is due to the fact that the present generation is very tech-savvy and can learn new skills rapidly via ICT. Furthermore, technology has become embedded in education and the results indicate a positive impact on learning and teaching styles. In addition, learning using technology is believed to complement the traditional forms of teaching and learning (Zuki, 2019). This phenomenon also adds to the present demand. The industrial revolution, for instance, needs changes in education, and the Covid 19 Pandemic drastically transforms the educational landscape. Therefore, we must accept this truth and adapt, whether we like it or not. Periodically, it is necessary to maintain and improve the integration of ICT into early childhood education.

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# A SURVEY ON MALAYSIA’S SMART PARKING MOBILE APPLICATION AND REVIEW ON TYPES & APPROACHES

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## 1. INTRODUCTION

In this chapter, a survey on Malaysia’s smart parking mobile applications is administered in a structured manner. An Application that enables drivers to identify the most convenient parking lot through geographical-based information and make bookings application is developed. This application enables parking owners to administer parking lots and validate each driver using the car park based on their booking details (Lotlikar et al., 2016). Furthermore, parking apps include several features such as GPS vehicle tracking as shown in Table 1, Booking, Price comparison, Map searching, and In-app payments (Patel, 2022). At the end of the chapter review of types and approaches is concluded and summarized.

**Table 1:** Definitions of Parking App Features

GPS Vehicle Tracking	To determine the location of the vehicle and calculate the distance to the nearest carpark
Booking	The reservation of a particular parking space in advance.
Price Comparison	Details on the pricing of nearby parking lots enable users to make the most suitable decision on where to park their car.
Map Searching	A feature that enables drivers to precisely locate the nearest parking lot.
In-App Payments	A feature that allows users to pay for their parking by selecting their preferred payment option within the App.

### 1.1 TYPES OF PARKING METHODS

Different implementations and strategies for parking have been utilized over the last few decades as parking has become an essential component of modern-day cities worldwide. The different parking methods are outlined in the following sub-section, namely Traditional parking, RFID parking and Automated parking.

#### 1.1.1 Traditional Parking

Most houses, offices, and recreational centers have a standard car parking arrangement. Separate parking spaces are constructed to improve organization and reduce traffic for seamless access. They use less energy, with lighting being the only energy demand. Traditional garages are also incredibly dependable because they are not affected by power outages. Traditional garages are open 24 hours a day, seven days a week. Due to the restricted space in some traditional car parks, drivers must search for a vacant spot before parking. The capital investment isn't significant if they have a simple design. Assigning lots to specific individuals can also be used to provide car protection techniques (Gautam, 2019).

### 1.1.2 RFID Parking

The system is built to regulate vehicle entry and exit based on credentials granted to them over a wide variety of distances up to 30 feet for ultra-high frequency RFID scanners and access rates up to 100 mph. Without the need for human involvement, this allows for speedy and relatively precise access. An RFID reader is installed at the car park's entry and exit points, and each user is given a credential or badge that grants him access to the facility. RFID tags are usually in the form of stickers/decals that are immediately attached to the vehicle's windshield or portable hang tags, cards, or fobs that give the individual more flexibility when driving another vehicle for the day (de Buitelir, 2021).

### 1.1.3 Automated Parking

An automated parking system (APS) utilizes less space and eliminates the need for the driver to park. These can be completely automated or only partially automated. The vehicle must be driven to an entrance location where the driver and passengers can exit. With some intervention, it is transferred to its designated location either automatically or semi-automatically. Automatic parking systems make the most of limited space, which benefits locations where space is scarce. Automatic car parks release automobiles precisely, allowing cars parked last to leave first, freeing up room in the inner lots for cars parked later (Gautam, 2019).

## 1.2 Automatic License Plate Recognition

Automatic License Plate Recognition or ALPR for short was originally developed in the 1970s in the United Kingdom. The approach of ALPR utilizes optical character recognition to capture and process vehicle license plate numbers. Furthermore, specialized camera systems are normally used to capture the images of license plates; this technology is widely utilized by a wide range of law enforcement units around the world to control traffic crime. Moreover, ANPR technology can also be utilized as a method to store license plate images that are captured by the camera systems and the alphanumeric text from the license plate; some of these camera systems are also able to capture and store an image of the driver as well. Conclusively, the process of License Plate Recognition involves capturing, identifying, and collecting information such as pictures and license plate numbers for verification and analytical purposes (Pallavi Khare et al., 2018). Table 2 defines the ALPR terminologies. Automatic License Plate Recognition is normally performed in a series of sequential steps namely license plate extraction, character segmentation, and lastly character recognition.

**Table 2:** Definition of ALPR terms

License Plate Extraction	The process of scanning an image of the front of a car and filtering the image to only discern the car license plate.
Character Segmentation	The process of isolating each character of a car license plate.
Character Recognition	The process of identifying each individual segmented character of a car license plate.

## 1.3 BACKGROUND STUDY

In the following section, several topics will be outlined and discussed regarding parking methods' current application. This will include an overview of the current parking issues, benefits, and drawbacks of parking apps, issues faced by license plate recognition technology, and the need for smart parking.

## **1.4 PARKING ISSUES**

Parking issues are becoming increasingly notable in cities and urban areas across the globe due to the imbalance between supply and demand in terms of parking lots and parking spaces. Furthermore, parking systems in metropolitan areas are essential and directly correlate with traffic congestion, road accidents, and environmental pollution. Moreover, efficient parking systems enhance transportation in urban areas and cities, but the major issue with parking is frequently ignored by authorities involved in transportation and planning. Additionally, more emphasis should be placed on seeking more innovative and efficient solutions to alleviate the parking issues currently being faced by constituents in cities and urban areas across the globe; this can be done through proper management, planning, and designing of parking infrastructure within these areas (Ibrahim, 2017).

## **1.5 BENEFITS OF PARKING APPS**

- **Optimized Parking:** Users of parking Apps can locate the most convenient parking spaces available, which reduces the amount of energy and resources exerted to find a parking spot. Additionally, parking owners can adequately manage their parking lots as parking spaces can be occupied effortlessly (Morelli Marcos, 2018).
- **Reduced Traffic:** The traffic flow through parking is extremely more seamless with the utilization of parking apps as drivers are not required to drive around in circles to find an open parking space (Morelli Marcos, 2018).
- **Reduced Pollution:** Driving around looking for a parking space burns a significant amount of oil within a single day; by utilizing parking Apps the amount of time taken to drive around and find an open parking space is reduced, and therefore, the amount of daily vehicle discharge is significantly reduced which contributes to a reduction in air pollution (Morelli Marcos, 2018).

## **1.6 DRAWBACKS OF PARKING APPS**

The primary issue with parking apps is that the information is almost entirely user generated. Apps that provide updated parking information, such as the parking fees for each parking lot, require users to provide such information. And sometimes, users may input incorrect pricing or wrong information, which may lead to inconveniences for other users. Additionally, parking information may be outdated in small towns or rural areas on certain apps that don't have a large pool of users. Another drawback of parking apps often faced by users is that the apps may provide incorrect pricing information, especially in particular circumstances where an event is happening in a particular town, such as a concert. Apps tend to provide standard prices and do not reflect the increased prices implemented by parking owners (*The Pros and Cons of Using a Parking App*, 2017).

## **1.7 ISSUES FACED BY LICENSE PLATE RECOGNITION TECHNOLOGY**

Several issues have been flagged during the application of Automatic License Plate Recognition over the years. One of the major issues is that there is no uniformity in car license plate numbers for different cities or states; thus, plate numbers often vary from car to car, and the length of car license plate numbers also vary. Additionally, this makes the extraction of car license plates increasingly more complex and affects the accuracy of character segmentation and recognition.

Furthermore, license plate recognition technology faces another major issue: the low resolution of specific car license plate numbers captured by the camera of license plate recognition

systems, making it difficult to discern the accurate license plate number accurately.

Moreover, specific solutions have been applied to circumvent some of the issues license plate recognition technology faces, such as developing sequential coordination of image and video processing and utilizing various algorithms. Additionally, another efficient solution that has been utilized is to pinpoint the license plate area rather than the whole front of the car to discern the plate number and the color of the license plate (Sharma & Sing, 2015).

## **1.8 FACTORS THAT AFFECT LICENSE PLATE RECOGNITION**

A license plate recognition system usually is strategically placed in a distinct and static location such as a lamp pole, traffic light, traffic toll, or parking entrance. These systems typically operate efficiently with high recognition speed and accuracy. On the other hand, due to certain factors, the efficiency of these systems is significantly reduced; these factors include camera specifications, the viewing angle at which the license plate image is captured, lighting conditions such as poor lighting, ambient lighting, and poor weather conditions (Rademeyer et al., 2018).

## **1.9 THE NEED FOR SMART PARKING SYSTEM**

With the growing number of vehicles on the road and present infrastructure difficulties, the need for mobility and parking efficiencies is becoming increasingly noticeable. Although self-driving cars are becoming more common, the necessity for parking does not appear to be diminishing. At this point, cities must deal with the potential consequences of all future changes. This can be accomplished by accurate and forward-thinking planning and the use of a Smart Parking system to process and analyze data, resulting in a healthier city (Ancion, 2019).

## **2. LITERATURE REVIEW**

A smart parking system, or SPS for short, is an application that consists of several technological components which aid in managing the occupancy of parking infrastructure. SPS implements different types of sensors that are used to determine the availability of parking spaces within a parking lot, the information regarding the availability of parking spaces is gathered in real-time and disseminated to the potential users of the parking lots through the application (Karsten, 2018).

Traffic congestion and the need for parking are significant issues faced by various populous cities across the globe. Thus, the need for smart parking systems is becoming increasingly essential. The utilization of smart parking systems allows for the efficient administration of parking infrastructure; by utilizing smart parking systems, drivers can locate available parking spots and make bookings based on their preferences (Elsonbaty, 2020).

Smart parking systems play a pivotal role in the growing concept of smart cities; the hassle of navigating around a particular town or city looking for suitable parking has increasingly become a hassle for drivers across the globe. Although some modern cities have implemented techniques in administering parking infrastructure, these parking systems remain unfamiliar to many drivers within those cities. Additionally, there is a lack of funds in some cities to implement smart parking solutions. Moreover, to circumvent the issues faced and reduce fuel consumption, the implementation of smart parking systems and appreciation of such systems is increasingly being advocated. Conclusively, smart parking has become a prominent feature of smart cities across the globe, notably being utilized in universities, shopping malls, parking lots, and airports with significant benefits (Vilceanu et al., n.d.).

## 2.1 ELEMENTS AND CONCEPTS OF SMART PARKING SYSTEMS

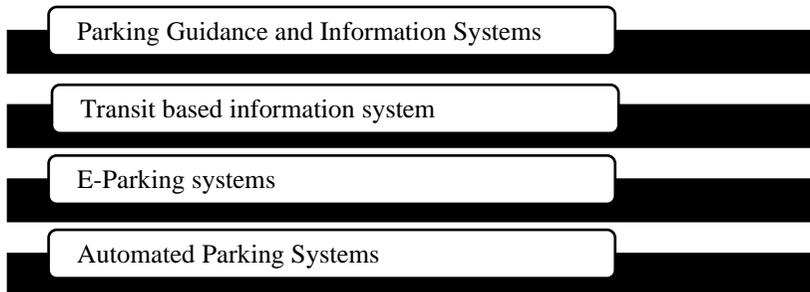
Elements and smart parking concepts are elaborated on in Table 3.

**Table 3:** Definition of terms related to SPS

Intelligent Transportation System (ITS)	By reducing congestion, the ITS aims to maximize traffic efficiency. It provides accurate traffic information, seat availability, and other features that assist commuters in saving time while also increasing their safety and comfort.
Convolutional Neural Network (CNN)	A CNN is a Deep Learning algorithm capable of taking an input image and assigning significance to various aspects/objects within it and discriminating between them.
Near Field Communication (NFC)	NFC is a near-field communication (NFC) technology that enables data exchange between devices within a 10 cm range.
Automatic License Plate Recognition (ALPR)	ALPR is an image-processing system that utilizes license plate numbers to identify vehicles.
Mobile ad hoc Network (MANET)	A MANET is a wireless mobile device network. A node can be a laptop, a PDA, a cellphone, or any other mobile device that can communicate with other mobile devices.
Roadside Unit (RSU)	An RSU collects data from a static sensing area along a road and sends it to traffic control devices and a centralized traffic management hub.
On Board Unit (OBU)	A transmitting device installed on cars that enables dedicated short-range communications (DSRC) between OBUs or RSUs.

## 2.2 TYPES OF SMART PARKING SYSTEMS

There are numerous SPS available on the market today. SPSs can be classified into five major categories based on their services: parking guidance and information systems, transit-based information systems, e-parking systems, and automated parking systems which are listed in Figure 1 below



**Figure 1:** Types of SPS

### 2.2.1 Parking Guidance and Information System (PGIS)

PGIS delivers real-time information about parking lots in managed parking spaces. It is a critical component of the Intelligent Transportation System (ITS) and is used with the vehicle guiding

system (Al-Turjman & Malekloo, 2019). Sensors are installed at the parking lot's entrances and exits to detect and calculate the number of vehicles entering and exiting. The available parking spaces are determined by sensing the number of vehicles entering and exiting available parking. Along with parking lot sensors, various computational methods are used to determine the status of the parking lot. Users can view the processed data via a variety of different interfaces. Users can make informed decisions about parking lots based on the information. Additionally, the PGIS system provides users with car navigation, guiding them to their allotted parking space.

### **2.2.2 Transit Based Information System**

The SPS based on public transportation provides information on parking lots near public transportation hubs. Additionally, it displays public transportation schedules to encourage users to utilize public transportation, which reduces traffic congestion, pollution, and fuel consumption (Al-Turjman & Malekloo, 2019). The Transit-Based Information method utilizes vehicle detection sensors and other computing techniques to obtain real-time parking lot occupancy information. Additionally, it directs vehicles to the designated parking lot via a series of message boards located along the route.

### **2.2.3 Smart Payment System Focused Parking**

Rather than using conventional parking meters, this type of smart parking system allows users to pay in advance. The technology paves the way for rapid and convenient payment collection by deploying an advanced payment feature. As a result, parking fees and fines collection time is significantly reduced. Additionally, this method ensures that new users have easy access. As a result, parking lots are vacated more frequently. The system may use contactless technologies such as near-field communication (NFC), radio frequency identification (RFID), or smart cards (Do et al., 2019). Additionally, the system may collect parking fees via cell phones or web applications via secure online payment mechanisms. Parking costs are calculated using the same sensors that determine parking lot occupancy.

### **2.2.4 E-Parking System**

E-Parking combines several smart parking facilities onto a single platform by leveraging innovative technology features (Soni, 2018). E-parking systems are software that is either mobile or web-based. Remote access to the facilities is available to anyone who has downloaded the app to their smartphone. To begin using the smartphone application, users must first register by providing the required personal and vehicle information. The user will gain access to the E-Parking facilities after completing the registration process. The E-Parking system provides the user with various services, including information about the occupancy status of various parking lots located within other parking stands, vehicle guidance to the closest parking stand, reservation capability, a variety of payment methods, vehicular security, and lot retrieval capability.

### **2.2.5 Automated Parking System (APS)**

APS is a fully automated mechanical parking system that operates without human intervention (Alsaferi et al., 2018). This system requires Automated Parking Facilities (APF), which allow users to check in and park their vehicles in a designated bay. The automobiles are then automatically parked in a designated parking space by a mechanical mechanism. To retrieve the vehicle, the user must first log into the system and pay any parking fees that may be applicable. After payment is made, the system returns the vehicle to its assigned parking space. APS informs the user of the number of available parking spaces within the parking space via digital display monitors.

Additionally, APS categorizes automobiles and assigns them to designated parking lots.

Because no human intervention is required during the parking process, vehicles are less likely to sustain damage during parking. APS maximizes the utilization of available parking spaces.

## **2.3 APPROACHES TO SMART PARKING SYSTEMS**

This section will conduct an in-depth analysis and comparison of the various SPSs' technology methods or approaches. SPS are classified into twelve distinct categories based on their approaches. These categories include wireless sensor networks, multi-agent systems, computer vision/image processing, vehicular ad-hoc networks, the Internet of Things, machine learning, and deep learning.

### **2.3.1 Wireless Sensor Network (WSN)**

A wireless sensor network (WSN) is a collection of geographically scattered wireless sensor nodes dedicated to monitoring various environmental characteristics such as sound, temperature, and pressure. A sensor node based on the WSN architecture is composed of a collection of sensors that communicate with one another to monitor various environment characteristics. All sensor nodes in a WSN are wirelessly connected to a sink node (Jawhar et al., 2018). Nowadays, WSN has acquired great interest among SPS developers due to its flexibility, scalability, and low deployment cost.

### **2.3.2 Multi-Agent System (MAS)**

MAS is a self-organizing computer-based system that leverages the intelligence of multiple intelligent agents to solve problems that no single system can solve (Belbachir et al., 2019; Dorri et al., 2018). Numerous studies have employed MAS to generate SPS due to its efficacy in closed or indoor and open or outdoor parking lot situations. A significant portion of the MAS-based SPS provides processing resources to the agents, which reduces the overall system's data transmission head. As a result, the rate of electricity use decreases.

### **2.3.3 Computer Vision/Image Processing**

SPS based on computer vision/image processing extracts various types of information from image data, such as parking lot occupancy status (Alsaferi et al., 2018), automatic licence plate recognition (ALPR), and face recognition for billing and security purposes, as well as to generate a report on road traffic congestion (Fahim et al., 2021; Pamula, 2018). Because these systems extract features from real-time parking lot video data, computer vision/image processing systems often have a high data transmission rate from the camera network to the processing units. These SPSs are frequently used in open parking spaces, as a single camera can cover a big area. However, these systems are prone to occlusion, shadow effects, distortion, and changes in light.

### **2.3.4 Vehicular Ad-Hoc Network (VANET)**

The VANET is inspired by the Mobile Ad Hoc Network (MANET), a wireless network comprised of mobile devices. The VANET-enabled SPS consists of three key components: the Parking Side Unit (PSU), the Roadside Unit (RSU), and the On-Board Unit (OBU) (Fahim et al., 2021; Nguyen et al., 2018; Zaheer et al., 2019). The OBUs are mounted on vehicles, the PSUs are positioned in parking lots, and the RSUs are installed beside the roads adjacent to the parking lots. This type of technology requires the presence of a credible authentication authority capable of certifying the OBU of the vehicle. When a car is parked in a smart parking facility, the OBU of the vehicle alerts the PSU that the parking space has been allocated. The PSU then forwards this data to the RSU. Vehicles traveling along the route where the RSU is located can acquire information on parking lot occupancy using their OBUs. In both closed and open parking lots, smart parking

systems based on VANET technology can be deployed. However, when a car without an OBU enters a smart parking facility, the system is inefficient and inaccurate.

### **2.3.5 Internet Of Things (IOT)**

The Internet of Things (IoT) is the hottest technology movement of the present day, in which all things are networked. Each internet-connected device has its own unique identity (UID). These gadgets can take the form of computational, mechanical, or digital equipment. They can convey data without requiring human-to-human or human-to-computer interaction (Karmokar et al., 2020; Kumar et al., 2019; Lao et al., 2020). The Internet of Things is a vital component of developing SPS. The internet connects all sensors and computational units in an IoT-based SPS, exchanging data without human involvement. Sensors, computational devices, and storage units can communicate via the internet via wired or wireless connections.

### **2.3.6 Machine Learning (ML)**

The term "machine learning" refers to a subset of artificial intelligence that enables a system to learn and improve on a specific activity using datasets or experiences without actively programming the system (Ullah et al., 2020). Based on machine learning, ASPS analyses the data from the parking lot to evaluate its status. Additionally, using machine learning and artificial intelligence, SPS can estimate parking lot occupancy for the next several days, weeks, or even months and give a dynamic pricing scheme. Machine learning-based systems can monitor traffic congestion and develop a smart solution for intelligent parking spaces (Kamble & Kounte, 2020).

### **2.3.7 Deep Learning (DL)**

DL is a subset of machine learning and an artificial intelligence function that makes decisions by simulating the human brain's data processing and feature extraction processes (Veres & Moussa, 2019; Zhang et al., 2019). DL algorithms are utilized to recognize vacantly occupied parking lots in an SPS rather than conventional sensors, which decreases the system's number of sensors and cameras. Additionally, DL is used to forecast the occupancy of parking lots.

### **2.3.8 Neural Network (NN)**

NN is a group of algorithms that pulls features and underlying relationships from data collections like the human brain does (Alam et al., 2018). In SPS, NN is used to recognize license plates from video footage captured in real time. CNN and machine vision are utilized to determine the occupancy status of a parking lot. Additionally, CNN can give traffic data for various routes (Pamula, 2018).

### **2.3.9 Fuzzy Logic**

Fuzzy logic is a type of logic that is like human reasoning. It uses multi-valued logic, which means that in fuzzy logic, there is no such thing as absolute truth or untruth (Jabbarpour et al., 2018). SPS forecasts parking lot occupancy status using fuzzy reasoning (Alavi et al., 2018). However, if the prediction output is not validated against real-time data, the accuracy of the fuzzy logic-based prediction model would be low (Costa et al., 2020). As a result, when paired with machine vision or sensors, fuzzy logic significantly increases the accuracy of the total system.

### **2.3.10 Global Positioning System (GPS)**

GPS is an integral part of a variety of smart parking techniques. On the other hand, GPS is incapable of gathering data on parking lot occupancy and providing other intelligent parking facilities. On the other hand, GPS can be used to navigate the user's vehicle toward available

parking spaces. Numerous systems can estimate parking lot occupancy and road traffic congestion utilizing GPS data and CNN or deep learning algorithms (Guo et al., 2021). The precision of GPS is proportional to the number of receivers. GPS receivers with a single frequency have an accuracy of roughly 7.8 meters. On the other hand, a two-frequency receiver delivers an accuracy of roughly 0.715 m. Additionally, GPS data is susceptible to error when used within a closed parking lot. Thus, GPS-enabled intelligent parking devices are ideal for open parking lots (Barriga et al., 2019).

### **2.3.11 Global System for Mobile (GSM)**

GSM is a second-generation (2G) digital cellular network standard. SMS is a supplementary service that the GSM standard provides. SMS is used to book parking spaces at various parking lots via SPS, based on GSM. Additionally, specific reservation systems generate unique codes for users throughout the reservation process. These numbers are used to verify the reservation and ensure that only authorized individuals may park (Hilmani et al., 2018).

### **2.3.12 Bluetooth**

Bluetooth is a wireless communication technology that permits the short-range transmission of data. Typically, a totally Bluetooth-based smart parking system includes automated valet parking. Without an automated valet parking facility, conventional SPS requires extra sensors and techniques to achieve various sorts of smart parking facilities (Khalid et al., 2021; Lewandowski et al., 2018; Saeliw et al., 2019). Numerous smart parking systems use crowd sensing to gather information about available parking spaces in an area. The approach captures parking lot data using an accelerometer, gyroscope, magnetometer, and GPS sensors on smartphones, as well as applications (X. Zhu et al., 2021).

### **2.3.13 SENSORS**

The sensors used in the design, development and implementation of SPSs are described in this section. This section discusses a variety of sensors, such as infrared sensors, ultrasonic sensors, cellular sensors, and magneto-resistive sensors.

#### **2.3.13.1 Infrared (IR) Sensor**

An infrared sensor is a device that detects and measures an object's emission of infrared radiation. Any item emits infrared radiation with a temperature greater than or equal to 5. The primary purpose of infrared sensors is to detect motion and measure temperature. There are two types of infrared sensors: active and passive (Fahim et al., 2021).

#### **2.3.13.2 Active IR Sensor**

The Active Infrared (AIR) Sensor emits infrared light and identifies any object in its area that reflects it. The light-emitting diode (LED) and the receiver are the two components of this infrared sensor. The LED emits light detected by the receiver as reflected infrared light. An active infrared sensor is unaffected by rain or snow. As a result, it is more suitable to object detection in covered or enclosed automobile parking facilities. Active IR Sensors' high deployment and maintenance costs are a significant disadvantage (Al-Turjman & Malekloo, 2019; Anjari & Budi, 2018).

#### **2.3.13.3 Passive IR (PIR) Sensor**

A Passive Infrared (PIR) Sensor emits no IR radiation. Rather than that, it senses changes in the environment's radiation levels. PIR sensors are typically used to detect moving objects. It is mostly used in SPS to determine the occupancy of parking lots. However, like the AIR sensor, the PIR sensor is sensitive to environmental changes such as rain and snow. As a result, it cannot be

used in conjunction with open parking lots. Furthermore, PIR sensors are expensive to deploy and maintain (Al-Turjman & Malekloo, 2019; Anjari & Budi, 2018).

#### **2.3.13.4 Cellular Sensor**

The term "cellular sensors" refers to the sensors that are integrated inside a smartphone. While a smartphone may feature a variety of sensors, the most usually utilized are the SPS, Accelerometer, Gyroscope, and Magnetometer. These sensors are used to ascertain the user's position, orientation, and direction (Barriga et al., 2019; Khalid et al., 2021).

#### **2.3.13.5 Magneto Resistive Sensor**

Magnetic resonance sensors (MR sensors) are designed to detect an applied magnetic field without any electrical contact. The magnetic resonance sensor operates on a relatively straightforward principle. A magnetic field generates a permeable change in the resistance of any electrical conductor when it is applied. Resistance varies according to the magnetic field lines' orientation. Magnetic resonance imaging is mainly used to detect vehicles in parking lots (Khalid et al., 2021).

#### **2.3.13.6 Acoustic Array Sensor**

An acoustic array sensor measures the distance and direction of a sound source or reflector by detecting sound or vibration at specific frequencies. The term "passive acoustic location" refers to this technique (Armingol et al., 2018; Dogaroglu et al., 2021). SPS employs Acoustic Array Sensors to detect parking lot vacancies and perform surveillance.

#### **2.3.13.7 Ultrasonic Sensor**

Using acoustic waves in the range of 25 kHz to 50 kHz, ultrasonic sensors identify any adjacent item reflecting the acoustic wave (Armingol et al., 2018). This sensor is best suited for interior applications due to its resistance to environmental changes such as snow and rain. As a result, ultrasonic sensors are utilized in enclosed, indoor parking spaces often positioned on the ceiling. Ultrasonic sensors can be used to detect vehicles. Additionally, when properly designed, this type of sensor can differentiate between a vehicle and a pedestrian. Ultrasonic sensors are low-cost and low-maintenance.

#### **2.3.13.8 Camera**

Numerous SPS researchers have implemented a camera or a network of cameras to detect vehicles and monitor parking lots. Numerous researchers have detected automobile license plates using cameras and various computational techniques (such as computer vision, image processing, and so on) for billing, reservation, and authentication applications. SPS provides users with a secure parking solution by utilizing a camera or network of cameras. However, camera-based SPS deployment and maintenance are typically prohibitively expensive (Alam et al., 2018; Khalid et al., 2021; Zantalis et al., 2019).

#### **2.3.13.9 Inductive Loop Detector**

An inductive loop detector (also known as an inductive loop traffic detector or vehicle loop detector) is a vehicle detection device that utilizes the electromagnetic induction principle. This type of detector is installed beneath the road to detect vehicles above it. When combined with specific computational algorithms, these detectors can classify a variety of vehicle kinds (Fahim et al., 2021; Wei et al., 2019). Loop detectors for vehicles are expensive and require considerable installation. This sensor is suitable for both open and enclosed parking lots.

#### **2.3.13.10 Light Detection and Ranging (LIDAR)**

LIDAR is a distance measurement technique that uses LASER light to determine the distance between two objects by illuminating the object of interest and sensing the reflected light. By measuring the time taken to collect the reflected light and the wavelength of the light, a three-dimensional representation of the item of interest can be constructed (Bura et al., 2018). In SPS, LIDAR is mainly used to detect vehicles.

#### **2.3.13.11 Microwave Radio Detection and Ranging (RADAR)**

Microwave RADAR uses electromagnetic waves in the microwave spectrum to determine the velocity, distance, and angle of a target object. However, microwave radar can detect only moving objects (Paidí et al., 2018). Doppler Microwave RADAR can be used to determine both stationary and moving objects (Lewandowski et al., 2018). An SPS can be used in a video camera by generating 2D images using radar sensors and artificial intelligence. Additionally, using Microwave RADAR data, a CNN can be trained to predict parking lot occupancy status. Changes in the environment do not affect this type of sensor. As a result, they can be used in open and enclosed parking lots. However, deploying and maintaining this type of sensing technology is costly.

#### **2.3.13.12 Magnetometer**

A magnetometer identifies the presence of any vehicle by monitoring the electromagnetic fields that surround it. Magnetometers are installed in each parking lot to detect the presence of any car (Alam et al., 2018). Magnetometers are appropriate for both confined and open-space SPS due to their insensitivity to environmental changes.

#### **2.3.13.13 Agent**

The term "agent" refers to a component in a multi-agent system, which also includes sensors, processors, and other tools. Consider an agent as a small system embedded within a more extensive network of systems capable of creating, processing, and transferring data to obtain a complete picture of the environment (Alavi et al., 2018; Al-Turjman & Malekloo, 2019).

#### **2.3.13.14 Radio Frequency Identification (RFID) sensor**

RFID technology uses electromagnetic waves to identify and track items. RFID technology combines an RFID receiver and an RFID tag into a radio transponder. When an RFID reader scans an RFID tag, the digital data stored is transmitted. The receiver obtains the information necessary to identify the object. RFID technology is commonly utilized to identify vehicles and users in smart parking systems (Al-Turjman & Malekloo, 2019; Atta et al., 2020; Ben-Daya et al., 2019).

### **2.3.14 NETWORKING TECHNOLOGIES**

The networking component of intelligent parking systems is crucial. Networking connects the data from the sensors to the processing units or the processed data from the processing units to the end users. In other words, it connects sensors, processors, and end-users. In SPS, the network is divided into two components: the Sensor Network and the User Network, both of which are discussed in this section.

#### **2.3.14.1 Sensor Network**

The Sensor Network is the component of the system that connects the sensors to the processing unit for data transmission. Sensor networks can be wired or wireless. SPS can communicate wirelessly via a variety of industry-standard technologies, including ZigBee, Wi-Fi, Local Area Network (LAN), Direct Short-Range Communication (DSRC), Constrained Application Protocol

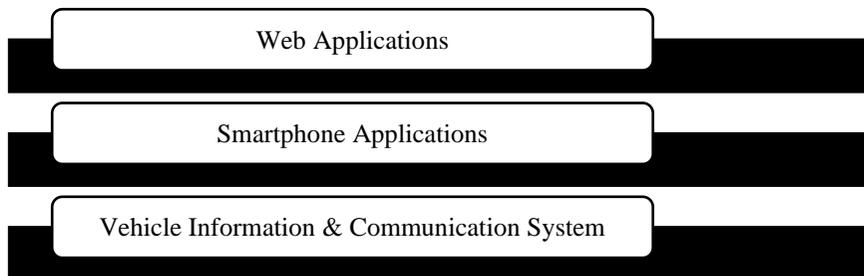
(CoAP), 3G/4G cellular networks, Enhanced Data for GSM Evolution (EDGE), General Packet Radio Services (GPRS), and IPv6 over Low-Power Wireless Personal Area Networks (LPWAN) (6LoWPAN) (Fahim et al., 2021).

### 2.3.14.2 User Network

The user network connects end users to the SPS, visualizing data, reserving parking, paying bills, and executing other associated actions. The User Network is primarily built on wireless connectivity technologies such as 3G/4G cellular networks, Wi-Fi, Device to Device (D2D) communication via Wi-Fi, GPRS, GSM, and Wide Local Area Networks (WLAN) (Fahim et al., 2021).

### 2.3.15 USER INTERFACES

SPS can be accessed via various interfaces, including online apps, smartphone applications, and the Vehicle Information and Communication System. The following section discusses the numerous user interfaces that are utilized in SPSs listed in Figure 2.



**Figure 2:** Types of SPS user interfaces

#### 1. Web Applications

Many SPSs use web applications based on the Hyper Text Transfer Protocol (HTTP) and Transmission Control Protocol (TCP)/Internet Protocol (IP) protocols to provide remote access to end-users. SPS web applications typically provide an end-user with a graphical user interface (GUI). The web application provides real-time parking lot status, navigation to the nearest parking lot or parking area, reservation of parking spots, and online payment (Fahim et al., 2021).

#### 2. Smart Phone Application

A substantial chunk of SPS deploys Android or iOS applications to deliver information about smart parking facilities to end-users. As with web-based apps, smartphone applications include a graphical user interface (GUI) that enables users to interact with the system. Additionally, to obtain real-time information on parking lot status, vehicle navigation to the nearest parking area or a lot, parking lot reservations, parking lot information retrieval, and payment of parking fees via internet services or smartphones' Near Field Communication (NFC) technology (Fahim et al., 2021).

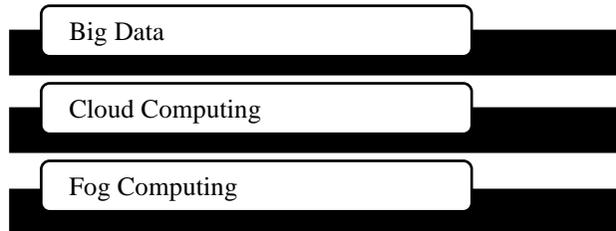
#### 3. Vehicle Information and Communication (VICS) Based SPS

VICS is a technology that enables the driver to receive traffic and travel information via a monitor mounted on the vehicle's dashboard. The VICS transmits and receives data via wireless technologies such as Frequency Modulation (FM), microwaves operating in the Industrial Scientific and Medical (ISM) band, Data Radio Channel (DRC), infrared (IR), and Radio Data

System (RDS). VIC is used in SPS to obtain information about nearby parking areas and traffic congestion. They can also be used to make parking reservations in some cases (Fahim et al., 2021).

### 2.3.16 COMPUTATIONAL APPROACHES

An SPS cannot function without a computational unit. The computational unit may shape a physical device installed within the parking area or a cloud-based platform. This section examines the most often utilized computational techniques for SPS, as seen in Figure 3 below: Big Data, Cloud Computing and Fog Computing.



**Figure 3:** Computational Approaches to SPS

#### 1. **Big Data**

Large-scale SPS creates enormous amounts of data, which are often analyzed through Big Data. The term "Big Data" is widely used to refer to vast amounts of structured and unstructured data that are far too large and complicated for typical data processing application software to process. It makes it possible to manage enormous amounts of data and generate insights. Large SPSs have the option of deploying Big Data on-premises or through a cloud service (Bibri, 2018; Silva et al., 2018; Tseng et al., 2018; L. Zhu et al., 2018).

#### 2. **Cloud Computing**

SPS is often based on cloud computing since it requires off-site processing and storage of sensor data. Cloud computing enables the system to obtain on-demand access to cloud storage and data processing without the user supervising it personally (Fahim et al., 2021). IoT-enabled technologies typically use cloud computing (Khalid et al., 2021; Kong et al., 2018).

#### 3. **Fog Computing**

Fog computing is a computer architecture that maximizes the processing, storage, and communication capabilities of edge devices connected to the end router via internet technologies. Cloud computing and Big Data are examples of this design. Decentralized SPSs frequently rely on fog computing for data processing and storage (Puliafito et al., 2019; Yousefpour et al., 2019). By utilizing fog computing, SPS can limit the amount of data transferred, resulting in more energy-efficient systems.

## 2.4 AUTOMATIC NUMBER PLATE RECOGNITION ALGORITHMS

The first and most crucial stage of ANPR systems is successfully extracting a number plate from an image/video. Algorithms must be robust to discriminate between the number plate and other items in the image frame. Numerous techniques have been used to extract number plates; the next sections summarize various algorithms.

## **2.5 NUMBER PLATE EXTRACTION METHODS**

### **2.5.1 NP Extraction Using Edge Information**

Edge detection methods are widely used to extract number plates by recognizing all rectangles in captured images (Lubna et al., 2021). Typically, the car's body and the region around the number plate have a distinct color transition. The two are separated by utilizing edge detection filters or algorithms to locate the edges. As demonstrated in (Hendry & Chen, 2019; Selmi et al., 2020; Shashirangana et al., 2021), a simplistic technique called the Sobel filter was employed to extract edges successfully. Edges are recognized by detecting vertical edges to obtain vertical lines and horizontal edges to obtain horizontal lines or detecting both simultaneously to obtain a complete rectangular shape. The number plate can be located by utilizing geometric qualities to locate the rectangle lines.

### **2.5.2 NP Extraction Using Global Image Information**

The image is scanned, and its pixels are classified into components based on their pixel connectivity using the Connected Component Analysis (CCA) technique (Slimani et al., 2019). Spatial metrics such as the aspect ratio and area are frequently employed to extract the number plate (Shashirangana et al., 2021; Weihong & Jiaoyang, 2020). (Slimani et al., 2019) developed a two-step method for number plate extraction. The first stage adopts Otsu's Threshold Method, a simple and effective adaptive thresholding technique to deal with the changeable light illumination conditions. The CCA technique is applied to the binarized image to find rectangular shapes. The resulting number plate is subjected to edge detection and a closed curve approach to verify that the created image is indeed a number plate.

### **2.5.3 NP Extraction Using Color Features**

Color-coded vehicle license plates may be used to indicate area or country. The general strategy for number plate extraction is based on the color mixing of number plates (Selmi et al., 2020). Additionally, the traits are unique, and such color contrasts occur only inside a plate region (Liu & Chang, 2019). The produced image is scanned horizontally. If a pixel has a value inside the range of the number color plate, the color ranges of its horizontal neighbors are evaluated. If a pixel's range is shared by at least two or more horizontal neighbors, it is an edge pixel. Finally, the color plate regions are determined by analyzing all the edges in the new edge image.

### **2.5.4 NP Extraction Using Texture Features**

The characters determine these techniques on the license plate. A greyscale exhibits a visible change induced by a color transition between the plate's character colors and its high-edge density background. To extract number plates from images, the Local Binary Pattern and Histogram of Oriented Gradients (HOG) are used (Shashirangana et al., 2021). The LBP algorithm is used to classify the texture and build a histogram using the rectangular shape of the number plate (Sferle & Moisi, 2019). With an accuracy of 89.7 percent, 110 pictures were discovered. This technique, however, is unsuccessful for fuzzy photographs or taken in low light, as well as for images with shifting angles of orientation.

### **2.5.5 NP Extraction Using Character Features**

Numerous research projects have also presented strategies for finding the plate's characters based on character feature extraction. These techniques scan the image for any characters on the license plate. The number plate region is then retrieved from the region containing the recognized characters. Rather than immediately applying the number plate properties, the algorithm recognizes all the image's character areas. This procedure is character- and region-dependent. All

detected character- based regions are mentioned and categorized using a neural network (Shashirangana et al., 2021).

### **2.5.6 NP Extraction Using Feature Learning**

Few extraction approaches are effective in detecting number plates because they seek at least two or more properties of a number plate. In this instance, the extraction techniques used are hybrid extraction approaches. You Only Look Once (YOLO), a Convolutional Neural Network (CNN)-based object detector, was employed (Li et al., 2018). It is a two-step process that utilizes standard data augmentation techniques such as flipped characters and inverted number plates. The CNNs are fine-tuned and trained at each level. The resulting model generates acceptable results for two datasets that are distinct.

## **2.6 NUMBER PLATE SEGMENTATION METHODS**

The character segmentation stage's success depends on the number plate extraction success in the image or scene. The following section discusses various techniques for segmenting number plates according to the features employed.

### **2.6.1 NP Segmentation Using Connected Components**

Segmentation is achieved using pixel connections (Al-Zawqari et al., 2019) using linked component labeling g to segment 958 High Definition (HD) images with various conditions with 99.75 percent accuracy. The character pixels in the binary image are labeled according to their connection, and their aspect ratio and size are compared to the characters on the number plate. However, this strategy does not appear to be promising for linked or fractured characters.

### **2.6.2 NP Segmentation Using Vertical/Horizontal Projection**

The lettering and backdrop of a license plate are colored differently. The generated binary image has distinct values for the character and backdrop of the number plate. Character segmentation is achieved by (Hendry & Chen, 2019) utilizing vertical and horizontal pixel projections. Vertical projection is used to determine characters' beginning and ending points, and horizontal projection is used to extract individual characters. Apart from noise reduction, vertical projection extracts characters from images (Weihong & Jiaoyang, 2020). This approach obtains a 99.2 percent accuracrate while processing over 30,000 photos in ten to twenty milliseconds.

### **2.6.3 NP Segmentation Using Characters Features**

Knowledge of the primary characteristics of car plates aids in the segmentation process. In (Lubnaet al., 2021), characters are isolated using the RGB color extractor. The segmentation rate is 98.5 percent for 255 color images analyzed. Segmentation is carried out utilizing YOLO models, YOLOv2 models, Fast-YOLO models, and Classification-Regression Network (CR-NET) models, all of which are based on neural networks (Laroca et al., 2018). The binary image is horizontally scanned to determine the locations of the starting and terminating characters. If the ratio of characterpixels to background pixels reaches the threshold value shortly after it falls below it, this is the character's commencement point.

### **2.6.4 NP Segmentation Using Boundary Information**

Contour modeling can also be used to segment characters. The secure curving method is employed (Slimani et al., 2019). Vertical histograms indicate the separation of letters (Sferle & Moisi, 2019). (Weihong & Jiaoyang, 2020) propose an adaptive morphology-based segmentation approach for recovering severely deteriorated number plates. A histogram-based technique is used to determine

and merge the portions.

## 2.7 NUMBER PLATE RECOGNITION METHODS

Character recognition is the final stage of ANPR systems. The segmented characters' size and thickness may vary due to zooming and camera distance. Due to noise, characters may be broken, twisted, or deformed. This section explores strategies for character recognition.

### 2.7.1 Character Recognition Using Template Matching

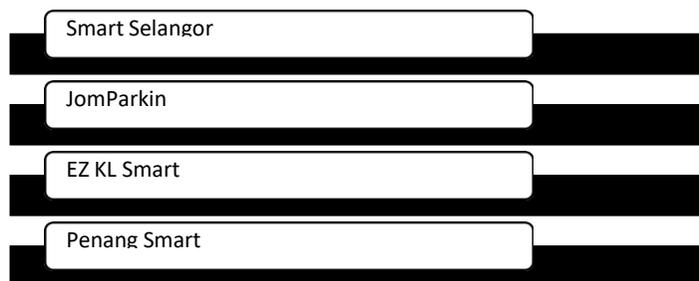
The simplest form of character recognition is template matching. A cross-correlation method compares or measures the extracted character's similarity to the template character set. The character bears the most resemblance to one of the templates set's candidates chosen. Since changes in lighting conditions directly affect the resulting image's grey-level intensities, these techniques are widely used for binary images (Lubna et al., 2021).

### 2.7.2 Character Matching Using Extracted Features

The processing time is significantly increased because the template matching technique uses all pixels. Additionally, for Character Recognition, an alternate approach of feature extraction is employed; this method reduces processing time and eliminates extraneous pixels. Divides the binary character into three four-pixel blocks, resulting in 24 blocks, each with its unique value, which generates a characteristic vector. Each matrix is compared to a pre-defined template of characters, and the closest match is used to select the character for each block. Following character identification, two unique groups of characters are produced and evaluated further using trained neural networks to increase the recognition accuracy of the system (Lubna et al., 2021).

## 2.8 SYSTEM COMPARISON

The following section compares Malaysia's most popular smart parking applications listed in Figure 4 below. Most of the apps compared in this section are commercial parking apps that can be used by the public depending on the state in which they reside in Malaysia. Additionally, these applications will be analyzed and compared based on their features.



**Figure 4:** Smart Parking APPS

### 2.8.1 System 1: Smart Selangor Parking

#### Intro

SSP is a public convenience in Selangor and Kuala Lumpur. You can pay your parking summons anytime, anywhere, or hassle-free in just two steps. Reload via secure banking or credit card within the application, and you can begin paying parking or summonses at the touch of a button.

### Features:

- Can be used in multiple councils
- Two-Step payment method which involves entering vehicle plate number and parking duration.
- Duration Timer
- Notification of time expiry
- Paperless utilizes digital receipt
- Credit can be reloaded directly from the application
- Multiple vehicles can be managed by a single account
- Parking fees for multiple vehicles can be paid simultaneously
- Monthly passes available
- Payments can be made at parking lots by scanning barcodes, entering vehicle plate number or car park ID.
- Credit can be transferred to other users.
- GPS is used to ensure payments is made to the correct council
- Can pay for parking in advance
- Cashless payments offered

### Screenshots



Figure 5: Smart Selangor APP Login interface



Figure 6: Smart Selangor APP registration interface

## 2.9 SYSTEM 2: JOMPARKINGINTRO

### Intro

JomParking is a self-service parking application that enables you to save time and money by paying for parking on the go. JomParking is a simple-to-use application that enables you to pay parking fees wherever you are; there is no need to scoop or travel in the rain to do so.

### Features:

- Can be used for both on-street and off-street parking
- Parking duration can be extended
- Notification of remaining parking duration.
- All transactions are tracked.
- Paperless
- Payments can be made for friends and family by one user.
- More than one vehicle can be registered per user on the App.
- Cashless payment offered.
- Credit can be reloaded directly from the application

### Screenshots

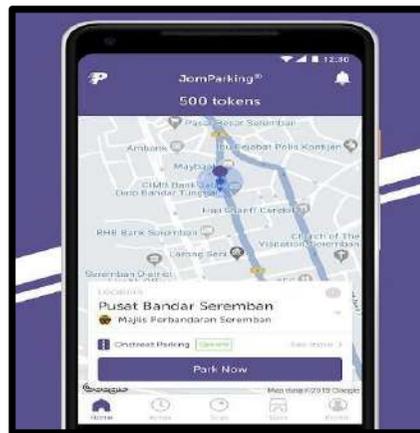


Figure 7: JomParking APP home Page

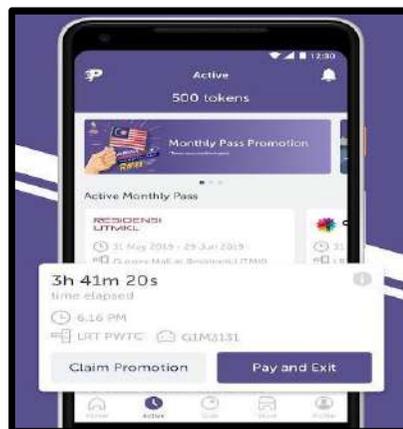


Figure 8: JomParking App Active Page

### 2.8.3 System 3: EZ KL Smart Park

#### Intro

A comprehensive yet simple parking system that enables users to take advantage of all the features required of an innovative and modern on-street parking system. User can pay for parking at anytime and from any location with the touch of a finger.

#### Features:

- Can be used for On-street parking
- Parking notifications and alerts
- Parking duration can be extended
- More than one vehicle can be registered per user on the App.
- Credit can be reloaded directly from the application
- Cashless payments offered

#### Screenshots



Figure 9: EZ Smart Park APP landing page

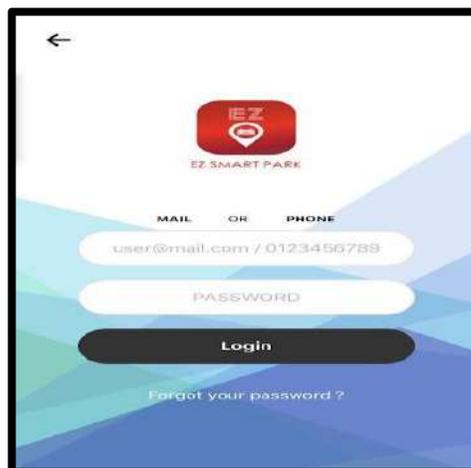


Figure 10: EZ Smart Park APP login interface



**Figure 11:** EZ Smart Park APP Home page

## 2.8.4 System 4: Penang Smart Parking app

### Intro

Not only is the Penang Smart Parking app used to pay parking fees, but it is also used to locate unoccupied parking lots throughout Penang. Additionally, you can register multiple vehicles under a single account, which means that you can pay the parking fee for your family members. This app can currently be reloaded using a credit/debit card, online banking, or a variety of e-wallets such as Boost and Grab Pay.

### Features

- Register multiple vehicles under a single account
- Pay parking fees for family friends
- Monthly pass available
- Uses GPS to locate parking lots in your area
- Credit can be reloaded directly within the APP.
- Parking duration can be extended
- Parking notifications and alerts
- Offers cashless payment methods.

### Screenshots



**Figure 12:** Penang Smart Parking APP booking interface



Figure 13: Penang Smart Parking APP search page

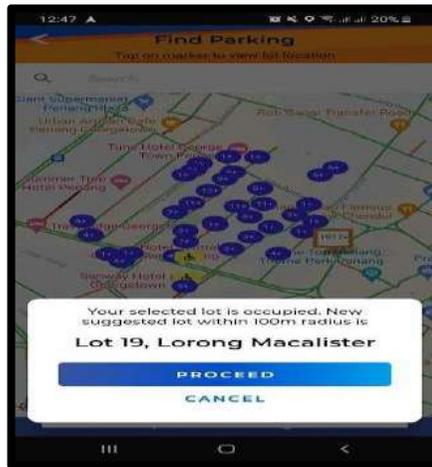


Figure 14: Penang Smart Parking APP search results page

The comparison table is shown in Table 4.

Table 4: Smart Parking Application Comparison Table

Features	System 1	System 2	System 3	System 4
Cashless Payments	✓	✓	✓	✓
Paperless	✓	✓	✓	✓
On-street Parking		✓	✓	
Off-street Parking	✓	✓	✓	✓
Multiple Vehicles under one account	✓	✓	✓	✓
Pay for parking in advance	✓			
Duration Timer	✓	✓	✓	✓
Notifications & alerts	✓	✓	✓	✓

Payments can be made at parking lots	✓			
Credit Reload	✓	✓	✓	✓
Two-step payment verification	✓	✓	✓	✓
Monthly Passes	✓			✓
Extend parking duration		✓	✓	✓
Pay for family and friends	✓	✓	✓	
Uses GPS to locate Parking lots				✓

## 2.9 CONCLUSION

According to this research's detailed evaluation and analysis, multi-approach SPS will prevail in future smart cities powered by the Internet of Things. The user interface will be a smartphone application that will include standard SPS features such as parking supervision, online payment, reservation, and vehicle direction. Sensors utilized in SPS will differ depending on the indoor and outdoor environment. However, when it comes to sensor selection, the ease of installation, privacy, sensing method, and sensor coverage area will be the significant factors to consider. Security of data transmission protocols will also be a significant challenge in future SPS systems. As a result, wireless communication protocols will place a higher emphasis on data security. In the case of this project, the smart parking application being developed will have features such as parking reservation and license plate recognition through sample license plate images.

Current state-of-the-art techniques for ANPR rely heavily on OCR engines equipped with AI capabilities. Recognition techniques based on Artificial Neural Networks achieve more excellent recognition rates. Integrating ANPR systems with other information and communication technologies (ICT) tools are increasingly gaining popularity. For example, integration of ANPR engines with GPS, online databases, Android/iOS platforms, and RFID, among other tools used in intelligent transportation systems. Future research is needed to underline the technology's importance and incorporate it with other ICT tools that can help the transportation system and its policymaking. The existing CV algorithm's accuracy is limited to areas and standardization for number plates. Additional study is required to develop sophisticated algorithms to work in varied situations with diverse number-plate datasets that are not standardized. With the accuracy of ANPR systems increasing over time and when combined with AI and IoT capabilities, it is anticipated that these disruptive technologies and applications will gain traction in the following years, leading to the introduction of new use cases. It is feasible to convert raw augmented ANPR camera data to helpful information and aid in comprehending traffic flow, including passenger and freight mobility, using the right tools/software. ANPR cameras can be strengthened by the addition of data about the vehicle's category. Conclusively, based on the result of the analysis conducted, multiple algorithms will be used in conjecture to achieve a higher number plate recognition rate.

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# KESAN PENYELENGGARAAN RANGKAIAN INTERNET BERPUSAT DI INSTITUSI PENGAJIAN DI NEGERI SEMBILAN

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## 1. PENGENALAN

Internet dan pelajaran telah menjadi satu keperluan wajib di dalam sistem pembelajaran bukan sahaja di Malaysia tetapi di seluruh dunia. Kesukaran untuk mengakses internet di institusi pengajian dilihat sebagai satu permasalahan dalam pembelajaran, apatah lagi di alam globalisasi kini semua informasi berkaitan pelajaran dikongsi melalui platform atas talian. Menurut Souter (2017), internet dilihat sebagai salah satu tunjang utama dalam memastikan kemajuan berterusan demi menaiktarafkan kualiti pelajaran. Souter (2017) juga menyatakan terdapat lima keutamaan didalam pembuatan polisi internet termasuklah infrastruktur dan akses, visi dan polisi, penyertaan, kapasiti, serta kandungan dan peranti.

Penggunaan peranti teknologi telah dilihat meningkat sejak lebih 10 tahun yang lalu dan peranti ini dilihat bergantung kepada rangkaian *wireless*. Justeru, kebanyakan institusi dilihat penting untuk mempertimbangkan untuk menyediakan rangkaian *wireless* terbaik dengan ciri-ciri keselamatan (Nose, Likavec, Bischof & Kuijper, 2015).

Mengabaikan kepentingan rangkaian internet berpusat dilihat sesuatu yang sukar untuk institusi, khususnya apabila terdapat banyak protokol dan aplikasi yang berjaya di internet beroperasi secara berpusat. Perlu juga diingatkan bahawa rangkaian berpusat bukanlah binari tetapi lebih menjurus kepada kontinum dimana sesuatu fungsi itu dikawal oleh satu entiti tunggal (Nottingham, 2022). Sementara Arkko (2020), melalui kajian beliau menyatakan trend pemusatan rangkaian internet dilihat amat penting memandangkan ia memberi kesan yang besar terhadap persaingan servis internet, pengguna internet serta evolusi teknologi internet. Melalui pendapat di atas, dapat diringkaskan bahawa pemusatan rangkaian internet di sesuatu institusi dan institusi adalah amat penting bagi memastikan kecekapan perkongsian maklumat dilakukan.

Namun begitu, menurut White (2021), pemusatan rangkaian internet akan mencetuskan kebimbangan kepada kejuruteraan dan polisi internet dunia. Ini adalah kerana pemusatan rangkaian akan meningkatkan kerumitan protokol serta sistem internet. Bukan sahaja itu bahkan menurut White (2021) lagi, ia juga akan melibatkan kos infrastuktur yang tinggi, ketidaksabaran pengguna serta penglibatan kerajaan sebagai pembuat polisi. Beberapa isu berkaitan pemusatan rangkaian internet di institusi pengajian dikenalpasti termasuklah:

- Laluan trafik tidak stabil: Laluan trafik tidak stabil adalah disebabkan banyak penggunaan pada suatu masa. Ia akan menyebabkan pelayan dan *router* tidak dapat menampung jumlah penggunaan pada ketika itu.
- Terdapat komputer yang tidak dapat mengakses internet: Jika terdapat bilangan pengguna yang ramai mengakses internet, pelayan tidak dapat melayan kesemua pengguna dengan sama rata yang berada didalam rangkaian dalam keadaan yang terbaik dan akan menyebabkan beberapa komputer tidak dapat mengakses internet.

- *Wireless modem* tidak berfungsi dengan baik: Ralat pada *Wireless modem* sering berlaku terutama jika talian internet yang dibekalkan oleh pembekal perkhidmatan internet tidak dapat berhubung dengan *Wireless modem* yang digunakan pada rangkaian LAN kita. Ini mungkin disebabkan berkongsi *Internet Protocol address* yang sama pada suatu tempat atau kawasan. Dengan keadaan tersebut internet diterima oleh pihak kita atau pengguna atau pelanggan akan terjejas. Bagi pengguna yang menghubungkan terus pada *Wireless modem* atau *Wireless router* untuk mendapatkan internet, pengguna tersebut akan berkongsi pula dengan pengguna akhir yang lain. Apabila ralat di *modem* atau *router* terjadi, pengguna perlu *restart* atau *reboot modem* atau *router* bagi *reset* semula peralatan rangkaian tersebut.
- Sambungan antara *wireless modem* kepada *wireless modem* yang lain tidak berfungsi secara berterusan: Keadaan ini berlaku ketika apabila sambungan menggunakan sistem atau teknologi *repeater*. Sambungan rangkaian menggunakan teknologi ini adalah mudah kerana dapat menyambung setiap rangkaian tanpa menggunakan wayar. Akan tetapi, jika terdapat ramai pengguna pada suatu masa akan menyebabkan sambungan internet tidak berfungsi dengan baik. *Wireless router* seringkali terputus isyarat untuk sambungan ke pengguna atau sambungan ke *wireless repeater* yang lain. Keadaan ini akan menyebabkan pengguna atau pengurus rangkaian perlu kerap *reboot wireless router* dan *wireless modem* supaya berfungsi seperti biasa.
- Tidak dapat mengawal setiap komputer yang berhubung dengan rangkaian: Jika tidak dapat mengawal pengguna didalam rangkaian, pengguna akan dapat mengakses setiap laman web yang tidak sepatutnya sekaligus akan mendedahkan rangkaian LAN dengan risiko bahaya daripada penggodam, virus dan sebagainya. Ini akan menyebabkan rangkaian LAN tidak selamat.
- Kawalan antivirus tidak dapat dilakukan secara berpusat: Setiap pengguna mempunyai antivirus tersendiri. Tetapi, jika tidak dikemaskini akan menyebabkan ancaman dari pihak ketiga. Jika antivirus dapat dikawal secara berpusat dan dapat mengemaskini antivirus sebelum memasuki rangkaian LAN, ianya adalah lebih selamat. Ini bermakna, antivirus perlu berada didalam pelayan.

Justeru, tujuan kajian ini adalah untuk melihat keberkesanan pemusatan rangkaian internet dalam penyaluran maklumat yang lebih cekap di institusi pengajian. Skop kajian ini akan memfokuskan kepada institusi pengajian di Negeri Sembilan, Malaysia.

## 2. RANGKAIAN DAN RANGKAIAN INTERNET

Sistem rangkaian komputer merupakan satu sistem komputer yang mengandungi lebih dari satu komputer yang dihubungkan di antara satu sama lain melalui sistem pengoperasian yang selaras. Sistem ini berupaya memberikan banyak kebaikan kepada pengguna. Antaranya, perkongsian, penyalinan serta penghantaran perisian dan fail secara atas talian. Dalam erti kata lain, pengguna tidak perlu menghabiskan sumber kewangan yang besar untuk membeli perisian bagi setiap unit komputer yang berada di dalam sistem. Dengan demikian, pengguna boleh berkongsi data atau perisian secara serentak contohnya tiga orang pekerja di dalam suatu jabatan, bekerja dengan menggunakan helaian elektronik (*electronic spreadsheet*) yang sama. Kemudahan ini membolehkan pencapaian dan penukaran pangkalan data oleh beberapa orang di dalam satu institusi.

Sistem rangkaian komputer membolehkan para pengguna berhubung serta berkomunikasi di antara satu sama lain. Pengguna juga boleh berbalas pesanan melalui komputer melalui mel elektronik serta perisian perbualan (*chatting software*). Ini membolehkan komunikasi dserta berhubung di antara satu sama lain menggantikan penghantaran memo serta dokumen di dalam institusi.

Sistem rangkaian komputer turut membenarkan beberapa komputer berkongsi perkakasan yang sama contohnya mesin pencetak, pengimbas, CD-ROM dan kelengkapan faks yang

mahal. Contohnya, sebuah pejabat yang mempunyai dua puluh buah komputer, tidak perlu mendapatkan dua puluh buah mesin pencetak untuk membolehkan mereka melakukan tugas cetakan mereka. Sebuah mesin pencetak yang disambungkan kepada mana-mana komputer peribadi di dalam rangkaian tersebut akan dapat dikongsi bersama oleh komputer-komputer peribadi di dalam sistem rangkaian tersebut.

Konsep rangkaian juga tidak terhad kepada satu-satu lokasi atau perniagaan sahaja. Internet sebagai contoh, satu daripada beberapa rangkaian yang ada, berupaya menghubungkan pengguna komputer dari merata pelusuk dunia. Pengguna boleh menjalankan atur cara komputer dari benua lain dan boleh mencipta halaman rerumah (*homepage*) supaya berjuta-juta orang yang tidak dikenaliboleh membacanya.

Internet juga membolehkan pelajar-pelajar khususnya serta pengguna-pengguna amnya mencari pelbagai variasi maklumat yang mereka inginkan mengenai apa-apa sahaja dari mana-manasudut dunia dengan hanya melayari dunia internet. Satu kelebihan lagi ialah segala maklumat yang mereka inginkan itu akan mereka dapati di dalam jangkamasa yang singkat sahaja.

## 2.1 Rangkaian

Rangkaian merupakan situasi apabila terdapat lebih dari satu komputer yang saling berhubung untuk berkongsi sumber seperti fail dan mesin pencetak, dan membenarkan komunikasi secara elektronik di antara satu sama lain. Komputer dalam rangkaian biasanya dihubungkan melalui wayar kabel, talian telefon, gelombang radio, satelit, *bluetooth* dan cahaya infra-merah (*infrared*).



**Rajah 2.1:** Contoh Rangkaian

### Rangkaian Internet

Pertumbuhan internet yang pesat telah mewujudkan cara baru untuk berkomunikasi. Popularitinya dicerminkan oleh pelbagai media yang kita gunakan pada hari ini.

Internet ialah rangkaian global komputer yang saling berkait di seluruh dunia, yang boleh diakses oleh orang awam. Internet merupakan rangkaian komputer yang berlainan yang disambungkan melalui rantaian menggunakan wayar tembaga, gentian optik dan sambungan tanpa wayar terkini. Internet berfungsi berdasarkan penghantaran data melalui satu jenis pensuisan paket yang dikenali sebagai protokol internet (IP).



**Rajah 2.2:** Contoh Rangkaian Internet

Pelbagai cara untuk memastikan sistem rangkaian Internet beroperasi dengan baik tanpa sebarang gangguan dan berjalan dengan lancar. Kebiasaannya setiap teknologi yang dicipta dan digunakan adalah untuk memudahkan manusia dalam melakukan sesuatu perkara. Sebagai contoh, jika dahulu telefon dicipta menggunakan wayar oleh Alexander Graham Bell dan apabila mengikut peredaran teknologi dan mempunyai daya saing antara kita, Martin Cooper pula telah mencipta telefon tanpa wayar. Jika dahulu telefon hanya diletakan di suatu sudut rumah dan kini telefon dapat dibawa kemana sahaja. Begitulah teknologi, ia akan dicipta dan direka bagi memudahkan setiap orang.

Jika institusi melanggan beberapa talian internet dan modem-modem yang dibekalkan oleh pihak Internet Service Provider (ISP) diletakan berhampiran pada komputer masing-masing dan apabila talian internet tersebut terputus atau terganggu, ia secara tidak langsung akan mengganggu tugas-tugas pekerja di institusi. Pelancaran Koridor Raya Multimedia (MSC) telah membawa perubahan besar dalam sistem pendidikan negara kita. Dalam usaha kerajaan membestarikan sistem pengajaran dan pembelajaran di sekolah, penggunaan komputer dan internet adalah sebahagian daripada media pengajaran dan pembelajaran di bilik darjah. Di sekolah, internet digunakan setiap hari untuk memasukan data ke sistem diantaranya kehadiran pelajar, sistem *Human Resource Management Information System (HRMIS)*, sistem latihan dalam perkhidmatan, dan pelbagai lagi. Malahan pengajaran dan pembelajaran juga amat perlu menggunakan talian internet yang baik. Jika terdapat gangguan rangkaian internet, guru dan pekerja terpaksa tidak dapat menjalankan tugas rasmi.

Sebaliknya sekiranya rangkaian internet secara berpusat dilaksanakan di institusi dengan kelajuan atau kepastian capaian dibahagi secara samarata dan jika terdapat masalah pada satu talian internet, talian internet yang lain akan mengambil alih tugas dalam membekalkan internet, sekaligus segala tugas-tugas rasmi tidak terganggu.

### **3. KEPENTINGAN RANGKAIAN INTERNET DI INSTITUSI PENGAJIAN**

Internet serta teknologi yang turut hadir bersamanya, mahu tidak mahu terpaksa diakui sebagai media yang melengkapkan proses globalisasi mahupun sejagat. Internet, kederasan pertumbuhannya serta teori perkmpungan sejagat yang didukung olehnya membuktikan kemampuan sebagai wacana media yang instrumental dalam konteks kesejagatan.

Terdapat pelbagai kepentingan internet di institusi pengajian seperti penggunaan mel elektronik, sebagai sumber rujukan, penggunaan laman web, berkongsi maklumat dan menerapkan elemen pengajaran dan pembelajaran secara maya dikalangan pelajar. Selain itu, pelbagai lagi sistem untuk pentadbiran sekolah yang memerlukan internet yang sempurna dan tanpa gangguan. Contohnya, e-gerak, e-hadir, e-penyata gaji, e-splg, e-operasi, SAPS, PAJSK dan pelbagai lagi.

### **4. PERALATAN RANGKAIAN KOMPUTER**

Komputer digunakan oleh warga kerja institusi dan pelajar sebagai alat untuk pemproses perkataan, grafik, pangkalan data, mel elektronik, telekomunikasi. Peralatan komputer mempunyai aplikasi dan perisiannya tersendiri supaya suatu peralatan komputer tersebut berfungsi dengan sebaiknya (Merill et.al, 1996). Manakala internet merupakan rangkaian komputer antarabangsa bagi membolehkan pengguna komputer di seluruh dunia berhubung antara satu sama lain dan mencapai maklumat pangkalan data dari seluruh dunia.

Seterusnya, Wi-Fi muncul sebagai teknologi servis internet yang mampu memberi ruang pengoperasian internet secara meluas. Tanpa sebarang sekatan atau tapisan, Wi-Fi telah menarik minat dan mendapat banyak perhatian daripada segenap lapisan masyarakat di seluruh Malaysia. Bahkan teknologi Wi-Fi turut memberi kesan terhadap perkembangan sistem pendidikan negara. Hal ini disebabkan teknologi maklumat tidak hanya terbatas pada teknologi komputer, malah teknologi komunikasi. Selain penting bagi memproses dan menyimpan maklumat, teknologi maklumat juga penting bagi mengirim atau menyebarkan maklumat (Martin, 1999).

Teknologi maklumat terdiri daripada dua komponen utama iaitu teknologi komputer dan teknologi komunikasi (William & Sawyer, 2003). Teknologi komputer adalah teknologi yang berhubung dengan komputer termasuk peralatan-peralatan yang berhubung dengan komputer seperti modem, router, printer dan lain-lain. Manakala teknologi komunikasi merupakan teknologi yang menghubungkan peralatan komunikasi jarak jauh seperti telefon dan faks. Teknologi ini menggabungkan komputer dengan komunikasi yang berupaya membawa data, suara, dan video pada kepantasan yang tinggi.

### **5. RANGKAIAN TIDAK BERPUSAT**

Rangkaian komputer atau internet tidak berpusat boleh ditakrifkan apabila konfigurasi rangkaian tersebut mempunyai beberapa pihak pentadbiran yang berfungsi sebagai pusat perkhidmatan kepada pengguna. Dalam dunia pengkomputeran, seni bina rangkaian tidak berpusat mengagihkan beban kerja di antara beberapa mesin dan bukannya bergantung pada pelayan pusat tunggal.

Diantara kelemahan-kelemahan rangkaian internet tidak berpusat adalah penambahan kos produktiviti dan penyelenggaraan dan masalah kordinasi. Rangkaian tdak berpusat memerlukan lebih peralatan, sumber IT dan tenaga kerja intensif, maka ini akan menambahkan kos untuk produktiviti. Ianya juga memerlukan kos yang tinggi untuk penyelenggaraan disebabkan sifatnya yang bertoleransi kesalahan (*default tolerant*) dengan kadar bilangan nod pelayan dan pengkomputeran yang lebih banyak. Selalunya sistem rangkaian jenis ini tidak sesuai untuk

syarikat yang kecil kerana kadar keuntungan sukar untuk diperincikan.

Nod-nod pelayan tuan bertindak secara bersendirian dan tidak berkomunikasi di antara satusama lain di dalam sistem rangkaian tidak berpusat. Di dalam syarikat besar, akan terdapat isu koordinasi dalam memberi arahan dan menerima tugas-tugas berkumpulan. Ini bermakna, tidak semua struktur syarikat dan model perniagaan yang melaksanakan rangkaian internet tidak berpusat akan membawa kebaikan, walaupun pada hakikatnya ia membawa sistem keselamatan dan privasi yang lebih kukuh.

## 6. RANGKAIAN BERPUSAT

Berdasarkan Geeksforgeeks (2022) meletakkan sesuatu sistem di suatu tempat akan lebih mudah dan selamat selain dapat melancarkan perjalanan sesuatu sistem. Selain itu, penggunaan *CPU*, *RAM*, *storage* dapat dikahaskan dan ia juga menjimatkan kos kerana tertumpu pada satu tempat apabila membinanya nanti. Bagi mengemaskini *firmware* dan *software* pula akan dapat dilakukan dengan lebih cepat selain mudah untuk memutuskan setiap sambungan samaada rangkaian atau internet. Tetapi, disebabkan kebergantungan yang tinggi pada rangkaian, sistem tidak akan berfungsi jika terjadi kehilangan nod dalam sambungan rangkaian. Kebarangkalian keseluruhan sistem juga akan secara mendadak tidak berfungsi jika mempunyai masalah pada sistem. Manakala kegagalan untuk sesuatu *backup file* adalah tinggi jika mempunyai masalah pada nod.

Kelebihan melakukan rangkaian internet secara berpusat adalah lebih konsisten, efisien, dan kemampuan dalam kebolehsambungan adalah tinggi. Pentadbir atau pengurus rangkaian mudah untuk mengemaskini sistem rangkaian kerana ia ditempatkan pada suatu tempat yang mudah untuk mengawal keseluruhan rangkaian dan menjimatkan masa. Tambahan lagi, setiap data pada rangkaian berpusat akan mudah dikenalpasti dan diambil jika diperlukan. Walaubagaimanapun, terdapat kekurangan atau risiko pada rangkaian yang berpusat ini pada institusi yang menggunakannya. Jika terdapat masalah pada sistem Pelayan, setiap pengguna pada rangkaian terbabit tidak akan dapat menerima setiap permintaan atau maklumat atau data atau akan terjejas. Inikerana, Pelayan mengawal keseluruhan rangkaian (Li et al., 2021).

## 7. PERBANDINGAN RANGKAIAN INTERNET BERPUSAT DAN RANGKAIAN INTERNET

### Tidak Berpusat

Rangkaian internet berpusat dan rangkaian internet secara berasingan mempunyai kelebihan serta kekurangan masing-masing (Li et al., 2021).

BIL.	CIRI-CIRI	RANGKAIAN INTERNET BERPUSAT	RANGKAIAN INTERNET TIDAK BERPUSAT (BERASINGAN)
1.	Aliran Data	Aliran data perlu melalui di suatu tempat khas iaitu pelayan.	Aliran data akan melalui pelbagai tempat tanpa tempat yang spesifik sebelum dibenarkan untuk mengakses data (workstation)
2.	Aliran Komunikasi	Data	Aliran data komunikasi adalah secara menegak.
3.	Pembuat Keputusan	Terletak pada satu tempat iaitu pelaya	Keupayaan dalam membuat keputusan terletak pada banyak tempat.

4.	Menerima ( <i>Adoption</i> )	Penggunaanbesaran. secara	Penggunaan masih di peringkat awal
5.	Privasi KeselamatanData	Privasi selalu menjadi isu kerana agensi swasta mahupun kerajaan boleh mengesan dan menjejaki maklumat dan data.	Terkenal dengan keselamatan data privasi pada tahap yang tinggi
6.	Kegagalan Berfungsi	Kegagalan berfungsi akan terkesan pada titik tunggal.	Risiko dalam kegagalan berfungsi pada titik tunggal dapat dielakan kerana terdapat banyak titik / nod yang boleh dilalui oleh data.
7.	<i>Authority</i>	Tempat yang sistematik di dalam rangkaian setempat	Melibatkan banyak tempat yang sistematik di perbagai tempat

**Jadual 2.1:** Perbezaan rangkaian internet berpusat dan tidak berpusat.

Lazimnya warga kerja dan pelajar memerlukan talian internet yang tiada gangguan di institusi. Hal ini demikian disebabkan internet merupakan sebahagian daripada keperluan seharian kita seperti pengajaran, pembelajaran, pekerjaan, pencarian maklumat penting, perhubungan dan pelbagai lagi. Memandangkan setiap sistem rangkaian internet mempunyai pro dan kontra masing-masing. Oleh itu, institusi perlu memilih sistem rangkaian internet yang terbaik mengikut keperluan institusi tersebut.

## 8. PENGUMPULAN DAN PENGANALISISAN DATA

Pendekatan secara kuantitatif melalui soal selidik digunakan bagi tujuan pengumpulan data. Pemilihan lokasi kajian ditentukan berdasarkan dua ciri berikut. Institusi ini menawarkan aliran sains komputer, majoriti staf mempunyai kemahiran asas Teknologi Maklumat dan Komunikasi dan mempunyai makmal komputer yang lengkap dengan sistem rangkaian internet. Seramai 100 orang responden yang dipilih secara rawak daripada populasi yang terdiri daripada pelajar dan staf yang terlibat dalam program sains komputer. Tinjauan awal telah dijalankan dalam skala yang lebih kecil bagi memantapkan instrumen soal selidik yang akan digunakan untuk mengumpul data. Proses pengumpulan data mengambil masa selama lapan minggu, bermula dengan proses mendapatkan kebenaran dari pihak institusi, pemilihan responden dan pengedaran borang soal selidik. Data yang dikumpulkan dianalisis secara deskriptif menggunakan perisian *Microsoft Office Excel*.

Borang soal selidik yang digunakan mengandungi empat bahagian iaitu latar belakang responden, penggunaan internet, kelajuan internet dan keadaan internet. Bahagian A iaitu latar belakang mengumpul maklumat berkaitan status pelajar atau staf, jantina, umur dan bangsa.

Bahagian B pula tentang penggunaan internet seperti kadar penggunaan internet sehari dan tujuan penggunaan internet. Manakala Bahagian C adalah berkaitan kelajuan internet yang diperlukan. Seterusnya, item-item dalam bahagian D meneliti keadaan talian internet di institusi berkenaan. Antaranya, kestabilan sambungan internet, kesukaran untuk akses, jaminan keselamatan ancaman virus, *wireless modem* atau *router* dan komputer yang disediakan berfungsi dengan baik, dan kemudahan untuk menyelenggara.

Akhir sekali, temu bual ringkas dilakukan bagi mendapatkan maklumbalas berkaitan keberkesanan pelaksanaan penyelenggaraan rangkaian internet berpusat serta permasalahan yang wujud sebelum dan selepas pelaksanaan sistem ini. Maklumat yang diperoleh dapat menjelaskan perubahan yang berlaku terhadap keadaan talian internet sebelum dan selepas penyelenggaraan rangkaian internet berpusat dilaksanakan.

## 9. KELEBIHAN RANGKAIAN INTERNET BERPUSAT

Rangkaian internet berpusat merupakan suatu bentuk sistem yang memberi kelebihan dari segi penjimatan kos, masa dan tenaga kerja. Pemusatan rangkaian internet di lokasi institusi tersebut menunjukkan kesan yang positif. Pelaksanaan rangkaian internet berpusat meningkatkan kelajuan internet dari 2% ke 66% diukur pada paras kelajuan maksimum. Malah, kekerapan talian internet terputus menurun dari 43% ke 7%. Hal ini membuktikan rangkaian internet berpusat dapat meningkatkan kelajuan internet ke tahap maksimum, mengurangkan talian internet daripada terputus dan mengurangkan masalah-masalah lain yang mungkin timbul berpunca daripada masalah rangkaian yang tidak berpusat.

Kekerapan penggunaan internet yang tinggi bukan sahaja diperlukan bagi pelaksanaan pengajaran dan pembelajaran, malah penggunaan internet sangat diperlukan bagi urusan tugas rasmi talian. Maka, rangkaian internet di institusi pengajian perlu berada dalam keadaan yang baik dan terurus supaya tidak mengganggu urusan rasmi harian.

Perkara ini menunjukkan rangkaian internet berpusat wajar dilaksanakan oleh institusi pengajian yang mengalami masalah rangkaian internet yang tidak berpusat. Sehubungan dengan itu adalah dicadangkan agar pengumpulan data dalam skala yang lebih besar dilakukan bagi mendapatkan keputusan yang lebih jitu dengan melibatkan lebih banyak institusi pengajian.

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# **THE IMPACT OF THE COVID-19 PANDEMIC LOCKDOWNS ON THE FAITH OF CATHOLICS IN MALAYSIA**

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## **1. EXECUTIVE SUMMARY**

The Covid-19 pandemic has affected various domains of life, including the faith and religious practices of individuals and communities worldwide. This study investigates the effects on Catholics' mental, social, and spiritual well-being in Peninsular Malaysia due to the absence of face-to-face communal engagement, worship, and support in churches due to Covid-19 policy decisions and restrictions. The Malaysian Catholic Church has responded pro-actively to government policies to curb the spread of the Covid-19 virus and implemented various measures to ensure the safety and health of the community while taking action to meet the spiritual needs of the people because of church closure. The study problematizes the consequences of these restrictions on Catholic faith life and well-being in Peninsular Malaysia. A mixed-method approach comprising quantitative and qualitative techniques will gather and analyze data. Surveys, interviews, and text analysis techniques will be employed to collect data on policies implemented and the consequences of the policies on the Catholic community. The scope of the study will include the three dioceses in Peninsular Malaysia, namely Penang, Kuala Lumpur, and Melaka-Johor. The surveys and interviews will consist of the clergy, religious, and lay members of the Catholic Church. The findings will shed light on the needs of the Catholic congregation during such a crisis and enable the Church administration to develop mechanisms to support their needs. The study will also aid the transition process of both lay and clergy to faith practices according to a "new normal" environment. This project will be developed in collaboration with the Catholic Research Centre (CRC), facilitating data collection from members of the Malaysian Catholic Church, including clergy and religious members. The project will be conducted by a team of researchers from various disciplines and public and private research universities and institutions of higher education.

## **2. RESEARCH OBJECTIVES**

1. To identify the impact of Covid-19 lockdown restrictions on the faith of Catholics in Malaysia
2. To identify the gaps in faith life caused by the pandemic for the Malaysian Catholic Church
3. To identify the religious coping methods employed by Catholics in Malaysia to cope with the effects of lockdown restrictions
4. To explore new opportunities in faith practices and engagement for the Malaysian Catholic faithful that have risen from the pandemic.

### **3. RESEARCH QUESTIONS:**

1. What impact has the pandemic had on the faith of the Catholic community in Malaysia?
2. What were the community's needs that were addressed and not addressed during the pandemic?
3. What were the religious coping methods employed by Catholics in Malaysia to cope with the effects of lockdown restrictions?
4. How have the new Standard Operating Procedures (SOPs) affected the management, execution, and participation in church services (urban and rural)?
5. What opportunities in faith practices and engagement have risen from the pandemic for the Malaysian Catholic Church?

### **4. JUSTIFICATION**

In Malaysia, religious identity and faith practices are essential aspects of daily life across various communities. Conducting communal worship and participating in religious activities at places of worship are routine for ardent followers of the different faith groups. The closing of public places of worship has impacted how various religious communities have practised their faith, specifically communal ones. For many, the restrictions forced changes in centuries-old traditions of worship that caused many to feel unsettled and dissatisfied, which, in turn, affected their faith and well-being. The disruption of spiritual, pastoral, and social engagement and inaccessibility to the Holy Sacraments caused many to lose their equilibrium, thus affecting their faith and well-being. This situation caused a diminished sense of purpose and meaning in the clergy, religious, and laity. Many were seeking spiritual engagement and guidance when various challenges during the pandemic confronted them.

Although the places of worship have begun reopening with the easing of the lockdowns, or the Movement Control Order (MCO), there have been new norms to adopt in worship based on guidelines and SOPs provided by the government and church authorities. However, the implementations of these guidelines and policies have proved to be challenging due to the different variables in each local parish and community.

Studies have shown that physical attendance at religious activities and engagement with faith communities have a bearing on people's faith and psychological and emotional well-being. The pandemic, however, did not allow for physical presence and engagement at places of worship. Given that there has not been any prior study in this area, this research is timely and significant to address the impact of the pandemic on the faith life of the Malaysian Catholic Church.

### **5. ORIGINALITY**

The pandemic has fueled various research efforts studying its impact on nations and their peoples. Much of the pandemic-related research focus has been on aspects of health, economy, finance, and education. There has been a minimal emphasis on how the pandemic has affected individuals and communities' faith practices and spiritual well-being. The research is novel as no known research is currently being conducted on the impact of the pandemic and faith practices amongst Catholics in Malaysia.

### **6. SIGNIFICANCE OF THE RESEARCH:**

1. To present the voices of parishioners
2. To help the Church support the needs of the people
3. To aid people in the process of transitioning back to normal practices in faith.

This research is significant as it presents the unheard grassroots voices of Catholic clergy and laity members who were subjected to the restrictions of the MCO imposed by the government and church authorities in Malaysia. This study will also be instrumental in helping the Malaysian Catholic Church support the psycho-spiritual needs of the people. It is hoped that this research's findings will help outline suggestions and recommendations in a White Paper that can aid the Malaysian Catholic Church in a post-pandemic environment.

**Scope:** Faith and Well Being in Peninsular Malaysia Catholic Church During Covid-19 Lockdown restrictions.

(To investigate direct and indirect effects on the mental, social, spiritual well-being of Catholics in West Malaysia due to the absence of face-to-face communal engagement, worship, and support in churches due to Covid-19 policy decisions and restrictions).

## **7. METHODOLOGY:**

Case Study: Peninsular Malaysian Catholic Church

Mixed-Method: Mixed Method - Quantitative and Qualitative Peninsular Malaysia - 3 Dioceses, rural and urban churches.

Participants: 18 and above. Consisting of the laity, religious and Church policymakers, and implementers.

Sampling: Purposeful Sampling

Data Collection Methods: Interviews and Survey (via online/digital platforms)

This research is a case study on the Malaysian Catholic Church, which consists of clergy, religious members, church policymakers, implementers, and laity in rural and urban churches in three Archdioceses and six Dioceses in Peninsular Malaysia, Sabah & Sarawak. The research will employ a mixed-method approach using quantitative and qualitative techniques to collect data from Catholic respondents aged 18 and above. The data collection methods will include an online survey, interviews, and content and text analysis. The online survey will collect 500 responses through snowball sampling methods disseminated via digital platforms. The interviews will be done via purposive sampling to include lay, clergy, and religious members of the Church and Church policymakers and implementers. As Malaysians and Catholics, members of the research team will be positioned as cultural insiders who share the national and religious backgrounds of research participants.

## **8. EXPERTISE AND SKILLS (PROJECT COMPLETION AND QUALITY):**

This research team is multidisciplinary, comprising a member of the clergy and academics and researchers from Communication, Cultural Studies, Media Studies, Psychology, Theology, Information Technology, and Statistical Analysis. Members of the research team are from public and private institutions of higher education and research and have collectively vast levels of experience in research and publications in their respective fields. These members' various knowledge and expertise will enhance and aid all aspects of the research process, including data collection, analysis and collation, and presentation of data findings.

## **9. THE IMPACT OF THE PANDEMIC LOCKDOWNS ON THE FAITH OF CATHOLICS IN MALAYSIA: A THEOLOGICAL-PASTORAL REFLECTION**

Among the words that we have used to describe the pandemic lockdowns, the word that probably stands out the most is the word 'unprecedented.' Many of us have not experienced anything like this apart from those who may have struggled to live through World War Two and the 1969 racial riots in parts of Malaysia. Apart from these two experiences, much of our lives and movements

have not been curtailed but such external factors.

This unprecedented disruption has affected the human fraternity in ways we could not have imagined before the pandemic. Economically, emotionally, psychologically, socially, physically, and spiritually, we were all affected immediately, and the unknown long-term effects are yet to be seen. Transitioning from a state of homeostasis into uncharted waters was easy for some, while others struggled to cope with the changes.

In the light of the changing circumstances, the Catholic Church also had to quickly reposition itself from an onsite Church to an online Church. It was a steep learning curve for many, and perhaps that is why in the early days, where the Church was not prepared, it was a difficult period of learning and celebrating the small successes and quickly correcting the mistakes that were made.

Given that most people have missed during the pandemic lockdown was the face-to-face engagements, the Church has had to repivot in the ways that pastoral ministry is approached. Since most if not all of us have only grown up in the context of an onsite Church, what lessons can we learn for a post-pandemic Church in terms of God, faith, and relationships? This reflection is based on the survey results conducted among Catholics in Malaysia. The survey result is not only indicative of how people have coped with the changes, but it also presents the opportunity to reflect on some theological points that we have held on in the pre-pandemic era.

## 1. Attending Mass and Relationship with God

The idea of attending Mass is based on the premise that those attending Mass have a “relationship” with God. However, it is not possible to quantify the level of relationship. For many Catholics, the idea of going to Mass may be related to the teaching on the “Sunday obligation,” and therefore going to Church could have been conditioned by external circumstances. Our survey indicates that almost 25% of the respondents did not transition to an onsite Church in the way that they have been going to an onsite Church in the past (*see Table 1*). Could this be tied to the fact that the Bishops Conference had given the dispensation from the Sunday obligation? The question of whom God is and the ensuing relationship with God call for a deeper reflection.

**Table 1:** *Online Mass Attendance*

<b>Online Mass Attendance</b>		
	Frequency	%
<i>I do not attend online Mass</i>	425	10.15
<i>I attend mass on feast days and celebrations</i>	197	4.70
<i>I attend mass when I feel like it</i>	420	10.03
<i>I attend online mass every Sunday</i>	2389	57.04
<i>I attend mass everyday</i>	757	18.08
<b>Total</b>	<b>4188</b>	<b>100.00</b>

## 2. Coping in Times of Tragedy

One would assume that people of faith would turn to God more than before in times of tragedy. While this might be true for most people (57.28%), the rest of the respondents felt that there was either no change in their relationship with God (29.13%), or that it had become weaker (13.13%) or non-existent during the pandemic (0.45%)(*see Table 2*).

**Table 2: Overall Relationship with God**

Relationship with God		
	Frequency	%
is non-existent during the pandemic	19	0.45
has become weaker during the pandemic	550	13.13
is the same during the pandemic	1220	29.13
has become stronger during the pandemic	2399	57.28
<b>Total</b>	<b>4188</b>	<b>100.0</b>

*Demographic Indicators of Relationship with God*

**a. Younger vs Older Adults**

Which age group coped better? The survey indicates that those who were older (those who were 41 years and above; see Table 3), seemed to cope better and reported having stronger relationship with God during the pandemic. This situation could have been due to the kind of “faith education/formation” they may have had, or even greater exposure and experience led to them coping in times of tragedy.

**Table 3: Age Group Comparison of Relationship with God**

Age Group (Years)		Relationship with God				Total
		non-existent during the pandemic	has become weaker during the pandemic	is the same during the pandemic	has become stronger during the pandemic	
12 - 18	Count % within age grp	3 (3.1%)	18 (18.8%)	32 (33.3%)	43 (48.8%)	96 (100%)
19 - 24	Count % within age grp	2 (1.2%)	63 (38.4%)	60 (36.6%)	39 (23.8%)	164 (100%)
25 - 40	Count % within age grp	7 (1%)	158 (23.4%)	239 (35.4%)	271 (40.1)	675 (100%)
41 - 59	Count % within age grp	5 (0.3%)	231 (12.9%)	548 (30.7%)	1001 (56.1%)	1785 (100%)
Above 60	Count % within age grp	2 (0.1%)	80 (5.4%)	341 (23.2%)	1045 (71.2%)	1468 (100%)
Total	Count % within age grp	19 (0.5%)	550 (13.1%)	1220 (29.1%)	2399 (57.3%)	4188 (100%)

These results here are also similar with the reporting between the same age groups and attendance at Online Masses. Those who were 41 years and older and reported a higher commitment to attending Online Masses daily or at least every Sunday compared with those who were younger in age.

Given that the younger people would have been more apt to transition to digital technology, there is no indication that an onsite church provided them with ease of worship and connectivity with God. Perhaps there is a need to re-look at how young people are given faith education/formation. Despite easy accessibility to information, the information does not seem to penetrate so that it transforms lives. We possibly need to revisit how the Church carries out faith education/formation. Does it connect with life? Does it prepare to face challenges/tragedies?

**b. Gender Difference**

A comparison between males and females in terms of their overall relationship with God, results indicate that females reported an overall better relationship with God during the pandemic compared to males (see Table 4).

**Table 4: Gender Difference in Overall Relationship with God**

			Relationship with God				Total
			is existent during the pandemic	non- weaker the during the pandemic	has become weaker the during the pandemic	s the same during the pandemic	
Gender	Male	Count % within Gender	8 (0.5%)	212 (14.4%)	514 (35.0%)	735 (50.0%)	1469 (100%)
	Female	Count % within Gender	11 (0.4%)	338 (12.4%)	706 (26.0%)	1664 (61.2%)	2719 (100%)
Total		Count Overall %	19 (0.5%)	550 (13.1%)	1220 (29.1%)	2399 (57.3%)	4188 (100%)

**3. Onsite Church and Online Church**

The pandemic lockdowns have forced the Church to embrace and utilize technology overnight. In the past, there may have been sporadic use of technology, especially in live streaming Masses for the homebound. All other aspects of the pastoral ministry of the Church had been face-to-face right up to the time of the lockdown. The steep learning curve for the Church in digital technology was not without challenges. In this sense, not only live streaming masses but the celebration of other sacraments required creativity while remaining faithful to the teachings and traditions of the Church. Now that the online Church is up and running and at the same time serving and fulfilling the needs of a segment of the parishioners, the Church will need to think of ways to suit their needs while at the same time helping the needs of those returning to Church for face-to-face engagement. As much as we would like to transition everything back to face to face, there will be a need to serve the online community, and the challenge is to find ways to help them too.

#### **4. Sense of Belonging to the Local Church**

As our churches were closed during the pandemic lockdowns, parishioners now have the freedom to choose which online Church there would like to attend. There were several reasons for this: brevity, timings, spiritually fulfilling, good music, and various other reasons. Naturally, during this time, people came to associate themselves with online churches locally and internationally. The online Church and community challenged the traditional sense of belonging to a parish community based on location and geography. The affinity to an online church service and relationship to a particular online church seen as fulfilling the spiritual needs has far-reaching consequences. Does it make sense to make someone go to the local onsite Church and not be spiritually fulfilled or allow parishioners to find a place (onsite or online) where their needs are met and nourished?

#### **5. Shifting Mindset**

Vatican II tells us the Eucharist is “the source and summit of the Christian life” (SC no. 11; cf., no. 1324). In other words, the Eucharist may also be seen as the “source and summit of Christian spirituality.” We all know that the climax of the Eucharistic liturgy is when we come to the altar and receive the bread and wine which has become for us the body and blood of Jesus Christ. However, during the lockdown and when our churches were forced into closure, many people said they missed the Eucharist because of the inability to receive Holy Communion even though they could celebrate the Liturgy of the Word through online services. Perhaps the lockdowns are forcing us to rethink our relationship with the Eucharist in a way that we revisit the Eucharist as more than just the reception of Holy Communion? In no way are we forced to believe that our Christian life can be void of Holy Communion, but to rethink our relationship with the other parts of the Holy Mass, such as Liturgy of the Word, and to worship as a community, etc.? There could be a need to “lift” the communal aspects of the Eucharistic celebration over the individual and pietistic elements of the Eucharist.

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# **TECHNICAL AND SOFT SKILLS ON READINESS OF DIGITAL AUDIT ADOPTION FROM STUDENTS' PERSPECTIVE.**

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## **1. INTRODUCTION**

### **Overview on Auditing Concept and Technology**

This chapter explains the concept of the auditor in the adoption of the digital audit. The auditor is one of the most regarded occupations because of his or her ability and natural tendency to be objective when reporting illegal information. Due to the high demand for audit and other assurance services from users of financial reporting, auditors bear a significant amount of duty toward them. Moreover, the obvious high level of concern about financial reporting among users, the responsibilities of auditors have been broadened to include reporting on the effectiveness of internal control and operation over an organization's financial statements (Kassem, 2018). A crucial role played by auditors is to confirm the correctness of an organization's financial statements in order to prevent any fraudulent activities. Auditors are professionals who give their professional judgment and play a valuable role in preventing any fraudulent activities (Farooq & Shehata, 2018). In order to exercise their professional judgment and do their audit job successfully and efficiently, auditors must study audit risk assessment by applying auditing standards in order to meet the needs of the decision-making process's users.

However, unethical corporate practices continued to exist despite the existence of many governance tools, such as the accounting standard and auditing standard set by regulators to guide auditors in the preparation of audit reports (Tuan Mansor et al., 2020). Furthermore, the problem of audit performance among auditors continues to be the most contentious topic in the accounting and auditing literature. Despite the fact that auditors are provided with a detailed guideline and auditing standard for the audit process and fraud assessment, the actual execution is carried out based on the situation, which is dependent on the auditor's judgement (Tang & Karim, 2018). As a result, the auditor's responsibilities and efficacy are questioned by the people who read the audit report. In order to provide high-quality audit opinions to decision-makers, the auditor's competency and judgement are critical during the audit process and during the audit assessment.

Unfortunately, despite the deployment of multiple governance tools by governments around the world, the emergence of unethical corporate practices continues to be a significant source of concern for economies all over the world, particularly in developing nations. Malaysia has seen an increase in fraud, corruption, and other types of economic crime, according to the PwC Global Economic Crime and Fraud Survey for the year 2020. The survey found that fraud, corruption, and other forms of economic crime increased from 41% in 2018 to 43% in 2020 (PwC Fraud Survey Report, 2020). The Association of Certified Fraud Examiners (ACFE) also highlighted in its 2020 report to the country that just 4% of fraudulent operations were discovered for the first time through external audits. As a result, the effectiveness and competence of auditors to detect and prevent fraud in businesses is being called into question, which is important in order to combat unethical business practices and protect the public interest (Association of Certified Fraud Examiners (ACFE), 2020). Fraud and corruption incidents, whether in the public or private sector, are extremely common and upsetting, leading members of the general public to question

the auditors' ability to carry out their responsibilities with due care and competence, believing that auditors play a unique role in detecting fraud. Despite this, the auditors continue to carry out their responsibilities with due care and competence (Tuan Mansor et al., 2020)

The technical and soft skills are the most important characteristics for audit success, and they are accompanied by professionalism, knowledge, considerable skills, and the ability to conduct audit duties at the highest levels (Seol et al., 2017). Technical and soft skills measurement are vital for improving the performance of auditors in creating high-quality audit reports by ensuring that they have the necessary knowledge, relevant experience, and technical abilities in completing audit activities with a professional attitude (Alam et al., 2017). Knowledgeable and resourceful, the auditor must constantly learn and apply new knowledge in order to improve the overall quality, efficiency, and effectiveness of audit services. Digital audit may be an outstanding tool for facilitating knowledge acquisition, sharing, and application (Thottoli & K.V, 2020). In order to examine risk assessment on judgment and improve audit work performance, competency and digital audit are essential.

A lack of technical and soft skills results in auditors making incorrect judgments while providing audit opinions, which has a detrimental impact on the efficiency with which they perform their jobs. According to the Security Commission Malaysia (SC), in December 2020, Deloitte was reprimanded and fined a total of RM2.2 million for failing to notify violations in connection with an RM2.4 billion Islamic bond (Sukuk) issued by Bandar Malaysia Sdn Bhd (BMSB), a subsidiary business of 1Malaysia Development Berhad (1MDB) (1MDB). According to the ruling of the High Court, Deloitte was found to have committed two violations of Sections 276(3)(b) and 276(1) of the Capital Markets and Services Act 2007 (CMSA) for failing to notify the commission of irregularities on a timely basis. A significant impact on BMSB's capacity to fulfill its obligations, including the repayment of any payments owed to Sukuk holders under the terms and conditions of its debt-financed Sukuk programme and the failure to submit financial reports to MTrustee Berhad, is possible. Technical and soft skills on readiness of digital audit adoption performance are crucial in the compilation of audit reports, which are designed to give users with confidence and reliable information to assist them in making informed decisions.

Technical and soft skills of the auditor is essential when the organization is at risk which is fraud has become gradually increased and complex (Law, 2011). As a result, an updated, relevant and reliable effective approach to risk management and control systems is highly demanded. The organization shifted from a traditional audit process to a computerized control environment through the employment of an audit technology software system (Halbouni et al., 2016; Malaescu & Sutton, 2014). Therefore, the audit technologies approach is introduced to meet the high demands of auditors and organizations due to material misstatement.

The current challenges for auditors involve providing audit judgement through the use of digital audit in conjunction with a real-time approach to auditing (Byrnes et al., 2018). In recent years, the use of digital audit by corporations has increased considerably. According to Statement of Auditing Standards (SAS) No 316.52, computer-aided auditing techniques should be used to get more comprehensive evidence concerning data included in critical accounts or electronic transaction files. The dependability and quality of data output supplied by computer-based information systems have become more important to the auditing profession (AICPA, 2006). These properties of the information must be present on time, relevant, reliable, free of omissions, and free of fraud (Chan & Vasarhelyi, 2011). It is possible that digital audit will improve the quality of audit evidence supplied to auditors by expanding the scope of transactions tested, delivering the evidence on time, analyzing complicated audit processes, or incorporating artificial intelligence into logical and organized auditing procedures (Brown et al., 2007; Byrnes et al., 2018).

Today, up-to-date, accurate, and trustworthy financial information is required for business decisions for the purposes of strategic planning and forecasting, capital gain, decision-making, and providing information to external users, among other purposes (Chan & Vasarhelyi, 2011). Digital audit is expected to provide benefits to the audit profession, such as improved understanding of audit procedures, enhanced knowledge, and the transferability of expertise, among other things (Omoteso, 2012). Consequently, prior to implementing audit procedures and tasks in the digital audit environment, it is necessary to understand the nature of audit processes and tasks in the digital audit environment. The adoption of digital audit will assist auditors in avoiding fraud and error in auditing and transaction by ensuring the correctness of financial records as well as the dependability of the systems that store and transport the records and transactions (Bradford et al., 2020). This auditing technique has the potential to increase fraud detection effectiveness as well as the likelihood of substantial errors in financial statements. All transactions are analyzed in real time utilizing audit technologies in order to improve the efficiency of the company's present operations (Flowerday et al., 2006). During this time of digital audit, the external auditor examines the business transaction and relies on information technology to record and process it. As a result, the auditor may issue an audit opinion on the business transaction. Hence, digital audit is acknowledged as a tool for auditors in completing audit processes, with improved assurance to consumers of financial reporting and increased efficiency of auditor work performance expected as a result of using digital audit.

Additionally, the Technology to Performance Chain (TPC) model which was evaluated by Goodhue and Thompson (1995), describes how technological advances have an influence on individual levels of performance. Individuals will use or adapt technology when the task and technology are designed to complement each other, or in other words when the task and technology are designed to fit each other. This will result in a positive impact on the individual's performance when the task and technology are designed to complement each other (Goodhue & Thompson, 1995).

## **2. LITERATURE REVIEW**

### **Readiness of Digital Audit Adoption.**

Readiness is the state of being ready or prepared. To be ready is not an option, it is compulsory to reduce the impact of changing environments especially in the digital era. The digital age has forced most of the industry to embrace a new challenge as to remain relevant. Similarly, the accounting profession keeps evolving with the updated technological advancement to simplify the accounting process by ensuring a reliable financial statement. Ansari and Khan (2020) stated that readiness is required by the accountant through the adoption of technological tools. To accomplish goals in life whether at home and work will be based on how the person's propensity, and interest to use the technology. This is referred to as technology readiness (Parasuraman, 2000). A study by Warden, C.A., Yi Shun, Stanworth, J.O., & Chen, J.F (2022), about technology readiness for university students. Based on Warden et.al.(2002) investigated three criteria which are self-efficacy, engagement and online class achievement to measure readiness. The study found that self-efficacy is important regardless of the level of the technology readiness. Another study by Azuraidah, Yunita, Shazalina, Norfadzilah and Mohd Sidki (2022) found the significant relationship between technology readiness and the digitalization of the accounting profession for future accountants with greater preparedness to adapt to the advancement in technology.

In particular, the future auditors need to improve in terms of technology skills, knowledge and abilities to respond to the current and social changes. Future auditors should equip themselves with technology skills and get ready for development in technology in order to ensure

that they are relevant. From the perspective of auditing, technology is being used in order to simplify work, fast and reliable. It improves the way the corporate sector presents their financial report and assists auditors on how to provide reasonable assurance on the true and fair view of the financial statements. The future auditors need to improve in terms of technology skills, knowledge and abilities to respond to the current and social changes. Future auditors should equip themselves with technology skills and get ready for development in technology in order to ensure that they are relevant and to assist them to achieve positive outcome in their job performance.

## **2.1 Technical Skills**

### **a. Data analytical skill**

Auditors require a variety of skills and among the important skills is the ability to analyze the data. While digital auditing will be using technology to perform audit, it will digitize the way how the auditors conduct their tasks. Auditors will utilize technology to capture data, automate procedures until analyzing the information. Thus, analytical skill competence is crucial for every auditor. Knowledge in data analytics is important but the discussion for this category is wide. Data analytical skill is defined as a technique of analyzing and understanding a massive amount of raw data and making conclusions which lead to useful information (Hariri, R.H., Fredereicks, E.M., & Bowers, K.M. (2019)

Good data analytical skills will help auditors work with clients in a better way, improve documentation and remove excessive review which may incur more cost in terms of financial and non-financial. Brink, W.D., Stoel, M.D. (2019) asserts that data interpretation and communication skills become the preference for accounting professionals. This is also consistent with Kavanagh, M.H., Drennan, L. (2008) where the employers' expectation in terms of communication, analytical, professional and teamwork skills are well aware by students. And in addition to that, understanding about business awareness and 'real world' knowledge would become a huge advantage Kavanagh, M.H., Drennan, L., (2008). Hence, it is important for the academics to encourage this ability for accounting graduates. With the support for a hybrid approach, where accounting programs combine a stand-alone course focus attention on data analytic competencies and embedded with accounting courses in combination analytic competencies. (Brink, W.D., Stoel, M.D., 2019)

### **b. Technology proficiency skill**

Another skill which is required in auditors' jobs is technology proficiency skill. Technology proficiency is a skill to communicate effectively and professionally, organize information, produce high quality products and improve in thinking skills by using technology (Saad, N., Sankaran, S., 2020). Auditors must equip themselves with the latest technology advancement to improve the quality of audit. The high technology proficiency skill and effective audit team will assist auditors to understand better about client business, better analyze information and reduce the risk of manual error (ICAEW, 2019). It is important for the auditor to have a basic understanding of certain auditing software together with business analytics software. Besides that, with the high technology proficiency skill, it facilitates auditors to navigate software and other resources to deliver more meaningful data.

### **c. Audit Skill**

Professional accountants required skills as part of capabilities to demonstrate competency. These capabilities include knowledge and experience. (IFAC, 2014). Auditor skill is to be able to use the system whereas appearance, behavior and conduct is about adhering to such effort and auditors are influenced by audit firm expectations on how audit work should be done Broberg (2013). The

International Ethics Standards Board for Accountant' Code of Ethics for Professional Accountants highlighted it is important for the accounting practitioners to ensure they are working under their authority in a professional capacity, adequate and professional training and supervision. In addition, to maintain the competency to undertake the work they perform (IFAC,2014).

The quality of auditors plays a critical role for an organization to be successful. The quality of audit is also important for an effective external audit and significantly reduces audit cost and increases audit efficiency by seeking assistance from internal auditors. Thus, they concluded that higher levels of internal auditor quality could help improve external auditor's audit quality. In order to maintain high internal audit quality, organizations attempt to select, train and promote internal auditors who are competent to perform qualified internal audit tasks (Mitchell and Sikka, 2005; Jackson, 2007). To be competent, internal auditors need to possess necessary skills and the IIA has conducted a series of CBOOK studies to help identify such skills.

In 1999, the IIA Inc developed a general framework, known as the competency framework for internal auditing (CFIA), that specifies the competency standards for internal auditors. Within the framework, CFIA introduces the necessary skills required by all internal auditors to ensure a high level of professional competence and effectiveness. According to CFIA, these necessary skills are categorized into cognitive skills and behavioral skills. Cognitive skills are further sub-categorized into technical, analytic/design, and appreciative skills; similarly, behavioral skills include personal, inter-personal, and organizational skills. Such skills are delineated for three different levels of internal auditors: entering internal auditor (56 skills), competent internal auditor (124 skills), and internal auditing management (19 skills). In 2006, the IIA conducted another CBOOK study and part of the study was to identify necessary skills for internal auditors. This time, they categorized skills into technical skills (13 skills) and behavioral skills (12 skills) and asked participating auditors about the importance of each skill.

Seol and Sarkis (2006) examined the usefulness of the framework in the selection of internal auditors by an organization. They investigated the perceptions of an experienced auditor on the importance of each attribute/skill proposed by CFIA, followed by an actual application of such skills to a recent hiring experience using a multi-attribute model. They concluded that the characteristics identified in CFIA were comprehensive and useful in the hiring process of new internal auditors. Thus the current study tries to understand the impact of technical and soft skills to the readiness of the digital audit adoption.

## **2.2 Soft Skills**

### **a. Communication skill**

Generally, communication skill refers to the communication process to transmit the information via various communication tools. The act of communicating with people is a communication (Hisyam,2015) With regard to the education context, communication skill for the student is the ability of the student to communicate in oral, written and presentation (Nurdian et al., 2022). In the digital era, the communication way is shifted with the integration of digital tools. Industry Revolution 4.0 with the interface of Internet of Things imposes enormous challenges to the accounting industry. Communication consisting of verbal and non-verbal (written) are changing rapidly due to digitalization. In the context of current accounting students who have grown-up in the information technology environment, the main communications tools employed are through social media with high reliance on technology (Lifintsev et al., 2019). Expedition of technology in the digital age is obvious when the role of technology is now replacing the traditional human's touch on accounting work particularly. Apparently, effective communication is an important skill in business, particularly in the accounting industry. For example, an auditor is required to interact with various levels of persons in performing the auditing tasks and thus, it is crucial to have good

communication skills and it is among the desired qualities required for the accounting professionals (Bee et al.,2018).

In relation to the importance of communication skill, the American Institute of Certified Public Accountants (AICPA) in 2018 emphasized to “effectively deliver information in multiple formats tailored to the intended audience” (p. 2) for the future accounting professional. In line with that, Cassandra and Jeffrey (2020) in their study had proposed that communication, critical thinking, reliability and responsibility, engaged listening, and respect are among the key components to be addressed in curriculum development. The study highlighted that the strong communication skill is the essential skill needed for the future accounting profession together with other technical and competency skills. In the study conducted by Collen (2020) for the Botswana accounting graduates’ curriculum, it is suggested that accounting digitalization such as XBRL, cloud computing, artificial intelligence, big data and machine learning is to be incorporated in the curriculum design. Powless and Schafer (2016) recommended the application of technology platforms by the students to reach and communicate with the potential employers. Dubey and Sahu (2021) found that the adoption of technological advancement in the learning process is significantly related to the factors of compatibility, resource availability, subjective norms, subject interest and institutional branding. Furthermore, Aysel (2022) stated that the technology advancement and the increase of technology usage in accounting practices have led to the required significant changes in accounting education.

Dealing with digitalization, auditing tasks are included. Information gathering is not occupying the traditional approach where social networks were employed to interact with a variety of stakeholders. With regard to that, students as the future accounting professional need to be well-equipped to face the challenges of automation. In 2019, ACCA has reported that the auditors need to adapt artificial intelligence and machine learning in performing auditing tasks. It is believed to be able to enhance the quality of audit. ACCA also identified the importance of communication skills as the key professional competency to be established. The Forbes Insights with the association of KPMG reported in Audit 2025 that strong communication skills are among the top required skills for the accounting profession. In here, the insights are reflecting on how vital it is to be embedded in the accounting student. To remain relevant, accounting professionals are required to be technological masters with the ability to adapt with technological changes. Lacking of integrating the digitalization elements to the accounting students with contributes to the incompetent accounting graduates to be produced. Hence, the importance of the digital elements to be embedded in the curriculum development is very crucial. By developing the communication skill with the use of digital tools, in particular of digital audit, it is expected to be able to nurture students with relevant attributes of professional communication skills.

#### **b. Problem solving skill**

Problem solving is defined as a process, used to obtain best answers to an unknown or a decision subject to some constraints (Mourtos. N.J., Okamoto. N.D., & Rhee. J., 2004). According to Wismath. S., Orr D., & Zhong, M. (2014) the person who increases in communication skill and awareness of problem-solving skills will increase confidence in their ability in problem solving.

In addition to that, Woods et. al (1997) specifies that the students who are problem solvers exhibit the following attributes such as:

- Willing to spend time reading, gathering information and defining the problem,
- Use a process, as well as variety of tactics to tackle the problems,
- Monitor their problem-solving process and reflect upon its effectiveness
- Emphasize on accuracy more to compare with speed
- Visualize ideas by using charts/figures during problem solving

- Systematic and organized
- Not rigid and open for discussion for different point of view
- Willing to take risk and open to ambiguity
- Use an overall approach that emphasizes the fundamental
- Objectively and critically assess the quality, accuracy of the pertinent subject knowledge.

The problem-solving skills require analysis, transfer information and metacognition, by understanding one's own thought process. Metacognition is important as it involves knowledge on multiple strategies, as well as understanding when and what strategies to be executed. This is a vital criterion to be used in problem solving. Problem solving skill has been highlighted in the revised Bloom Taxonomy (Krathwohl, 2002). This skill also had become the focus of Wiggins. G. and McTighe. J. (2005). Problem solving needs critical thinking which is difficult to acquire (Gelder. V, 2005). Practices are needed to enhance this skill. Ladyshefsky (2006) explains that peer coaching techniques can be utilized to encourage critical thinking among students. According to DudleyL.W., Davis,H.H. & McGrad. D.G. (2001), critical thinking can be gained by the students based on practical application of “learning by doing”

Facione (2007) proposed the Six Steps to Effective and Problem Solving. The six steps are “IDEALS” which is to Identify the problem, Define the context or the problem, Enumerate the choices, Analyze the options, List explicitly the reasons and Self-Correct or review. These six steps encourage students to apply their knowledge and become the guideline for critical thinking among students. This is supported by Hou,H., Chang, K., & Sung, Y. (2007) where using peer assessment will encourage critical thinking and metacognitive skills among students. The IDEALS are consistent with Woods et.al. (1997) approach that asserts the approach of a six steps method to teach problem solving skills.

Nonetheless, instead of highlighting the ideal way to encourage problem solving skills, Mourtous. N.J., Nokomato. N.D., Rhee. J. (2004) conducted a study on assessment of students’ problem-solving skills and identified the challenges for the students to reach a good level for these skills. The challenges include making reasonable assumptions, translating the result, making a reasonable estimate of the subject matter, checking the correctness of units in the parameter given and communicating the problem, the approach and the significance of the result.

Based on the study above, the group of students with high scores spent a considerable and reasonable amount of time in recognizing the problem, checking on their assumptions and results before report submission. On the contrary, the group of students which spent less time on recognizing problems received low scores. While Mourtous. N.J., Nokomato. N.D., Rhee. J., (2004) highlighted on defining and exploring the problem as part of a key ingredient for better problem- solving skills, Pintrich, (2002) suggested that metacognitive is the vital element for solving problems. Pintrich, (2002) highlighted that awareness about self-strengths and weaknesses, the ability to monitor and control one’s thinking are also important. Additional to that, Zimmermann and Compillo (2003) asserts that attributes such personal resourcefulness and persistence, motivational beliefs and learning goal orientations are crucial in proficient problem solving.

### **c. Teamwork skill**

Teamwork skill is one of the important indicators in the evolution and survival of humanity. It provides better measures to the organization and to the individual. The skill to effectively work in a team along with other soft skills will enhance the quality of the individual. Teamwork skill has become the norm of today’s organization and this is one of the criteria for hiring the employee (Kelton,2013). Employers are in favor of hiring employees with good individual attributes together with strong soft skills such as teamwork skills. Hisyam (2015) in his study revealed the

level of teamwork skills are determined by planning and decision-making skills, self-adaptability or flexibility, interpersonal relationship and communication skills. In line with the digital age, the way the teamwork skill is performed will rely very much on the digital tools and requires proper monitoring to ensure the task is able to be completed.

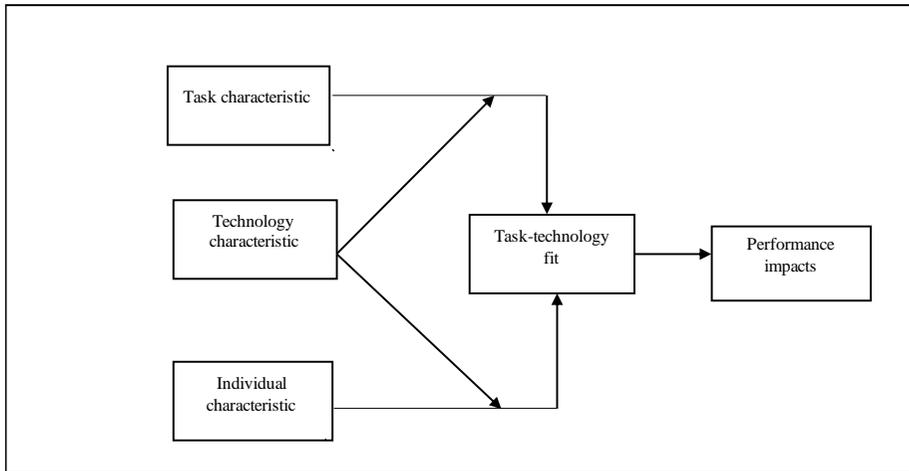
In relation to digital audit, the teamwork skill is impacted due to the nature of auditing work itself. Adopting digital audit basically involves computer auditing where it will differ from traditional auditing. The way the auditors are performing the auditing in information gathering and communicating the audit findings are related to teamwork skills. Hence, the students are expected to be ready to be imparted to the new face of teamwork skills in the digital audit.

### **3. TECHNOLOGY TO PERFORMANCE CHAIN MODEL (TPC)**

It is possible to improve individual performance while also having a positive impact on the overall performance of an organization by better understanding the relationship between information systems (IS) and human performance (Ghani et al., 2017). Information technology is more likely to have a positive impact on an individual's performance when the technology's capabilities complement the tasks that the user is expected to complete, according to Goodhue and Thompson (1995). Hence, it was well understood that the ability to conduct reliable and relevant information security analysis was essential. The organizations invested vast sums of money to strengthen information security, but it was difficult to determine if the improvements were beneficial or detrimental since they didn't know where to direct their attention. Using this theory, it is assumed that information technology has a beneficial influence on individual performance and that it can be used when the IT capabilities fit the tasks that the user would be doing.

Furthermore, according to Abdillah and Saepullah (2018), the technology to performance chain (TPC) model is a model that examines the performance consequences of individual level information technology adoption at the individual level. This model provides a more precise representation of the relationship between technology and user tasks in order to achieve the greatest possible performance impact. It takes into consideration that technology should be used first and tailored to the tasks supported by its technology in order to have the greatest possible performance impact. According to the TPC model, the influence or reciprocal effect of a successful implementation or implementation of an Information System is a reflection of the successful implementation or implementation of a successful Information System, as defined by the TPC concept (IS). Because of this, it is straightforward to state that the performance of individual users of an Information System (IS) is a reflection of the success rate of the system under consideration. To summarise the definition provided by Susanti (2006), TPC is an affirmation for information technology that has a positive impact on a person's performance; however, technology must be deployed and technology must be compatible with the activities that are supported.

A key component of this model is how technology has an impact on the performance of humans at various levels within an organization. Individuals will use technology or embrace technology when the task and the technology being used are complementary, or, to put it another way, when the task and the technology are compatible with one another. Individual performance will improve as a result of this (Goodhue & Thompson, 1995). TPC models take into account not just the technology with the user, but also the complexity of the task that must be supported by a sophisticated information technology system (IT system), according to the TPC model (Ammenwerth et al., 2006). Figure 1 depicts the Technology to Performance Chain (TPC)



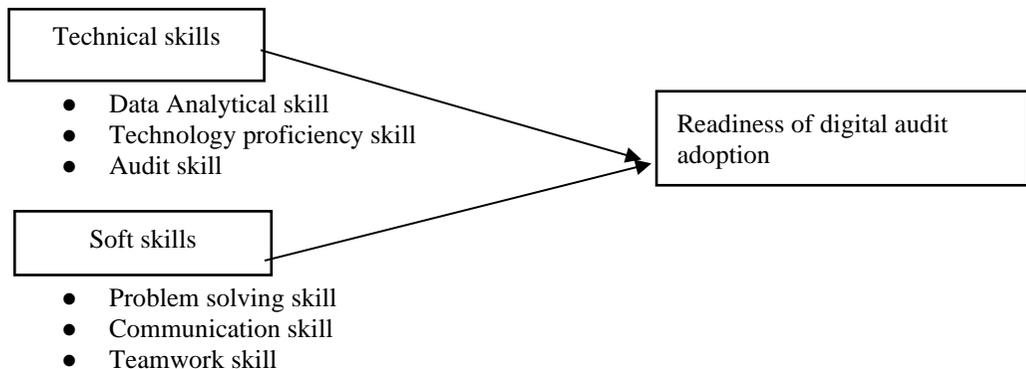
**Figure 1:** The Technology to Performance Chain (TPC) Model

#### 4. CONCEPTUAL FRAMEWORK

The proposed conceptual framework is depicted in Figure 2 as below:

##### INDEPENDENT VARIABLES

##### DEPENDENT VARIABLES



**Figure 2:** Conceptual Framework

Figure 2 outlines the proposed conceptual framework. This model examines the direct relationships between the readiness of digital audit adoption (dependent variable) and the two independent variables, which comprise six dimensions; data analytical skill, technology proficiency skill and audit skill (technical skills) while problem solving skill, communication skill and teamwork skill (soft skills). Based on the above framework, the readiness of digital audit adoption has a relationship with technical skills and soft skills. Auditors require a variety of skills and among the important skills in digital audit including data analytical skill, technology proficiency skill and audit skill.

Good data analysis skills will help auditors work with clients in a better way, improve documentation and remove excessive review which may incur more cost in terms of financial and non-financial. With regard to that, it is important for the academics to encourage this ability and skill for accounting graduates especially in digital audit adoption. Hence it is expected to have a

positive relationship with readiness of digital audit adoption.

Good proficiency in technology skill will help auditors to know well about their client's business, better in analyzing information and mitigate the risk of errors. Thus this skill is important for digital audit adoption. Hence it is expected that the proficiency technology skill to have a positive relationship with readiness of digital audit adoption.

Auditing is a systematic process of examining the evidence, verification of organization with the predetermined standard and providing reasonable assurance on the financial statements through issuance of opinion. By carrying this important role, an auditor is expected to acquire audit skill in order to perform the audit task especially in digital audit. Hence it is expected that the audit skill has a positive relationship with readiness of digital audit adoption.

In education context, students are expected to be able to communicate in oral, written and presentations (Nordian et al, 2012). With the current technology development, the communication is shifted with the integration of digital tools. Good communication skills are required during examining evidence, verification with predetermined standards and when delivering reasonable assurance through audit opinion. Hence this skill is important to be acquired by auditors, especially in digital audit adoption. Auditors are required to analyse and communicate the data by using digital audit. Hence it is expected that the communication skill has a positive relationship with readiness of digital audit adoption.

Problem solving skill requires an auditor to understand the problem and identify which strategies to be executed. In auditing, there are multiple methods which may bring different level outcomes. This problem-solving skill is still important even though digital audit is expected to ease the auditor task. Hence it is expected that the problem-solving skill has a positive relationship with readiness of digital audit adoption.

Effective audit team will help a group of auditors to conduct better audit tasks. It means that the evidence examination process, verification of organization towards the compliance to predetermined standards and providing opinions are not individual task basis and need support and cooperation from the other team members. With the current technology advancement, the teamwork skill is impacted by the way each engagement team members should conduct their audit. Hence it is expected that the teamwork skill has a positive relationship with readiness of digital audit adoption.

## **5. CONCLUSION**

For the time being, Malaysia is still in the early phases of developing digital audit for use in the country. Digitalization in the accounting field in Malaysia is evolving and will keep on moving along the technology advancements with numerous digital tools. Consequently, it is predicted that this study will lead to a better understanding of the adoption of digital audit decisions in this country, as well as the identification of technical skills and soft skills on the readiness of adoption of digital audit from the perspective of students. A concept called the Technology to Performance Chain Model (TPC) is employed in order to better understand the adoption of digital audit in the context of readiness of digital audit adoption (Goodhue & Thompson, 1995). When it comes to adopting audit innovation, it is more typical for auditors to rely on the encouragement and full collaboration of organizations, particularly in developing countries such as Malaysia and Indonesia (Ahmi & Kent, 2012; Kim et al., 2016; Widuri et al., 2016). TPC framework believes that the influence of technical qualities, task characteristics, and individual attributes that are compatible with the technology task on individual competences is relatively equal across all three

dimensions.

The findings pave the way for more investigation in the future. Researchers could concentrate on technical and soft skills on the readiness of the adoption of digital audit from the student perspective. In order to improve audit work effectiveness in the future, it would be interesting to examine how these skills are significant to the readiness of digital audit adoptions. In order to increase fraud risk audit judgment and combat fraud risk, it would be intriguing to examine what has happened to digital audit usage in the last few years and how this may be compared to other countries and IT environments for future study and development. This is crucial for the auditor in generating a high-quality audit report because it is required by users for their decision-making needs.

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# **THE IMPACT OF COACH LEADERSHIP STYLES AND COACH-ATHLETE RELATIONSHIP ON GROUP COHESIVENESS**

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## **1. INTRODUCTION**

A team's success in sports is based on the spirit of teamwork to achieve a shared goal. The sense of belonging to a group or team is an essential element to fulfilling the needs of individuals as well as embarking on team spirit, player relationships, team loyalty, respect, and team accomplishment. The coach plays an important factor in helping to improve athlete skills from the basic level to development to physical, technical, and psychological success Nizam et al (2009). There are several leadership styles that every leader seeks to emphasize where one expects support and supportive from his team members. Each highlighted leadership style has its own strengths and is backed by the timing and leadership style that can be improved and vice versa Tang & Chan (2009).

The achievement of a team is based on a high team spirit to accomplish a goal. Challenges faced with high team integrity and spirit are shown by each player. What is referred to as team spirit is actually a characteristic of the team's integrity and what are the factors that motivated the success of a team. This chapter defines whether group cohesion will be determined by athlete behaviour. Other than that, factors that influence the group cohesion is defined and lastly identify whether group cohesion lead by leadership style or not.

## **2. LITERATURE REVIEW**

No one denies that psychological preparations and training are more complex and challenging in team sports as they require more collective efforts, group interactions and cohesion, and motivation. As a result, it is commonly agreed that sports psychologists can enhance performance by enhancing psychological skills as done by Murphy and Tammen, (1998), Weinberg & Gould, (1995). As far as soccer training and competitions are concerned, some of the potential psychological variables that significantly determine the performance and success of a soccer team include the coach's leadership styles and team cohesion, among others. Studies by Bollettieri, 2001, Weinberg, 2002 focus on the coach's leadership styles, team cohesion, motivation, and coach effectiveness have been mentioned as integral components of sport psychology by leading practitioners, scholars, and organizations. Most research on coaching effectiveness has assumed that coaches greatly influence athletes' performance, behaviour, and psychological, and emotional well-being. Regarding to this, Horn (2002) stated that the behaviour of coaches directly influences the motivation, team cohesion, perceived success, achievement behaviour of athletes and overall success of the team. In many sports, "the behavioural changes of the athletes are considered to be the direct result of the coach's leadership", Barrow (1977).

Consequently, a soccer coach's leadership style has a great impact on individual performance. Coaches usually give an instruction to the soccer player on how to understand and employ a strategy and evaluate the performance of athletes, Turman (2008). The coach's primary objective is to develop both the physical and psychological aspects of an athlete's performance. As

Wiese-Bjornstal, LaVoi & Omli (2009) found out a coach should also foster a climate around the team that affects athlete development and creates an atmosphere conducive to an optimal athlete, as well as team performance. Overall, the coach influences the player's knowledge of the game, skill level, and team cohesion through his or her actions.

In the study on professional dancers, Kamaroa (2010) found out no significant relationship between the perception of coaching leadership behaviour and different forms of motivation. While Geme (2010) found out that the supportive and autonomous behaviour of coaches is positively and significantly correlated with motivation.

Alvarez et al (2009) examined the satisfaction of basic psychological needs as a mediator of the relationship between perceived leadership style and motivation. They concluded that there is a significant relationship between coaching leadership style and motivation. Hagger and Chatzisarantis (2006) showed that supportive and autonomous behaviours of coaches affect individuals' motivation in sports and physical education classes. In a study on coaches' leadership behaviours and achievement motivation, Smith et al (2007) provided a model and found that supportive and autonomous behaviours of coaches positively predict achievement motivation. Standage et al (2006) conducted a study in a physical education class and concluded that students' understanding of the coaches' supportive behaviour positively predicts their perception of autonomy, competence, and constancy.

### **3. DISCUSSION ON DUTY OF CARE FROM LEGAL PERSPECTIVES**

The interdependent coach-athlete relationship represents the most fundamental instance of a duty of care in sports. It is material to clearly define, analyse and clarify the duty of care related to sports coaches. It is also paramount to identify the dynamic relationship between coaching, sport and the law.

Among others, several issues need to be ascertained as follows:

- i. Coaches have an informed awareness of the evolving legal context in which they discharge their duty of care.
- ii. A coach's duty of care by scrutinising this duty of care in the specific context of sports coaching.
- iii. The legal principles and court decisions discussed relate to coaching
- iv. Both amateur and professional levels of performance.

Thus, the law sees the importance of highly instructive duty of care for practising coaches, coach educators, and national governing bodies of sport. Simultaneously, other categories of groups are also relevant to well understanding this duty of care such as students, teachers and practitioners involved in sports law, sports coaching, sports ethics, tort law, sports policy and development, sports studies, and physical education.

### **4. CONCLUSION**

Duty of care means the coach takes responsibility for the physical and emotional safety of everyone in his care. This applies to everyone involved in sports and the actual "duty of care" involves 360 angles commencing from the moment of hiring practices to personal conduct, to the process of raising concerns.

Literature also suggests that there are always gaps in the limitation of coach responsibilities and liabilities in sports. This means it is still uncertain as to whether the styles of coaching entail the blurred areas of the behavioural perspectives as to the coaches, students, players and others.

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# HUBUNGAN ANTARA KUALITI PERKHIDMATAN KEMUDAHAN SUKAN UNIVERSITI SWASTA DENGAN KEPUASAN PELAJAR

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## 1. PENDAHULUAN

Dalam usaha untuk memartabatkan institusi pengajian tinggi swasta (IPTS) sebagai sebuah institusi pendidikan yang terulung, tahap kepuasan pelajar terhadap kualiti perkhidmatan kemudahan sukan haruslah berada dalam keadaan yang memuaskan kerana ini adalah pemangkin kepada persekitaran yang positif dan berkesan dalam melahirkan pelajar yang berkualiti dan berdaya saing selaras dengan aspirasi visi & misi universiti. Dalam industri yang berkaitan perkhidmatan yang semakin mencabar sekarang ini, faktor penting untuk terus bersaing adalah dengan menyediakan perkhidmatan berkualiti tinggi yang akan membawa kepada kepuasan pelanggan (Shemwell, Yavas & Bilgin, 1998). Hubungan antara kualiti perkhidmatan dan kepuasan pelanggan telah mendapat perhatian para pengkaji sejak kebelakangan ini (Sureshchandar, Rajendran & Anantharaman, 2002). Para pengkaji telah menjalankan banyak kajian tentang hubungan ini dalam pelbagai perkhidmatan seperti pengangkutan (cth: Swan & Bowers, 1998), firma audit (cth: Caruana et. al., 2000), restoran (cth: Davies, Baron, Gear & Read, 1999) dan perkhidmatan katering (cth: Brysland & Curry, 2001), dan dapatan kajian menunjukkan hubungan positif antara kualiti perkhidmatan dengan tahap kepuasan pelanggan (Cronin & Taylor, 1992; Caruana, Money dan Berthon, 2000 ; Kouthouris & Alexandris, 2005).

Antara kaedah yang sering digunakan untuk mengukur kualiti perkhidmatan adalah dengan mengambil kira jangkaan pelanggan terhadap perkhidmatan yang disediakan serta pengalaman mereka terhadap perkhidmatan yang diperolehi (Robinson, 1999). Model pengukuran kualiti perkhidmatan yang banyak digunakan oleh para pengkaji adalah Model SERVQUAL yang dikemukakan oleh Parasuraman, Zeithaml dan Berry (1985). Kebiasaannya SERVQUAL digunakan sebagai pendekatan untuk mengukur kualiti perkhidmatan melalui perbandingan antara pengalaman pelanggan terhadap perkhidmatan yang diperolehi dengan jangkaan pelanggan terhadap perkhidmatan yang disediakan. Ringkasnya, model ini menjelaskan bahawa tahap kualiti perkhidmatan boleh diukur melalui perbezaan yang terdapat antara skor pengalaman dengan skor jangkaan pelanggan terhadap perkhidmatan. Semakin besar skor positif yang diperolehi menunjukkan semakin berkualiti sesuatu perkhidmatan, sebaliknya semakin besar skor negatif yang diperolehi menunjukkan semakin rendah kualiti sesuatu perkhidmatan. Model SERVQUAL muncul dari Model Jurang Kualiti Perkhidmatan yang dikemukakan juga oleh Parasuraman et.al. (1985) di mana model ini menjelaskan terdapat tujuh jurang dalam kualiti perkhidmatan dan salah satunya adalah jurang antara jangkaan kualiti perkhidmatan dan pengalaman kualiti perkhidmatan dan di sinilah wujudnya Model SERVQUAL tersebut. Sementara itu, terdapat enam lagi jurang yang dikemukakan oleh Model Jurang Kualiti Perkhidmatan tidak berkaitan dengan kajian ini (rujuk rajah 1). Kajian yang menggunakan SERVQUAL (Swan & Bowers, 1998; Caruana et. al., 2000); Davies, Baron, Gear & Read, 1999; Brysland & Curry, 2001) mendapati terdapat hubungan positif yang kuat diantara kualiti perkhidmatan perbankan dengan tahap kepuasan pelanggan bank berkenaan.

Walaupun bagaimanapun, Sureshchandar, Rajendran dan Anantharaman (2002) berpendapat pengalaman pelanggan terhadap kualiti perkhidmatan yang diterima sebenarnya bergantung kepada pengalaman yang pernah dilalui oleh pelanggan berkenaan. Jika pelanggan pernah

menerima perkhidmatan yang lebih baik dari tempat yang lain, maka pengalamannya terhadap perkhidmatan yang diterimanya akan lebih rendah dan begitu juga sebaliknya. Oleh itu pengkaji mencadangkan agar pihak pengurusan yang berusaha untuk meningkatkan kualiti perkhidmatan agar tidak hanya memfokus kepada meningkatkan kepuasan sahaja, sebaliknya mereka juga perlu memperbaiki pengalaman pelanggan terhadap keseluruhan perkhidmatan dengan memberi perhatian kepada pembolehubah pengalaman lepas pelanggan. Terdapat juga kajian yang menunjukkan bahawa kualiti perkhidmatan yang diterima tidak mampu meramal tahap kepuasan dan ia diperolehi dalam kajian yang dijalankan Kouthouris et. al. (2005) terhadap 287 orang individu yang melibatkan diri dalam aktiviti luar seperti berkayak, orienteering dan memanah di tasik Plasteera, Greece. Kajian inibertujuan menentukan sejauh mana model SERVQUAL mampu meramal kepuasan pelanggan dan keinginan untuk meneruskan aktiviti dalam industri pelancongan sukan yang dispesifikkan kepada aktiviti luar yang telah dinyatakan. Walaupun terdapat percanggahan dapatan kajian ini dengan kajian-kajian yang lain, penyelidik mempunyai sebab tersendiri bagi menjelaskan dapatan ini. Menurutnya, perbezaan dapatan ini disebabkan oleh ciri-ciri unik yang terdapat pada perkhidmatan berkaitan aktiviti luar berbanding perkhidmatan-perkhidmatan lain. Oleh itu, penyelidik mencadangkan agar instrumen khas untuk mengukur kualiti perkhidmatan berkaitan aktiviti luar dibangunkan untuk menilai kualiti perkhidmatan berkaitan aktiviti luar dengan lebih tepat.

Kesimpulannya, walaupun banyak kajian telah menunjukkan wujudnya hubungan positif antara kualiti perkhidmatan dengan kepuasan pelanggan, namun kajian lanjut berkaitan hubungan ini terutamanya dalam perkhidmatan yang berkaitan dengan aktiviti luar, sukan dan rekreasi masih perlu diteruskan untuk mengukuhkan dapatan kajian oleh Kouthouris et. al. (2005) tersebut. Dalam konteks sukan di Malaysia, terlalu sedikit kajian tentang hubungan tersebut dijalankan. Ketiadaan kajian seumpama ini menyukarkan pihak pengurusan kemudahan sukan di Malaysia menyediakan perkhidmatan yang terbaik dalam memperbaiki kualiti perkhidmatan yang diberikan kepada pengguna kemudahan sukan. Menurut Murray (2002), peningkatan pemahaman tentang aspek kualiti perkhidmatan akan membantu penyedia perkhidmatan dalam menyediakan perkhidmatan yang mempunyai kualiti yang setaraf dengan keinginan pelanggan yang akan membawa kepada peningkatan tahap kepuasan mereka. Meningkatkan tahap kepuasan pelanggan adalah penting kerana ia mampu menyumbang kepada sikap untuk terus melibatkan diri dalam aktiviti sukan (Brady & Robertson, 2001). Ini kerana usaha pengendalian minat dalam melakukan aktiviti sukan dan rekreasi dapat membantu kerajaan kearah mengekalkan serta meningkatkan tahap kesihatan warga Malaysia melalui aktiviti sukan dan rekreasi (Dasar Sukan Negara, 1998). Selain itu, kajian ini juga akan dapat mengembangkan lagi pengetahuan sedia ada tentang hubungan di antara kualiti perkhidmatan dengan kepuasan pelanggan terutamanya dalam konteks perkhidmatan kemudahan sukan di negara kita.

Secara umumnya dapatan kajian ini menunjukkan bahawa kualiti perkhidmatan kemudahansukan di universiti swasta berada pada tahap yang agak rendah yang disimpulkan dari skor perbezaan yang negatif di antara skor pengalaman dan skor jangkaan. Berdasarkan Model SERVQUAL, tahap kualiti perkhidmatan dapat digambarkan melalui jurang yang wujud di antara pengalaman dan jangkaan pelanggan manakala jurang tersebut pula dijelaskan melalui skor di antara enam hingga negatif enam. Tahap kualiti perkhidmatan terbaik di capai jika skor perbezaan adalah sifar yang berlaku apabila pengalaman pelanggan terhadap perkhidmatan yang diterima adalah sama dengan jangkaan mereka terhadap perkhidmatan yang disediakan. Skor perbezaan yang positif pula menunjukkan pengalaman pelanggan melebihi jangkaan mereka kerana penyedia perkhidmatan memberi lebih dari apa yang mereka jangkakan. Manakala skor perbezaan negatif menunjukkan pelanggan tidak menerima perkhidmatan sebagaimana yang mereka jangkakan yang menggambarkan kualiti sesuatu perkhidmatan tersebut adalah pada tahap yang rendah. Model ini juga menekankan bahawa nilai positif terutamanya yang agak besar bukanlah sesuatu yang baik kerana ia menunjukkan penyedia perkhidmatan menyediakan sesuatu yang tidak dijangkakan atau

mungkin juga tidak diperlukan oleh pelanggan. Situasi ini juga sebenarnya memerlukan penyedia perkhidmatan membuat penilaian semula terhadap perkhidmatan yang mereka berikan agar tidak terlalu melebihi jangkaan pelanggan. Penilaian semula ini juga akan dapat membantu penyedia perkhidmatan menjimatkan kos-kos tertentu dalam menyediakan perkhidmatan yang tidak diperlukan oleh pelanggan. Berbalik kepada dapatan kajian, didapati kesemua dimensi kualiti perkhidmatan menunjukkan perbezaan yang negatif iaitu di antara -0.7 hingga -2.0. Seperti yang telah dijelaskan, lebih besar nilai negatif bagi skor perbezaan maka semakin rendah kualiti perkhidmatan bagi sesuatu dimensi tersebut. Oleh itu, secara keseluruhannya walaupun kualiti perkhidmatan kemudahan sukan di universiti swasta agak rendah, namun ia tidak keterlaluan kerana nilai negatifnya masih kecil. Walau bagaimanapun, penyedia perkhidmatan kemudahan sukan di universiti swasta boleh meningkatkan tahap kualiti perkhidmatan mereka dengan memperbaiki beberapa aspek terutamanya bagi dimensi kebolehpercayaan kerana dimensi tersebut menunjukkan nilai negatif yang agak besar berbanding dimensi-dimensi yang lain. Model SERVQUAL menyatakan bahawa penyedia perkhidmatan yang mempunyai kebolehpercayaan yang tinggi mampu melaksanakan perkhidmatan yang dijanjikan dengan tepat dan tidak bergantung kepada pihak lain.

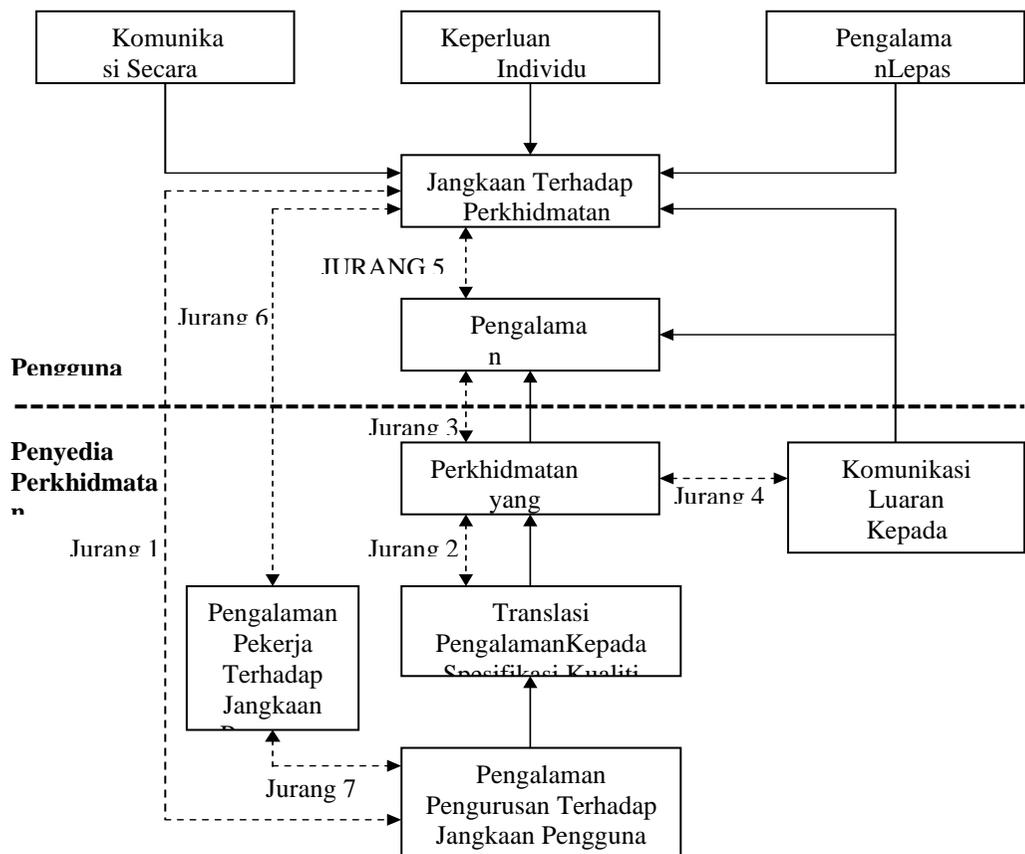
Lantaran itu, untuk memperbaiki kualiti perkhidmatan bagi dimensi tersebut, penyedia perkhidmatan kemudahan sukan di universiti swasta boleh memperbaiki beberapa aspek seperti berikut: i. sentiasa menyediakan perkhidmatan seperti yang dijanjikan, ii. sentiasa bersedia menangani masalah pelajar berkaitan kemudahan sukan, iii. sentiasa memastikan semua peralatan dan kemudahan sedia digunakan pada masa yang ditetapkan, iv. mempunyai rekod pinjaman dan penggunaan yang teratur dan sempurna, dan v. sentiasa menjadi tempat yang boleh diharapkan oleh pelajar untuk memperolehi apa sahaja berkaitan kemudahan sukan. Seterusnya kajian ini juga menjangkakan jika tahap kualiti perkhidmatan adalah rendah seperti yang diperolehi dalam kajian ini akan membawa kepada tahap kepuasan yang rendah dalam kalangan pelajar selaras dengan kajian oleh Murray et. al. (2002) yang mendapati kualiti perkhidmatan memberi kesan langsung kepada kepuasan di mana kualiti perkhidmatan yang tinggi menghasilkan tahap kepuasan yang tinggi, sebaliknya kualiti perkhidmatan yang rendah menghasilkan tahap kepuasan yang rendah. Namun, secara umum dapatan kajian ini adalah sebaliknya di mana berdasarkan analisis korelasi, hampir semua dimensi menunjukkan hubungan negatif yang bermaksud semakin rendah kualiti perkhidmatan maka semakin tinggi tahap kepuasan. Hanya satu dimensi sahaja yang menunjukkan hubungan positif yang signifikan iaitu dimensi penampilan, namun nilainya terlalu rendah dan hampir tiada hubungan. Beberapa faktor telah dikenapasti yang boleh menyumbang kepada percanggahan dapatan kajian ini berbanding kajian terdahulu. Faktor pertama adalah berkaitan pengalaman lepas para pelajar yang pernah menerima perkhidmatan seumpama ini di sekolah lama mereka. Menurut Sureshchandar et. al. (2002), tahap kepuasan pelanggan bergantung kepada pengalamannya terhadap perkhidmatan yang pernah diterima sebelum ini di mana jika pelanggan pernah menerima perkhidmatan yang jauh lebih baik dari apa yang mereka terima sekarang, pengalamannya terhadap perkhidmatan yang diterimanya sekarang akan lebih rendah yang menyebabkan tahap kepuasan yang rendah dan begitu jugalah sebaliknya. Situasi inilah yang berlaku kepada para pelajar universiti swasta kerana boleh dikatakan semua pelajar menerima perkhidmatan kemudahan sukan yang jauh lebih baik dari apa yang mereka terima di sekolah mereka dahulu. Kemudahan sukan yang jauh lebih baik ini mungkin memberi kepuasan yang tinggi bagi mereka kerana tidak pernah menerima kemudahan seumpamanya sebelum ini. Walaupun dapatan menunjukkan mereka masih berharap dan menjangkakan lebih dari apa yang mereka terima, namun pada hakikatnya mereka berpuas hati dengan perkhidmatan yang mereka terima kerana tidak pernah menerima perkhidmatan kemudahan sukan sebaik ini. Faktor kedua adalah berkaitan persekitaran pembelajaran di universiti swasta yang sangat berorientasikan peperiksaan dan motivasi mereka adalah untuk mendapat kelulusan terbaik bagi menjamin tempat di institut pengajian tinggi.

Lantaran itu, aktiviti sukan dan rekreasi bagi mereka hanyalah untuk memenuhi masa lapang lantas mereka tidak mementingkan kualiti perkhidmatan kemudahan sukan yang mereka terima. Kepuasan bagi mereka ketika melakukan aktiviti tersebut mungkin tidak terletak kepada kualiti perkhidmatan yang diterima, sebaliknya berkemungkinan di sebabkan oleh faktor-faktor lain yang tidak dapat dikenalpasti dalam kajian ini seperti faktor sosial, kesihatan dan mungkin juga hasil yang diperolehi dari aktiviti tersebut. Analisis regresi pelbagai pula mendapati kualiti perkhidmatan bukan peramal kepada tahap kepuasan dalam melakukan aktiviti sukan dan rekreasi atau dalam ertikata lain kualiti perkhidmatan tidak mempengaruhi tahap kepuasan. Ini jelas bercanggah dengan dapatan kajian Lee, Lee dan Yoo (2000) yang mendapati kualiti perkhidmatan yang diterima mampu maramal tahap kepuasan pelanggan. Percanggahan ini mungkin disebabkan kedua-dua kajian ini dijalankan ke atas responden dari persekitaran yang berbeza di mana kajian ini dijalankan ke atas responden yang melakukan aktiviti sukan di luar manakala kajian lepas di jalankan ke atas responden dari kalangan pelanggan firma perunding pelaburan, pelajar sekolah aerobik dan pengunjung taman hiburan. Kajian yang dijalankan oleh Kouthouris et. al. (2005) terhadap responden yang menjalankan aktiviti luar seperti berkayak, orienteering dan memanah juga mendapati kualiti perkhidmatan yang diterima tidak mampu meramal tahap kepuasan pelanggan dalam melakukan aktiviti luar tersebut. Oleh itu, dapatan kajian ini dapat mengukuhkan lagi kenyataan bahawa kepuasan individu yang melakukan aktiviti luar tidak boleh di ramal atau tidak dipengaruhi oleh kualiti perkhidmatan yang mereka terima. Perlu ditekankan di sini terdapat beberapa faktor yang menyumbang kepada percanggahan dapatan di antara kajian yang dijalankandi persekitaran luar (cth: aktiviti sukan dan rekreasi) dan di persekitaran yang lain (cth: perbankan dan restoran). Alexandris, Zahariadis, Tsorbatzoudis dan Grouios (2005) mencadangkan factor utama yang menentukan tahap kepuasan dalam melakukan aktiviti sukan adalah hasil yang diperolehi dalam aktiviti dari perkhidmatan yang diterima. Hasil yang diperolehi boleh dikaitkan dengan faedah-faedah seperti pencapaian, keseronokan dan kegembiraan yang diharapkan oleh individu dari penglibatannya dalam aktiviti luar tersebut. Manakala faktor kedua adalah disebabkan tahap kepuasan dalam melakukan aktiviti-aktiviti luar dipengaruhi oleh faktor-faktor lain yang tidak berkaitan dengan kualiti perkhidmatan seperti faktor persekitaran (cth: cuaca) dan faktor peribadi (cth: harapan atau jangkaan dalam melakukan aktiviti) yang dilihat lebih penting berbanding faktor kualiti perkhidmatan (Tian-Cole & Crompton, 2003). Walaupun dapatan kajian ini tidak menyokong banyak kajian terdahulu, ia sebenarnya jelas dapat membantu penyedia perkhidmatan kemudahan sukan di universiti swasta dalam mengenalpasti kekuatan dan kelemahan mereka dalam menyediakan perkhidmatan tersebut kepada pelajar. Namun, sebarang penambahbaikan yang boleh dilakukan bukanlah untuk meningkatkan tahap kepuasan pelajar sebaliknya mungkin untuk aspek- aspek lain seperti pengiktirafan dari pihak pengurusan atasan atau sebab-sebab lain yang difikirkan wajar oleh penyedia perkhidmatan berkenaan. Apa yang jauh lebih penting adalah kajian ini dapat menguatkan kenyataan bahawa kualiti perkhidmatan tidak mempengaruhi tahap kepuasan dalam konteks aktiviti luar. Lantaran itu, dicadangkan agar kajian seumpama ini diteruskan lagi di universiti swasta yang lain di seluruh negara mahupun terhadap organisasi-organisasi lain yang menyediakan perkhidmatan berkaitan aktiviti luar untuk memberi gambaran yang lebih jelas tentang hubungan di antara kualiti perkhidmatan dan tahap kepuasan. Selain itu, dicadangkan juga agar satu kajian tentang faktor-faktor yang mempengaruhi tahap kepuasan individu yang melibatkan diri dalam aktiviti luar dijalankan dengan memasukkan pembolehubah seperti faktor sosial, faktor kesihatan serta faktor hasil dari aktiviti selain faktor kualiti perkhidmatan untuk memberi gambaran tentang faktor sebenar yang mempengaruhi tahap kepuasan mereka. Penekanan juga perlu diberikan ke atas usaha untuk membangunkan instrumen khas untuk mengukur kualiti perkhidmatan bagi aktiviti luar dengan lebih tepat dan berkesan berbanding SERVQUAL yang sedia ada.

**Jadual 1:** Dimensi-dimensi dalam SERVQUAL

Dimensi	Definisi	Jumlah Item
Penampilan	Penampilan kemudahan fizikal, peralatan, para pekerja serta alat-alat komunikasi	4
Kebolehpercayaan	Keupayaan melaksanakan perkhidmatan yang dijanjikan dengan tepat dan tidak bergantung kepada pihak lain	5
Layanan	Kesanggupan untuk membantu pelanggan dan memberi perkhidmatan yang segera	4
Jaminan	Pengetahuan serta kebolehan para pekerja. Ini membolehkan mereka bertugas dengan amanah dan diyakini	4
Empathi	Memahami, mengambil berat serta memberi perhatian kepada setiap pelanggan	5

**Rajah 1:** Model Jurang Kualiti Perkhidmatan (Parasuraman et. al., 1985)



Sumber: Parasuraman, A., Zeithaml, V.A., Berry, L.L. (1990). *Delivering quality service: Balancing customer perceptions and expectations*. New York: Free Press

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# **STRESS MANAGEMENT IN THE WORKPLACE**

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## **1. INTRODUCTION**

Kuala Lumpur was discovered to be the fourth most overworked city among 50 metropolitan areas around the world as covered by the survey from Kisi, a US security specialist on work-life balance (The Sun Daily, 2021). A study by the American Insurance Association in 2019 revealed that there is a three-fold increase of mental health issues in Malaysia in the 20 years as their study showed that 51% of the Malaysian workforce suffered from at least one dimension of work-related stress. Globally, about 12 billion work days are lost annually to depression and anxiety. As of the Sept 28, 2022 report by the World Health Organisation (WHO) this works out to a US\$1 trillion (RM4.7 trillion) loss in productivity each year.

The pandemic that attacked the whole world made the situation worse as people lost income and some even lost their job and as a result were forced to take two or three other side jobs to survive. The working from home policy does not help much either as it has become the major contributor for work-related stress as screen time has lengthened, making work-life balance to be nearly impossible.

Stress in the workplace is not also bad for the mental health of employees but indirectly increases the cost of the organization as study found that 70% of workers testified that job stress caused decreased productivity. A bigger portion of the budget also has been allocated to cater the medical costs of stress-related conditions.

## **2. WHAT IS STRESS?**

The founder of stress theory Hans Selye (1956) who was also known as the ‘father of stress’ defined stress as the nonspecific response of the body to any demand. His study found that stress caused the overproduction of chemicals and hormones, producing gastroduodenal ulcers as well as high blood pressure. The World Health Organisation (WHO) defined stress as any type of change that causes physical, emotional or psychological strain. Stress happens when our body responds to anything that requires our attention and action. WHO also stated that a little bit of stress is good for humans to perform better and protect themselves but excessive stress can be harmful for both the mind and body of the individuals.

There are a number of situations that can be categorized as being stressful such as financial worries, relationships, family related problems, peer pressures, not having enough time, too much workloads parenting, and many other reasons. This paper intends to focus on the work-related stress, analytically discussing the causes, effects and how to solve them.

## **3. STRESS IN THE WORKPLACE. WHAT CAUSED THEM?**

Work stress is considered as a significant issue in the occupational safety and health aspect as well as organizational wellbeing (Williams and Cooper, 2002) since it risks the employees’ health and organizational success (Noblet et al., 2001). When an individual experiences work stress, it could make him/her vulnerable physiologically, psychologically and behaviorally (Beehr and

Newman, 1978; Sutton and Rafaeli, 1987).

The National Institute for Occupational Safety and Health (NIOSH) defined workplace stress as harmful physical and emotional reactions that occur as a result of job requirements that do not match the capabilities, resources, or needs of the worker. Stress can be categorized into two types, Eu-stress and Distress. Eu-stress can be the reasonable amount of stress that a human can take. It can produce positive after effects such as stimulating passion for work or bringing out someone's hidden abilities and talents. Distress on the other hand is an excessive quantity of stress which could be harmful to the individual (Ashok Panigrahi, 2017). When the demands on the job become too much to handle, workers generally display signs and symptoms that indicate they are feeling stressed out. The mild symptoms can be as normal as boredom, emotional fatigue, irritability and headache but it can turn out to be as bad as rage, agitation, lower self-esteem, heart condition and many other self-destructive impacts if the stress was not treated in the early stage (Melanie Bickford, 2005).

There are few categories that can be associated with factors of stress at the workplace; intrinsic to job factors, role in organization, career development as well as relationship at work. Stress related factors that are intrinsic to the job can include (but not limited to) long hours, work over or under load, time pressure, work control, unclear work roles and lack of breaks. Long working hours is common in certain kinds of industry where workers are required to work overtime beyond the normal working hour. As stated in the report by the International Labor Organization (ILO), more than 488 million workers (approximately 7%) had to work over 55 hours a week all over the world (Pega et al., 2021). Long working hours can cause a serious harm to their mental health as workers are deprived from having enough rest time. Studies found out that, in addition to stress, long working hours can also lead to job burnout (Hu et al., 2016), occupational stress (Lee et al., 2016), and depression (Virtanen et al., 2018).

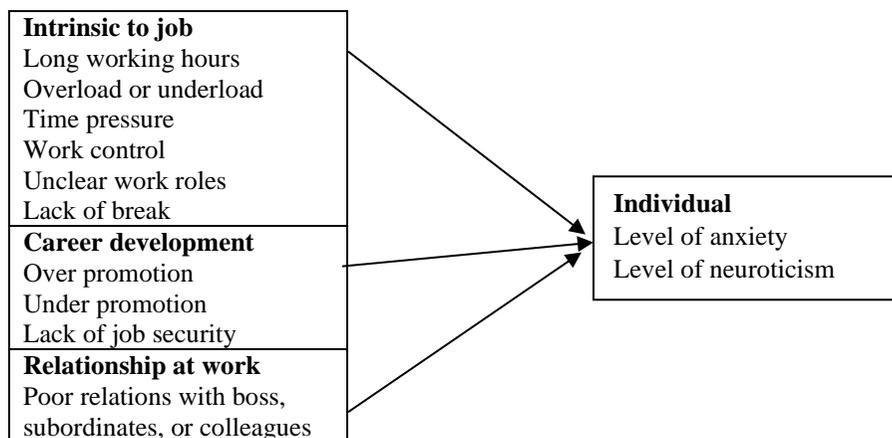
High workloads can be defined as the excessive amounts of tasks given to the employee with maybe an unrealistic deadline which can make the employee feel pressured and overwhelmed to complete their task while insufficient workloads make people feel that their skills are being underused and thus lead them to feel insecure in their job roles. Both could lead to stress in the workplace as the first one makes someone have to perform more than he could handle while the later makes him feel the anxiety of not being needed in the organization. Ambiguous work or conflicting roles and boundaries can also cause stress, as people are not about what they are doing, are they in the right direction, and doing the right things expected to be done. The lack of guidance, and training on the job would also make it stressful for employees. Alternately, workers who feel they have no or little control about their job or task may feel like they are not being trusted to do a great job and would be in distress of meeting the expectation of their supervisors.

In this pandemic era, job security is becoming another main significant factor that causes stress among workers as individuals are not guaranteed that they can remain working in the organization for a long time as economic condition globally does not seem to show a positive progress. Workers constantly worry whether they would be in the list if the company ever decided to retrench their workers on the grounds of cost cutting as the company is not making much profit as compared to before. While staff who are not concerned about their job security (due to the stability of the firm) might feel the stress if he or she feels that they are under-promoted.

First of all, let us define what is promotion in the context of employment. Employee promotion means the ascension of an employee to higher ranks. It involves an increase in salary, position, responsibilities, status, and benefits. Going back to our point, employees would feel stressed out if he or she feels that they are under promoted as they are working for years in the

same organization, but still at the same level while other same age are already in the middle of climbing up the corporate level can lead the individual feel distress for the lack of career growth. Although under promotion would be the usual concern of most employees in the industry, some might feel stressed and pressured of over promotion as well. Over promotion happens when employees climb up a higher rank quite faster and sometimes too frequently. It can cause stress if the employees are not ready for the responsibilities nor he or she has the right skills and knowledge for the new job role. Over promotion usually occurs when management feels like there is no other suitable person to fit the role and leads them to choose the same individuals all over again.

Aside from job and organizational related factors, the relationship between employees and their colleagues and superiors also plays a significant role in contributing towards workplace stress for the workers. Having a bad relationship with the manager would make it difficult for the employees to actually like being under the supervision of that manager. Managers who are too strict, always finding fault, and authoritarian are some of the examples that can cause stress for the workers. In addition to that, a sour relationship with colleagues can also create a conflict in the workplace as there will be difficulties to communicate, to get cooperation and even worse bullying at the workplace. Malaysia's Healthiest Workplace by AIA Vitality 2019 survey also revealed that 20% of employees surveyed said they continued to be affected by workplace bullying which overall contributes to their stress at work. These can cause employees involved to feel stressed and anxious about coming to work, therefore absences may increase due to not wanting to deal with their coworkers.



**Figure 1.** Sources of stress at work

#### 4. DIFFERENCE BETWEEN PRESSURE & STRESS

Stress is what can put you in stress but not all the time and mostly comes from external behaviors such as having an overload of tasks. Pressure is being overloaded or having a time deadline accompanied with lots of work, especially if you are someone who has never dealt with pressure before.

Stress can be pressure converted to stress and it's what you deal with internally that affects your feelings. Stress is that negative energy that controls you and convinces you that you aren't going to achieve your work within a deadline. The main causes of work related to stress were lack of management support and violence and harassment (Smruti Rekha Sahoo, 2016).

The National Association of Mental Health (2016) draws a major distinction between stress and pressure. Pressure is defined as a subjective feeling of tension or arousal that is triggered by a potentially stressful situation. When pressure exceeds an individual's ability to cope, the result is stress. The main causes of work related to pressure and stress were lack of management support and violence and harassment.

## **5. EFFECTS OF WORK STRESS ON ORGANIZATIONS**

According to Brewer et al. (1997), stress is one of the most common organizational consequences of excessive working and social interaction.

### *a) High Staff Turnover & Recruitment Costs*

Stressed employees may feel they have no option but to leave their jobs. Many employers make no attempt to ascertain the true reason for an employee's resignation. Employers may not realize that their organization has an issue with stress and never realize that it is affecting their employees.

### *b) High Absenteeism and Presenteeism Levels*

Stress individuals tend to experience more illness and take more time off due to illness. Absenteeism can also be the result of staff feeling that they simply cannot cope with stress. Stress individuals tend to experience more illness and take more time off due to illness. Absenteeism can also be the result of staff feeling that they simply cannot cope with their work. Usually this kind of staff is unable to contribute much on his/her work.

### *c) Reduced productivity Levels*

As exposure to stress is prolonged and no solution is taken, it will become more difficult for the employee to work at an optimum level. As concentration and motivation levels drop, it leads to mistakes creeping into their work. They will take longer to complete tasks, and the quantity and the quality of their work begins to suffer. And this will drop productivity levels of the organization.

### *c) Increased Health and Safety Issues*

Employees tend to take more risks and suffer poorer concentration when they are stressed. This will increase accidents which in turn increase litigation, insurance and medical costs for the organization.

### *d) Litigation*

Organizations have a legal obligation to provide a safe and healthy workplace for their employees. Organizations may provide adequate training, safe work practices, and a workplace free from favoritism and harassment. An employee may seek legal remedy if the organization fails to meet its legal obligations.

### *e) Reputational Damage*

The reputation of the organization is damaged if the organization and the employee fail to manage the stress in which it will develop the culture of stress. When the productivity levels and the performance of staff are reduced, it will develop a culture of poor customer service.

### *f) Increased Training costs*

As a result of higher staff turnover, more induction courses are required. The organizations may have to provide more training on interpersonal skills, health and safety and stress management training.

## 6. HOW TO OVERCOME STRESS IN THE WORKPLACE?

During the pandemic era, the economy everywhere was unstable and some of the organizations had layoffs and cut budgets. As a result, it will increase fear, uncertainty, and higher levels of stress. In this difficult economy, we may find it harder to cope with the challenges of the job. Both the stress we take with us when we go to work and the stress that awaits us in the workplace are now on the rise – and employers, managers, and workers are all feeling the added pressure. The ability of the employee to manage the stress in the workplace can make the difference between success and failure on the job. Our emotions are contagious, and stress has an impact on the quality of our interactions with others and the delivery of the tasks. If the employee is able to manage the stress and the better outcome taken, the more positively affect those around the employee and the less other people's stress will negatively affect (Brewer et. al., 1997).

The Malaysian Trades Union Congress (MTUC) (2022) has proposed that leave be granted to enable workers to deal with the mental stress that they feel at the workplace. Employers have to understand that their workers have other responsibilities outside of work, too. According to Brook Murray, the Chief Operating Officer and Co-Founder of seoplus+, supervisors will have one-on-one meetings with their employees every week to ensure their employees are well-being. Besides this is to show how leadership and the management teams can support their employee needs at work (Brianna Graham, 2022).

When stress is interfering with our ability to work, we need to start paying attention to physical and mental health in order to maintain self-care. The better we feel, the better equipped we will be to manage our stress, without becoming overwhelmed. According to Smruti Rekha Shoo (2016), there are few examples how employee may manage stress at workplace such as:

- a) *Managing time* - Employees should be able to differentiate between urgent tasks (unplanned demands) and important tasks (those that give you the best return for the investment of your time).
- b) *Managing workload* – Plan ahead, to better manage ‘peaks’ and ‘troughs’.
- c) *Managing change* – Be prepared – keep up to speed with what is happening, read around the subject and ask lots of questions before the change occurs.
- d) *Managing people & conflict* – Avoid aggressive (fight) and submissive (flight) behavior which will add to your stress. Aim to win/win agreements wherever possible.
- e) *Managing yourself* – Don't be afraid to talk to others and seek advice.

According to American Psychological Association (2018), there are few steps to manage stress as below:

- a) *Track your stressors*. Keep a journal for a week or two to identify which situations create the most stress and how you respond to them. Record your thoughts, feelings, and information about the environment, including the people and circumstances involved, the physical setting, and how you reacted. Taking notes can help you find patterns among your stressors and your reactions to them.
- b) *Develop healthy responses*. Instead of attempting to fight stress with fast food or alcohol, do your best to make healthy choices when you feel the tension rise. Exercise is a great stress-buster. Also make time for hobbies and favorite activities. Build healthy sleep habits by limiting your caffeine intake late in the day and minimizing stimulating activities, such as computer, television use and entertained media social via mobile phone, at night.
- c) *Establish boundaries*. In today's digital world, it's easy to feel pressure to be available 24

hours a day. Establish some work-life boundaries for yourself. Establish some work-life boundaries for yourself. That might mean making a rule not to check email from home in the evening, or not answering the phone during dinner which all are after working hours. These realms can reduce the potential for work-life conflict and stress that goes with it.

d) *Take time to recharge.* To avoid the negative effects of chronic stress and burnout, we need time to replenish and return to our pre-stress level of functioning. This recovery process requires “switching off” from work by having periods of time when you are neither engaging in work-related activities, nor thinking about work. Take time off to relax and unwind, so you come back to work feeling reinvigorated and ready to perform at your best. If you are not able to take time off, get a quick boost by turning off your smartphone and focusing your attention on nonwork activities for a while.

e) *Learn how to relax.* Techniques such as meditation, deep breathing exercises, and mindfulness can help melt away stress. Start by taking a few minutes each day to focus on a simple activity like breathing, walking, or enjoying a meal.

f) *Talk to your supervisor.* Employee health has been linked to productivity at work, so your boss has an incentive to create a work environment that promotes employee well-being. Start by having an open conversation with your supervisor. This is for managing the stressors you have identified in order to perform at your best on the job.

g) *Get some support.* Accepting help from trusted friends and family members can improve your ability to manage stress. The employer may also have stress management resources available through an employee assistance program, including online information, available counseling, and referral to mental health professionals, if needed.

## CONCLUSION

For both employees and the organisations that employ them, work stress is a significant concern. The purpose of this chapter is to increase knowledge of the impacts of workplace stress and the pervasiveness of the issue. If neither the organisation nor the employee take any action, a culture of stress will subsequently develop, which will have numerous negative effects on the organisation. The greatest way to prevent the negative effects of stress on the organisation is to establish a culture of stress management that has the support of both management and employees. Hope this will spur businesses to examine the stresses in their own workplaces and implement measures to lessen and/or prevent stress there, helping to maintain the health and wellbeing of employees.

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