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Determinants for Knowledge Sharing Behaviours among Undergraduate Students in Public University in Malaysia

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Abstract

Purpose – This study aims to investigate the factors affecting knowledge sharing behaviour (KSB) among undergraduate students in X University in Malaysia. University X was used instead of the university's name to protect the identity of the university. The objectives are: i) To identify the factors that affecting knowledge sharing behaviour among undergraduate students in Public University in Malaysia, ii) To determine relationship between self-efficacy and knowledge sharing behaviour, iii) To determine relationship between trust and knowledge sharing behaviour, iv) To determine relationship between technology availability and knowledge sharing behaviour and v) To determine relationship between perceived usefulness of technology and knowledge sharing behaviour. **Design/methodology/approach** – The data from 297 students out of 1,486 undergraduate students in a X University in Malaysia has been collected. Data from 297 students were completed and the demographic shows 197 females (66.3%) and 38 males (33.7%). The quantitative approach and questionnaire instrument are the research methodology and technique used to investigate this phenomenon. Data analysis conducted using SPSS software to constructs the finding results. **Findings** – The results indicated the highest correlation value is between trust and knowledge sharing behavior which comply with one of the objective to determine relationship between trust and knowledge sharing behaviour, whereas the lowest correlation value is between technology availability and knowledge sharing behavior which comply with one of the objective to determine relationship between technology availability and knowledge sharing behaviour. Therefore, it could be considered that the variables used in this study have positive correlation either moderate or low relationship. **Research limitations/implications** – There are several limitations of this study. Firstly, this study was only focused on undergraduate students from one Public University in east coast peninsular. Therefore, it may not be generalised to other Public University across Malaysia. Secondly, we did not relate the students' knowledge sharing to academic performance, which may be of interest to be looked into in future studies. Moreover, by utilizing a single method, i.e. quantitative, we may not be able to assess and understand student's intention of knowledge sharing in depth, as most behavioral studies consisted of mixed method approach. Lastly, it is the nature of a cross sectional survey study which limits our analysis. It would be of much benefit if we can perform a prospective study in assessing the changes in students' knowledge sharing behaviour as they progress in the subsequent years of their studies. **Conclusion** – The conclusion could be drawn that knowledge sharing was found to be significantly related to all components under study i.e. self-efficacy, trust, technological availability, and perceived usefulness of technology. Personal attitudes and technological factors may act as determinants of knowledge sharing among university undergraduate students in X University in Malaysia.

1. Introduction

Knowledge defined as a fluid mix of experience, values, textual information and expert insight that provides a framework for evaluating and incorporating new experience and information (Davenport and Prusak,1999). Knowledge is Human knowledge of a particular area of interest acquired through research and practice (Awad & Ghaziri,2004). Essentially, knowledge becomes as the important asset in acquiring competitive advantage. In order to succeed in an increasingly dynamic environment, vital assets for individuals and organizations adoption of knowledge is recognised (Van den Hooff and De Ridder, 2004; Alavi and Leidner, 1999; Yang, 2007; Syed-Ikhsan and Rowland,2004).

In organisational perspective, knowledge is considered an intangible asset which has the capability to sustain in future challenges and competitive market. With the possession of knowledge, it would act as the competitive power to ensure the organisation to achieve the business objective successfully. By saying that, it is significance to mind and completely organise the knowledge appropriately. In order to achieve success, an organisation must have mutual or shared vision that could be obtained and therefore, knowledge sharing is an important tool among Knowledge Management (KM) tools which would give great impact on the organisation business.

As one of important tool in KM, knowledge sharing is considered KM's Main Enabler. Knowledge may be either contained within the minds of a person or preserved in a document either conventional document such as policy paper, conceptual paper and etc. or could be in electronic document as such e-book, databases, information system. Types of knowledge possessed by an organisation consists of experience of employees, procedures, record and business process and it also could be considered as the intellectual assets of the organisation. Different individual owns diverse knowledge, this is means as every individual have differences in the way he thinks, formulates an idea and varies in experiences.

Higher education institutions are where individuals when to search and to learn new knowledge and is a place that responsible for the creation, management and spread of knowledge within society (Shaik & Othman, 2015). Universities recognized as knowledge centre to provide each individuals or students with education as their lifelong learning process and to ensure to grow the knowledge in the society, the need of knowledge sharing is essential.

Sharing of knowledge occurred when an individual disseminates or distributes his or her knowledge acquired to other members within the organization (Ryu, Ho and Han, 2003). From here we could understand that knowledge serves as an entity which could be passed from the individual's mind to others in need of that particular knowledge. In universities, systematic knowledge management is commonly used to leverage knowledge resources and to encourage sharing of knowledge between academics, staff and students. With the implementation of the system, the society of universities would organize information, communicate and exchange views between them.

Therefore, the resolution of this study is to investigate the factors that affecting knowledge sharing behaviour and its relationship among undergraduate's students in an East Coast Peninsular University in Malaysia.

2. Literature Review

2.1 Knowledge Sharing

Knowledge is the most crucial resources in any organisation. In general knowledge is referred as individual understanding based on the experience which is should be shared for numbers of purposes. There are many literatures defined knowledge in various ways. Generally, knowledge is referred as the experience, skills, insights or thoughts possess by individual inside of their mind. However, for the purpose of consistency in defining this term, the definition of knowledge is adopted based on Davenport and Prusak (1997, p. 5) as cited by Biloslavo and Mojca (2010), where knowledge is referred as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. Knowledge is basically resided in the minds of knower. In organization context, knowledge is not only embedded in documents or repositories, but also in organizational routines, processes, practices and norms".

Knowledge could be divided into two main categories; tacit and explicit. Tacit knowledge could be defined as cultural, emotional and cognitive background, of which we are only marginally aware (Stenmark, 2001, p.10). Based on Nonaka and Konno (1998) as cited by Haag, Duan & Mathews (2010) added an argument on tacit knowledge where a technical dimension involving personal skills is referred to as know-how, and a cognitive dimension which

"comprise of beliefs, ideas, values, schemata and mental models which are deeply ingrained in us and which we often take for granted". On the other hand, Nonaka (1991) defined explicit knowledge as knowledge which could be expressed, codified, stored in databases or as text in book or articles, transferred, shared and managed by knowledge management tools. Both tacit and explicit knowledge should be expressed in mutually complementary entities. This is because knowledge is not either completely tacit or completely explicit (Haag, Duan and Mathews, 2010).

2.2 Knowledge Sharing Behaviour in Academic Institutions

Gebretsadik et al., (2014) as cited by Mafabi, Nasiima, Muhimbise, Kasekenda, & Nakiyonga, (2017) explained that the sharing of knowledge could be described as the main enabler of knowledge management. Generally, sharing knowledge is about communicating obtained knowledge within a group of people. Knowledge sharing could either occur in formal conversation or informal communication. In this point of view, sharing is referred like a cycle where one party gives a resource and another receives it. The resource must transfer between source and recipient to ensure the sharing process takes place. The word "knowledge sharing" commonly involves the process of providing and receiving information framed by the knowledge of source within a context. What is obtained is the information presented by the receiver's knowledge.

Sharma (2010) as cited by (Shaik & Othman, 2015) justified that to ensure success and to achieve goals and to have improvement in performance in academic institutions, universities need to encourages knowledge sharing activities among their academics, staff and students. It is also said, if knowledge sharing implemented in a proper and systematically, it could produce a competitive advantage for the academic institutions. Riege (2005) as cited by (Yogeesha & Gopala Krishna, 2013) stated three group could be categorised in associating factors to knowledge sharing which are: individual, organisational and technology factors.

2.3 Purposed of the study

The purposed of this is to investigate the factors affecting knowledge sharing behaviour (KSB) among undergraduate students in a X University in Malaysia. University X was used instead of the university's name to protect the identity of the university.

2.4 Research Objectives

The following research questions guided the study:

RQ1. What are the factors that affecting knowledge sharing behaviour among undergraduate students in a X University in Malaysia?

RQ2. Is there any relationship between personal attitudes and technological factors towards knowledge sharing behaviour;

i.   Is there any relationship between self-efficacy and knowledge sharing behaviour?

ii.   Is there any relationship between trust and knowledge sharing behaviour?

iii.   Is there any relationship between technology availability and knowledge sharing behaviour?

iv.   Is there any relationship between perceived usefulness of technology and knowledge sharing behaviour?

2.5 Research model and hypotheses

This study investigated whether factors such as personal attitudes and technological factors is related to knowledge sharing behaviour by referring to Wangpipatwong (2009) Model based on the previous literature. Personal attitudes show to what degree a person likes or dislikes something. Generally, the attitude may explain whether the individual is positive or negative, particularly from the manner in which he thinks about doing things. Instead, Technological factors have been referred to as a resource contributing to communication, especially for long distance collaboration. Figure 1 depicts our study framework. As shown, both personal attitudes and technological factors comprise of two factors respectively. In personal attitudes, self-efficacy and trust are the factors used in order to determine knowledge sharing behaviour in individual perspective, while technology availability and perceived usefulness of technology are the factors developed based on the technological context.
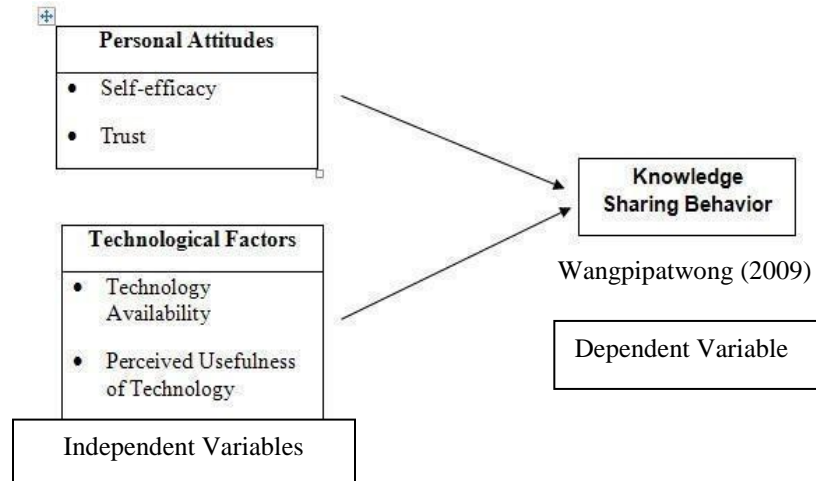
Figure 1. Research model of the study

2.5.1 Self-efficacy and Knowledge Sharing Behaviour

Self-efficacy could be referred as a form of self-evaluation, which may influence decisions on what behaviours to perform ss well as the amount of effort and determination to bring forward in the face of challenges and behavioural mastery. Besides, Jashapara and Tai (2006) defined self-efficacy as views in a person capability to organize and execute the developments of action required to produce given attainments. The findings of study conducted by Kankanhalli et al. (2005) also discovered that self-efficacy may be the element with intrinsic advantages, this could be combined with other variables to investigate their effect on the behaviour of knowledge contributions. The results of the study presented that self-efficacy is positively related to knowledge contribution while using electronic knowledge repositories.

Furthermore, Hilmi Aulawi, Iman Sudirman, Kadarshah Suryadi & Govindaraju (2009) highlighted that self-efficacy could be projected where the highest positive attitude of an individual towards sharing knowledge, the higher its intention to share knowledge. The first hypothesis is formulated from all the literatures. Accordingly, the following hypothesis H1 is proposed:

H1: Self-efficacy is significantly related to knowledge sharing behaviour.

2.5.2 Trust and Knowledge Sharing Behaviour

Trust is the second factors from the personal attitude aspect. Trust is basically similar to self-efficacy where it is all about the belief. However, the variation is in terms of the ability of one to belief another party to perform intended behaviour. Orr and Persson (2003) claimed the degree of individual confidence to other parties' skill and positive attitude would support to decrease the concern about the precision of

acknowledged knowledge, while also reducing the propensity to doubt the precision of the knowledge acquired. Furthermore, according to Ching-Lin (2003) as quoted by Hilmi Aulawi, Iman Sudirman, Kadarsah Suryadi, & Govindaraju (2009), trust would impact a sharing of knowledge attitudes.

For example, the purpose of this study is to investigate the factors that affecting behaviour in the sharing of knowledge among undergraduates. When one's trust in his colleague's skill and positive attitude is higher, he would benefit from his trust that the knowledge gained from his colleagues. It could therefore remain predicted that the higher level of confidence in his colleagues ' ability and positive attitude would confirm the growth of the positive attitude of an individual towards knowledge sharing. According to this discussion, the hypothesis H2 is proposed:

H2: Trust is significantly related to knowledge sharing behaviour.

2.5.3 Technology Availability and Perceived Usefulness of Technology towards Knowledge Sharing Behaviour

Technology availability is referred to when the technology could be accessed for the communication or exchange of knowledge. As mentioned earlier, technology is important for networking purposes, as it allows for long-distance collaboration. According to Riege (2005) as quoted by Wangpipatwong (2009), technology may serve as a facilitator to facilitate and encourage knowledge sharing by making the sharing of information easier and more convenient. The technology's availability and usability drive knowledge-sharing activities (Han & Anantatmula, 2007). For instance, Nurliza Mohammed Fathi, Eze & Goh (2011) Concluded that the presence of an incentive system promotes greater motivation for employees to share their knowledge.

Perceived usefulness of technology is also another factor of technology, which is used in this study. Davis (1989) addresses in the technology acceptance model (TAM), perceived usefulness is defined as "the degree to what extent a person belief in using particular system that could enhance his/her job performance". Additionally, perceived usefulness affects the attitude of the individual towards using the system that could help determine behavioural intentions and indirectly contribute to the actual use of the system. From this point of view, perceived usefulness of technology is the act of usability of existing technology in carrying out specific activities. It could therefore be view that perceived usefulness of technology I suggested as the important factors for encouraging the exchange of information.

Throughout social networks, the chance of people to begin their interpersonal contact is high. One of the benefits of social networks is it may encourage collaboration among co-workers and help in developing suitable surrounding or atmosphere to share knowledge. ICT is capacity to disseminate but also spread information across various organizational units or divisions, could enhance understanding of the complex organizational environment. This condition probably happens in academic institutions as well. In getting ICT accessibility, students could share their knowledge with other colleagues who could help them understand a specific subject better. Based on this discussion, the hypothesis H3 is proposed:

H3: Technology availability is significantly related to knowledge sharing behaviour.

H4: Perceived usefulness of technology is significantly related to knowledge sharing behaviour.

2.6 Research methodology

Instrument and measurement

This is a cross sectional study among undergraduate's students in x University in Malaysia. Sampling population consisted of 1486 total of active students. Both male and female students were randomly selected. Simple random sampling using Raosoft (sample size sample software) to ensure representativeness of the student population, which resulted in a final sample of 297.

A survey questionnaire was administered consisting of four sections; demographic information (Part A), knowledge sharing behavior (Part B), personal attitudes (Part C) and technological factors (Part D). Items were phrased according to a 5-point Likert scales (ranging from 1 for Strongly Disagree to 5 for Strongly Agree). The questionnaires were adapted from previous studies (Cheng, et al., 2009; Yuen & Majid, 2007). In order to ensure its consistency and the language appropriateness, both pre-testing and pilot testing were performed, and the questionnaire was validated by Cronbach's alpha.

2.7 Statistical Analysis

Statistical analysis was conducted using SPSS version 23. P value of 0.05 was the cut-off of the level of statistical significance. Main statistical analysis performed was Pearson's Correlation Test. It was performed to test the relationship between Knowledge Sharing Behaviour (KB) and the four independent variables: Self efficacy (SE), Trust (T), Technology Availability (TA) and Perceived Usefulness of Technology (PU). Results of descriptive analysis were displayed by frequency, percentages, mean, standard deviation and variance.

2.8 Results

2.8.1 Reliability test

A reliability test was performed for each variable of this study. The result of this test is presented in Table I. Cronbanch's alpha was acceptable according to international standards, ranging from 0.70 to 0.8

Table 1. Reliability test

Variables	Number of Items	Cronbach's Alpha
Personal Attitudes:		
Self-efficacy (SE)	8 items	0.866
Trust (T)	8 items	0.708
Technological Factors:		
Technological Availability (TA)	3 items	0.808
Perceived Usefulness of Technology (PU)	8 items	0.824

2.8.2 Profile of respondents

In Table II states the details of the demographic profile of the respondents. Of the 297 respondents, the majority were female students (66.3%) and the rest were male students (33.7%). In terms of age, most respondents indicated their age between 18-20 years (n = 186, 62.6%), while the minority was >27 years old (n = 1, 0.34%). In relation to the semester of study, the majority are in the semester 1 (n = 76, 25.6%) while the lowest is semester 4 & semester 7, respectively (n = 3, 1%).

Table 2. Demographic profiles

Variables	Dimensions	Frequency	%
Gender	Male	100	33.7
	Female	197	66.3
Age group	18-20 years	186	62.6
	21-23 years	105	35.4
	24-26 years	5	1.7
	>27	1	0.3
Semester of study	Semester 1	76	25.6
	Semester 2	59	19.9
	Semester 3	56	18.9
	Semester 4	3	1.0
	Semester 5	46	15.5
	Semester 6	37	12.5
	Semester 7	3	1.0
	Semester 8	17	5.7

2.8.3 Descriptive Statistics of Research Variables

Table III presents a descriptive profile of the research variables. As shown, the mean score of knowledge sharing behaviour is 3.656 and this indicated that students positively sharing their knowledge among the students. All mean scores of the four variables were above the average value of 3, therefore suggesting that all four factors were average to high among the respondents. Among the four, technology availability scored the highest in mean value, indicating that it was the most prominent factor among students. Differ, trust scored the lowest of all.

Table 3. Descriptive Statistics

Variables	Mean	Standard Deviation	Variance
Knowledge Sharing Behaviour	3.656	0.857	0.778
Self-efficacy	4.084	0.720	0.523
Trust	3.770	0.048	0.700
Technology Availability	4.323	0.701	0.492
Perceived Usefulness of Technology	3.080	0.763	0.591

2.8.4 Relationship among Research Variables

Table IV portrays the results of knowledge sharing behaviour relationship with personal attitudes and technological factors. As shown, the value of Pearson for all the independent variables varied from r=0.201 to r=0.437. The highest correlation value was noted between trust and knowledge sharing behaviour, whereas the lowest correlation value was between technology availability and knowledge sharing behaviour. Therefore, in general, we can conclude that the variables used in this study have a significantly positive moderate degree to low degree correlation.

Table 4. Relationship among Research Variables

Variables	KSB	SE	T	TA	PU
Knowledge Sharing Behaviour (KSB)	1	0.425**	0.437**	0.201**	0.315**
Self-efficacy (SE)	0.425**	1	0.406**	0.483**	0.498**
Trust (T)	0.437**	0.406**	1	0.353**	0.548**
Technology Availability (TA)	0.201**	0.483**	0.353**	1	0.603**
Perceived Usefulness of Technology (PU)	0.315**	0.498**	0.548**	0.603**	1

**: Significant correlation; $P < 0.05$

3. Discussion

This study was aimed to investigate the factors or determinants of knowledge sharing behaviour in academic institution perspective. Knowledge sharing is important to ensure knowledge management to be successful either in organizational-based or in the academic institution environment. As we know, academic institutions nowadays not only providing knowledge to students, but it also plays as the main centre where information practices and learning strategies take place simultaneously.

3.1 Personal Attitude

Personal attitude is the conviction of the person who intends to conduct a behaviour (Ajzen et al., 1980). In fact, personal attitudes depict how one feels they believe doing something that could directly establish their intention to perform that behaviour. Under personal attitudes there are two dimensions namely self-efficacy and trust.

3.1.1 Personal Attitude: Self efficacy

Self-efficacy is referred to as beliefs in one's ability to manage and execute the courses of action required to achieve those achievements (Jashapara & Tai, 2006). Self-efficacy showed somewhat moderate based on the findings. Most respondents were asked based on their level of confidence as well as belief in themselves. This result supported with the findings by Lin, Hung and Chen (2009) when they identify individuals who share knowledge as a competent, superior and cooperative means of achieving personal goals, demonstrating the utmost willingness to share their knowledge.

3.1.2 Personal Attitude: Trust

For the second aspect of personal attitudes, trust could also influence knowledge sharing behaviour among the student. According to Mayer et al. (1995), trust could be defined as the willingness of a party to be vulnerable to the actions performed by another party which importance to the trustor, regardless of the ability to monitor or control those other parties. Better than self-efficacy, trust indicate quite high mean for personal attitudes factors. Based on the questionnaire, the respondents were asked whether they trust their friends or vice versa in sharing knowledge. The response showed that almost overall of the respondents eager to trust their friends. Most of the respondents would ask their friends if they are good at something. Besides, the respondent would also ask their friends when they need certain knowledge in order to accomplish a specific task.

Nevertheless, trust has the most value of correlation with moderate significant relationship towards knowledge sharing behaviour. It is suggested that good peer relationship is one of the reasons that student's convenience of sharing knowledge with their friends. Other than that, the students feel it is a good initiative in helping classmates academically. Hence, as overall, trust is positively related to knowledge sharing behaviour with the highest mean value to be moderate relationship.

3.2 Technological Factors

Technological factors are one of the factors that affecting knowledge sharing behaviour in this study. Knowledge sharing not only occurred physically, but it could also take place thru the technology. This is because technology could assist people from isolated locations to communicate and share knowledge with each other. For example, online chat and social media networking could be perfect place where the people could share knowledge or discuss some issues. Moreover, with vast development of technology nowadays, all information and knowledge produced electronically and becoming parts of our daily life activities. Therefore, people without hesitation would search the information and knowledge, especially from the Internet, information repository system or from subscribed online databases.

3.2.1 Technological Factors: Technological Availability

There are two aspects under technological factors, including technology availability and perceived usefulness of technology. From the findings, technology availability could be referred as the accessibility of the technology for sharing knowledge. Surprisingly, this study indicates that technology availability has the lowest mean where there are respondents uncertain with the given statement but it could be said that overall respondents believe with the advantages of technology availability. The respondents were aware the existence of technology such as email, web pages and blogs to share knowledge with others. As overall, majority of the respondents agreed that they could access the technology whenever needed. Other than that, after conducting the correlation analysis, it was found that technology availability has a small correlation. It is believed that overall respondents willing to share knowledge even without the available of technology. Based on the overall findings, technology availability is also significantly related to knowledge sharing behaviour among the students.

3.2.2 Technological Factors: Perceived Usefulness

Perceived usefulness of technology is another aspect of technological factors. Based on Davis (1989), perceived usefulness of technology means "the degree to which a person believes that using a particular system would enhance his or her job performance". From the findings, it has shown that most of the respondents agreed that they leveraging the technology to share knowledge. Most of the respondents believe that technology orchestrate the essential role to communicate, exchange knowledge or make informal discussion with other friends who live in remote areas. By having the technology, the respondents could also obtain relevant information based on their information needs.

4. Conclusion

As a conclusion, based on the findings and analysis obtain by this study, the knowledge sharing activities would offer lots of benefits to the academic institution or in any field of work environment. Dynamic and willingly of sharing knowledge is the vital component to ensure a holistic, current and effectual learning process, specifically between the students. In this point of view, personal attitudes could be seen as the major determinant that could affect knowledge sharing behaviour among the students. Furthermore, mutual trust is also essential for students to share knowledge. On the other hand, technology is crucial in encouraging knowledge sharing among university students. This is because technology could assist the students to communicate with their classmate that are far from them due to geographical factor as well as facilitate them in discussing and sharing knowledge. Technology could also help the students in completing the coursework. This statement in line with the conclusion by Wangpipatwong (2009), suggested that technology support plays crucial roles to the knowledge sharing activities among university students. Based on the explanation, it is proven that the factors including self-efficacy, trust, technology availability and perceived usefulness of technology were significantly affecting knowledge sharing behaviour among undergraduate students in X University in Malaysia.

The research objectives have been successfully achieved for this study, it contributes to understanding the determinants of knowledge sharing behaviour of undergraduate students which back to the basic of human instinct which is personal attitudes to share knowledge portray big role rather than the technological factors but still have limitations in the conduct of this study. The study solely focusing on undergraduate students from X University, that raised the queries of transmission of findings within different academic institutions in Malaysia. In a wider range of respondents, further studies are suggested. Apart from that, the study approach used only quantitative research in conducting this research. For that reason, it is recommended that further research to be conducted by using mix of qualitative and quantitative research approach or quantitative research approach to achieve better and solid outcomes.

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Understandings the Reading Habit and Reading Attitudes Among Students in Research University Library in Malaysia

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Abstract

Reading is one of the activities known to give a lot of benefits to readers. In the context of university students, reading can improve their academic performance. However, literature indicated that students read-only to pass their examination and not for pleasure and acquiring knowledge. The study reported in this paper investigated the reading habit and reading attitudes among students in the research university library in Malaysia. It is believed that positive reading attitudes towards education materials or non-education materials lead to positive reading experiences, which also lead to higher academic performance. A descriptive study used questionnaires as an instrument of a quantitative method. Convenience sampling was employed and 400 respondents from four research university status libraries were selected. Moderate levels of reading attitude were obtained from the result of the study, in which several variables produced a significant relationship in the reading attitude (education background and favorite activities during leisure time). The findings of this study have shown the behavior of academic library users in terms of reading habits, reading attitudes, and selection of reading materials. Several suggestions such as providing a variety of reading material (sense of humor and humanities, public figures and tv personalities) and reading encouragement activities have been suggested. This study provides useful inputs to the Ministry of Higher Education (MOHE) in constructing effective strategies to cultivate reading habits among reluctant readers in public universities.

Keywords: reading habits; reading attitude; reading practice; academic library; university library; research university library.

INTRODUCTION

Reading is one of the abilities of literacy skills, other than writing and counting. Reading skills are the initial skills that a person needs to possess to ensure that they remain competent in daily life. As all know, reading not only can give meaning to a statement, but it can give a deeper understanding to the reader. It also one of the activities known to give a lot of benefits to its readers. Since reading is an activity that has been started since childhood and become a repeated activity for ones in fulfilling their leisure time, obtaining information, and addicting to find some books or reading materials that they like, it is called reading habit (Sari et al., 2020).

Efforts to improve reading activities or inculcate reading habits among the community remain warm although many efforts have been made since time immemorial. The importance of literacy or reading ability among the community is crucial, which acts as a benchmark of a country's development. According to IFLA, the INTERNATIONAL FEDERATION OF LIBRARY ASSOCIATIONS AND INSTITUTIONS, there is a significant relationship between reading research and reading promotion and the role of libraries in lifelong literacy (IFLA, 2019). The National Library of Malaysia (NLM) has long been implementing reading programs and campaigns since 1995 through the National Reading Month celebration, with the theme "Mari Membaca Bersama" or "Let's Read Together". Starting 2006, under

the leadership of the Ministry of Culture, Arts, and Heritage (KEKKWA), the reading campaign which was previously held throughout July has been made an annual agenda aimed at producing a knowledgeable and informed Malaysian society by making reading a culture. The Reading Campaign Slogan "Bangsa Membaca Bangsa Berjaya" (Successful Nation is a Reading Nation) began to be widely used throughout the country to this day. Besides, Kuala Lumpur has been named the World Book Capital 2020 with the slogan 'KL Baca - Caring Through Reading' by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) (UNESCO, 2019). Accordingly, concerning the recognition, the government has also organized the implementation of the National Reading Decade (DMK) 2021-2030 through the empowerment of the basic environment of reading encouragement and the mental preparedness of the people aggressively, creatively, and inclusively as a solid foundation.

The Malaysian government has structured all public universities into three categories, namely, research universities, focused universities (the technical education, management, and defense universities), and comprehensive universities. There are presently five universities which are Universiti Malaya (UM), Universiti Putra Malaysia (UPM), Universiti Kebangsaan Malaysia (UKM), Universiti Sains Malaysia (USM), and Universiti Teknologi Malaysia (UTM) given the RU status by the Ministry of Higher Education Malaysia during the 9th and 10th Malaysia Plan out of 20 public Higher Education Institutions (HEIs) (MOHE, 2019). Research universities (RU) in Malaysia are required to focus primarily on research and innovation activities, driven by highly competent academics and competitive student admissions. According to Mohamad Sheriff and Abdullah (2017), RU's are expected to explore their intellectual capacity and become models of Malaysian universities in conducting research activities aimed at knowledge advancement. Seven criteria used by the Assessment of Research Universities Committee to evaluate if a university qualifies to be a research university were namely, 1) quantity and quality of research, 2) quantity and quality of researchers, 3) quantity and quality of postgraduates, 4) Innovation, 5) Professional services and gifts, 6) Networking and linkages, and 7) Support facilities (Mohamad Sheriff and Abdullah, 2017). The RU program was intended to provide a boost that could better inculcate such a research culture in the universities under it.

Due to well-equipped services and facilities in supporting the development of learning, teaching, and research, library users among research university status were chosen as the scope of the study. Besides that, in terms of sufficient budget allocation each year, these academic libraries could maintain the source of reading materials (printed/ electronic) provided to their users. Despite the current deteriorating economic situation happening all over the world. Based on the RU justification, the limitation of times and budget constraints in conducting current research have made RU students in Malaysia respondents to the study. The data obtained from this study although could not be generalized to other public universities possibly it can be used as an example and benchmark to other related studies in the future. Especially on educational institutions that related to reading habits and reading attitudes, and to other institution sources of reference materials available to the local community. Study related to reading profile or reading habits most suitable to be implemented at the level of educational institutions such as schools and institutions of higher learning. It is important to understand and highlight the initiatives taken by a country in supporting reading culture at the education level.

LITERATURE REVIEW

Nowadays the evolution of the Internet has been impacted the local reading practices that have been practice for ages. The medium and practical of reading have been changing due to Information, Communication, and Technology (ICT) rapidly develops. This phenomenon may change the way people perceive reading and how printed materials are being utilized to facilitate reading. In addition to what has been studied in the past, this study attempts to explore the current reading habits and attitudes among students at a public university in Malaysia. It is also expected to update and provide baseline information about the reading habits and attitudes of Malaysian students.

Related studies

Studies on reading habits and attitudes among college students globally have gained as much attention in previous years due to the impact of digital media made available through the internet (Liu, 2005; Ramirez, 2003). College students also have been known to be very receptive to different forms of media in their reading and writing practices. This may call for attention among a few researchers to study the evolution of their reading patterns and attitudes, taking into consideration the impact of digital media. Numbers of researchers have carried out their research on the reading habit and attitudes among students in educational institutes in Malaysia.

Universities or higher institutional students that are connected with the internet or as a user will also be affected by this phenomenon. Abdul Karim and Hasan (2007) who have conducted their study among International Islamic

University Malaysia (IIUM) students have reported that students reading attitude is positive and they tend to use electronic and IT resources more than printed. Also, the researchers identified that the students spend about 7 to 9 hours per week on average reading, that related to their academic work. It was also revealed that students spend a significant amount of time reading newspapers, academic books, and websites for leisure and not for educational purposes. In a similar finding, Noor (2011) has conducted a study on reading habits and preferences of English as their foreign language (EFL) postgraduates' students in the Faculty of Social Sciences and Humanities of Universiti Kebangsaan Malaysia (UKM). The researcher has found that the respondents read various types of reading materials, with different reasons for reading as well as language preference in reading. Mostly preferred online reading materials (Internet) and spent about 1 to 2 hours per day on reading.

Ismail and Elias (2009) also have found that the majority of the students have a positive attitude towards reading, but reluctant to English materials and sources that only related to their studies. The study was conducted among English as their second language (ESL) Diploma students at MARA University of Technology Malaysia, Johor. Another study was done by Annamalai and Muniandy (2013) on the reading habit and attitude of the students in a Malaysian Polytechnic have found that the students have low interest in reading and they did not enjoy reading as much as they enjoy doing other technology-related activities. The researchers have adopted Smith's (1991) Adult Survey of Reading Attitude (ASRA) and Pandian's (1997) Reading Habit questionnaire for their study. There were 119 polytechnic students from Engineering and Business departments in the selected Polytechnic who have been involved as respondents. Reflect on this study, it is important to study the current reading habits and attitudes among the population.

Using a similar framework, Ahmed (2016) also revealed that the undergraduate students in her study had an overall positive attitude towards reading. However, the respondents reported faced anxieties and difficulties and had minimal enjoyment of readings. The researcher had a study on reading habits and attitudes of University Malaysia Sabah, Labuan International Campus (UMSKAL) among undergraduates which involved 314 students in 2015. Another study done on reading habits among Malaysian university students was conducted by Zainol Abidin et al., (2011) which has involved a total of 60 Chinese students studying at the University Tunku Abdul Rahman (UTAR). The outcome of the study reported that a positive general attitude towards reading and most of the respondents spend most of their reading time on schoolwork and completing assignments. It was found that due to several issues and barriers have resulted in the pattern of reading habits and reading attitudes among higher learning institution students.

Although the results of the literature shows were quite historic and not recent, it is a fact that no recent study can be obtained and correlated with the current study being undertaken. Most of the studies that have been conducted involve reading studies that do not consist of students of higher learning institutions and studies related to academic achievement generally. Some studies focus on services and facilities provided by the universities and university libraries only. Nowadays, students are known to be very receptive to different forms of media in their reading and writing practices and things are getting better due to the impacts of the internet. This scenario has geared scholars across the globe to conduct more studies related to the reading habits and attitudes among college students on that status (Abdul Karim and Hasan, 2007; Liu, 2005; Ramirez, 2003).

Statement of gap

Although university students are believed to have a good record of academic achievement, they do not necessarily have a positive interest in reading, especially in non-academic reading material. Studies done by previous literature have shown a decline in the number of reading information materials, compared to other media of information, and poor reading habits and negative attitude towards reading (Egong, 2014; Owusu-Acheaw, 2014). Most of the studies conducted found that many students read, only to pass their examination and not for pleasure and acquiring knowledge. Support by the finding, Odewole (2019) has concerns on the inability of the students to cultivate reading culture could affect the academic activities and their academic performance, and indirectly affected the quality and standards of a country education program. This would lead to difficulties in attaining meaningful development and growth initiates by the government and the society.

A similar scenario in the Malaysian public university setting, currently there is still lack of studies conducted which then result in less understanding of the current patterns and trends of Malaysian students' reading habits and attitude. In response to this issue, more rigorous studies need to be conducted on the basic level. It also helps the policymakers in providing sufficient and suitable information sources, facilities, and services for academic library users (Samsuddin et al., 2020). The purpose of this paper is to investigate the current reading habit and attitudes among students in

Research University (RU) library in Malaysia specifically. It is believed that positive reading attitudes lead to positive reading experiences, which also lead to higher academic performance (Abdul Karim and Hasan, 2007).

Goal of study

This study purpose was to investigate the reading habit and reading attitudes among students in the research university library in Malaysia, and guided by the following research questions:

RQ1: What are the reading habits among the students in the research university library in terms of the following;
      1a. Types of reading material they read?
      1b. Time spend on reading?
      1c. Activities during their leisure time?
      1d. The medium of reading (printed/digitally)?

RQ2: What are the students in research university library attitudes toward reading?
RQ3: What is the relationship between selected demographic factors and their reading attitude?

METHODOLOGY

This study is a descriptive study in which the sample was selected using convenience sampling. The pre-test has been conducted at selected IPTA's library in Selangor, which involved 5 respondents. The pre-test process is vital as it ensures that students and enumerators can comprehend each of the items and the scale used in the instrument. Meanwhile, the pilot test conducted which involved a total of 30 students from the Universiti Sains Malaysia (USM) has resulted in an acceptable level of internal consistency for each variable (Cronbach alpha above .7) in examining the instrument's reliability. USM was chosen based on its Accelerated Programme for Excellence status (APEX) which is also listed as one of the research universities in Malaysia that have been in the top 1% of universities worldwide.

Population and sample

The assessment of the QS World University Rankings, the top 5 rank universities in Malaysia are Universiti Malaya (UM), followed by Universiti Putra Malaysia (UPM), Universiti Kebangsaan Malaysia (UKM), Universiti Teknologi Malaysia (UTM), and Universiti Sains Malaysia (USM) which also have been categorized as Research Universities (RU) in Malaysia. Whereby the student population in research universities in Malaysia according to National Education Statistics for the year 2019 (MOHE, 2019) was 159,621 (N). However, only 4 research universities are involved in this actual data (UM, UPM, UKM, and UTM). Based on Taro Yamane's (2003) sampling procedure, the sample size for students in research universities in Malaysia is 399 respondents. However, the study has collected a total of 400 respondents respectively.

Measurement and data collection

This study used questionnaires as an instrument of quantitative method which was built based on the research purpose. The study adopted the Adult Survey of Reading Attitude (ASRA) from the work of Smith (1991). The construct was categorized into three variables namely (i) Reading activity and enjoyment (six items); (ii) Anxiety and difficulty (seven items); and (iii) Modality (two items) based on a five-point Likert-type scale (5 = "strongly agree"; 1 = "strongly disagree"). While reading habits were analyzed through the types of reading materials read, the amount of time spent on reading per day, their preferences on their leisure time activities, and the type of medium (digitally/ printed) they prefer to read.

Convenience sampling has been implemented due to limited time and budget constraints while conducting the study. Each research university was represented by 100 respondents and conveniently, library users who visit the library within the opening hours during the data collection time were selected and approached as respondents. The research team monitored the data collection process to ensure that the data required can be gathered (100% response rate).

Data analysis

Descriptive analysis and Inferential analysis such as frequency, percentage, mean and standard deviation were used to discover the general data of the study. Analysis of variance (ANOVA), independence t-test, and Spearman Rho Correlation were employed to discover the differences and relationships between the reading attitude

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and the selected demographic factors. Data were examined based on the skewness
(.263) and kurtosis (.555) values and considered normally distributed when it falls
between −2.0 and +2.0. The decision to use these analyses was based on the
distribution of data normality and type of variables. SPSS was used for data analysis
purposes (George and Mallery, 2010; Gravetter and Wallnau, 2014).
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FINDINGS

This study has involved a total of 89 male students and 311 female students aged between 18 and 47 years as respondents. Besides, a various background of programs or faculty involved in this current study (Science, Social Science, Medical & Health, Arts & Humanities, Computer Science & IT, Communication, Engineering, Education, Business & Economics, Agriculture, Language & Literature, Environment, Account & Finance, Architecture & Building, Law & Legislation, Islamic Studies). In terms of differences, through the independent t-test and ANOVA analysis that has been conducted, there are significant differences in gender ($p = .031$), age ($p = .042$), and education attainment ($p = .043$) with the reading attitude. While, there is no significant difference in student's status, students' program/ field of study, and library distance from their living place. The result showing different results from previous studies conducted by Abdul Karim and Hasan (2007) who have found that there is no significant difference in gender towards reading attitudes. However, in a similar vein, the researcher also found no significant differences between program/field of study with reading attitude.

Type of Reading

The results of the study found that the main selection of reading type among RU library users is novel (36.5%) for printed format and academic journal/article (27.3%) for non-printed format (see Figure 1). This study has proven that the main selection of reading type depends on the type of reading material itself.
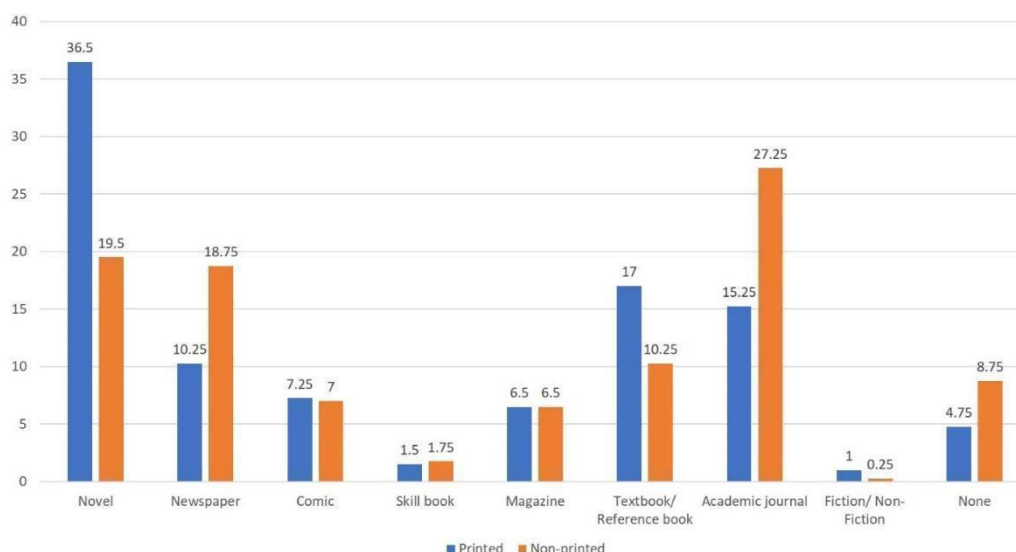
Figure 1: The selection of reading type (Printed and Non-printed)

Time spent reading

While the findings related to time spend on reading, a majority of respondents in this study (39.5%) spent about 1 hour to 2 hours a day. There is also a large percentage (35.8%) spend their reading activities at least less than 1 hour a day (see Figure 2). As a student, it was found that at least in a day they have spent some time reading, regardless of scientific reading material or light reading material.
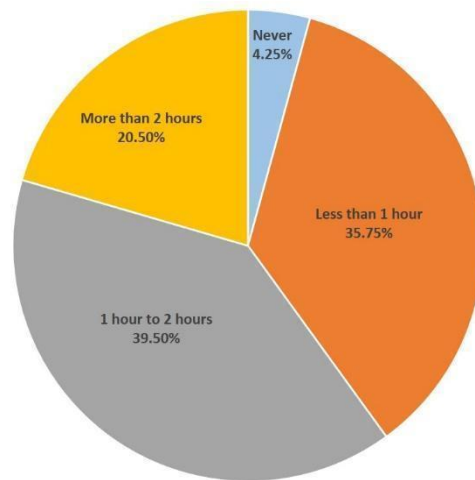
Figure 2: Time spent on reading in a day

Activities during leisure time

The top activities preferred during leisure time were Internet surfing, which recorded the highest score (39.3%), followed by watching video/ movie in second place (13.8%), and in third place shared the equal score at 11.8 percent were reading and listening to music. Based on the data shown in Figure 3, students in higher education institutions are now more inclined towards the use of current technology, namely the Internet. Whether by using a laptop, desktop, or smartphone, ease of access and availability of information and entertainment at your fingertips is a top choice in filling free time. Unconsciously, some have made Internet surfing their daily activity and some have made it a hobby.
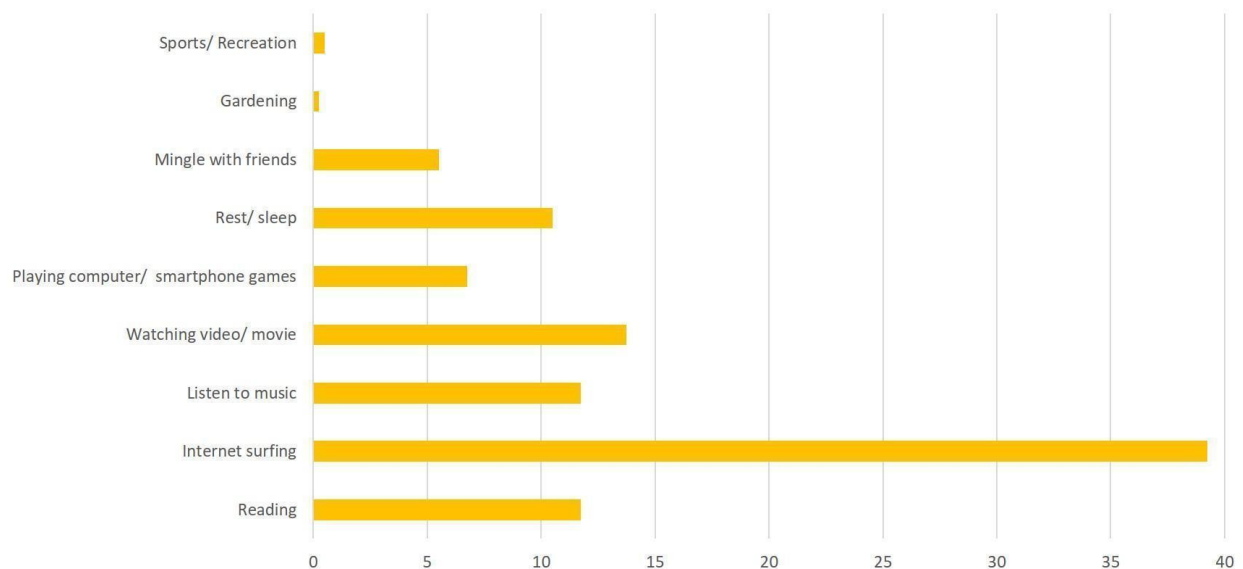
Figure 3: Favorite activities during leisure time

The Medium of reading format

In terms of the selection of the most preferred form of reading material, the respondents prefer printed reading material (33%) compared to non-printed material (32.8%) and new media (30.3%) such as social media (see Table 1). However, it is only a slight difference. These findings can further strengthen the initial results obtained in this study which states that the form of reading material whether printed or non-printed it is not the main criterion for the selection of reading material.

Table 1: Medium of reading format

Medium	Frequency	Percent
Printed	132	33.0
Non-printed	131	32.75
New media/ Social media	121	30.25
None	16	4.0

Reading Attitude

Answering the second research question, the findings have shown that the attitude towards reading is at a moderate level with the mean score of 3.180 and the majority of the respondents (90%) showed a positive attitude towards reading (see Table 2). In terms of the distribution of reading attitude variables, each reading activity and enjoyment (M = 3.598) and modality (M = 3.895) was recorded at a high level. While for anxiety and difficulty variable, it is recorded at a moderate level (M = 2.618), which is one of the initial expectations of current researchers. As in Table 3, the statement "I read when I have time to enjoy it" recorded a high percentage (94%) among the respondents for the reading activity and enjoyment variable. As for the modality variable, the majority of respondents (96.5%) agreed with the statement "Reading is one of the best ways for me to learn things". While the statement that recorded the highest percentage (67.5%) for anxiety and difficulty variable was "Encountering unfamiliar words is the hardest part of reading".

Table 2: Descriptive statistics of reading attitude

Variables	N	Mean	S.D.
Reading Activity and Enjoyment	400	3.598	.80130
Anxiety and difficulty	400	2.618	.87015
Modality	400	3.895	.77166
Attitude Overall		3.180	.48441

Table 3: Percentage of Reading Attitude statements

Statements	Percentage agreed (%)	Mean	S.D.
Reading activity and enjoyment			
1. Reading is one of my favorite activities.	88.5	3.675	.99340
2. I read when I have time to enjoy it.	94.0	3.925	.86964
3. I get a lot of enjoyment from reading.	93.5	3.833	.87828
4. I spend a lot of my spare time reading.	81.0	3.328	1.00885
5. When I am at home, I read a lot.	76.0	3.213	1.09789
6. I want to have more books of my own.	84.5	3.618	1.09049
Anxiety and difficulty			
7. I quickly forget what I have read even if I have just read it.	66.0	2.985	1.11485
8. I try very hard, but I just can't read very well.	38.5	2.285	1.13225
9. I get upset when I think about having to read.	38.2	2.223	1.17108
10. Encountering unfamiliar words is the hardest part of reading.	67.5	2.963	1.17667
11. When I read, I usually get tired and sleepy.	62.7	2.885	1.13357
12. I often feel anxious when I have a lot of reading to do.	52.2	2.630	1.22140

13. I need a lot of help with reading.	41.2	2.353	1.23574
Modality			
14. Reading is one of the best ways for me to learn things.	96.5	4.183	.90899
15. There are better ways to learn new things than by reading a book.	87.2	3.608	1.04219

Analysis of relationship on reading attitude

Factors that are related to reading attitude were education background (r = .110; p = .028) and favorite activities during leisure time (r = -. 120; p = .016) (see Table 4). Although both factors indicate there is a significant correlation with the attitude of reading, educational background towards positive direction while activities during leisure time towards the negative direction. For other factors such as age, the field of study/ program, library distance from the place of living, student status (part/full-time), time spent on Internet surfing, and time spent on playing games did not record any significant correlations. It can be said that the higher the level of education of a person, the higher the reading attitude possessed by that person. Meanwhile, for the variety of activities that are spent during free time, the more activities that are spent in free time, the lower the reading attitude that a person has. This shows that the higher the level of education of a person, the more demand for increasing the level of knowledge and exploration to the field ventured is necessary.

Table 4: Relationship between selected demographic factors and Reading Attitude among rural library user

Variables	*r*	*p*
Age	.061	.224
Education Achievement	.110	.028*
Field of Study	.006	.900
Library Distance	.028	.570
Student Status	.017	.738
Time Spent Internet Surfing	.011	.832
Time Spent Playing Games	.025	.617
Favorite Activities during Leisure Time	-.120	.016*

*significant at .05 Cronbach alpha

DISCUSSIONS

Reading Habit and Preferences

These findings on types of reading material (printed/ non-printed) in line with a previous study done by Ismail and Elias (2009) and Akanda et. al (2013) (see figure 1). Where there is a type of reading material that suitable as the form it is, whether in printed form only or non-printed form only or suitable for both printed and non-printed forms. In this study, it appears the majority of respondents reading novels prefer the printed form. In line with the results of previous studies that found that adolescents are more likely to choose reading materials such as novels as their main reading material (Samsuddin et al., 2020). Besides, the physical form of the novel is smaller than the size of the book such as the main reference books (textbooks), making it more convenient to carry anywhere and be used as primary reading material for those who have a hobby of reading. While the existence of article journals that are mostly available in non-printed form is a top choice for study purposes in choosing the type of non-printed reading material. It also has demonstrated significant similarity with a previous study (Zainol Abidin et al., 2011; Zhang et al., 2017) that indicated that non-printed journal articles are often obtained or used by students in carrying out their learning and research activities at the tertiary level.

Meanwhile, based on the selection of the most preferred form of reading material it was stated that any form of reading material available out there has its fans. Some of them did use these three mediums of reading material when reading. The variety of forms of reading material is very important to be provided to the reader so that it can reach the whole community with a variety of options available. There are arguments from previous researchers on this issue (Ahmed, 2016; Ismail and Elias, 2009; Liu, 2005; Ramirez, 2003). However, if it can be implemented by the publishers and

producers regarding the reading material form, the local community will no longer face problems related to access to information and insufficient reading material content.

Reading culture among students of higher education institutions is indeed positive and very encouraging. This is because of their background and their demands as a student to ensure the sustainability of a future career. It's being debated by previous researchers about the reading culture that is disappearing after they finish their formal learning session (Samsuddin, 2020; Zainol Abidin et al., 2011). Being one of the agenda at present how this culture can be continued with a view, reading as a lifelong learning process. Not just for academic purposes, but more towards self-development or problem solving, and can also be used as a method of relaxation. As a career person, good time allocation and balance in daily activities are crucial and should be emphasized to achieve a healthier lifestyle in terms of absorbing the ambient pressure.

Based on the activities during leisure times, the result is in line with the findings of previous studies which stated that the Internet and adolescents today cannot be separated (Annamalai and Muniandy, 2013; Mokhtari et al., 2009). Also, the second-highest result which is watching video/ movie has shown that apart from carrying out their main task as a student of higher education institutions, they are no exception in balancing their daily activities with entertainment. Activities such as watching videos/movies and listening to music can indirectly reduce their stress (Samsuddin et al., 2020). The selection of reading as a preferred activity during free time among the other activities by the respondents has meets the expectations of researchers because they are university students who require them to constantly practicing reading activities as a way of learning. The previous study done by Samsuddin et al. (2020) and Akanda et al. (2013) has also stated similar findings in this regard. However, the context of the type of reading that is implemented to fill their leisure time cannot be stated in terms of scientific material or light reading material.

What can be said here, a person's interest in reading regardless of age, chooses the form of their reading material based on the type of reading material itself. The suitability of the form of the reading material whether in printed or non-printed form reflects the character of the reader who emphasizes terms of the feasibility and availability of the reading material. The existence of the physical form of the reading material can also affect a person's interest in reading the type of material to read. The role of publishers and producers of books in the production of this material at the same time plays a very important role in shaping a person's interest in reading. The choice and decision in the publication of reading materials are noteworthy that it should be compatible with the demands and can supply a variety and adequate reading materials to the reader. However, what is happening in the present, production, and acceptance of companies in producing this book is more focused on the current trend which is only limited to one popular type at a particular time. On the grounds that if publish or produce the kind of books that are not following current trends, the book cannot be sold in the market. Where the criteria of quality and production of various types of books are no longer the main criteria for publishing. This will cause a lack of diversity of reading materials on the market and indirectly narrow the scope of the reader's interest in the selection of reading material that is available only. It is not in line with the reading encouragement campaign that is often held by the relevant parties. This variety of reading material can attract the interest of readers not only in one direction. Apart from the purpose of learning and leisure, reading materials that can form a self-development, sense of humor/ humanities or entertainment such as public figures (tv personalities/ actors) update and local entertainment can increase their general knowledge during reading. Readers, especially teenagers, have more choices in enjoying the reading material they are interested in. This point is very important in the effort to cultivate reading activities among the local community.

Reading attitude among students in Research University library and its relationship on selected demographic factors

Respondents of this study which consists of students of higher learning institutions have a better level of education due to their educational background. Furthermore, as a student, even if they do not have a high interest in reading, it becomes a necessity for them to master the reading skill. Compared to the level of anxiety and difficulty of rural communities, they scored a higher level because of a lack of formal education in mastering reading skills (Samsuddin et al., 2020). Therefore, activities such as reading skills mastery which are held in rural areas are not suitable for students of higher learning institutions. The campaigns that need to increase can be a reading encouragement that was most appropriate for this category of students. Reading encouragement activities that can be done by academic libraries could be more interactive and youth attract such as active readers awards or reading games attainment. The best planning and innovation in providing this effort is very much demanded to meet the current needs of library users who are increasingly challenging nowadays.

The finding on the relationship of reading attitude with education background was significant with a previous study done by Samsuddin et al. (2020) especially for those who further their study towards higher levels such as Masters and Ph.D., the qualifications of each applicant are different which requires at least a bachelor's degree as a condition of admission. The relationship between favorite activities during leisure time and reading attitude, from the findings, Internet surfing, and entertainment-related through movies/ videos watching and listening to music were among the most popular activities. Although these activities seem to conflict with the reading attitude, they can also read for relaxation and entertainment purposes such as by reading comics and entertainment magazines (Wallace, 2003). Among students of institutions of higher learning reading attitude, they have the opposite relationship with their leisure activities. Most of the respondents filled their free time with leisure and more relaxed activities after being tired through the learning process throughout the day. This indirectly shows the positive things that these students know how to divide their time between study and break. The balance they get can relieve their stress while studying in institutions of higher learning.

CONCLUSIONS AND RECOMMENDATIONS

The overall findings of the study, the purpose of this paper in investigating the reading habit and attitude among students in the research university library in Malaysia is achieved. In terms of reading habits, this paper describes the types of reading material they read; time spend on reading; their favorite activities during leisure time; and the medium of reading they choose. While, high levels of reading attitude were obtained from the result of the study, in which several variables produced a significant relationship in the reading attitude (education achievement and favorite activities during leisure time).

The findings of this study have shown the changes in the behavior of academic library users in terms of usage patterns, attitudes, and selection of reading materials. The existence of digital media may explain the differences in reading behavior among Malaysians. More people are using the web and wireless services to satisfy their information needs and this might negatively affect their reading habits and attitudes towards the printed text materials. This study should be carried out to investigate whether the impacts of ICT affected the reading practices among students in the research university library in Malaysia.

The research data can be referred by researchers/students for future studies especially in the context of digital reading perspectives. This study has provided useful inputs to the Ministry of Higher Education (MOHE) of Malaysia in constructing effective strategies to cultivate reading habits among reluctant readers in public universities. It is also suggested for the policymakers to come out with innovative solutions to continue reading culture after their academic studies through lifelong learning initiatives. Further research could be conducted at the post-educational level, whether to know the reading culture that has been applied can be continued at the career level or not. Sustainability in reading activities is crucial to be continued so that the ability and capability of knowledge development of a country in terms of national literacy rate could be fair in measured through reading activities (seriously or casually).

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The Application of Information Success Model in Perpustakaan Tun Abdul Razak (PTAR) UiTM

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Abstrak

Teknologi Maklumat dan Komunikasi dan Internet banyak merubah cara penyampaian perkhidmatan organisasi. Dengan menggunakan teknologi ICT dan dan Internet, organisasi boleh menyampaikan perkhidmatan digital kepada pengguna dengan lebih pantas dan berkesan. Dalam konteks perpustakaan dan perpustakaan digital, penyampaian perkhidmatan telah banyak dipertingkatkan selaras dengan kepesatan penggunaan ICT dan Internet di perpustakaan. Kertas kerja ini membincangkan penyampaian perkhidmatan perpustakaan digital di Perpustakaan Tun Abdul Razak (PTAR) UiTM dengan merujuk kepada Information System Success Model yang diperkenalkan oleh Delone & Mclane. Inisiatif digital PTAR seperti MyKnowledge Portal, CHAT WITH LIBRARIAN, E-Kelas Kemahiran Maklumat (eKKM) dibincangkan dengan memadankannya dengan elemen service quality, information quality dan system quality dalam IS Success Model. Hasilnya, dari konteks penggunaan system sebagai alat service delivery, pelaksanaan inisiatif digital PTAR adalah selaras dengan IS Success Model.

Abstract

Information and Communications Technology (ICT) and Internet have changed the way organizations deliver services. Using ICT and Internet technology, organizations can deliver digital services to consumers quickly and effectively. In the context of libraries and digital libraries, service delivery has been greatly improved along with the extensive use of ICT and Internet in the library. This paper discusses the delivery of digital library services at UiTM's Tun Abdul Razak Library (PTAR) with reference to the Information System Success Model introduced by Delone & Mclane. PTAR digital library initiatives such as MyKnowledge Portal, CHAT WITH LIBRARIAN, E-Class Information Skills (eKKM) are discussed by mapping them with service quality (SQ), Information Quality and System Quality elements in the IS Success Model. As a result, from the context of the use of the system as a service delivery platform, the implementation of PTAR digital initiative is found to be aligned with IS Success Model.

Keywords: ICT and internet; service delivery; IS Success Model; Digital Library initiatives; Perpustakaan Tun Abdul Razak.

1.0 Introduction

With the advancement of ICT and Internet connection, information in digital form can be obtained from various sources, and easily and quickly accessed. With this nature of information retrieval, information and should therefore be provided in the digital platform. The library as one of information provider has no exception and this is a major library consideration where services must be provided digitally to facilitate information on access, anywhere and regardless of time.

Generally, digital library plays role in providing digital materials to users. Taking into account ICT infrastructure and digital applications, the provision of digital materials to consumers is made with reference to certain principles. One of the principles referred to in the provision of digital information materials is the Information System Success Model (ISSM) (McLean & Delone 2003). The ISSM consists of service quality, information quality and system quality. The ISSM mainly aim at general and comprehensive definition of IS success that covers different perspectives of evaluating information system in an organization.

Aligned with digital library advancement, Perpustakaan Tun Abdul Razak (PTAR) UiTM as an academic library needs to provide various materials digitally. The PTAR collections that include books, thesis, journals, archive materials are best delivered in digital forms. Through the digitization initiative, PTAR provided extensive access for users internally, locally and abroad.

Researchers have researched the digital services such as electronic resources, use and acceptance of digital libraries and various literature have been extensively discussed about this digital library both in Malaysia and abroad. In discussing the electronic and digital resources systems, the models commonly referred to are Information Success Model (ISM), Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), Unified Theory of Acceptance and Use of Technology (UTAUT) and et.

This concept paper refers to the Information System Success Model of Delone & Mclean (2003) in discussing the digitalization initiative and delivery of such materials. In this context, this paper heavily discussed the application of service quality, information quality and also system quality as practiced in PTAR UiTM. The discussion in the following sections include the literature review, application of service, system quality and information quality in the context of UiTM's PTAR.

2.0 Literature Review

The library is an information delivery platform supports academic activities and development. The library is responsible for acquiring, preparing, filtering and distributing the information required by users. Therefore, in this way, there is a strategic and systematic information delivery concept in which the delivery is based on the needs of the user.

The study conducted by Kala Abdoulaye and Shaneen Majid (2000) acknowledged that academic libraries in Malaysia focused on the use of the internet for the purpose of reference services. His study indicated that respondents agreed that reference librarians need high skills in the field of computer and digitization for the purpose of helping users access information through the internet to meet the needs of users. Thus, through time change and also the needs of users, digitization requires librarians to accept and be balanced according to the development and needs of technology. Qian Zhou (2005) has stated that digital librarians have embraced activities in the work process such as selecting, acquiring, preserving, organizing and managing the digital collection. In this process, it also involves technical aspects in the construction of the digital library system. The data attribute (metadata) should also explain the whole content and in this process it should once again be stressed that digital librarians should have planning, implementing and supporting direct delivery to digital services such as information navigation, consultative and data transfer as information to users.

PTAR has also conducted various programmes including empowering digital library services in support of the needs of the university's teaching and learning. Many initiatives have been taken and improved from time to time to ensure that users continue to be with PTAR services and make use of various facilities provided by librarians with the challenges of this information explosion. The PTAR's librarians responsible in continuously ensure that organizations and society they serve receive information that is indisputable in the quality.

2.1 Role of PTAR Librarian in Different Department

PTAR UiTM handles activities related to the digitalization and involved librarian in each of the activities. The different departments use various systems related to daily task. Table 1 lists the departments and system related to the activities and skills needed by the librarian.

Table 1: Departments, Systems Used and Librarian Skills at PTAR

Department	System related	Skills/ Activities for the digitalization duties
Acquisition	Online Public Access Catalog (OPAC), Web Based Integrated Library System (WILS)	Accessing, Cataloguing, Searching & Browsing, Data collection and storage using system PTAR.
Institutional Repository (IR)	Online Public Access Catalog (OPAC), Web Based Integrated Library System (WILS), UiTM IR.	Acquiring, Scanning, Uploading and make it accessible to user
Circulation	Online Public Access Catalog (OPAC), Web Based Integrated Library System (WILS)	Inter Library Loan, retrieving data, generating data and updating data.
Information Technology (Digital)	Diversified Computer Controlling System (DCCS)	Web designing, Upload data, storing data, accessing data from the system provided by PTAR. Create new database and system for library.
Research and Reference Services/ Selective Dissemination of Information	Online Public Access Catalog (OPAC), Web Based Integrated Library System (WILS), Online database (ezaccess, ebooks), eKKM, UiTM IR, MyKnowledge Portal, Chat with librarian, Google meet, zoom etc. (online platform)	**Online Database** - ebooks/ejournal **Literacy class** **Thesis** - ethesis/thesis **References guide** - library services (searching, accessing, literate, and guidance skills)
Archival	Online Public Access Catalog (OPAC), Web Based Integrated Library System (WILS)	Collect, upload data/resources and make it available for the user.

In ensuring the effective information delivery, some issues need to be taken into account. The activities and duties provide the provision of a system platform for online convenience that facilitates users, the diversity of information in the user field such as target groups or special groups and service delivery i.e. service to users through the way, anytime, everywhere and how it is delivered. Among the methods of delivery, the Online Database system through the MyKnowledge Portal as well as various types of databases that provide articles related to each various field of studies. The user can access and use the articles or resources available for the process of teaching and learning purposes.

The Online Database initiative through the MyKnowledge Portal system mentioned above is assessable from the Information System Success Model introduced by Delone & McLane (2003). According to Delone and McLean (2003), the Information Success Model described the need for success and effectiveness of information delivery from the three aspects namely the system, information and service qualities. Thus, the role of digital librarians towards the preparation, development and delivery of this information has also been seen and measured through the achievements of the department's Performance Index which also supports and contributes to UiTM's achievements. The role of librarians which refers to the competency of librarians (knowledge, know-how, skills and attitudes) in PTAR involving activities such as creating, storing, analyzing, retrieving and disseminating information in the form of text, image and sound Sreenivasulu (2000) is measurable using the Delone and McLean's (2003) Information System Success Model.

2.2   Information System Success Model (Delone & Mclean, 2002, 2003)

The DeLone and McLean Information Systems (IS) Success Model as a framework and model for measuring the complex dependent variable in IS research (Delone & McLane 2003). Originally, it was to synthesize previous

research involving IS success into a more coherent body of knowledge and to provide guidance to future researchers (Delone & McLane 2003). The six dimensions of success model are depicted in the following diagram.
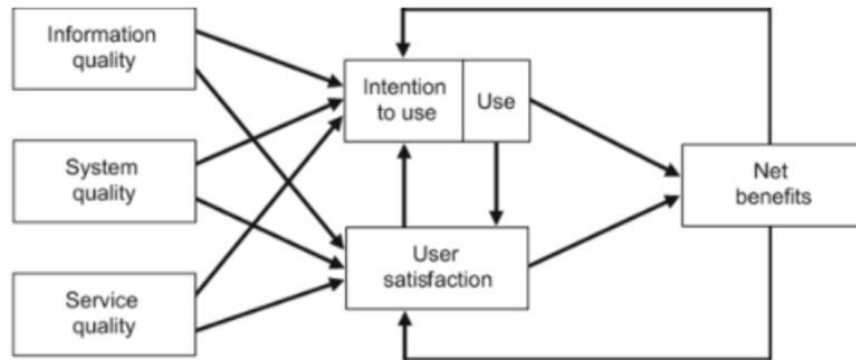

Figure 1: Information Success Model Delone & Mclean, 2003

2.2.1 Service Quality as of Delone & Mclean (2003) Conception

Quality service (SQ) as in Delone & Mc Lean conception encompasses the relationship between usage and the desire of users to use the service. It affects the overall benefits of use for those users as well as engaging organizations and individuals with the delivery of these services. The quality of service is defined as a subjective assessment of users that the services they receive from the portal are the services they expect (Ahn et al, 2004). The quality of the service can be effectively assessed in terms of efficiency, service follow-up, empathy, confidence, reliability, and responsiveness. According to the Masrek study (2007), a strong relationship was observed between service quality and consumer satisfaction using correlation analysis. Similar evidence was found in the Lwoga (2013) and Shaltoni et al. (2015) investigations.

2.2.2 Information Quality as of Delone & Mclean (2003) Conception

The Information Quality (IQ) of the Delone & McLean's model is about the use of digital material itself. The quality criteria of the information produced must have accuracy, completeness, consistency, understanding, format, suitability according to the field or requirements of the user. To illustrate the relationship between quality of information and user satisfaction or intent to use, Lin (2007), Lwoga (2013), and Shaltoni et al. (2015) concluded that the quality of information obtained significantly affects user satisfaction and intent to use online services.

2.2.3 System Quality as of Delone & Mclean (2003) Conception

System Quality (SQ) in the Delone & McLean's conception is about the use and effectiveness of access, ease of use and availability of materials, navigation, reliability, efficiency and flexibility according to the needs of the user. However, the quality of the system also refers to the extent to which the system is 'User friendly' and can be used without specific complexity (Davis et al., 1989; Doll and Torkzadeh, 1988; See and Do., 2002).

3.0 Discussion

Having the brief conception about the service, information and system qualities above, this section discusses the application of Service Quality, Information Quality and System Quality in PTAR UiTM by librarians. Discussions are is established by matching each concept in the model with the intuitive and activities carried out in PTAR.

The Application of System Quality di PTAR

At PTAR, system quality is applied with each librarian to plan, build and strengthen the structure of the digital library system as well as the development of other systems that support the implementation of digitization. PTAR librarians have worked diligently to strengthen digital services through the development of several systems such as web hosting systems that provide digital services such as the MyKnowledge Management system which has details about the overall needs of users.

MyKnowledge Management service provides a platform for information search facilities such as personal information of the user itself, materials that have been borrowed or still in loan, list of information according to the requirements of the user field such as books list, ebooks, journals, institution repositories, archive materials, bank examination

questions, articles from newspaper clippings, online databases and this has been mentioned by Bell, S.J & Shrank, J. (2004) also support that in digitalization environment, the librarian should establish user friendly networking and set up relevant standards and policies for the digital library. The part of designing, maintain and transmit value-added information product is the important element that contribute to the success of the usage and the role of digital librarian. This is also supported by Zainab (2019) that indicated that the research on implemented system acceptance have been the focus of many previous studies including O'brien & Marakas (2007), Venkatesh et.al. (2003), Wilson (2001) and Simon (2000) that were highly focused on retrieval, download and sharing of information.

Other related factors that had been considered in ensuring the quality of the PTAR digital system are protection of digital intellectual property in the networked environment. This consideration is to ensure the security of information and digital collections by designing the technical architecture of digital library; describing the content and attributes of items (metadata); plan, implement, and support digital services such as information navigation, consultation and transmit services; establish friendly user interface over network; set up relative standards and policies for the digital library; design, maintain and transmit add-valued information products; protect digital intellectual property in network environment; and insure information security.

It is observed that the network and system provided by PTAR play role in provide the continuous information services to user if the librarian knows the best way to choose the suitable system for their users or field. Mohamad Noorman Masrek, James Eric Gaskin (2016) mentioned that System Quality related to user satisfaction in using web digital library and its shows that systems quality significantly associated with users' satisfaction on the digital library. Due to librarian's knowledge and creative thinking, library make the decision to choose the network which highly capable to access and the system must be able to retrieve and delivering information.

The Application of Service Quality di PTAR

PTAR's quality service is established through the provision of data and information to users as well as directly through the services available. The librarians at all PTAR's branches responsible for CHAT WITH LIBRARIAN, an online service that helps users directly seeking advice and consultation from PTAR Librarian. With the use of these chats, users are able to continuously assess the efficiency and effectiveness of the delivery of information from the results of the query or the needs of those users. The digital librarian who handles CHAT WITH LIBRARIAN should have information and expertise in obtaining and meeting the needs of the users in a short time.

The librarians need some necessary knowledge and skill in handling consumers' demands and emotions thorough the chat. The quality service applies when that the librarian needs to meet the quality required by the users and to deliver the services that lead to the evaluation of the quality of the service. Each activity was evaluated according to the quality standard such as information achievement with customer satisfaction. The PTAR Reference Librarian took the initiative to provide selected materials through Selective Dissemination of Information (SDI) services i.e. obtaining materials such as journals from SCOPUS, WOS and so on. Materials need to be selected and evaluated againts good publication quality and then directly disseminated in order to assist the personnel in the University or Campus level.

It is learnt that the service quality is one of the main aspects that must be preceded in the delivery of information in order to ensure that consumers get the best service and guaranteed quality and recognized materials. Along with this, the PTAR had also intensified and introduced new teaching methods and education facilities such as online learning and research reference as indicated by (Thanuskodi, 2011).

The Application of Information Quality di PTAR

Quality information is an important aspect in ensuring that users continue to trust and believe in the digital system. As of now, PTAR librarians have managed to ensure that the information provided is quality, accessible or achievable and according to time requirements and have value in the development of the university. According to the Information Success Model of Delon & McLean (2003), the success will affect workgroups, industries and societies (Myer et al. 1997; Seddon et al.,1999) also, there is a positive relationship between information quality and also user usage which includes the user as well as the system itself.

Among PTAR initiatives related to information quality is the implementation of online learning platform named E-Kelas Kemahiran Maklumat (eKKM). eKKM which is implemented online, providing 12 modules (See Figure 1) to support users in library services. The modules were implemented by all PTAR Librarians throughout Malaysia

specifically to serve the entire of UiTM's patron. As an improvement, the eKKM allow users' evaluation on the information delivery and their journey upon completion of the module.

1.	**Introduction to Library Systems**
2.	**Introduction to PTAR Electronic Resources**
3.	**Online Databases**
4.	**Reference Management Software - Endnote**
5.	**Reference Management Software - Mendeley**
6.	**Advanced Literature Search I (SCOPUS: World's largest scientific database)**
7.	**Advanced Literature Search II (Identify Collaborators Using Web of Science)**
8.	**Easy Write with Microsoft Word**
9.	**Writing and Publishing**
10.	**Open Access for Scholarly Publication**
11.	**Google Scholar & Google Drive**
12.	**PhD Clinic@PTAR**

Figure 1: Modules in eKelas Kemahiran Maklumat (e-KKM) PTAR

There are librarians' involvement in other implementations such as MOOCS as well as video learning on how to obtain materials or access to a digital system available. This shows that PTAR librarians have had ICT competencies due to the achievement of the organizational goals that have been achieved. This also involves the delivery of comprehensive information and related information society (Li, 2007) and it available with the existence of such competencies. According to Mansour (2017), librarians overcome many issues related to access, organizing, value and use the information through digital literature skills and digital literature are crucial to the development of the country including Malaysia.

4.0 CONCLUSION

The librarians at PTAR have played a role and this discussion refers to is Delon & McLean (2003) model as in Figure 2 below. Having looked at the development of PTAR and the achievements involving the support of universities (UiTM), it is clear that the use of PTAR Librarians has put into practice 3 key elements of is model i.e. quality service, quality system and information quatity in ensuring the continuity of service to consumers. Figure 3 shows the model for PTAR's success in digital libraries through the role of librarian. There are also a number of achievements such as the improvement of accessible materials, the continuous delivery of information in various circumstances as well as the preparation of the required materials on time. And it can be concluded here that, the competency of librarians has increased the importance of PTAR's librarian role.

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The Success Factors of Web Integrated Library System and Job Satisfaction in Academic Libraries

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Abstract

Web integrated library system performance is important to evaluate as it is used in managing library activities and holds millions of library records. To have an effective web integrated library system for staff, it is essential for the library to offer high quality systems, service, usage and Internet. This study presents a perception on web integrated library system success factors (system quality, service quality, usage quality and Internet quality) and its relationships with job satisfaction. Questionnaires was distributed to 110 library staff who are using the web integrated library system at academic libraries in Selangor, Melaka, Johor, Negeri Sembilan and Pahang. The analyses are undertaken using SPSS. Descriptive findings show moderate perceptions in four variables (system quality, service quality, usage quality and job satisfaction) where the mean value are in the range 3.18 to 3.45 and low perception in one variable (Internet quality) in range 2.69 on a 5-point Likert. Besides that, the results also indicate a positive and high correlation between job satisfaction with usage quality, moderate correlation between service quality and Internet quality. Meanwhile, the relationship between job satisfaction and system quality is weak. The finding of the study is useful for the library to realize that the success factor of a web integrated library system will contribute to their job satisfaction. As to that, the library should improve their library information system to provide a high quality of library product and services.

Keywords: success factor; Web Integrated Library System; job satisfaction; information system success; information system evaluation.

1. 0   INTRODUCTION

Academic libraries can benefit from powerful workflow library management as well as flexible and convenient access to information by using a web integrated system. The development of effective information delivery is a key component of university teaching and learning and modern technology. Academic libraries used various software packages to automate their operations as to manage huge collections of printed and non-printed materials. Integrated library systems like other technologies, are playing an essential role in facilitating libraries in running their operations more quickly and efficiently (Siddique and Mahmood, 2014). Thus a good quality of library information system may lead to their staff job satisfaction. Library management systems are established as an essential tool in the support of effective customer services, stock management and management of services offered by libraries (Madhusudhan & Singh, 2016). Most of the vendors of library management systems on the market had products which were introduced as systems of the third generation. They all looked more or less the same, both inside and outside, as they were designed following the same pattern, but none of them was or is completely finished (Dahl, 2002).

Evaluation had generally been accepting as an essential element for measuring and ensuring effectiveness and efficiency in library system. An assessment of different library systems is essential before selecting and implementing an appropriate one; it is also necessary to evaluate a system after it had been implemented and operational for a significant period. This is done to check whether or not the system is performing to expectation, its functionality and the important problems. Evaluation research not only analyses the usability and usefulness but also

the performance of the system (Taole, 2008). Besides that, Aggelidis & Chatzoglou (2012) acknowledge that measuring job satisfaction had a long history within the information system discipline.

This research is guided by the following objectives:

i) to determine the success factor of WILS pertaining to system quality, service quality, usage satisfaction, Internet quality and job satisfaction.
ii) to examine the relationship between system quality, service quality, usage satisfaction, Internet quality and job satisfaction.

There are four hypotheses developed in this study in order to test the relationship between WILS success factor and job satisfaction.

i)   there is significant relationship between system quality and job satisfaction
ii)   there is significant relationship between service quality and job satisfaction
iii)   there is significant relationship between usage quality and job satisfaction
iv)   there is significant relationship between Internet quality and job satisfaction

This study adapted the Information System Success Model developed by DeLone and McLean in 1992 and updated in 2003 to fill the gap of study related to evaluation of web integrated library systems in Malaysia. It also examined the impact of Internet connection factor to job satisfaction. This is because there might be a slightly different set of satisfaction in terms of access using intranet and Internet/web based information systems. It also provided an academic library in Malaysia with a better idea in recognizing the effectiveness of chosen web integrated library systems for their library operations and their staff job satisfaction. The result of this study contributed to academic libraries in evaluating their library system and the revision of this system helped management decide whether this web integrated library system relevant to their library in order to cope with the advancement of technology and at the same time provide better services to user and staff.

2. 0   LITERATURE REVIEW

The research framework used in this study is modified from the Information System Success Model by DeLone and McLean's to identify the variables used in the research and questionnaire with the addition of internet quality variables. Figure 1 presents dependent and independent variables that are used in this study. This framework assists in clarifying the proposed links between success factor of WILS and job satisfaction.
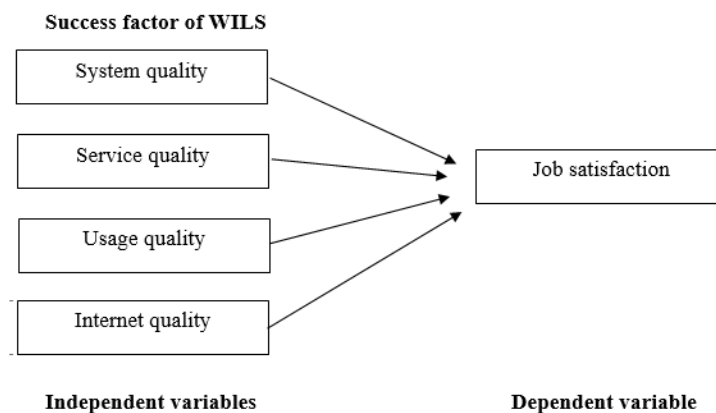
Figure 1: Theoretical framework

The success factors are usually listed as either very general factors or very specific factors affecting a particular project (Belassi and Tukel, 1996). It describes the impacts of several aspects on system performance thus helps the organization to improve or take any related actions in future. The success of an information system is not only dependent on high technology but also on user successful use of the system and job satisfaction.

2.1   System quality

There is a need for a high quality of library management system as academic libraries need to serve their users all around the country with accurate and complete information to support the teaching, learning and research activities. WLIS needs to have a comprehensive module and contains all system features and functions whether in an acquisition, cataloguing, circulation, serials, binding and article module. The functionality and efficiency of the integrated library system is critical to the smooth operation of information systems in fulfilling library client charter as to provide access to information at anytime and anywhere.

System quality refers to the quality of information processing offering key functions and features. It is also related to the technical aspect of software that is user-friendly, easy to cope with and maintain (Gorla, Somers and Wong, 2010). An instrument in system quality is explained by DeLone and McLean (2003) as consisting of ease of use, functionality, reliability, data quality, flexibility and integration. Zaied (2012) in his study revealed that measurement of system quality focuses on system performance characteristics, resource utilization and investment, response time, system trust and accuracy.

Additionally, the element of reliability, usability, adaptability, trust and maintainability are also highlighted. The complete system features can support the ability to store data and make data easy to retrieve by the system's users. Fox *et al*. (1993) stated that in the field of library and information science, specific features are believed to be critical in affecting the usage of libraries system. Without the complete system features, staff will face difficulties in processing and managing a large amount of library collections. In Yu and Qian (2018) study, they explained that system quality indicates the overall system performance as perceived by users.

2.2   Service quality

In today's world of intense competition, the key to sustain in competitive advantages lies in delivering high quality of service that will result in satisfied customers (Shemwell et al., 1998). The service quality is also one of the highly debated and researched topics in marketing theory and has been described as a form of attitude in responding to a favorable or unfavorable way of an object. After sales service is critical for system vendors to fulfill as for supporting any requirement from users of the system. Their services help academic libraries to minimize any error or problems regarding the use of WILS.

At the early phase of WILS implementation and data migration, difficulties occur and library staff are unfamiliar with the term used in WILS modules. Concurrent with this scenario, the Information Technology department is responsible to manage feedback from library staffs. In order to cope with this, academic libraries had setup team expert and technical team to support any additional requirement and look into the feedback. All the feedback is recorded and monitored in a feedback platform named iSMS. This due to the progressive action and monitoring action by the Chief Librarian to ensure all feedback on WILS must take action as soon as possible to avoid any service interruption and to make sure the objectives of the library are achieved to serve a comprehensive, up to date and relevant knowledge resources.

As stated by Petter *et al.* (2008), service quality concentrates on the level of service delivered by system providers to users in terms of reliability, responsiveness, assurance and empathy factor. It also had to meet user expectation and satisfaction by providing service in time and courteous when dealing with the request. This required a knowledgeable person in charge to solve any system problem and ensure error-free on system performance. The research literature on service quality had identified numerous models by the different researchers. Parasuraman *et al*. (1988) develop a comprehensive SERVQUAL instrument on 22 items work of service quality and value which measure by five-factors namely reliability, responsiveness, assurance, empathy and tangibles.

According to Adil (2013) from customers' perspective, service quality significantly influences their satisfaction by providing fast service, understanding the needs, available when needed, empowered to resolve problems and lastly shows sincere interest in solving problems. Likewise, study conducted by Adil (2013) itemized service quality as up to date equipment, services delivered at promised time, services delivered as promised, error-free records, service right at the first time, solving the problem, trustworthy, courteous, knowledgeable, prompt service, willing to help, individual attention, specific needs and best interest.

2.3   Usage quality

Usage is the degree and manner in which staff utilize the capabilities of an information system by the amount of use, frequency and extent of use. Venkatesh *et al.* (2012) justify intention to use is determined by the user's beliefs

about the system. Furthermore, TAM model enables the acceptance of technology by considering behavioral intention to use and actual system use of the information system (Davis, 1989). The previous study explains the acceptance of library information system are based on factor analysis of perceived usefulness and ease of use. It contains an indicator of the quality of work, control over work, work more quickly, critical to the job, increase productivity, job performance, accomplish more work, effectiveness, makes job easy and useful for perceived usefulness. While indicator perceived ease of use are; cumbersome, easy of learning, frustrating, controllable, rigid and inflexible, easy of remembering, mental effort, understandable, effort to be skillful and ease of use (Endang, 2015). Petter, DeLone and McLean (2008) described the value of information system to the success of individual, group, organization in improving the decision making, productivity, increase sales, cost reduction, and increase profit.

The value also includes the efficiencies use in internal operation, effective management of resources, improve customer service and improve decision making (Gorla, Somers and Wong, 2010). Moreover, this use takes account the individual satisfaction and organization performance in creating competitive advantage and strategic value (Mahmood and Soon, 1991). A study conducted by Burton-Jones in 2005 discovered the sampling of 48 articles in major information system journals in the period 1977-2005 that explain the usage as an activity that involves three elements; a user, a system and a task. System usage is measure by the number of systems sessions, the percentage of times use to perform a task, duration of use, number of times system use and voluntariness of use. There are many conceptions of system usage at the individual, group, and organizational levels, with most researchers conceptualizing system usage as a behavior (what a user does), cognition (what a user thinks), and/or an effect (what a user feels).

At the individual level, most researchers view system usage as behavior, measuring system usage via indicators such as an individual's frequency or duration of usage (Trice and Treacy 1986). Therefore, in term of usage quality the items measured consists of enjoyable, convenience to learn, recommended to others, intended to use in future and most importantly easy to use.

2.4   Internet quality

The Internet is a global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols (Oxford, 2018). The Internet enables network of global exchanges including private, public, business, academic and government. The Internet is used as a global communication system, including hardware and infrastructure. As computing advanced, communication was gradually delivered and enhanced.

Nowadays, billions of Internet users rely on multiple application and networking technologies to do their daily business and social activities. The Internet is the most cost-effective communications method in the world, in which the data transfer and file-sharing services are instantly available (Technopedia, 2018). By taking these advantages, many businesses and organization are moving forward to use cloud computing services and integrated system. In order for the service and system to work effectively, the high quality of Internet connection is crucial. A study conducted by Lahrssen (2018) describe that the speed and bandwidth of Internet is affected by the number of users on the network. In order to effectively handle organization activities, a high speed of Internet connection is required.

Moreover, Internet permits the secure point to point connection over network for data protection. As to use cloud processes efficiently, organizations need dependable high-speed Internet. Being able to put organization processes in the cloud keeps expenses down and productivity high. With fast Internet connection, it makes easy to connect and interact with other staff in organization despite their current location. In addition, the high speed of connection can eliminate many potential telecommunication problems, like slow Internet speeds during heavy use and slow uploads of important files. Similarly, Ahmed (2017) agreed that the faster Internet speed, the more we can accomplish business goals, high quality and efficient organization process.

With a high speed of Internet connection, the average page loading times are majorly reduced. When the Internet does not have high speed capability, the connection becomes slow when more than one user tries to browse the web at the same time. Above all, without high-speed, sufficient and stable internet connection, the organization may face a trouble in digital business operations and obstruction towards success.

2.5   Job satisfaction

Satisfaction is considered as a prerequisite for staff retention, loyalty and helps in profitability and return on

investment (Hackl and Westlund, 2000). It can occur at multiple levels based on the function that encounters/experiences of the staff in an organization. Measuring satisfaction on system performance has great potential to provide a library with information about their actual staff performance and their expectations. Such information also allows vendors to fine-tune their efforts to improve the quality of their services or to deliver services that appear attractive to system users (Shin & Elliott, 2001).

In this manner, measuring job satisfaction of library staff when using WILS is expected to enhance the library reputation and image, increase attention to staff needs, reduce staff attrition (Muffato & Panizzolo, 1995) and ultimately increase profitability. Besides, one of the information system success objectives is to satisfy its users by meet their needs and achieve their expectations. This can be done by capturing the behavior that affects satisfaction by looking at the usefulness element. The successful system can assist users to contribute values to the internal and external customer. In Seddon and Kiew's model, usefulness is believed to affect satisfaction but in some situations, satisfaction is thought to be a better alternative for success than actual use (Jones and Beatty, 2001). Many researchers such as William and Anderson (1991) emphasized that satisfaction consists of a cognitive and affective component which include behavioral action or thinking and emotional attitude.

Other than that, job satisfaction consists of meet the information processing needs, sufficient system, effective system, well satisfied with the system as a whole, helps improving capabilities to meet the needs of the target group, help create value for users and allow more user orientation. While, a study conducted by Zaied (2012) explained the element of measuring user satisfaction specifically on job satisfaction are self-efficacy, repeat visit, personalization, perceived risk and enjoyment. In terms of use of information systems, the other popular element on job satisfaction includes; it would help to complete work/task assign, has met certain expectations, improve productivity, improve decision making or problem-solving and saves time.

3.0   METHODOLOGY

The quantitative study was conducted in order to test the hypotheses in this study. Online survey via Google Forms is used for data collection. The online survey URL link and information is emailed to the respondents due to save time, quick and easy feedback, expenses and overcoming geographic distance. The participants in this study are 150 academic libraries staff from gred N11 to S54 (deputy chief librarian, librarian, assistant librarian) in Selangor, Melaka, Johor, Negeri Sembilan and Pahang. They are from different departments who use web integrated library management system in their daily operation and activities.

This study is referring to Krejcie and Morgan table to achieve desired sample size. A number of 110 questionnaires were gathered and available for analysis. The research instrument consisted of two main sections. The first section incorporates a nominal scale to identify respondents' demographic information. The second section uses 5 points Likert response scale where 5: Strongly disagree, 4: Disagree, 3: Neutral, 2: Agree and 1: Strongly agree. This section includes Information System Success concepts. The data received from the questionnaires are coded and entered onto the SPSS statistical program (SPSS Version 24.0 for Windows). The data are subjected to descriptive analysis, validity and reliability test and correlation test.

4.0   RESULT

Reliability Analysis

Reliability generally refers to the extent to which a variable or set of variables is consistent in what it is intended to measure. Based on the Table 1, the value of Cronbach's Alpha for system quality was 0.89, service quality was 0.94, usage quality was 0.94, Internet quality was 0.80 and the job satisfaction was 0.92. According to all of the value, all variables are stated more than 0.5 value of Cronbach Alpha which means that all the instruments of the study were trustworthy and reliable. Therefore, it can be used for further analysis.

	Variables	Cronbach's Alpha	No. of item
1	System quality	0.89	3
2	Service quality	0.94	5

3	Usage quality	0.94	5
4	Internet quality	0.80	3
5	Job satisfaction	0.92	5

Table 1: Reliability test

Perception on success factor of WILS pertaining to system quality

System quality is the desirable characteristics of an information system such as ease of use, ease of learning, flexibility, reliability as well as system features of sophistication, and response times. System quality is also a value of the system performance and desirable characteristics of information system. Table 2 shows the mean score of system quality was moderate in which library staff were agree that *WILS has all features* (mean = 3.45), *WILS is integrated* (mean = 3.34) and *WILS is well structured* (3.27).

	Statement	Mean	Std. Deviation
1	WILS has all features	3.45	0.95
2	WILS is well structured	3.27	0.93
3	WILS is integrated	3.34	0.91
	Overall	**3.35**	**0.83**

Table 2: Mean score of system quality

Perception on success factor of WILS pertaining to service quality

Service quality is the quality of the support that system users receive from the IS department and IT support personnel for example in term of responsiveness, accuracy, reliability, technical competence, and empathy of the personnel staff. Table 3 shows the mean score of service quality was moderate. Library staff were agreeing that *the staff of technical support for WILS shows sincere interest in solving problems* (mean = 3.52), *the staff of technical support for WILS provides fast service* (mean = 3.5), *the staff of technical support for WILS empowered to resolve problems* (mean = 3.44), *the staff of technical support for WILS available when needed* (mean = 3.42), *the staff of technical support for WILS understand the needs* (mean = 3.39).

	Statement	Mean	Std. Deviation
1	The staff of technical support for WILS provides fast service	3.51	0.91
2	The staff of technical support for WILS understand the needs	3.39	0.88
3	The staff of technical support for WILS available when needed	3.42	0.94
4	The staff of technical support for WILS empowered to resolve problems	3.44	0.99
5	The staff of technical support for WILS shows sincere interest in solving problems	3.52	0.98
	Overall	**3.45**	**0.82**

Table 3: Mean score of service quality

Perception on success factor of WILS pertaining to usage quality

System use is the amount and routine in which staff utilize the capabilities of an information system. For example, the amount, frequency, nature, appropriateness, extent and purpose of use. It describes how well the outputs

of information are used. Table 4 shows the mean score of usage quality in which the overall score is 3.12. Library staff was agreed that *WILS is intended to use in future* (mean = 3.34), *WILS is convenience to learn* (mean = 3.15), *WILS is easy to use* (mean = 3.14), *WILS is recommended to others* (mean = 3.00) but disagree on *WILS is enjoyable* (mean = 2.96).

	Statement	Mean	Std. Deviation
1	WILS is easy to use	3.14	0.95
2	WILS is convenience to learn	3.15	1.01
3	WILS is recommended to others	3.00	1.02
4	WILS is intended to use in future	3.34	1.04
5	WILS is enjoyable	2.96	1.00
	Overall	**3.12**	**0.90**

Table 4: Mean score of usage quality

Perception on success factor of WILS pertaining to internet quality

Internet quality refers to the speed and establishment of Internet connection when using the information system. Table 5 shows the mean score of Internet quality is 2.69. Library staff disagree that *Internet connection at my workstation is sufficient* (mean = 2.79), *Internet connection at my workstation is stable* (mean = 2.70) and *Internet connection at my workstation is high speed* (mean = 2.58).

	Statement	Mean	Std. Deviation
1	Internet connection at my workstation is high speed	2.58	0.95
2	Internet connection at my workstation is sufficient	2.79	1.02
3	Internet connection at my workstation is stable	2.70	0.96
	Overall	**2.69**	**0.87**

Table 5: Mean score of Internet quality

Perception on success factor of WILS pertaining to job satisfaction

Job satisfaction describes as the feelings, attitudes or preferences of individuals regarding their work. It consists the overall satisfaction on system and library staff approval or disapproval of WILS. Job satisfaction is also a major source of determining the success of library information system. Table 6 shows the mean score of job satisfaction with overall mean of 3.18. The library staff agreed that *WILS helps to complete my work* (mean = 3.36), followed by *WILS improves my decision* (mean = 3.32), *WILS improved productivity* (mean = 3.17), *WILS saves my time* (mean = 3.05) and last but not least, slightly disagree on *WILS has met my expectations* (mean = 2.97).

	Statement	Mean	Std. Deviation
1	WILS helps to complete my work	3.36	0.81
2	WILS has met my expectations	2.97	0.83
3	WILS improved productivity	3.17	0.93
4	WILS improves my decision	3.32	0.87
5	WILS saves my time	3.05	1.11
	Overall	**3.18**	**0.79**

Table 6: Mean score of job satisfaction

Relationship between WILS success factor and job satisfaction

Table 7 shows the correlation between five dimensions of WILS success factor and *job satisfaction*. There were a positive and high correlation between *job satisfaction* with *use quality* (r=0.789; p<0.01) and moderate correlation on *service quality* (r=0.582; p<0.01) and *Internet quality* (r=0.482; p<0.01). However, there were positive but low correlation between *job satisfaction* with *system quality* (r=0.340; p<0.01).

	SYSQ	SRVQ	USEQ	INTQ	JOBQ
System quality	1				
Service quality	.660**	1			
Usage quality	.520**	.591**	1		
Internet quality	.215*	.257**	.419**	1	
Job satisfaction	**.340****	**.582****	**.789****	**.482****	1

**. Correlation is significant at the 0.01 level (2-tailed)

Table 7: Results of correlation analysis between system success and job satisfaction

5.0 FINDING AND DISCUSSION

5.1 Relationship between WILS success factor and job satisfaction

One of the main objectives of this study is to examine the relationship between WILS success factor and job satisfaction. In the analysis, there are four independent variables were identified as WILS success factor including *system quality, service quality, usage satisfaction, Internet quality* and *job satisfaction*. These success factor have a relationship with job satisfaction and it is therefore all hypotheses in this study were accepted.

5.2 Relationship between system quality and job satisfaction

The findings reveal that there is a positive but low correlation between system quality and job satisfaction. Majority of WILS users are support staff with less than a year experience in using WILS. The respondents find it a bit difficult to adapt the system in a short amount of time because of the different features, integration, terms and structure. This might have an impact on their job satisfaction. Research conducted by Iivari (2005) shown a strong relationship between *system quality* and *job satisfaction*. Other than that, the features of information system which is one measure of *system quality* has been found to be significant related to *job satisfaction* (Gelderman, 2002).

5.3 Relationship between service quality and job satisfaction

Service quality was positively and moderately correlated with job satisfaction. The service quality factor shows significant relationship with job satisfaction as they support library staff need in term of providing advisory and guidance to get their job done. Leonard-Barton & Sinha (1993) in their study found that the technical staff performance in response to user problem was positively related to job satisfaction. This is also supported by case study conducted by Leclercq (2007) which found the significant relationship between technical staff function and quality of service provided had an impact on the job satisfaction.

5.4 Relationship between usage quality and job satisfaction

It is also shown a positive relationship and high correlation between usage quality and job satisfaction. According to Agarwal & Prasad (1999) user value the usefulness of new system with the support of training, technology awareness, accept the technology advancement based on their education, past experience, positive attitude and believe. Here, it was found that library staff are willing to learn more about handling WILS and intended to use in future as the evidence of great effort by the top management that send expert team to every campus. This initiative is implemented as to educate their staff in proper classroom training and hands on experience as well as details document in work instruction process.

5.5 **Relationship between Internet quality and job satisfaction**

The relationship between Internet quality and job satisfaction was positive and moderate with correlation. The Internet quality factor shows significant relationship with job satisfaction as without it, WILS cannot run smoothly and fulfil respondent needs. As there are limited literature and quite a few studies conducted to explain the impact of Internet quality to system success, this study discovers that by using a web integrated library management system, Internet quality has a huge impact and relations towards job satisfaction. Fast speed, sufficient and stable Internet connection are critical in order to produce a platform for data to be access, process, retrieve, disseminate and share between one campus to another. Failure of any one of this requirement may lead to the data error, duplication, data corrupt and time consuming (Bouch, Kuchinsky & Bhatti, 2000).

From the findings it shows that the performance and quality of WILS is still at moderate level. As for that reason, WILS needs to upgrade, modify, improve and customize its features to meet the library staff requirement. This study creates an opportunity for the evaluation and measurement which are important to be done as to check and balance WILS performance towards job satisfaction.

6.0 **CONCLUSION**

Several recommendations are suggested to improve the job satisfaction on web integrated library system in academic libraries. First, the future research on knowledge, attitude and practices (KAP studies) are proposed as to measure WILS in real situation, identify what is known or done and the effectiveness of WILS that affect staff behaviors and job performance. Second, staff who work with WILS are dealing with complex and subject to productivity pressure. Adequate training on every module is a must and has a long lasting impact on the morale and willingness for them to embrace technological change. Third, frequent audit should be conducted to verify secure operation of a system and its software. This process will determine if the information systems are safeguarding assets, maintaining data integrity, and operating effectively to achieve the academic libraries goals or objectives. Moreover, it helps to examine the library information system inputs, outputs, and processing. Fourth, academic libraries should encourage and motivate their staff on accepting the change to WILS as to be patient, open minded and cooperate together to contribute any ideas or necessary improvement. It is also suggested that, academic libraries to set up IT special force of expert team that consist of system analyse, system developer, programmer and information technology expert to look into issues of WILS technology, data structure and programming without sole dependencies to vendor.

The lesson learned from this study will support the improvement of WILS in future and acknowledge the challenges and success stories. It is also hope that academic libraries review WILS performance in term of system quality, information quality, service quality, usage quality and Internet quality on annual basis as to boost their staff job satisfaction.

To conclude, according to Knox (2014) not one single library management system is perfect and each new system installed at a library provides an opportunity for something to succeed or fail. We all learn something new every day and it was hope that all library staff would give themselves a chance to learn, adapt and adopt this new integrated system environment from their own efforts. We should support and accept the change and make full use of this new system and constantly give feedback within the selected community of practice as to come out with an effective solution.

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Reading Habits Among Students in the Digital Era: Changes of Trends and Behaviours

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Abstract

Reading has a significant number of benefits and the effects of reading practice have been proven in most developed countries. The revolution of technology plays a significant role of unpredictable changes and pervasive effect that has transformed the society nowadays. Indeed, it can fundamentally change the reading habits and indirectly boost efforts in maintaining lifelong reading since Malaysia is now moving towards Vision 2020. Thus, the rapid development and demands of the technology has reinforced the challenges of making reading habits consistent and grows intensively. This study sought to identify and measure the reading habits among students which are their trends and behaviours toward reading that reflect on the impact of digital sources made available through the Internet. This study was conducted in Universiti Teknologi MARA Sarawak, limit to Semester One students, aged between 17-21 years by using a survey method involving 2340 from 10060 diploma students with the questionnaire as the research instrument. The random sampling for the students is involving 14 faculties in UiTM Sarawak branch. Taken together, QR code has been used as an initiative platform in order to conduct and monitor the survey efficiently. Data analyses were collected using Google Sheet and the study found that majority of the students (44%) like reading on websites compared to other choices such as print books, e-books, magazines, comics, novel and newspaper. Fiction is the most preferred type of literature read by 68% the students, followed by non-fiction (32%). The findings also found that majority of the students (49%) preferred reading from their mobile phone, whereas others preferred reading from a print book (44%) and reading from a computer (7%). Findings of the study revealed that the rise of information and technology has extensively changes the trends and behaviors of the student's reading habits, which slowly moving away from printed books to online source materials.

Keywords: reading habits; students, digital era, trend, behaviors.

1. Introduction

Reading is the most valuable way and great deals to approach life effectively and efficiently. The more we read, the more knowledge and exposure we gain. According to Samsuddin et al. (2019), reading is a method of getting data and engaging information. Generally, people are always encouraged to develop these reading habits at an early age, to expose them with a lot of things around the world. Undeniably, the facts that the power of reading brings a lot of advantages which indirectly can help to motivate people and build their self-confident.

As it is known, reading habits are very close to all the people around the world. Indeed, the students are the one that always be advised to strengthen their reading habits in order to support their learning capabilities. Walia & Sinha (2014) also emphasizes that reading is considered a practice, a way of thinking and a kind of real experience, and it requires many complex skills, the ability to interpret written words, to skim for knowledge, and then perhaps to read intensively. Therefore, reading habits is considerably significant towards students which can support their academic performances.

In the past, library is the most perfect place for students to spend for their reading activities. They will not be ready to expand reading practices beyond libraries reported by Dali (2015). Thus, academic library plays a very important role in these reading habits despite major changes in trends and behaviours. However, the traditional function of the academic library, which has rightfully been dubbed the "heart" of the academic community, remains intact (Banou et al., 2008). Besides that, students also take the traditional method of readings such as books, magazines

and journals where the fact they can feel the turning the pages and enjoy holding the physical materials. Songhui (2008) points out that, by "traditional reading habit" is supposed the reading of books published within the sort of paper only. Hence, the traditional student's reading habit has slowly changed and transformed in line with the current technological developments.

The revolution of technology plays a role of unpredictable changes and pervasive effect that has transformed the society nowadays. Literally, this situation is referring to the digital era that has completely dominating the world today. Hall (2019) indicates the digital era has brought new technologies, tactics and organizations to support action. Consequently, the digital era has totally brought large and rapid changes occurring in the development of the industry in this world.

As the world becomes technologically advanced, many people nowadays have changed their culture and environment on reading by looking for the digital sources of reading materials. Abdul Karim & Hasan (2007) had earlier reported that the trend may have shifted to a digital reading habit, which is completely different from the traditional definition of reading. Even though the reading habits have literally changed, we need to be disciplined and committed in order to cultivate lifelong reading habits in our society. There have several issues on reading habit problems among students and a key issue is the emergence of various applications and social media has neglected the time of the students. The tremendous advancement in data innovation that consequently have made understudies to peruse books less and get more associated with sitting in front of the television, chatting and getting all the more profoundly fascinated in the activities in the social media (Fatiloro et al., 2017). The other issues are the level of the information literacy skills among the students. According to (Böckle et al. (2020), the literacy rate is heavily influenced by reading ability and access to services such as libraries. It is important for the students not only able to read for information and believe in what they see, they should have the ability to understand the information or messages sending from all of different types and formats of reading sources. Generally, the advancement of digital technology has affected many other spheres of our lives and indirectly hit our reading habits.

It is significant to explore the impact of digital era towards reading habits since it is an important to identify the trends and behaviours among students nowadays. With the availability of various gadgets and widespread use of social media, students are more interested in spending their time reading through the phone or laptop. According to Tanjung et al. (2017), indicate that it's closely associated with the utilization of gadget among students like smart phones or tabs which are simply exploited to access the present online news In this digital age, readers (especially younger readers) tends to grow gradually develop the screen-based reading behaviour. According to Abdul Karim & Hasan (2007) found that the developing amount of reading time are spent more on searching and browsing for information on the web based platform. Currently, students choose to stay in one place and access the internet to read while doing another movement not just focus in one place and read lots of documents (Manalu, 2019). Furthermore, it clearly shows that the main reason of the changes of this trends and behaviours on reading habits are related to the ubiquity and advancement of technology. Particularly, this study is performed to explore the impact of digital era on reading habits and behaviours among students.

To achieve the objectives of this paper, the following hypotheses is formulated. Then, the paper discusses the methodology and follows with the results and findings about the topics. The last section of this paper will discuss and make a conclusion on the topics.

2. Literature Review

The review of literature for this paper includes topics on reading, students' reading habits, traditional students' reading habits, digital era, traditional reading habits vs modern reading habits and trends and behaviors of reading habits among students in the digital era/digital material.

Reading

Reading is a complex and cognitive process for learners to easily understand the information that they receive every day. It can be either through text or passages, which usually come from a printed or non-printed material. Besides, Mohamed et al. (2012) found that some view reading as a complex process integrating all aspects of human behaviours and demanding varied and continued instructional guidance to read precisely, to appraise and to relate to others during a significant way. The concept of reading is generally an activity to understand meaning, message from written materials or non-printed that helps the readers catch what idea the writer is trying to convey.

There are many reasons that make reading very essential and need to be developed to each and everyone. Basically, reading can help us a lot on exposing ourselves with a new thing and indirectly broaden our knowledge effectively. Mohamed et al. (2012) indicates that in Islam, reading is crucial and a thought of as a window to knowledge. Reading is an important tool for achieving emotional stability, enjoying leisure hours, sharing the difficult experiences which are encountered in books and it continues to follow developments in the world (Ogunrombi & Adio, 1995). Therefore, reading is very important and brings a lot of positivity in our life.

Students' reading habits

The concept of students reading habits is on how often they read, when do they read, what do they read and why do they read. Literally, not all students have the same habits in reading. According to Davidovitch et al. (2016), reading habits are the way individuals organize their reading. Some would choose reading through written or printed materials because it is way more direct and there are some would prefer digital materials as it is faster and easier just by searching information through the internet. With no doubts, the reading materials itself can affect their reading habits. Besides that, Avci & Yüksel (2011) stated that in individual reading, students read the page and continue, often not understanding all or part of its content. In order to determine the students reading habits, we need to understand their attitudes, the environment and the reading materials that they prefer.

Students are the one who are significant with this reading habit because reading will have a good effect on their learning journey. Literally, university students are groups that are expected to possess a high level of reading habit, which is among the individual and social development criteria (Erdem, 2015). In addition, Abdul Karim & Hasan (2007) found that, from the previous study, the amount of time spent on reading by the university students was found to be higher than the average adults. But the fact is, the level of students' reading habits is not an achievement we can be proud of so far, yet we need to work more aggressive in order to ensure students will always keen on reading.

Traditional Student's Reading Habit

There are some traditional ways of reading habits that students still practice today. According to Songhui (2008), "traditional reading habit" means the reading of books published in the form of paper only. Thus, by reading a book, it is one of the way students can expand their knowledge and utilize their leisure time wisely. Reading usually said to be an individual's personal relationship with the book, but in addition, this relationship can be influenced by environmental situations such as the presence of places and the choice to spend free time (Walia & Sinha, 2014). Therefore, the traditional students' reading habit are basically depending on the use of printed or physical materials such as books, magazines and journals. Furthermore, Duncan et al. (2016) found out that the teenagers usually have more appeal with reading materials such as traditional texts and fiction books to reading comprehension. Not only that, academic library also play a vital role in creating this traditional reading habits among students. As a whole, printed materials and libraries are necessary in ensuring that these reading habits are always relevant among the students.

Digital Era

Nowadays, the advancement of the technology and wide range of digital advocacy has initiate people to the digital era. As a result, the rise of digital era generally hit and change our reading habits. Abdul Karim & Hasan (2007) provide evidence that the trend and behaviors will be transformed to a digital reading habit, which is completely different from the traditional definition of reading. In parallel, the invention of paper and printing technology in ancient China enhanced ways of reading and reading capacity immensely, speeding up the development of mankind's literate community (Songhui, 2008). The digital era has mainly changed our various ways of life and aspects of this world and the changes of the reading habits that people are experiencing now.

The widespread use of digital technology has a huge impact on students' reading practice today. It totally makes changes the traditional ways of reading habits of the younger generation which are the students that always looking for an opportunity to fully utilize the value of the digital era. Today's technologies not only influence students learning and studying in the classroom but also affect their reading behaviours at home. Liu (2005) found that the digital era has started to impact the reading behaviour of people with the increasing amount of digital content available and the increasing amount of time people spend reading electronic media. As a result, the digital era transforms the trends and behaviours of reading habits among students and impacts the changes in reading materials as well as the use of technology in reading.

Traditional reading habits vs modern reading habits

The traditional reading habits and modern reading habits have their own strength and weakness which will influence students 'choices to read. The reading of books written solely on paper is referred to as a "traditional reading habit". Meanwhile, modern reading habits are evolving with various forms and formats that move in line with the development of technology nowadays. Davidovitch, Ph, et al. (2016) report that students may choose to read information that is readily available rather than sifting through a library's collection of academic texts. Although, using gadget and other forms of technology, everyone can read at any time and from any place, regardless of the type of reading material (Samsuddin et al., 2019). After all, if students read an article or e-text online, they save money on paper and other physical costs, such as the production and sale of a hardcopy course pack (Ji et al., 2014). These apparently shows that digital library should seize the opportunity to look up for the initiative by using both of this approach or method in order to enhance the reading habits among students.

Trends and behaviors of reading habits

As the technology develops tremendously, indirectly it also contribute a great change in the trend of our reading habits. For instance, during the past years, it is a trend when people especially students looking for an opportunity to read in the library. But nowadays, library need to come out with extraordinary initiatives and creativities to maintain the trend of reading in the library. Songhui (2008) points out that in the modern age, the library is experiencing drastic changes in its information service as a conventional information institution. Hence, library institution continuously plays important roles to be alert with changes in the trend of reading habit from time to time.

Apart from that, the digital era has even changed the behaviours, or the way people read especially among the students. Today, young people have less time to read on a study table (Walia & Sinha, 2014). For instance, instead of spending time reading on a study table or in the library, they can simply pick up the phone and just sit back and relaxing on the couch while reading. Moreover, instead of going to the library and looking for materials on the shelves one by one, it is easier for them to just find the existing materials available in digital form. This means that the digital era totally changes the behaviours of reading habits among the students.

With the growing number of digital materials, it indirectly affects the revolution of reading materials among students. Nowadays, most of the students prefer using digital form of reading materials. Abdul Karim & Hasan (2007) pointed out that this phenomenon will affect how people interpret reading and how printed materials are used to make reading easier. The reading materials are also affected with the rapid technology that people face nowadays.

3.   Methodology

In this study, a quantitative approach was utilized. According to Caldenas (2019), we are performing research with quantitative data when the data is numbers (or when the information acquired is represented into numerical scales). The survey-based questionnaire was prepared using Google Forms and the random sampling was distributed among 2340 diploma students of UiTM Sarawak from multiple faculties during the interim session.

Faculty	Number of respondents
Faculty A	218
Faculty B	223
Faculty C	236
Faculty D	195
Faculty E	156
Faculty F	134
Faculty G	228
Faculty H	132

Faculty I	145
Faculty J	106
Faculty K	152
Faculty L	164
Faculty M	116
Faculty N	135

It consists of 2 sections where Section A about the general information such as name, student ID, gender, and faculty, while Section B is specific close-ended questions relating to their reading habits. In addition, the questionnaire was distributed to them online, whereby QR Code is provided for them to scan and access the questionnaire. To collect data of respondents for this study, at the end of each session for 2 days, students will take about 5-10 minutes to answer this survey. Data collected using Google Sheet and Microsoft Excel responses were calculated which the results below were showed using the pie chart. The detailed results are tabulated in the following section.

4. Results and Findings

The results of the experiment found clear support to identify and measure the reading habits among students which are their trends and behaviors towards reading. The questionnaires were built based on the objectives and the responses were calculated which the pie chart below depicts the result. Data analyses were collected using Google Sheet and Microsoft Excel.
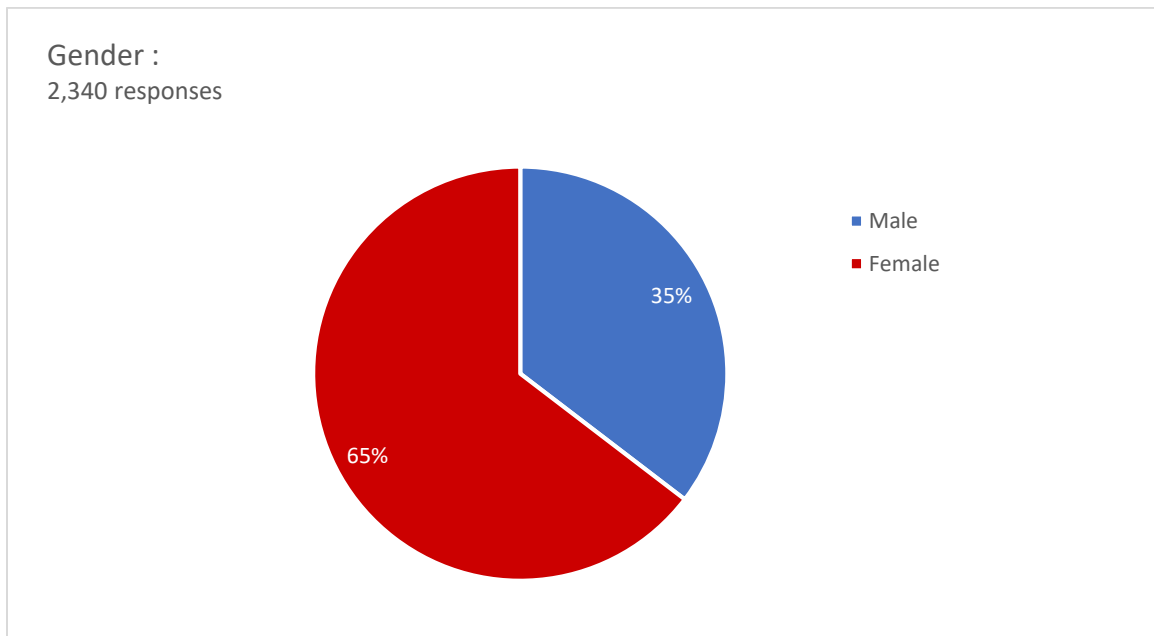
Demographic

Figure 1 (a): Gender of the respondents

Table 1 (a): Gender of the respondents

Gender	Number of respondents	Percentage
Male	828	35%
Female	1512	65%

Figure 1(a) shows the gender of the respondents. It is found that most of the respondents were female which carried the percentage of 65% and the remaining was male with the percentage of 35%. Therefore, as we can expect most of the universities including UiTM are dominated by female students rather than male students.

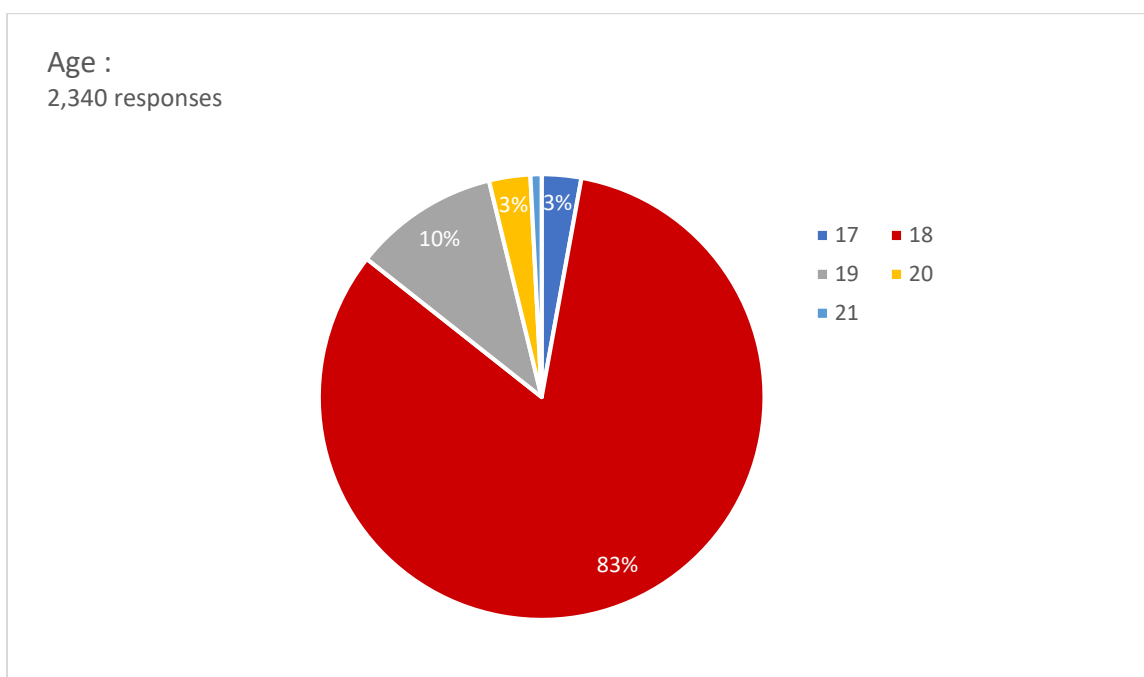Figure 1 (b): Age of the respondents

Table 1 (b): Age of the respondents

Age	Number of respondents	Percentage
17	67	2%
18	1937	83%
19	247	11%
20	70	3%
21	19	1%

Figure 1(b) shows the age of the respondents. It is found that most of the respondents belonged to the age of 18 years old with the percentage amount of 83%. Meanwhile, 11% of them were in the age of 19, followed by 3% for the age 20, 2% for the age 17 and only 1% for the age 21 years old. Besides that, the respondents are from 14 faculties in UiTM Sarawak and majority of respondents in answering the online survey was from Faculty C which consists 236 respondents and the lowest number of respondents was from Faculty J.

Based on the data obtained from the online survey, it is observed that the findings on this research were analysed in terms of the types of reading materials that are chosen (not for a class assignments), the genre of reading materials, the type of reading format and the frequency of student on readings.

Types of Reading Materials
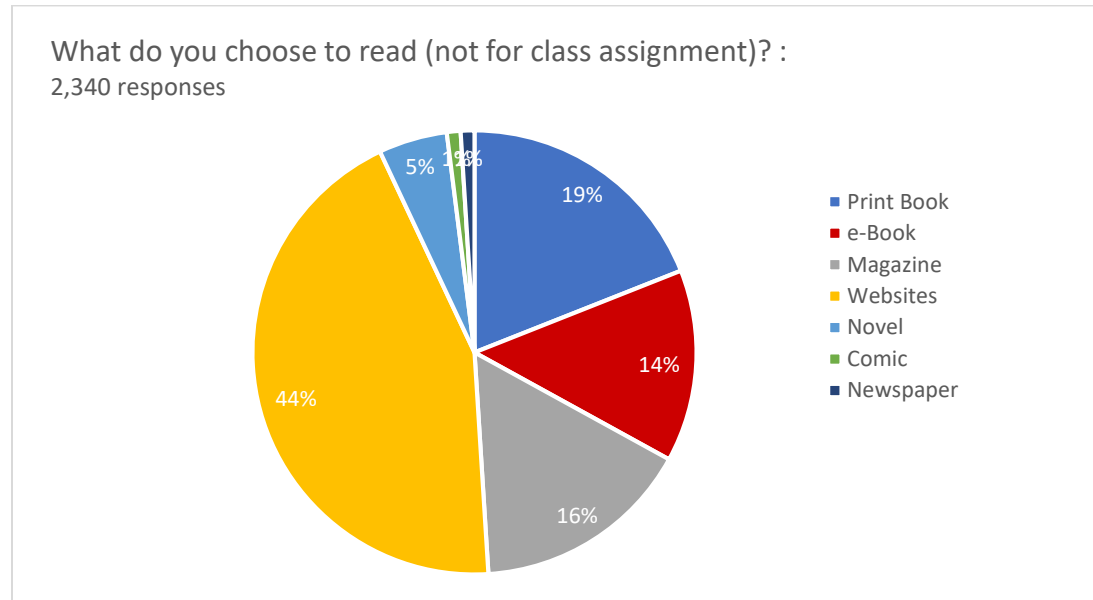
Figure 2: Types of reading materials

Table 2: Types of reading materials

Type of reading materials	Number of respondents	Percentage
Print Book	445	19%
e-Book	328	14%
Magazine	374	16%
Websites	1030	44%
Novel	117	5%
Comic	23	1%
Newspaper	23	1%

It is observed that majority of the students, which about 44% preferred reading on websites, followed by print book (19%), magazine (16%), e-Book (14%), novel (5%), comic and newspaper was only 1%.

The Genre of Reading Materials
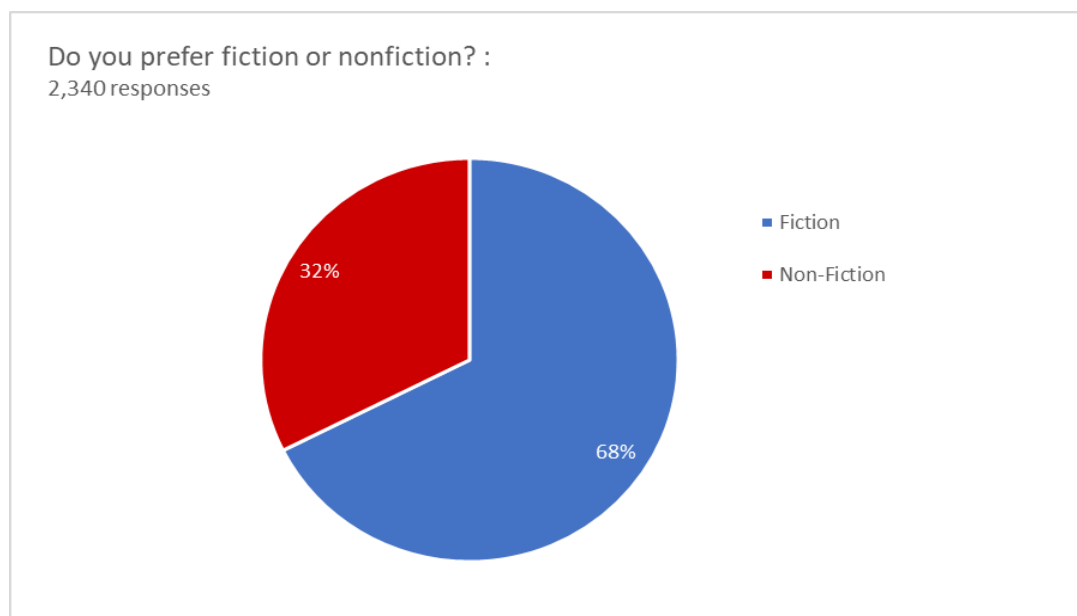
Figure 3: The genre of reading materials

Table 3: The genre of reading materials

Genre of reading materials	Number of respondents	Percentage
Fiction	1591	68%
Non-Fiction	749	32%

Figure 3 shows that high majority of the students preferred fiction as the genre of their reading materials which consists of 68% compared with the non-fiction that only consists 12%.

Type of Reading Format
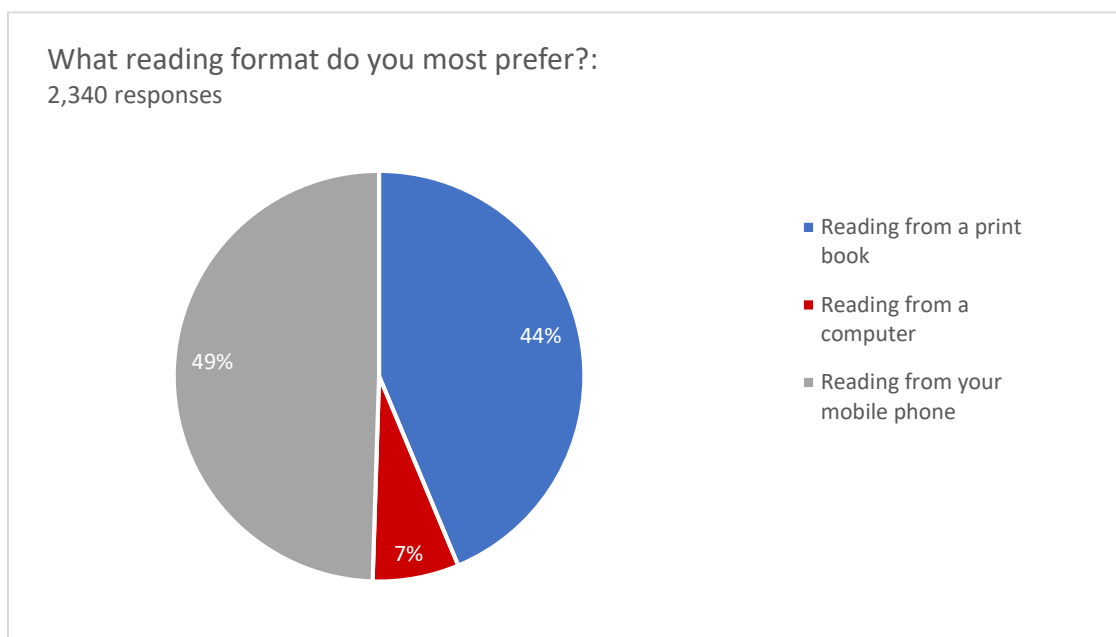
Figure 4: Type of reading format

Table 4: Type of reading format

Type of Reading Format	Number of respondents	Percentage
Reading from a print book	1030	44%
Reading from a computer	164	7%
Reading from your mobile phone	1146	49%

As a result, depicted in figure 4, about 49% of the students preferred reading from their mobile phone while 44% choose reading from a print book and the lowest percentage was reading from a computer which just consists 7%.

Frequency of Student on Readings
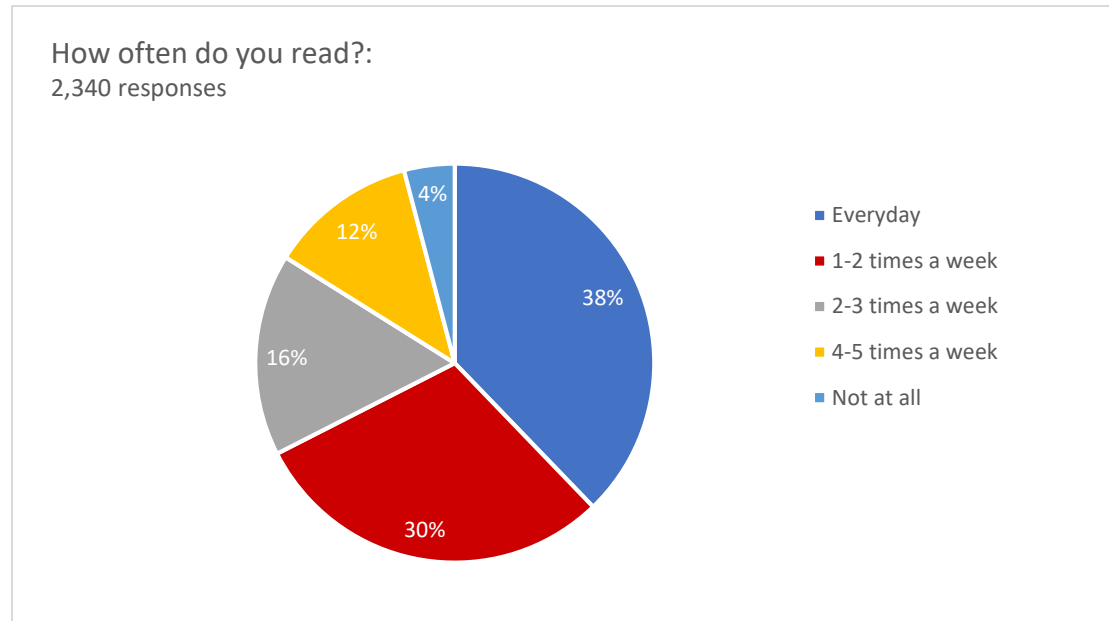
Figure 5: Frequency of student on readings

Table 5: Frequency of student on readings

Frequency of student on readings	Number of respondents	Percentage
Everyday	889	38%
1-2 times a week	702	30%
2-3 times a week	374	16%
4-5 times a week	281	12%
Not at all	94	4%

Besides that, the results on the figure 5 aims to identify the advancement of technology can boost up the levels reading habits among students. The result displays that, 38% students' reads daily and only 4% students did not read at all. Therefore, it shows that the changes in current reading trends and behaviours can at least attract and convince students to read.

5.   Discussion and Conclusions

As the result that shows above, it has been proven that students nowadays have change the trends on reading which they preferred the electronic type of reading materials compared to the traditional printed book. The result is slightly supported by the study conducted by Francis et al. (2020) about 45.9% of students acquire new information through internet sources and only 4.9% of students gather information from book sources. Even though the previous study focuses on the way students acquire information and not for a reading purposes, it is showing that students nowadays are more interested in using electronic technology. Furthermore, the findings from Table 3 are in close agreement with the study conducted by Walia & Sinha (2014), they found that the preference of non-fiction and both fiction and non-fiction among the younger age group (<15 years) as seen in this research, the widely held assumption that younger adolescents are less inclined towards non-fiction. Thereby, as the technology grows intensively, it does not really affect the genre of the reading materials which they still favor such as science fiction, romance and fantasy.

Besides that, if we look the findings on the preferred reading formats in relation to the current situation, we literally can expect this decision because students nowadays are very dependent on their mobile phone. This may explain that students fully utilize the use of technology and it totally changes the behaviours on their reading habits. The trend may have changed to a digital reading habit that varies entirely from the standard meaning of reading (Abdul Karim & Hasan, 2007). The findings also showed that teacher applicants have predominantly used internet for doing research, reading news and journals; and accessing knowledge; so it could be concluded that with the aid of the internet, they used the internet to improves themselves and easily accessed new information reported by Ilgar & Ilgar (2012). An initial objective of this paper was to identify the impact of digital era on reading habits. From the findings from each of the variables, the advent of technology in this digital era indicates that reading habits still exist among students, but the trends has turned out in a way that is more in line with the latest technology flows.

In conclusion, the contribution of this study has been to confirm that digital era creates the conversion of the trends and behaviors towards reading habits among students. Students prefer using mobile phone to read information rather than reading using the traditional format such as book and newspaper. In addition, it is supported that the changes of this trends indirectly strengthen the reading habits among students which from the findings showed that students frequently read every day. Therefore, academic library needs to empower their roles for continuously comes out with a variety initiative to reinforce the reading habits among students. Thus, the findings of this study must be seen considering some limitations. Due to time constraints, the biggest limitation was the inability to gather samples and data from the other level of study such as degree and master. Therefore, the results of this study are not significant to generalize the overall institutions because it is limited only to the Diploma students. Hopefully with the technology alongside the new changes of trends and behaviors nowadays, it can foster interest in reading habits that can be more remarkable among the students. In the foreseeable future, further research can be conducted in a large scale which also involves the postgraduate's students to see more clearly how the digital era can make a change on the trends and behaviors towards reading habits among students. In terms of directions for future research, further work could determine the roles of the information institution such as academic library in order to support the trends of reading habits among the students in this digital era. Besides, the institution will have a better understanding regarding the importance of reading habits among students that literally can help to improve the quality of learning and teaching process. Future research of reading habits should be considered is investigation of information literacy rate among students from the reading habits to better measure the competency on searching for the reliable information and sources.

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Digital Competency among Students: A Case study at UiTM Kelantan Branch

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Abstract

IR4.0 technologies enable the learning to be conducted in an easier way and meaningful manner. Many online learning platforms such as Google Classrooms, Frog Classrooms and MOOCS are developed based on the IR4.0 technologies. Students should have necessary competencies in coping with IR4.0 learning technologies. However, there is a lack of digital skills among students as reported in the literature. This study investigates the level of digital competency among students in response to the prescribed issue. The samples were 389 students studying multiple academic programs in UiTM, Kelantan Branch. By adopting the questionnaires used in previous research, this study specifically measures the information and data literacy, communication, safety, digital content creation and problem-solving competencies following the DigComp Framework. The SPSS version 22 was employed for data analysis. The results indicate lowest score in digital content creations compared to other four competencies. The potential implication of this study is the emphasis on this competence as this skill requested is critical in digital gig economy.

Keywords: Digital competence, DigComp framework, UiTM Kelantan branch, digital skills.

1.0 Introduction

The term IR4.0 is derived from the German word for innovation, growth and processes in the manufacturing sector, including new developments in the industry. Today, the Fourth Industrial Revolution (IR4.0) gives a great impact towards individual's lifestyles, business operations and economic growth. IR4.0 is changing how we live, work and communicate and reshaping government, education, healthcare as well as commerce sectors (Trailhead, 2020). The Fourth Industrial Revolution (IR4.0) has had a great effect on daily human life, corporate practices and economic development of individuals today.

IR4.0 has been applied in various fields such as economy, business, legislation, health and education. For example, IR4.0 is applied in economics through the introduction of online banking (Sabri, 2019). In the field of business, IR4.0 is applied using cashless payments through block chain technology (Zuriati, 2019). The impact IR4.0 had been in legislation system with the implementation in civil cases, in which the judiciary permitted parties to apply for court hearings to be held remotely by means of the court's e-Review system, e-mail exchange or video conferencing, where consent and leave of court is obtained from the parties. In terms of health, Sharon Alita (2021) stated that IR4.0 involved the use of robotics and artificial intelligence (AI) in disease surgery using da Vinci Surgical System. In addition to the examples mentioned above, IR4.0 also applied in many other fields including education.

As for education, the IR4.0 technology makes the learning process easier. The Google Classrooms, Frog Classrooms, MOOCS, Google Meet, Zoom and Kalam among others are an IR4.0 technology enables the learning delivery. A study conducted by Hasnah (2020) found that 89.5 percent of students one Malaysian public university

used Google Meet app as a platform to follow online classes and 2.6 per cent using Kalam. It is apparent that the IR technology enables the teaching and learning processes anytime and   anywhere.

The use of IR4.0 technology in teaching and learning raises the issue digital technology-related skills and knowledge. Digital competency encompasses the knowledge and skills required for an individual (United Nations, 2019). Digital competency is among the vital competences for the 21st century in the age of 21st century (Lumbar et al., 2019). Lumbar et al. (2019) also said that virtual competence means that students no longer understand the grounded simple IT capabilities most effectively, e.g. using computer systems to retrieve, analyze, manage, create, gift and alter information, but also to speak and engage in interactive networks across the internet.

This is in line with the view Ismail (2020) that says that the marketability of graduates of the IR4.0 age not only emphasizes the expansion of high thinking and technical skills, but also highlights the importance of promoting problem-solving abilities and digital innovation.

The skill mentioned above is crucial to enable students to master effective learning in accordance with the development of IR4.0. However, past studies conducted among Malaysian students on ICT competency among pre-university students were somewhat limited (Tenku Putri Norishah et al. 2012; Teck Soon Hew, 2011; Ahmad, Ayub, & Khambari, 2019). The limitation eventually did not provide an overall picture of the digital competency and students' digital abilities in the face of virtual learning and online distance learning. The study reported in this paper enriches the literature on students' digital competency by examining the level of digital competency among university students at the Kelantan Branch. In conducting this study, the framework of DigComp Framework 2.1 was adopted. In general, this framework comprises the dimension of information and data literacy, communication and collaboration, digital content creation, safety and problem solving which are adequate to measure the students' digital competency skills.

In establishing the aim of this paper, the following arrangement is identified. Next section presents the review of literature in relation to Industrial Revolution (IR) 4.0, IR4.0 in human life domain, IR4.0 and digital competency among students and digital competence. Section 3 discusses the method that this paper adopts. The discussion follows in Section 4 and Section 5 concludes the paper.

2.0 LITERATURE REVIEW

The Industrial Revolution (IR) 4.0 has a long and colorful history. It was first coined by renowned Historian Arnold Toynbee (1889-1975) (Dzulkifli Abdul Razak, 2020). There are 4 levels of Industrial Revolution; Industrial 1.0 that uses of steam silent in industrial activity, Industrial 2.0 that involves electricity power, Industrial 3.0 that is based on information and computer technology and automation technology and now Industries 4.0 or Industrial Revolution 4.0. Industrial Revolution 4.0 that is characterized by a combination of digital, physical, or biological technology systems involving new capabilities namely machinery, human and new technological methods (Universiti Teknologi Malaysia & Ismail, 2018). Among the growing trends of IR4.0 technologies are simulation technology, IoT, cloud computing, manufacturing of additive manufacturing, reality strengthening systems (augmented reality), big data analysis (big data analytics) and automation robots. The development of innovation and technology, driven by digital power and the Internet makes IR4.0 drives human life in all aspects of life.

The IR4.0 penetrated all human life segments including economy, business, legislation, health and others. According to Schwab (2011), The Industrial Revolution (IR) 4.0 changes the way people work and live life. These include changes in various aspects of human life such as in the form of communication from telephone to smartphones use of e-commerce in shopping activities, introduction to smart homes technology, schools, and smart factories as well as drone applications in agriculture and safety. This is supported by Jumadi (2020) who stated that IR4.0 is a major change that will take place in providing convenience to human life.

The IR4.0 technology significantly affects the education segment of human life. Teaching methods at present have been transformed to the technology-based learning in which the learning and teaching (T&L) sessions between students and lecturers are now connected to various digital communication platforms such as Massive Open Online Learning (MOOC), Open Educational Resources (OER) and Flipped Classroom and communication relationships between students and lecturers can also use applications such as WhatsApp, Telegram, Google Classroom and so on.

The use of IR technology in T&L gives concerns about the skills in operating such technology. As a result, the digital competency gained attention by authorities around the world. European Commission (2006) for example

recognized digital competency as one of eight competences for lifelong learning (European Commission, 2006). Malaysian Qualifications Agency (MQA) through its Malaysian Qualifications Framework (MQF) 2.0 (MQF 2020) include the digital competency as one of the attributes for curricular design by Malaysian academic institutions. These universal and national initiatives indicate that digital competency is a critical skill as world is now overwhelmed by IR4.0.

Literature offers huge conception about digital competency. It is defined as a "set of knowledge, skills, and attitudes, strategies and awareness that is needed when using ICT and digital media" (Ferrari, 2012). Digital competence is an interest against attitudes and abilities of individuals in using digital technology and communication tools (Setyaningsih et al. 2019). The above statements imply that graduates need to strengthen their knowledge in the field of digital and information technology as well as diversify their skills to stay relevant for future job markets. Hariharasudan and Kot (2018, p. 227) emphasized that students need to be trained instead of being taught to compete in today's driven digital world to be more experienced and skilled for today's industrial operations. The statement also aligns with the research done by Ismail (2020) which indicated that the only difference is that in the IR4.0 era, the skills needed today are very different from previous human resource skills.

Digital literacy is viewed from multiple attributes. As for European Commission (2006), Digital competence are attributed by Media Literacy, ICT Literacy, Information Literacy and Literacy These competences are used to identify and analyze students' achievement with digital technology (Hatlevik and Christophersen, 2013). On top of EC's framework of digital competency, DigComp Framework is another digital framework for measuring the digital competency. This study applies the DigComp framework as it is the current framework adopted in measuring digital competency in many human life domains such as business, educations, economy and public administration.

3.0 RESEARCH FRAMEWORK

As mentioned earlier, this study adopted DigComp Framework as a research framework. DigComp framework provides detailed descriptions of all qualifications required to be sufficient in the digital environment and explains these competences in terms of knowledge, skills and attitudes (Hazar, 2019, p. 958). The European Commission's Joint Research Centre first published the Digital Competence Framework for Citizens (DigComp) in 2013 and updated it in 2017. The framework includes five competence areas: (1) information and data literacy; (2) communication and collaboration; (3) digital content creation; (4) safety; and (5) problem solving. DigComp has been used as a foundation for developing strategy, education programmes and assessment tools in over 20 countries in Europe and around the world (Kluzer and Pujol Priego, 2018, p. 8). In the context of DigComp framework, the term "digital competence" refers to the use of ICT, to achieve goals related to citizens' work, employability, learning, leisure time, citizenship participation, skills and attitudes (Chanias et al., 2019, p. 23). Digcomp was established in order to measure the level of digital competency among students because the framework aims to describe what and how students acquire, use, adapt to and learn with technology (Siddiq et al., 2017, p. 31).

According to Ferrari (2014), the five areas of digital competences can be summarized as follows:

1. *Information and data literacy* – to identify, to locate, to retrieve, to store, to organize and to analyze digital information judging its relevance and purpose.

2. *Communication* - to communicate in digital environments, to share resources through online resources and online tools, to link with others and to collaborate through digital tools, to interact with and to participate in communities and networks, cross –cultural awareness.

3. *Content creation* – to create and edit new content (from word processing to images and video), to integrate and re-elaborate previous knowledge and content; to produce creative expressions, media outputs and programming to deal with and apply intellectual property rights and licenses.

4. *Safety* - personal protection, data protection, digital identity protection, security measures, safe and sustainable use.

5. *Problem Solving* – to identify digital needs and resources, to make informed decisions on most appropriate digital tools to the purpose or need, to solve conceptual problem through digital means. To creatively use technologies, to solve technical problems, to update own and others competence.

Dimension 1	Dimension 2	Dimension 3
5 Areas	21 Competencies	Competence Levels

AREA		COMPETENCE
Core	**1. INFORMATION**	1.1 **Browsing, searching** and **filtering** information 1.2 **Evaluating** information 1.3 **Managing** information and digital content
	2. COMUNICATION	2.1 **Interacting** through digital technologies 2.2 **Sharing** through digital technologies 2.3 **Engaging in citizenship** through digital tech 2.4 **Collaborating** through digital technologies 2.5 **Netiquette** 2.6 Managing **digital identity**
	3. CONTENT CREATION	3.1 **Developing digital content** 3.2 **Integrating and re-elaborating digital content** 3.3 **Copyright** and licenses 3.4 **Programming**
Transversals	**4. SAFETY**	4.1 Protecting **devices** 4.2 Protecting **personal data** and **privacy** 4.3 Protecting **health** and **well-being** 4.4 Protecting the **environment**
	5. PROBLEM SOLVING	5.1 Solving **technical problems** 5.2 Identifying **needs** and **tech. responses** 5.3 **Creatively using** digital technologies 5.4 Identifying **digital competence gaps**

Figure 1: Digital Competence Framework

4. METHODOLOGY

This research adopts the quantitative approach in order to determine digital competence. The study setting was Universiti Teknologi MARA (UiTM) Kelantan Branch located in Machang. The research instrument was questionnaire with six (6) sections following the DigComp framework namely Demographic Profile, Information and Data literacy, Communication and Collaboration, Digital Content Creation, Safety and Problem Solving with three (3) scales of Likert measurement. The questionnaire was administered online to 400 respondents from both diploma and degree level of studies. The convenience (non-probability) sampling was used in the sampling approach. Out of the 400 questionnaire sets out, a total of 389 sets of questionnaire were returned and valid for analysis. The analysis was conducted using the SPSS Version 22 package and the simple descriptive analysis techniques was applied.

5. RESULTS AND DISCUSSION

As the objective of the study is to identify the students' digital competency level, the descriptive analyses are used in the analysis. The results of descriptive statistical analysis using SPSS Version 22 are tabulated as following.

5.1 Demographic Profiles

Table 1 below represents the demographic profile of the respondents involved in the study. It indicates the gender in which female represent 83.0% and male 17.0% of the respondents. It also shows the level of study in which that 62.5% are diploma students and 37.5% are degree students. With respect to faculty, respondents from Faculty of Business and Management are 33.2%, Faculty of Computer and Mathematical Sciences 19.5%, Faculty of Information Management 18.5%, Faculty of Accountancy 15.4%, Faculty of Arts and Design 7.5% and Faculty of Administrative Science and Policy Studies 5.9%).

Table 1. Respondent's Profile

Profile	Category	Frequency	Percentage
Gender	Male	66	17.0
	Female	323	83.0
Education	Diploma	243	62.5
	Degree	146	37.5
Faculties	Information Management	72	18.5
	Business and Management	129	33.2
	Accountancy	60	15.4
	Computer & Mathematical Sciences	76	19.5
	Administrative Science and Policy Studies	23	5.9
	Arts And Design	29	7.5

Source: Author (2021)

5.2 Descriptive Statistics

5.2.1 Reliability Analysis

Two descriptive analyses are reported in this paper. First is the reliability analysis and the other is summary of descriptive analysis. Table 4 below shows the Cronbach's Alpha value for each item in the DigComp framework. It is noted that the Cronbach's Alpha value for all items is higher than 0.7 and this indicates that all items are reliable.

Table 2. Reliability Analysis

DigComp AREAS	CCODE	COMPETENCE	CRONBACH
Information and data literacy	CM 1-8	Scanning, searching and filtering Information	0.857
	NM 1-5	Evaluating information	0.796
	SM 1-7	Store and retrieve information	0.897
Communication	INT 1-6	Interaction through technology	0.877
	KOG 1-4	Information sharing and content	0.870
	TER 1-5	Engagement with the online community	0.825
	PE 1-4	Ethical related knowledge	0.917
	ID 1-5	Managing digital identity	0.878
Digital Content Development	BKD 1-4	Digital content development	0.844
	IKD 1-4	Digital content integration	0.875
	HCL 1-3	Copyright and license	0.688
	ATR 1-4	Programming	0.866
Safety	LPr 1-3	Protect the device	0.800
	LPP 1-6	Protects personal data and privacy	0.806
	LK 1-3	Protect health and well-being	0.870
	LAS 1-3	Protect the environment	0.886
Problem Solving	SMT 1-3	Solve technical problems	0.849
	KTT 1-3	The need to identify and respond to technology	0.876
	KTD 1-3	Creative using digital technology	0.816
	JKD 1-4	Identify digital efficiency gaps	0.884

Source: Author (2021)

5.2.2   Descriptive Analysis

The descriptive analysis shows that digital competence levels of respondents for all measured items are dividable into two categories that High and Moderate. No Low score is observed from the result. Table 5 shows the summary of descriptive statistic of the study.

Table 3. Summary of Descriptive Statistics

Areas	Label	N	Mean	Std Deviation	Total Overall	Overall by Area		%	Scales	Rank
Information	cm	389	2.66	0.362		87.1%		88.6%	High	3
	nm	389	2.62	0.381				87.4%	High	6
	sm	389	2.56	0.441				85.3%	High	7
Communication	int	389	2.73	0.360		85.3%		91.1%	High	1
	kog	389	2.65	0.427				88.5%	High	5
	ter	389	2.45	0.457				81.7%	High	14
	pe	389	2.49	0.504				83.0%	High	9
	id	389	2.47	0.471				82.2%	High	11
Digital Content Development	bkd	389	2.15	0.570	82.0%	70.6%		71.6%	Moderate	19
	ikd	389	2.23	0.575				74.4%	Moderate	17
	hcl	389	2.16	0.536				72.0%	Moderate	18
	atr	389	1.93	0.606				64.2%	Moderate	20
Safety	lpr	389	2.41	0.557		84.9%		80.3%	High	15
	lpp	389	2.45	0.452				81.8%	High	12
	lk	389	2.66	0.464				88.8%	High	2
	las	389	2.66	0.471				88.6%	High	4
Problem Solving	smt	389	2.26	0.554		80.5%		75.3%	Moderate	16
	ktt	389	2.50	0.493				83.4%	High	8
	ktd	389	2.48	0.501				82.7%	High	10
	jkd	389	2.42	0.532				80.6%	High	13

Source: Author (2021)

From five areas of digital competence, Information and Data Literacy identified as first, rank or highest score areas with overall percentage 87.1%. This finding is significant with the findings conducted by Khan and Vuopala (2019b, p. 26) that showed Information and Data Literacy is the highest core competency. The result is also similar to a study done by Evangelinos and Holley (2015) in their paper "A Qualitative Exploration of the DIGCOMP Digital Competence Framework: Attitudes of students, academics and administrative staff in the Health Faculty of a UK HEI", that the most prominent area was information. From the results, it was agreed that UiTM Kelantan Branch students have a high level of competence with an overall percentage (87.1%) in terms of information and data literacy areas, but the results showed that while students are good at searching and filtering as well as storing and preserving information, students seem to have problems evaluating information and digital content.

Online learning has now become the key forum for performing university teaching and learning events. Google Meet, WebEx, Zoom and other platforms are the most common platform for online learning activities in UiTM Kelantan Branch. In addition, most students participate in and connect with friends and families via social networking sites such as Instagram, WhatsApp, or Facebook. From the results, we can conclude that students in UiTM Kelantan Branch are able to communicate, collaborate, interact, and participate in virtual teams and networks with overall percentage around 85.3%.

Following Information and Communication, safety has become the third most important field. As can be seen in Table 6, with a percentage of 84.9%, defense is the least established competency. Generally, in digital settings,

respondents are seen to have knowledge of security aspects and security concerns such as identity theft, computer viruses, cyber fraud such as "phishing" and "scam" emails.

Problems solving competency areas can be defined as an individual's capacity to engage in cognitive processing to understand and resolve situational problem where a method of solution is not immediately obvious. It includes "the willingness to engage with such situations in order to achieve one's potential as a constructive and reflective citizen" (Vuorikari, Punie, Gomez, & Van den Brande, 2016). Based on the result, it shows that problem solving competency's overall percentage is 80.5% and be ranked as the fourth place. The lowest subcategory score was creative in using technology with 75.3% and the results revealed that most students are not creative in utilizing digital technology.

The lowest score among five competencies was Content Creation Development with overall percentage was 70.6%. From the survey, the result has revealed that most respondents encountered problems in developing digital content creation. The results have revealed that most respondents encounter problems in developing programming codes because it achieved 64.2%. Ala-Mutka (2012) and Guzdial (2003) stated that generally, learning programming was considered a difficult process with high dropout rates, aligned the finding with previous study. This statement was supported by a study conducted by Krpan, Rosić, and Mladenović (2014) that showed most undergraduates students specifically first year students from the Faculty of Science, University of Spilt, Croatia encountered difficulties in programming environment, language syntax knowledge, problem understanding and debugging. Besides that, from the total of 389 respondents, only 19.53% or only 76 respondents were from the Faculty of Computer and Mathematical Sciences while the rest are from the Faculty of Art and Design, Faculty of Information Management, Faculty of Accountancy and Faculty of Business and Management. It therefore also led to the above result because, opposed to students from the Faculty of Computer and Mathematical Sciences, these groups of respondents have not been exposed to programming languages in their syllabus courses.

The descriptive analyses have unveiled some useful statistics about the level of digital competence among UiTM Kelantan Branch students. The survey has adopted Digital Competency European Digital Competence Framework (DigComp) 2.0 version. It was noted that respondents had the lowest results in the development of digital content, but high results in information and data literacy were registered. Statistics shows that respondents (students) lack the ability to create programming codes and only at the medium level to develop content and to incorporate and re-elaborate digital content. Respondents were also found to have an average knowledge of how material and content are protected by copyright and licenses.

It is learned that the overall score for five competence areas in DigComp is 82 percent, which is considered as High Level, based on the results generated from statistical analysis and discussion that follows. However, it was interesting to know that even the average score considered high-level respondents were not very competent in two areas out of five main areas of problem solving and digital content creation. These skills are among the main skills looking forward by the future employer towards graduates. A study done by Tanius et al. (2019, p. 13) reported that employability issue among Malaysian new graduates arised due to skills gaps which refer to the mismatch between employers' expectations and the graduates' employability skills. From the findings results, university students at UiTM Kelantan Branch are still not yet considered as digital competent as they have lack of skills in two main areas in DigComp. Faculties and top management of the institution should address this issue because without enhancement programs to upgrade or upskill their digital competence, they are not compatible with the current needs of job market.

6.0 CONCLUSION

This research aims at measuring digital competence among university students as fewer research have been conducted in Malaysia regarding digital competence especially in the context of public Malaysian universities. Despite the intended aims have been achieved, this study has some limitations in its locality and sampling in particular. Future research can include respondents from Malaysia private universities. Therefore, in order to develop the digital skills of students and to be digital competent to survive and ready to adapt to the demanding working environments, more research can be explored and carried out, particularly in digital library literacy skills.

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Academic Library Online Services During Pandemic COVID-19: The Experience of Universiti Teknologi MARA, Malaysia

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Abstract

Perpustakaan Tun Abdul Razak (PTAR) in line with Open and Distance Learning (ODL) mode of teaching and learning in UiTM system, has bring out these initiatives with new norms to continuously assist teaching, learning, research and innovation activities among university members. This paper highlights six online library services offered by PTAR during pandemic COVID-19 in Malaysia. Document analysis approach was used to highlight the online library services initiatives. Secondary data is used in this study through the PTAR UiTM Shah Alam official records. This paper is very useful in providing valuable insights and practical solutions in addressing pandemic issues for other academic libraries that facing similar challenges in continuing providing library services to meet the user needs.

Keywords: academic library; online library services; pandemic and library services

1.   Introduction

Coronavirus (COVID-19) spreads rapidly across the world. All sectors are required to comply with government announcement to stay at home and apply new norms to slow down the COVID-19 pandemic. Schools and higher institutions are announced to shut down and make immediate conversion of moving education towards online learning. Universiti Teknologi MARA (UiTM), through its circular issued in March 2020, instructed students to leave campuses and all academic activities required to be conducted virtually via Open and Distance Learning (ODL). Staffs were also instructed to work from home and only essential parts were required to serve in rotation.

Considering this outbreak and new norms practice in UiTM, Perpustakaan Tun Abdul Razak (PTAR) enhances its online library services by offering off-campuses virtual access towards library facilities, services, and resources. Digital library initiatives are developed and enhanced to ensure all library resources and collections are accessible online by users. This includes library online resources, past year examination paper, book loan services, inter-library loan, as well as academic consultation and guides by reference librarians. With tagline *'Stay Connected: Anywhere, Anytime, Anyone'*, PTAR continues to delighted all university members with the unlimited easy access regardless of time and place to support research, reference and learning in new norms.

However, the library resources and services statistical usage trends are not as expected. In addition to the lockdown situation in the COVID-19 pandemic, all physical services are closed for a specific period to stop the spread of the pandemic. Users cannot physically access library resources and start switching to online accessibility. As a result, off campus users have limited access to library services and resources due to various reasons such as lack of facilities and poor networks connection. This has led to an imbalanced situation where library management is always committed to providing the best services through various digital library initiatives for academic excellence.

This article highlights the initiatives and best practices in online library services implemented and reported by PTAR UiTM during pandemic COVID-19 to support online distance learning in university. The initiative implemented by PTAR has successfully solved the problem of library usages during the pandemic COVID-19 outbreak. It is expected that the best practices highlighted in this article can be a reference to other library with similar issues to optimize the library usage in term of facilities, services, and resources offered.

Discussions on initiatives and best practices regarding online library services during pandemic COVID-19 have be executed is in the following arrangement. The literature review highlights detail issues related to new norms in regard to online library services in section 2 – Literature Review. Methodology section explains the method used in preparing this paper. Followed by the discussion of each initiative taken by PTAR UiTM is reported in section 4 – Discussion. This paper is closed with Conclusion in Section 5.

2. Literature Review

This section reviews the issues including new norms, digital library and online library services.

New Norms.

Pandemic COVID-19 has led the world to new norms. According to Corpus (2021), the term 'new norms' started to use during financial crisis in 2008, referring to the dramatic economic, cultural, and social transformations that caused precariousness and social unrest, impacting collective perceptions and individual lifestyles. It somehow has been widely used during this pandemic COVID-19 to adjust the practices of essential aspects in human life. World Health Organization (2020) proposed the world to adapt new norms to cut the spread across the globe. People are suggested to avoid the three Cs; crowded places, close-contact settings and confined and enclosed spaces, continue to practice measures, ourselves and others, cover coughs and sneezes with flexed elbow, wash hands with soup, water, or alcohol-based hand rub, and many more.

There is not an option but mandatory for all to follow. Tan Sri Muhyiddin Yassin, Prime Minister Malaysia, has declared the entire country to be on a movement control order for the first wave of the rise of COVID-19 on 18 March 2020 (Tang, 2020). The decision was made based on Prevention and Control of Infectious Diseases Act 1988 and the Police Act 1967. The prohibition of movements required all government and private premises to be shut down, except those businesses that classify under "essential services". Malaysian government proposed changes in employment law to enable working from home to prevent the spreading of the virus COVID-19 while sustaining economy. Malaysia's Department of Statistics (DOS) stated that 44% of employers had worked from home on early implementation of MCO 2020 (Siti Aiysyah, 2020).

Complying with the order, Minister of Higher Education has promptly come out with circulars, standard of procedures (SOPs), and guidelines to ensure all management and academic operations in colleges and universities adapting to the new norms and reduce physical contact. Online classes and distance learning has been taken placed in continuing the process of teaching and learning. Considering the recent changes, digital library offers contactless academic supports with online resources, facilities, and services, which would be explained more in the next section.

Digital Library

Digital library is the most appropriate library service practice that fits new norms best. Most of colleges and universities libraries already have their own digital libraries. A digital library generally provides digital access to documents and objects related to knowledge and learning. The terms "library without walls", "virtual library" and "electronic library" are often used in defining digital library. Xiangxing, Zhong, Shuguang and Chong (2008) defined collection of digital objects (text, video, and audio) along with method for access and retrieval, [as far as users are concerned] and for selection, organization, and maintenance. Digital objects resources however referred as a dynamic, growing organism that increase and expand with the line of the current technology development (Singh, 2018).

Agree with Jie and Bhao-Zhong (2012), digital library not merely offers digital collection but also involve a series of activities that bring together the collections, services, and people in supporting the full life cycle of creation, dissemination, use and presentation of date, information, and knowledge. Numerous types of information resources and services offer by digital library include information literacy online classes, webinars, live chat, online public

access catalogue, library mobile application services, subscribed online databases (e-books, e-journals, and e-theses) access, and many more.

Digital library in new norms increases access to library resources, facilities, and services without physical contact while online library services with new technology adoption bring huge benefits to users, as well as the librarians as the main controller. Next section will give details about online library services.

Online Library Services

The Covid-19 pandemic is a new challenge to library services. Academic libraries need to shift roles that previously focused on physical services to online services in order to meet the needs of library users during the pandemic. Academic libraries need to be creative to create services that can meet the needs of library users (Demir & Parachi, 2018). According to Shen and Chen (2014) online library services is define as a library services within a university online system which provides resources and databases to support distance learners to conduct research or to consult information. It is supported by Kasa and Abdulsalam (2020) opined that the situation of pandemic COVID-19 requires academic libraries to be more creative and even building synergy to learn more, become more equipped, and fast track using technologies. According to Dadhe and Dubey (2020), many libraries have significant online library services; expanding access towards e-resources and make use of open access resources, and there are some of them provide multi-mode access towards resources they have based on user's request. Therefore, academic libraries have sought and created creative changes on some services by transforming them to online services to make it easier for users to access library facilities and services.

The implementation of online services in academic libraries has made the library a one-stop center for teaching, learning and research activities in the university. It is in line with the requirements of the university that all teaching, learning and research processes to be implemented through online distance learning (ODL) and applied to the library services as well (Perpustakaan Tun Abdul Razak, 2020). Hence, several services such as consultation services, information literacy skills classes, book loans, fine payments and loan renewals have been transformed to meet these needs. This is in line with Leo (2020) reported that Chinese University of Hong Kong Library, in creative ways, conducting online teaching using Zoom Conference Meeting, and expanding library services; waived overdue fines, auto loan period, and auto-renewal items loan. Although, this has become a new norm, but it is not an obstacle to library services and even makes the academic library staff more motivated to perform such tasks.

The most physical library services affected during the pandemic include library reference and consultation services as well customer services. Social distancing gives a personal and professional challenges to library users and staffs (Walsh & Rana, 2020). Although, social distancing was a major obstacle during a pandemic, face-to-face services continued with the use of online medium such as online meetings and webinar sessions. For example, face-to-face consultation services. These services are continued online using live instant messaging using applications and social medias such as *WhatsApp Business, Telegram, Facebook Chat*. Most of academic libraries even set up their own real-time chat with various brands such *Ask Chat with Librarian, Chat with Librarian, Ask a Librarian Live* and many more (Diaz, 2020; Nor Edzan, 2020; Haerkoenen, Blackmore & Beadle, 2020; Radford, Costello & Montague, 2020; Walsh & Rana, 2020). Although this consultation services cannot be physically carried out and implemented online, it is beginning to gain attention and provide many advantages to library users.

While most physical library services were affected by the pandemic, online library services have provided more benefits to library users. Online library services greatly facilitate users in terms of time, place and cost. The online library service saves users time as users can get unlimited information at any time because it can be accessed 24 hours without requiring users to come to the library (Owusu-Ansah, Rodrigues & Van Der Walt, 2021). Perdana and Prasojo (2020) also mentioned that online library services provide an easy access to information as users can get the required information easily just by accessing the online library using equipment and devices. While Uzuegbu and McAlbert (2012) suggested that online library services are accessible over the Internet provide opportunities to advance knowledge and to dramatically improve the quality of life. Along with that and other benefits gained by users of online library services, online library services have become the focus of library users.

3. Methodology

This study used a document analysis to highlight the online library services initiatives. Bowen (2009) defines document analysis as a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic. Secondary data is used in this study through the PTAR UiTM Shah Alam official records. These include mission statements, monthly statistical reports, policy manuals and strategic plans. These documents are thoroughly reviewed to strategies the best practices and initiatives of online library services implemented in PTAR, UiTM Shah Alam. PTAR UiTM Shah Alam, is selected for this study as it plays an essential role in monitoring the implementation of online library services throughout all 38 branches of UiTM libraries in Malaysia during pandemic COVID-19.

4. Results and discussion

This section discusses the findings from this study by explaining the initiatives of online library services implemented by PTAR during the pandemic COVID-19.

4.1 PTAR during pandemic COVID-19

Malaysia government has taken quick responses towards this pandemic COVID-19 to protect citizens by announcing MCO at first phase, started on March 18, 2020. In response to curb the COVID-19 infection, UiTM has announced the closure of all the departments, including its 35 branches. However, Conditional MCO, which taken date on May 4, 2020, allow all sectors to resume business with restricted guidelines and regulations.

As many libraries closed, the challenges began to all library all around the world (IFLA, 2020). As one of UiTM department, Perpustakaan Tun Abdul Razak (PTAR) was quick to react towards this announcement by transforming its services towards digital library. Technology development in information and education industry since years ago make all initiatives ease. PTAR digital services, collections and process, which developed in-house from time to time, have been fully optimized during this pandemic COVID-19. However, PTAR librarians need to wisely restructure the strategies in term of library promotions and implementations to reach all universities members effectively. The chaos situation at first week MCO was managed promptly with the library operation guidelines and procedures that funneled to 38 UiTM libraries covering all branches through online meetings, emails and social medias. WhatsApp and emails being as the most frequent medium of communication used to deliver messages and information.

Several measures to prevent the spread of pandemics and the provision of library services were initiated by PTAR before the implementation of the MCO was enforced by the government. The preventive measures implemented by PTAR before the MCO came into force were to provide sanitation kits such as gloves and hand-sanitizer for the use of library staff and users. The process of decontamination and sanitation of counters as well as staff workspace is also done before the operation of the library service begins. Besides, PTAR also provides Standard Operating Procedure for library services in line with SOPs issued by the government, ministries and universities such as social distancing and cancellation of public assembly programs.

A few of PTAR staffs, were assigned to work from office to perform prescribed tasks during MCO and CMCO, while the rest working from home. Rotating schedule, by consent of UiTM authority, has been determined to ensure the only technical library operation teams which required physically presence were allowed to be in the library building. The PTAR head of departments, together with UiTM library branch leaders were responsible to manage library operations unceasingly reach users in order to support online teaching and learning in the university as well.

4.2 Online PTAR library services

One of the main departments that serve a core function in PTAR is a Library Services Department (*Perpustakaan Tun Abdul Razak*, 2020). Three main divisions under this core services at PTAR are Customer Service Division, Corporate Communications Division, and Research, Learning and Reference Division. However, other main departments in the library also playing essential roles to support the library operational services as well. Pandemic COVID-19 brings the transformation of the ways PTAR delivering these all services using online medium in order to assist university

members in conducting teaching, learning, research and innovation activities. The online service initially had a great impact as users could not physically go to the library to use the facilities and access the library collections.

In conjunction if implementation of ODL in UiTM academic system, the force of performing online services in the PTAR became compulsory. This situation has posed a challenge for libraries and users including teaching faculty and students (Mehta & Wang, 2020). PTAR librarians were required to equip themselves with skills in interacting with users thru online information literacy classes, being available at live chat, and doing frequent promotional awareness about online digital services, facilities and collection. Online library services development at PTAR is quite impressive since almost all online systems and digital resources have been developed in-house by PTAR technical team.

Since this health crisis occurred, PTAR has made the best effort in providing online library services. According to Nazri (2020), it was reported that PTAR's online library services nationwide has recorded an increase of 81 percent since the enforcement of the Movement Control Order. This positive usage increment motivates PTAR to perform better.

4.2.1   *Online Information Literacy Class*

Online Information Literacy Class (afterword called e-ILC) is one of the PTAR user education programs. The programs used to enhance library skills to the new students (Suleiman, 2012). It helps students to know various types of library facilities as well as library resources and services offered to user. Generally, eILC was conducted by librarian in physical classroom, face-to-face, and hands-on guide. However, during pandemic period and ODL mode of learning in UiTM, this class are organized and conducted via online to university members using online platform such as Google Classroom, Google Meet and Webex Meeting. In e-ILC, participants will learn on how to find research materials effectively from library resources.

For more effective and organized management of e-ILC, PTAR provides an online application and class management platform called *Sistem Kelas Kemahiran Maklumat* (eKKM) or Information Literacy Skill Class System. This system was developed to facilitate users to register for e-ILC. There are 11 modules are developed and offered to all users, including:

1)   LSC100: Introduction to Library System
2)   LSC101: Introduction to PTAR Electronic Resources
3)   LSC102: Online Databases for Literature
4)   LSC200: Advanced Literature Search I (Scopus: World's largest scientific database)
5)   LSC201: Advanced Literature Search II (Identify Collaborators Using Web of Science)
6)   LMS300: Library Management Software – Endnote
7)   LMS301: Library Management Software – Mendeley
8)   LMS302: Easy Write with Microsoft Word
9)   LSA400: Writing and Publishing
10)   LSA401: Open Access for Scholarly Publication
11)   LSA402: Google Scholar & Google Drive

4.2.2   *Online Reference and Consultation Service*

One of the crucial works for librarian is reference (Murray, 2016; O'Gorman & Trott, 2009). Yet much of the literature on face-to-face reference services in academic libraries describes moving away from a traditional sit-and-wait model (Riehman-Murphy & Hunter, 2019). There is no doubt that students need assistance using the library – from selecting sources to evaluating sources to using and producing information ethically – yet one of the primary modes of aiding students, the reference desk.

To answer queries from users, PTAR has provide a real-time, chat-based online reference service that allows users to ask questions directly to the librarian on duty. This live chat service application is called *Chat with Librarian* service. Live chat reference service allows users to ask questions in real-time. While the campus remains closed during the COVID-19 pandemic, reference librarians entertain this service remotely from 9:00am – 5:00pm every day. Offline chat would be answered by emails for the next day.

4.2.3   *Library Massive Open Online Courses (MOOCs)*

According to Rinne (2014) MOOCs comes from the fact that they allow students who are not enrolled to fully participate in the class for free – hence the "Open" aspect. In line to support online learning in the university, PTAR has developed Massive Open Online Courses or PTAR Online Learning known as MOOCs @ PTAR for users. PTAR Online Learning is one of UiTM library new services to support the Education 5.0 Initiative. MOOCs facilitate users in flexible online training and enable them to self-study for the Information Skills Class modules offered by PTAR. In an event of MCO, users who are not able to come to the library can enroll to MOOCs @PTAR for free. This is another alternative provided by PTAR for users who are unable to attend e-ILC. There are 8 modules offered in MOOCs @ PTAR which include:

1.   UiTM Institutional Repository
2.   Exam Paper System
3.   Online Database Subcribed by UiTM
4.   eBook Subcribed by UiTM
5.   MyLibrary Account
6.   Web of Science
7.   Reference Management Software - Endnote
8.   Reference Management Software – Mendeley

4.2.4   *Electronic Resources*

According to Sharma and Kumar (2018) an electronic resource is defined as a resource which requires computer access or any electronic product that delivers a collection of data, be it text referring to full text databases, electronic journals, image collections, other multimedia products and numerical and graphical or time based, as a commercially available title that has been published with an aim to being marketed. As online database subscription is the most expensive library resource, academic libraries need to take actions to intensify the use of e-resources during the pandemic to ensure the usage statistics are constantly increasing. The primary e-resources are in the form of proprietary online databases, e-books, e-journals and open access publications. It has been provided by the library through various platforms. Pandemic has provided great opportunities to promote library e-resources collection to students and the university community.

EZAccess is one of the library systems which has been developed years ago to locate all subscribed online databases and PTAR e-resources. Strictly to all UiTM members, PTAR has created more awareness using all promotional mediums for all university members in optimizing the usefulness of *EZAccess* in assisting teaching, learning, research and innovation activities.

During pandemic COVID-19, many publishers offer open access towards scholars' opinions, reviews and studies about the virus to encourage awareness, reading and research among societies as well as researchers to take part in seeking the solutions about COVID-19. PTAR effectively took this chance by listing the open access COVID-19 collection links at *EZAccess* for assisting university members to access that special collection from only one-stop-center.

Figure 1. (a) COVID-19 special collection poster; (b) PTAR online databases COVID-19 Special Collction

Other PTAR systems that facilitate users to access library electronic resources are: -

- WebOPAC (https://library.uitm.edu.my/opac.html)– To access book collection.
- Electronic Question Paper System - EQPS (https://koleksi.uitm.edu.my/eqps/) – To access past semesters examination papers.
- Institutional Repository (http://ir.uitm.edu.my/) – To access UiTM publications.
- MyKnowledge Management (https://mykm.uitm.edu.my/v2/) – To access personalized library information.
- Local Content Hub (http://localcontent.library.uitm.edu.my/) – To access collection by special subjects.

4.2.5   *Online Book Loan Service*

PTAR receives many enquiries regarding book loan during pandemic COVID-19. Due to this demand, PTAR offers the online book loan service for those who want to borrow books by requesting using online form and requested books will be delivered to their home by postage. The maximum amount of loans allowed is 10 books per user. Book loans due date period also are extended until end of the semester, and late fine would be waived. Users also can return book loan by postage; however, any risks in regard to postage issues are under users' responsibility.

4.2.6   *Online Library Outreach Program*

The librarian's duties are extended to promote library services and facilities through the Library Outreach Program. Although in times of pandemic, these promotional activities are intensified to library users with the aim that users are aware and alert of all services and facilities provided by the library. Liu (2013) highlights that outreach services have become an important aspect of overall library services because of their unique goal – the extension of library presence into new venues. These programs are primarily intended to convey information and raise awareness about the current and new services and facilities served by PTAR to the faculty members. Before pandemic, this program was conducted in a physical manner whereby library will go to the respective faculty and do a briefing. But now this program is conducted by using online platform like *Webex Meeting*, and *Google Meet*. However, using this online platform brought ease to all participants to join the program anywhere, everywhere.

5.   Conclusion

The COVID-19 pandemic has created a growing need for libraries to serve library users creatively in these specific situations. The results of this study show that academic libraries need to take proactive steps in providing library services in order to meet the needs of users. Despite the difficulties of physically delivering services, the online library services initiative strategy needs to be implemented immediately to prevent library services from being affected.

PTAR library online services highlight its potential by providing a wide range of free online services and high-quality content to UiTM members. The use of online library services is seen to be able to continue and grow rapidly in the future. Adoption of technology in library services creates opportunity and challenge to librarians and library professional to maximize the library resources and brings value to benefit all. Despite the global pandemic COVID-19, the functions and roles of the academic library will continue to be enhanced to support learning, teaching and research in universities.

Future studies on the use of online library services could be considered. This is to evaluate the level of effectiveness of its use by library users. Thus, it can provide insights to the library management to optimize the use of online library services and improve existing services in the future so that this initiative can have a significant impact on users.

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