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Facilitating Digital Needs: The Influence of Internet Offerings and Accessibility Initiatives on Internet Use Behavior Among Malaysian Students and Working Communities

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Abstract: The COVID-19 outbreak and the Movement Control Order (MCO) enforcement have rendered online activities essential. It is essential to emphasise the importance of providing essential internet services and initiatives for internet connectivity to all individuals and groups in Malaysia, enabling effective communication in the new normal. Therefore, this study examines the extent and impact of internet connectivity on the day-to-day routines of marginalised populations. The study aimed to gather data from 300 respondents by conducting surveys among primary, secondary, and tertiary education students and individuals from the working population who fall under low- and mid-income groups. The data were collected using offline and online survey questions to understand the disparities between urban and rural areas. This research finding supports the idea that internet services and efforts to improve accessibility influence people's behaviour when using the internet. The geographical location plays a substantial role in generating disparities between urban and rural regions. Age has a crucial role in shaping the connection between measures to improve internet accessibility and individuals' behaviour in using the internet. This research provides valuable insights into understanding the relationships between internet access options and measures to improve accessibility in emerging communication activities. As such, this research provides insights into the long-term preservation of digital inclusion and policymaking focused on establishing effective systems, services, and support to ensure internet accessibility. As such, this research sheds light on the importance of digital inclusion in rural and urban areas, considering different income groups.

Keywords: *Internet offerings, internet accessibility initiatives, internet use behavior, digital inclusion*

1. Introduction

Malaysians are devoting more time to using the Internet and showing their readiness to make online purchases due to restrictions on in-person shopping caused by the COVID-19 pandemic (Vasudevan & Arokiasamy, 2021). 97.1% of the population who use social networks also participate in other internet activities. Subsequently, individuals engage in activities such as acquiring images, movies, videos, or music (84.7%), participating in or acquiring games (84.7%), seeking information regarding goods or services (83.5%), conducting Internet/VoIP telephony (77.4%), and acquiring software or applications (77.1%) (Department of Statistics Malaysia, 2020). Furthermore, educational establishments are using virtual classrooms, and this phenomenon is anticipated to grow persistently. Students need help with e-learning, such as setting aside extra time for video preparation or online learning, insufficient internet connectivity, and expensive data packages (UNESCO-UNEVOC International Centre, 2020; Yeap et al., 2021). There has been a clear and significant rise in the amount of time Internet users have spent on online activities in 2020 compared to 2019. Consequently, the significance of infrastructures that enhance customers' capacity to utilise the Internet with better speed and connectivity has experienced a substantial rise.

The COVID-19 pandemic has necessitated the closure of schools and caused significant interruptions to school for billions of students across Malaysia. EdTech companies like Pandai, Anak2U, and AOneSchools employ technology and software to improve teacher-led instruction and promote student academic performance, going beyond the traditional physical school environment. According to the Malaysian Investment Development Authority (2020), Malaysia's e-commerce sector has a significant growth rate of 87%. Like other countries, Malaysia is adjusting to a new norm defined by digitalisation and internet connectivity. People are adjusting to the practice of remaining at home in response to the COVID-19 Movement Control Order (MCO). Participating in both job and school would present difficulties because of problems related to the availability and effective use of information and communication technology (ICT). Hence, the survey findings from this study will be

valuable in tackling current and future issues related to digital connectivity throughout the pandemic.

A predominant issue among rural inhabitants is the inadequacy of internet facilities and supporting infrastructure in educational institutions and public areas. A significant issue in this scenario is that not all individuals possess the financial resources to afford a subscription to fixed-line Internet, which provides a dependable connection and unrestricted data. In addition, they need more financial resources to obtain technologically advanced equipment or enter into an internet service arrangement. The seriousness of this issue is worsened by technical challenges, such as insufficient internet connectivity and limited data plans (Dawood et al., 2019; Azlan et al., 2021). Therefore, online lectures are not advantageous for students living in remote places and individuals who require complete involvement in online activities. The internet connectivity problem is frequently mentioned as a primary concern in Malaysia, especially in rural regions where 22% of the population lives (Worldometers, 2019). Internet services play a vital role in enabling online education and communication activities. However, there is a lack of research on the consequences of internet connectivity during the COVID-19 pandemic. The additional factors that may impact internet usage patterns in rural areas are still uncertain.

The government has made several efforts to tackle digital inequalities in rural regions during the Movement Control Order (MCO). The Jaringan Prihatin programme was launched as a component of the 2021 Budget, with an initial commitment of RM1.5 billion. This programme aims to offer subsidies for communication service subscriptions or the purchase of mobile devices to about 8.4 million Bantuan Prihatin Rakyat (BPR) participants. Recipients who meet the requirements for Jaringan Prihatin can choose between a package that includes a device or a bundle that offers a monthly data plan. Individuals categorised as B40 with children under 18 are eligible for an RM300 deduction on the device bundle or a monthly reimbursement of RM180 for 12 months. Individuals in the B40 category who do not have children can choose between receiving an RM180 reduction on the device bundle or a monthly rebate of RM180 on their data plan for 12 months (Arfa, 2021). Simultaneously, the Selangor government has implemented an online registration system for the Skim Internet Selangor M40 (SISM40). This comprehensive programme offers internet subsidies to persons in the M40 income bracket who are disproportionately affected. Menteri Besar Selangor Incorporated (MBI Selangor) has partnered with Telekom Malaysia Berhad (TM) to launch the SISM40 (TM). Through this campaign, the M40 group can choose from any of Unifi's eight Family, Singles, and Basic packages. According to New Straits Times (2021), they will be granted a discount ranging from RM10 to RM30 for 12 months. Although several programmes have been implemented, there has been a lack of emphasis on measuring the effectiveness of these initiatives for the intended groups and their ability to contribute to internet-related activities, especially during the COVID-19 pandemic.

Furthermore, implementing the Movement Control Order (MCO) has led to a transition towards carrying out most operational and non-operational tasks, such as education, commerce, and other transactions, via online platforms that utilise the Internet. This shift has led to the widespread and rapid increase of congested data streams. Service providers are essential in ensuring internet connectivity matches Malaysians' capabilities (Isa & Abdul Latiff, 2020). As reported by MCMC (2020a), the nationwide internet traffic witnessed a 23.5 per cent surge during the initial week of the MCO, followed by an additional 8.6 per cent rise in the second week. The substantial increase caused internet congestion, decreasing download speed (Syazwina, 2020). Mobile subscribers may experience decreased data speed, especially when there is a significant demand on the network due to network congestion. The limited network capacity or lack of bandwidth is the main reason for decreased speed. The limitation is also restricted by mobile devices' growing popularity and the wealth of multimedia content, such as video streaming and cloud services, which require a reliable and significant bandwidth capacity (Wahab et al., 2019).

Internet accessibility is crucial in the current epidemic and significantly impacts Malaysians' internet usage behaviours. It is especially crucial for employment, education, information retrieval, and socializing. Although many studies have shown the lack of internet connectivity in rural areas, researchers may overlook the same problem in urban areas because of internet capabilities and infrastructure availability. However, the widespread use of the Internet due to the COVID-19 pandemic could change the situation. Therefore, this study aims to improve the understanding of the relationship between internet access services and attempts to promote accessibility regarding internet usage patterns. The research will specifically address the challenges

that students and working individuals from the M40 and B40 socioeconomic groups face in their academic and professional pursuits, access to information, and social integration. This option allows for examining the discrepancy in digital inclusion between urban and rural residences.

2. Literature Review

Internet Use Behavior

Information communication technology has advanced, offering Malaysians additional opportunities to share knowledge and acquire information (Melhem & Tandon, 2009). The internet's widespread availability contributes to substantial advancements in society across multiple domains, including education, online social networking, information sharing, and other activities that streamline daily tasks (Singer et al., 2012; Bhiwgade & Bhiwgade, 2022; Lozano-Blasco et al., 2022).

The efficacy of virtual work and learning during the MCO is contingent upon the internet connection quality. An unreliable connection might lead to interruptions during live sessions, impacting the quality of job tasks or course delivery. This issue is particularly evident among students residing in remote regions with inadequate internet connectivity or lacking the financial means to buy costly monthly data subscriptions. These students heavily depend on pay-as-you-go internet access subscriptions (Azlan et al., 2020). This study examines internet usage trends about growing communication standards, particularly for work, education, obtaining information, and promoting social cohesion during the COVID-19 pandemic.

Internet Offerings

The increasing accessibility of gadget ownership and internet connectivity has profoundly affected the lives of several persons with consistent online access, irrespective of their geographical location (Selver, 2005). Users are provided with various internet product choices, such as mobile postpaid, prepaid, and broadband services. Based on the facts, internet offerings refer to services offered by service providers for business or personal use. It enables internet connectivity to consumers, allowing them to access the internet, participate in commercial operations, and interact with their family and friends. The pricing of this service is subject to variation depending on the diverse range of internet packages offered. The options include mobile prepaid, mobile postpaid, public Wi-Fi, and broadband. This study examined the correlation between the internet services offered by service providers and the internet usage behaviour of users.

Internet Accessibility Initiatives

However, most activities are conducted digitally throughout the MCO period, including meetings, seminars, lectures, and the trade of goods and services (Isa & Abdul Latiff, 2020). Therefore, the government and telecommunication service providers have introduced multiple incentives to meet the requirements and benefits of Internet users. Tan Sri Muhyiddin Yassin, the Prime Minister, introduced the People-Centric Economic Stimulus Package (PRIHATIN) on 27 March 2020. The Malaysian government presented an initiative of RM250 billion, as stated by MCMC (2020b). These incentives provide monthly financial support for data plans or the purchase of mobile device packages to those who receive Bantuan Prihatin Rakyat (BPR), married or single parents with children under 18 years old. Furthermore, numerous telecommunication providers have offered free internet-based education to pupils from the B40 socioeconomic group. Through online educational programmes, B40 students can receive free SIM cards with 40GB of data (MCMC, 2022). Both government entities and telecommunication operators are implementing numerous internet accessibility efforts. This study assessed the usability of the measures of participants' internet usage behaviour.

Age

In the contemporary period, the internet has had a profound influence on our daily lives, rendering digital literacy an essential component of children's growth in the present day. According to Othman, Fahrulrazy Rahim et al. (2019), the internet has become an invaluable resource for young people to research for their school assignments, communicate with others, participate in interactive games, and access their favourite songs and movies. Although older adults have traditionally been reluctant to adopt technological advancements compared to younger generations, many effectively overcome barriers to obtaining, utilising, and keeping pace with information and communication technologies, such as the Internet (Aggarwal et al., 2020). Hence, the difference between the older and younger study participants is that both groups could complete most activities

proficiently. However, older individuals need more steps to do them (Singer et al., 2012). Although there was an increase in internet usage among older individuals in 2017, it remains lower compared to younger age groups (Barbosa Neves et al., 2018). This study investigated the degree to which age can strengthen the correlation between online services and initiatives aimed at improving internet accessibility, precisely user behaviour.

Gender

Gender is a tool that helps reveal basic principles that can create expectations and unite a wide range of individual discoveries (Sun et al., 2020). Gender, as understood in social science, refers to how individuals conduct themselves and engage with others (Fleming & Agnew-Brune, 2015). The study by Raheem Ahmed, Hanif and Ahmed Meenai (2015) revealed that males mostly use the internet for downloading and purchasing, while females prefer messaging and social networking. According to the Internet Users Survey (IUS) by MCMCb (2020) conducted by the MCMC, 54.3 per cent of internet users in Malaysia are male, while 45.7 per cent are female. The gender gap in internet access could contribute to the existing disparities between men and women in their labour force participation, salaries, and access to financial services (International Monetary Fund, 2020). This study examined the relationship between gender and the influence of internet services and accessibility initiatives on internet usage behaviour.

Location

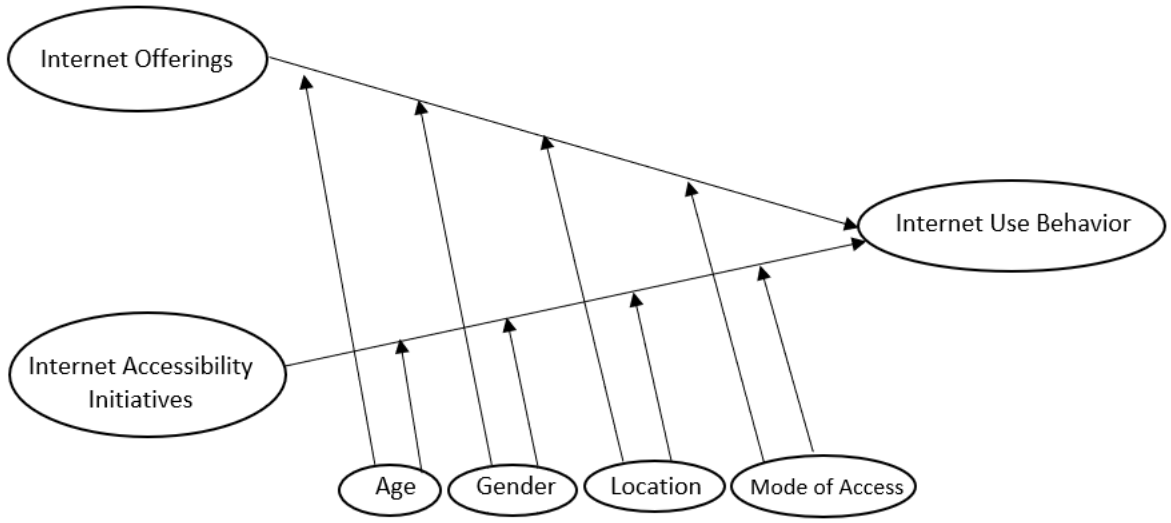
Lack of digital infrastructure and restricted access may hinder students' engagement in online classrooms and add complexity to their online learning experience (Selvanathan et al., 2020). In addition, the lack of internet access in rural areas leads to limited job opportunities (Berner et al., 2014), and the absence of a younger population has contributed to the underdevelopment of rural regions compared to urban areas. Urban Malaysians have quickly adopted digital technology, including platforms such as Lazada and Highland Fresh, for purchasing veggies and Grab for food deliveries, in contrast to rural areas (Gong, 2020). Nevertheless, in both urban and rural areas, it is prevalent for several devices and users within a household to lack the requisite speeds to participate adequately in educational or professional activities. This limitation arises because consumers may need to distribute their internet throughput or bandwidth across other nearby users, affecting the speed of their internet connection (Lai & Widmar, 2020). This study investigated the extent to which location can negate the relationship between internet services and initiatives aimed at enhancing accessibility in terms of internet usage behaviour.

Mode of Access

Laptops, cell phones, PCs, tablets, and house telephones are employed for online activities. Studies suggest that employed individuals are more likely to use their gadgets than those provided by their businesses (Rachmawati et al., 2021). In addition, students are strongly inclined to acquire technological devices such as personal computers, laptops, tablets, and mobile phones with internet access to enhance their learning methodologies. These educational methods and settings allow students to have the freedom to learn and build relationships with their teachers at any location of their choosing (Raheem Ahmed et al., 2015). This study investigated the potential impact of internet access methods on the interaction between internet offerings and accessibility initiatives, specifically regarding internet-using behavior.

The conceptual framework, shown in Figure 1, was developed based on a previous literature review. Age, gender, location, and mode of access were essential factors in shaping the behaviour of internet users and were therefore considered moderators in internet offerings and accessibility initiatives. The Social Exchange Theory underpins the conceptual framework, as postulated by Blau in 1964. Social exchange is a cooperative interaction between two or more individuals, where each participant possesses something of value to provide to others (Thibaut & Kelly, 1959; Homans, 1961). The transferred resources can possess an economic, social, or economic and social character (Miles, 2012). As a result of this transaction, societal consequences arise (Rudner, 1966). This study investigated the economic resources from internet services and accessibility initiatives while considering social resources as moderating factors. These interactions result in a social outcome, namely internet use behaviour and social character (Miles, 2012). As a result of this transaction, societal consequences arise (Rudner, 1966). This study investigated the economic resources from internet services and accessibility initiatives while considering social resources as moderating factors. These interactions result in a social outcome, namely internet use behavior.

Figure 1: Conceptual Framework



Source: Researcher

Based on the conceptual framework, the following are the main hypotheses derived for this research:

H1: Internet offerings positively influence internet use behaviour.

H2: Internet accessibility initiatives positively influence internet use behaviour.

H3: Age strengthens the relationship between internet offerings and accessibility initiatives towards internet use behaviour.

H4: Gender strengthens the relationship between internet offerings and accessibility initiatives towards internet use behaviour.

H5: Location strengthens the relationship between internet offerings and accessibility initiatives towards internet use behaviour.

H6: Mode of access strengthens the relationship between internet offerings and accessibility initiatives towards internet use behaviour.

3. Methodology

The study sample comprises working adults from the M40 and B40 income groups and students from the secondary and university levels in Negeri Sembilan. The B40 income group consists of individuals with a monthly household income below RM4849, while the M40 income group includes individuals with a monthly household income ranging from RM4850 to RM10,959 (Department of Statistics Malaysia, 2019). The study employed a quota sampling technique to ensure a representative sample of participants from urban and rural regions. Three hundred samples were collected from the working and student groups, consisting of sub-samples of 30 persons.

The questionnaires were distributed online and physically at universities and internet centres. The variable measurement items for internet offerings and internet accessibility initiatives are self-designed. Meanwhile, two items of internet use behaviour were self-designed, and the remaining thirteen measurement items were adapted from Al-Hariri and Al-Hattami (2015), Parker et al. (2020) and Figueroa et al. (2002). A scale ranging from 1- 'Strongly Disagree' to 2- 'Strongly Agree' was used for internet use behaviour, internet offerings and accessibility initiatives. Meanwhile, a nominal scale was used to calculate age, gender, location, and mode of access. The instruments were pre-tested by experts and participants representing the potential respondents.

4. Findings and Results

The preliminary analysis and the respondents' information were analyzed using SPSS. The Skewness and Kurtosis statistics for the items in this research were at an acceptable value of <3 And <10, respectively.

Profile of Respondents

Urban area respondents for primary students consist of 20% male and 13.3% female respondents, 18.9% male and 14.4% female respondents for secondary school students, and university students comprise 8.9% male and 24.4% female respondents. Meanwhile, responses for primary students in rural areas were 14.5% male and 18.9% female, 10% male and 23.3% female for secondary school students, and 8.9% male and 24.4% female respondents for university students. Respondents for M40 in urban areas are 13.3% male and 36.7% female. For B40, 11.7% of the population is male, and 38.3% is female. Meanwhile, M40 in rural areas had 28.3% male and 21.7% female respondents, and B40 had 25% male and female respondents. The student respondents range from the age of 8 to 42 years old. Meanwhile, there were 120 total working group respondents, with 12.5% males and 26.7% females from urban areas and 37.5% males and 23.3% females from rural areas. The working group respondents are those aged 18 to 58 years and above.

Inferential Data Analysis

This research employed SEM-PLS with Smart PLS Version 3 to examine the hypotheses.

Measurement Model

Evaluating reflective measurement models involves assessing composite reliability to measure internal consistency, individual indicator reliability, and average variance extracted (AVE) to assess convergent validity. Discriminant validity is assessed using the Fornell-Larcker criterion, cross-loadings, and the Heterotrait-Monotrait (HTMT) ratio, as Hair, Hult, Ringle, and Sarstedt (2017) outlined. The convergent validity and discriminant validity for this research are as follows.

Convergent Validity

Four items that did not meet the specified criteria have been removed. The remaining elements for outer loadings satisfy the minimal threshold value of 0.4 (Hulland, 1999) and have an AVE score greater than 0.50 (Fornell & Larcker, 1981). In this research, the reliability is typically measured using Cronbach's alpha (CA) and composite reliability (CR). The threshold value for reliability is similar to CR, which should be 0.7 or higher to indicate sufficient convergence or internal consistency. Table 1 shows that these values are acceptable (Ramayah, Cheah, Chuah, Ting, & Memon, 2018).

Table 1: Convergent Validity for Measurement Model

Construct	Items	Loadings	CA	CR	AVE
Internet Offerings	IOa	0.815	0.864	0.907	0.71
	IOb	0.891			
	IOc	0.855			
	IOf	0.807			
Internet Accessibility Initiatives	PI1	0.908	0.939	0.954	0.804
	PI2	0.920			
	PI3	0.861			
	PI4	0.906			
	PI5	0.888			
Internet Use Behavior	IUB1	0.606	0.874	0.892	0.51
	IUB2	0.695			
	IUB4	0.766			
	IUB5	0.675			
	IUB6	0.817			
	IUB7	0.708			
	IUB8	0.781			
	IUB9	0.635			

Discriminant Validity

The results shown in Table 2 indicate that the square roots of the Average Variance Extracted (AVE) for each construct are higher than the correlations among the latent constructs. Therefore, the discriminant validity of all the notions is deemed satisfactory according to the criterion established by Fornell and Larcker (1981). In addition, discriminant analysis was performed by comparing the cross-loadings among constructs. The findings of this study indicate that the indicators demonstrate a strong association with their respective constructs while showing a weak association with other constructs, as proposed by Ramayah et al. (2018). The presence of discriminant validity suggests that the conceptions are distinct from one another.

Table 2: Discriminant Validity (Fornell & Larcker)

Latent Variable	1	2	3
Internet Offerings (1)	**0.843**		
Internet Use Behavior (2)	0.219	**0.714**	
Internet Accessibility Initiatives (3)	0.237	0.235	**0.897**

Structural Model

There are seven constructs in this research, which consist of internet offerings, accessibility initiatives, internet use behavior, age, gender, location, and mode of access, that were assessed in the structural model. All the Inner VIF values for the independent variables (Internet Offerings and Accessibility Initiatives) are less than 5 overall, specifically for students and working groups. Thus, it indicates that collinearity is not a concern (Hair et al., 2017). The analysis of confidence intervals, bias, and bootstrapping results revealed that zero does not straddle between the confidence intervals, indicating a statistically significant result.

This research evaluates the significant effects stated in the model of the research (Figure 1). It was shown in Table 3 that the effect of (location) IO -> L-> IUB ($p< 0.05$) and PI -> L-> IUB ($p< 0.01$) was highly statistically significant and influenced internet use behavior. Additionally, (internet offerings) IO -> IUB ($p< 0.05$) and (internet accessibility initiatives) PI -> IUB ($p< 0.05$) were significant and influenced internet use behavior. Therefore, H1, H2 and H5 were supported. However, H3 is partially supported. The effect of (age) IO -> A -> IUB ($p> 0.05$) was not significant in influencing internet use behavior. Meanwhile, PI -> A -> IUB ($p< 0.05$) was significant and influenced internet use behavior.

Furthermore, Table 3 shows the insignificant relationships, which are explained as follows: (gender) IO -> G -> IUB and PI -> G -> IUB were not significant ($p> 0.05$) in influencing internet use behavior. In addition, (mode of access) IO -> MOA -> IUB and PI -> MOA -> IUB were also not significant ($p> 0.05$) in influencing internet use behavior. Therefore, H4 and H6 were not supported.

In addition, Table 4 shows a significant relationship among students' groups for (internet accessibility initiatives) PI -> IUB and IO -> L -> IUB ($p < 0.05$) in influencing internet use behavior. Besides that, (internet offerings) IO -> IUB ($p<0.01$) was highly statistically significant and influenced internet use behavior among working groups (refer to Table 5).

For this research, the R-square value of internet offerings and accessibility initiatives influencing internet use behavior is 0.083 (overall), 0.09 (students' group) and 0.134 (working groups). Besides the two-predictor variables, adding the moderating variables (age, gender, location, mode of access), as well as the dependent variable (internet use behavior), contributed to the value of 0.165 (overall), 0.188 (students' group), and 0.267 (working groups) R-Square.

Table 3: Structural Model Assessment (Overall)

Hypotheses	Path	Standard Beta	Standard Error	T Value	P Values	Decision
H1	IO -> IUB	0.173	0.064	2.721	0.003*	Supported
H2	PI -> IUB	0.194	0.09	2.152	0.016*	Supported
H3	IO & PI-> A-> IUB					Partially Supported

H3a	IO -> A -> IUB	0.053	0.069	0.766	0.222	Not Supported
H3b	PI -> A-> IUB	-0.132	0.069	1.914	0.028*	Supported
H4	IO & PI-> G-> IUB					Not Supported
H4b	IO -> G -> IUB	0.021	0.066	0.324	0.373	Not Supported
H4b	PI -> G-> IUB	0.066	0.072	0.918	0.18	Not Supported
H5	IO & PI-> L-> IUB					Supported
H5a	IO -> L -> IUB	-0.123	0.061	2.016	0.022*	Supported
H5b	PI -> L-> IUB	0.2	0.078	2.553	0.005**	Supported
H6	IO & PI-> MOA-> IUB					Not Supported
H6a	IO -> MOA -> IUB	0.047	0.055	0.852	0.197	Not Supported
H6b	PI -> MOA-> IUB	-0.05	0.049	1.018	0.155	Not Supported

Note: IUB = Internet Use Behaviour; IO = Internet Offerings; PI = Internet Accessibility Initiatives, A = Age; G = Gender; L = Location; MOA = Mode of Access
*p < 0.05 and **p < 0.01

Table 4: Structural Model Assessment (Student Group)

Hypotheses	Path	Standard Beta	Standard Error	T Value	P Values
H1	IO -> IUB	0.079	0.149	0.533	0.297
H2	PI -> IUB	0.265	0.155	1.705	0.044*
H3	IO & PI-> A-> IUB				
H3a	IO -> A -> IUB	0.022	0.118	0.183	0.428
H3b	PI -> A-> IUB	-0.117	0.094	1.249	0.106
H4	IO & PI-> G-> IUB				
H4b	IO -> G -> IUB	-0.001	0.088	0.011	0.495
H4b	PI -> G-> IUB	0.035	0.122	0.284	0.388
H5	IO & PI-> L-> IUB				
H5a	IO -> L -> IUB	-0.208	0.13	1.597	0.055*
H5b	PI -> L-> IUB	0.143	0.103	1.381	0.084
H6	IO & PI-> MOA-> IUB				
H6a	IO -> MOA -> IUB	-0.031	0.086	0.359	0.36
H6b	PI -> MOA-> IUB	-0.017	0.081	0.214	0.415

Note: *p < 0.05 and **p < 0.01

Table 5: Structural Model Assessment (Working Group)

Hypotheses	Path	Standard Beta	Standard Error	T Value	P Values
H1	IO -> IUB	0.31	0.083	3.732	0.000**
H2	PI -> IUB	0.139	0.122	1.139	0.128
H3	IO & PI-> A-> IUB				
H3a	IO -> A -> IUB	-0.092	0.135	0.68	0.248
H3b	PI -> A-> IUB	-0.093	0.148	0.628	0.265
H4	IO & PI-> G-> IUB				
H4b	IO -> G -> IUB	0.016	0.112	0.146	0.442
H4b	PI -> G-> IUB	0.115	0.117	0.986	0.162

H5	IO & PI-> L-> IUB				
H5a	IO -> L -> IUB	-0.083	0.1	0.837	0.201
H5b	PI -> L-> IUB	0.111	0.122	0.906	0.183
H6	IO & PI-> MOA-> IUB				
H6a	IO -> MOA -> IUB	0.075	0.092	0.818	0.207
H6b	PI -> MOA-> IUB	-0.054	0.087	0.622	0.267

Note: *p < 0.05 and **p <0.01

Cohen's (1988) study determined that effect sizes of 0.02, 0.15, and 0.35 correspond to small, medium, and large magnitudes, respectively. The research followed these principles, and the effect sizes of the latent constructs in the structural model are displayed in Table 6. Table 6. In general, and particularly for working groups, there was a minimal impact on internet usage behavior. However, it was shown that internet offerings, gender, and mode of access had no impact on the internet use behavior of the student group.

Table 6: Effect Size (f^2)

Path	f^2	Degree of Effect Size		
		Overall	Student Group	Working Group
Internet Use Behaviour				
Internet Offerings (IO -> IUB)	0.031	Small	No effect	Small
Internet Accessibility Initiatives (PI -> IUB)	0.039	Small	Small	Small
Moderating Effects				
Age (IO & PI-> A-> IUB)	0.025	Small	Small	Small
Gender (IO & PI-> G-> IUB)	0.01	Small	No effect	Small
Location (IO & PI-> L-> IUB)	0.043	Small	Small	Small
Mode of Access (IO & PI-> MOA-> IUB)	0.03	Small	No effect	Small

Discussion

The accessibility of Internet services has a beneficial impact on individuals' behaviour regarding their Internet utilisation. Upon further investigation, it is evident that Internet services (0.031) have little impact on developing the R2 for Internet Use Behaviour. However, after comparing the two groups (students and working groups), notable disparities were noticed that impact the connection between Internet Offerings and Internet Use Behaviour. The association between internet services' availability and internet usage behaviour is statistically significant at a high level. These data indicate that internet offerings are crucial for facilitating internet-related activities among the M40 and B40 working population segments. In contrast, student groups frequently depend on their parents or guardians to provide them with internet subscription services, leading to a divergent trend. These results indicate that the Internet is essential amidst the epidemic, particularly for the working class (B40 and M40). Regardless of age or profession, including students and employed individuals, the Internet has become essential for these groups due to the government-enforced Movement Control Order (MCO) during the COVID-19 epidemic. Therefore, the specific internet services individuals subscribe to can considerably influence their online conduct, especially regarding activities like employment, education, accessing information, and socialising.

Internet accessibility measures have a favourable impact on internet usage behaviour. The Internet accessibility initiatives (0.039) had little influence on the formation of the R2 for Internet Use Behaviour. This value demonstrates that internet accessibility initiatives have minimal impact on students and the M40 and B40 working groups. Nevertheless, comparing the student and working adult categories demonstrated that notable disparities exist between the B40 and M40 subgroups. These disparities impact the correlation between attempts to enhance internet accessibility and the behaviour of internet usage. The likely reason for these findings can be linked to the fact that a substantial percentage of students are engaging in online learning during the length of the Movement Control Order (MCO). Consequently, the students rely extensively on Internet accessibility initiatives to help ease the difficulties of consuming large amounts of data at home or

accessing Internet facilities. No notable discrepancies were seen between the working groups, consisting of M40 and B40. This outcome can be attributed to the onset of tasks by the groups at work and their utilisation of the office's internet resources throughout the duration. Regardless of the availability of internet accessibility initiatives, it is imperative for those in the M40 and B40 working groups, as well as school-age and university students, to meet their academic and employment commitments. Therefore, it encompasses the necessity of utilising the Internet for remote work and the essentiality of Internet connectivity for educational objectives. Therefore, the Internet has become an essential requirement for these specific individuals.

In addition, the results suggest that the age variable has a limited impact on internet usage behaviour. The analysis suggests that age has a negligible impact (0.025) on the generation of the R2 for Internet Use Behaviour. This value suggests that age does not substantially influence students and employed adults in the M40 and B40 groups. The impact of age on the relationship between internet accessibility initiatives and internet usage behaviour has diminished; however, it remains relevant for internet offers. One possible reason for this difference could be the varying degrees of reliance that students and working groups have on Internet services and accessibility initiatives. Upon comparing the student and working groups, it was found that there were no significant differences between the B40 and M40 groups. These inequalities did not affect the association between age, internet offerings, internet accessibility initiatives, and internet use behaviour. During the COVID-19 Movement Control Order (MCO), people of various age groups, such as students and working professionals, have distinct requirements for internet subscriptions and internet-accessible programs.

The study findings indicate that gender does not substantially influence the relationship between internet offerings and accessibility initiatives in shaping internet usage behaviour. The study suggests that gender (0.01) has the least significant impact on the R2 value for Internet Use Behaviour. This value demonstrates that gender has a minimal impact on students and the M40 and B40 working groups. Gender did not influence the relationship between internet services and accessibility initiatives on internet use behaviour. Overall, the goal of achieving reliable internet connectivity for online activities, regardless of specific subscription plans or measures to improve internet access, remained the same for both genders. However, upon analysing the group of students and working adults, it was concluded that there are no significant distinctions between the B40 and M40 groups regarding how gender affects the impact of online offers and accessibility initiatives on internet usage behaviour. Hence, gender did not play a substantial role in distinguishing the purpose and significance of internet accessibility during the COVID-19 MCO era.

The statistical analysis demonstrates that the association between internet offers, accessibility initiatives, and internet use behaviour is significantly impacted by location. Nevertheless, it has been determined that the location variable (0.043) minimally impacts the R2 value for internet use behaviour. The observed results can be attributed to the uniformity of internet usage patterns and infrastructure in urban and rural regions. However, when comparing the students and working adults groups, significant differences were identified between the B40 and M40 groups. These inconsistencies impact the relationship between geographic location, internet services, efforts to improve accessibility, and internet usage patterns. The study has discovered that students' geographic location significantly influences the relationship between internet services and their use. This discovery indicates that the availability of internet services can vary depending on the geographical location, which can subsequently affect the internet usage behaviour of students.

Moreover, this study found that internet services and accessibility initiatives had an identical impact on internet usage behaviour, regardless of online access mode. The results suggest that the Internet access mode (0.03) has a minimal effect on the R2 value for Internet Use Behaviour. The value demonstrates that the mode of access has minimal effect on the students and the working groups of M40 and B40. The results of this study indicate that over 96% of participants are inclined to use mobile phones to access the Internet. The difference can be ascribed to the restricted usage of alternative internet connection means, such as laptops, desktops, and feature phones. Furthermore, by thoroughly comparing the groups of students and working individuals, it was concluded that there are no significant disparities between the B40 and M40 groups. These disparities do not influence the relationship between the mode of accessing Internet services and their influence on individuals' behaviour when using the Internet.

5. Conclusion and Recommendations

To summarise, this research strengthens the idea that Internet services and efforts to improve accessibility influence the behaviours of individuals when using the Internet. The findings suggest that location contributes to the differences between urban and rural areas. Moreover, age has a crucial role in shaping the connection between measures to improve internet accessibility and individuals' behaviour in using the Internet. Furthermore, the research has advanced our understanding that engaging in online accessibility activities significantly enhances internet usage behaviour and primarily benefits students. Moreover, this study focuses on the discrepancy in internet utilisation between urban and rural regions during the COVID-19 pandemic, which has now become the norm. Prior studies have conventionally focused on the limited Internet accessibility in rural areas and may have overlooked the same problem in urban areas. The empirical findings in this research provide insights into the insufficient internet accessibility, which may also be lacking in urban settings. The information indicates that slight disparities exist between urban and rural areas. The primary policy focus must be to strategize for the long-term provision of digital inclusion in Malaysia. Prioritising the establishment of suitable infrastructure, services, and support for internet accessibility is essential in policymaking in rural and urban areas. Conversely, telecommunications providers are crucial in facilitating access to suitable and affordable internet services for users of different ages and disadvantaged groups, particularly students and low-income individuals.

Nevertheless, it would be interesting to examine the reactions of students and working groups in the aftermath of the COVID-19 outbreak. Furthermore, the factors of online offerings and internet accessibility initiative programmes, along with moderating variables such as age, gender, location, and mode of access, accounted for 16.5% (R2 value) in explaining internet use behaviour among students and working groups. The data indicates that the remaining 83.5% of internet use behaviour can be attributed to other variables. However, this research found that the independent and moderator variables could account for around 26.7% (R2) of internet use behaviour in working groups. This research model is more effective for working groups than for students. Hence, this observation might be further explored and expanded to encompass other states in Malaysia and other Asian nations to provide further validation.

Thus, it is geared towards obtaining more comprehensive insights into the extent of digital inclusiveness in both urban and rural regions. In addition, future research should investigate internet accessibility ideas related to users' aptitude, socioeconomic status, limited literacy, digital literacy, and motivation to access information technology. Furthermore, the presence of adequate infrastructure and amenities in both urban and rural regions, as well as the level of knowledge and education in technology, will significantly facilitate the improvement of internet connectivity. In addition, it has been determined that the impact of internet offers and accessibility activities on internet usage behaviour is not substantial when considering certain moderator variables, particularly gender and mode of access. Therefore, additional moderators could be introduced to enhance the interaction. This research focuses on the behaviour of individuals using the Internet in study/work, information searching, and online social contact. Furthermore, it can be further examined from the standpoint of social services, healthcare, online retail, banking, and online formal communications.

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