Factors Influencing Consumer Purchase Intention and Adoption Onwards of 5G Mobile Phone in Malaysia

Wong Chee Hoo[1,6], Lim Shuk Ping[2], Syed Far Abid Hossain[3], Ye Jia[4], Dzuljastri Abdul Razak[5]

Abstract

The use of 5G technology signifies a significant progression in mobile telecommunications, offering improved speed, connection and efficiency. The objective of this research is to determine the variables that impact customer purchase intention and subsequent adoption of 5G mobile phones, specifically from the viewpoint of popular shopping platforms in Malaysia. The theoretical framework can be found pursuant to the Technology Acceptance Model (TAM) and the Diffusion of Innovations (DOI) theory. Utilising quantitative surveys to collect extensive data from a varied sample of Malaysian customers who are Shopee subscribers. A total of 413 samples was successfully collected using convenience sampling of Malaysians in the Klang Valley. Findings suggest that factors such as perceived ease of use, subjective norm, and attitude serve a crucial role in determining purchase intention. The online purchasing of 5G mobile phones is greatly influenced by both intention and actual behaviour. The study emphasises the need of using targeted marketing tactics that specifically target these diverse characteristics. Online merchants and mobile phone manufacturers may greatly boost customer trust and adoption rates by improving user experience, offering comprehensive product information, and implementing strong security measures. The study offers vital information for competitors seeking to take advantage of the continuously growing 5G industry in Malaysia.

Keywords: *Consumer behaviour; consumer purchase intention; consumer adoption; diffusion of innovation theory; technology acceptance model.*

Introduction

This study examined the determinants of customer adoption of 5G Mobile Technology in the Malaysian context. According to Statista (2020), the average download speeds for 5G varied from 50.9 Mbps in the United States to 414.2 Mbps in Saudi Arabia. The average download speeds for 5G in 2020 were between 1.4 and 14.3 times higher than those for 4G.

5G and 4G are both mobile network technologies, but they have several key differences. In the speed, 5G is significantly faster than 4G by 10 times providing a huge capacity for fast data. For frequency, 4G uses frequencies below 6 GHz, while some 5G networks use higher frequencies, like around 30 GHz or more. These high frequencies support a large capacity for fast data. The technology of 4G uses LTE technology, which is primarily based on transmitting data using radio waves. In contrast, 5G networks utilize a combination of radio waves and high-frequency millimetre waves, enabling faster data transfer and lower latency. As of capacity, 5G can support over 1,000 more devices per meter than what's supported by 4G. Moreover, 5G networks' latency is much lower than 4G networks, meaning data can be transferred with minimal delay. While the coverage of 4G networks has widespread coverage, 5G is still in its early stages of deployment and may have limited coverage in certain regions. These differences make 5G a telecommunications game-changer, promising lightning-fast downloads, real-time streaming, and supporting the Internet of Things (IoT) with its massive device capacity.

Shopee is one of the leading e-commerce platforms in Southeast Asia and Taiwan, with over 200 million active users and 300 million downloads as of 2020. Shopee offers a wide range of products, including mobile phones and accessories, and provides various features and services to enhance the online shopping experience, such as live chat, flash sales, and free shipping. Shopee also has a strong presence in Malaysia, ranking as the most visited e-commerce site and the most downloaded shopping app. According to a report

---
[1] 1Associate Professor, Faculty of Business and Communications,INTI International University, Nilai, Malaysia; 6Faculty of Management, Shinawatra University, Thailand. Email id: cheehoo.wong@newinti.edu.my ORCID ID:0000-0003-0691-4463
[2] MBA Student, Faculty of Business and Communications, INTI International University, Nilai, Malaysia. Email id: i2202376@student.newinti.edu.my
[3] Assistant Professor, International University of Business Agriculture and Technology, BRAC University, Dhaka, Bangladesh, Dhaka. Email id:syed.farabid@bracu.ac.bd ORCID ID:0000-0003-0729-1456
[4] Faculty of Liberal Arts, Shinawatra University, Thailand. Email: ye.j@siu.ac.th
[5] Sanata Dharma University, Indonesia.

by Shopee, Malaysia has one of the highest smartphone penetration rates in the region, with 88% of the population owning at least one smartphone. Moreover, Malaysia is one of the first countries in Southeast Asia to launch 5G services, with the government aiming to achieve nationwide 5G coverage by 2023.

Given the high smartphone penetration and the availability of 5G services in Malaysia, there is expected to be a growing demand for 5G phones among Malaysian consumers. However, adopting 5G phones may not be as straightforward as various factors may influence consumer behaviour and preferences. These factors may vary across different segments of consumers, such as age, gender, income, education, and location. Therefore, it is essential to identify and analyze the factors that influence consumer intention towards adoption of 5G phones in Shopee, as it can help marketers and policymakers to develop effective strategies and policies to promote and facilitate the adoption of 5G Mobile Phones in Malaysia. This study explores the determinants of customer adoption of 5G Mobile Technology in the Malaysian context. This chapter briefly summarises the research problem, objectives and the related research questions. It also discusses the importance of the research and its objectives, questions, and hypotheses.

This research paper aims to explore the novelty of factors influencing consumer purchase intention and adoption of 5G mobile phones through e-commerce platforms in the Malaysian market. Despite the potential benefits of 5G, its intention to purchase by consumers is not guaranteed, as many factors may influence their behaviour and decision-making. These factors may include perceived value, perceived risk, perceived ease of use, perceived usefulness, subjective norm, and attitude. These factors may vary across different segments of consumers, such as age, gender, income and location. In conclusion, the attitudes of consumers play an essential part in the formation of their acceptance of 5G phones. Businesses and legislators alike need to put focused initiatives into action in order to foster positive attitudes and encourage the widespread adoption of 5G technology.

Research Objectives

1. To examine the influence of perceived value on consumer intention towards adoption of 5G phones on Shopee.

2. To examine the influence of perceived risk factors on consumer purchase intention of 5G phones on Shopee.

3. To examine the influence of perceived ease of usefulness on consumer purchase intetion of 5G phones on Shopee.

4. To examine the influence of subjective norms on consumer purchase intention of 5G phones on Shopee.

5. To examine the influence attitude on consumer purchase intention of 5G phones on Shopee.

6. To examine the influence of consumer purchase intention on consumer adoption of 5G phones on Shopee.

Literature Review

The advent of 5G technology marks a transformative era in the realm of mobile communication, offering unparalleled speed, capacity, and connectivity for users worldwide. Characterized by significantly higher data transfer rates and lower latency compared to its predecessor, 4G, 5G mobile phones promise to revolutionize the way individuals interact with technology. According to a report by the International Telecommunication Union (ITU), the population coverage by type of mobile network from year 2015 to 2020 as shown in figure above showing that 4G has occupied and gradually increasing the population coverage. The average download speeds for 5G varied globally, ranging from 50.9 Mbps in the United States to an impressive 414.2 Mbps in Saudi Arabia (ITU, 2020). This substantial leap in download speeds, often 1.4 to 14.3 times higher than those of 4G, translates to faster data transfer, real-time streaming, and enhanced overall user experiences (ITU, 2020).

The extent to which people in Malaysia are adopting mobile phones with 5G connectivity is illustrative of the country's commitment to digital transformation and technical advancement. Malaysia has made significant progress towards the deployment of 5G networks, which can be attributed to the substantial

financial commitments made by both the public and private sectors. According to a study published by the Malaysian Communications and Multimedia Commission (MCMC), Malaysia is making concerted efforts to achieve nationwide coverage by 5G technology by 2025. As a result of this new breakthrough, Malaysia has become one of the first countries in Southeast Asia to implement the 5G technology (MCMC, 2021). This strategic endeavour is in agreement with the main purpose of the Malaysian government, which is to create the nation of Malaysia as a centre for digital technology in the surrounding region.

The ability of consumers in Malaysia to acquire 5G mobile phones is significantly aided by the proliferation of e-commerce platforms, with Shopee in particular playing a pivotal role in this regard. The huge online marketplace that is Shopee is an important venue for individuals to investigate and obtain a broad selection of 5G-enabled smartphones because monthly it has more than 8.65 million unique users in Malaysia visited the platform as of 2022 (Factory, 2023). The incorporation of user-friendly interfaces, live messaging, and flash sales into the platform all contribute to an overall improvement in the 5G adoption experience.

Consumer Usage Intention towards 5G Mobile Phones

The consumer's intention to utilise 5G mobile phones is a vital component in determining whether or not this cutting-edge technology will actually be accepted and incorporated into everyday life. A beneficial insight into the customers' desire to embrace and use the transformational possibilities given by 5G technology can be gained by gaining an awareness of the elements that influence the intention to use something. According to the Technology Acceptance Model (TAM) that was introduced by Davis (1989), the perceived usefulness of technology has a significant impact on the intentions of consumers to accept it. Studying how customers feel about 5G mobile phones lends themselves particularly well to the use of this paradigm.

As of 2021, the rate of adoption of 5G technology has been astounding. This has been made possible by its ability to completely revamp mobile user experiences. Customers' inclination to adopt 5G mobile phones is highly influenced by their view of the usefulness of these devices, which includes characteristics such as quicker data transfer, lower latency, and higher connectivity, according to the research carried out by Zhang et al. (2021). This finding was emphasised in the study that was carried out. According to the findings of the survey, consumers are more likely to adopt 5G technology if they believe it will provide them with tangible benefits that are tailored to their own requirements and preferences. Study on awareness, attitude, and intention of Malaysians to register as organ donors was recently done by Abdullah et al. (2023).

Perceived Value

Research by Ltifi (2018) on the influence of consumer behaviour on 5G mobile phones is significantly impacted by perceived value, which includes the subjective evaluation of the advantages and disadvantages linked to the adoption of this cutting-edge technology. The perceived value of 5G is intrinsically tied to consumers' assessments of whether the tangible and intangible benefits of 5G outweigh the associated costs. The International Data Corporation (IDC, 2019) reports that 5G smartphones have been widely adopted on a global scale, indicating that consumer interest in these devices is increasing.

Attaran (2023) refer to the evolution of mobile communication above, the advantages of 5G are evaluated by consumers in relation to enhanced connectivity, reduced latency, and expedited data transmission; these aspects substantially augment the perceived worth of 5G mobile phones. The influence of marketing strategies on the way in which consumers perceive value is critical. Perceived value is increased through effective communication of the advantages and promotional campaigns that highlight the positive effects of 5G on the daily lives of users (Shah et al., 2023). Within the highly competitive telecommunications sector, service providers are required to effectively communicate the distinctive value propositions that their 5G offerings offer in comparison to pre-existing technologies.

Perceived Risk

Perceived risk plays a vital role in shaping consumer behaviour when it comes to adopting 5G mobile phones. It refers to the uncertainties and potential bad outcomes that are connected with accepting this new technology. Consumers' impressions of the transition from 4G to 5G are significantly influenced by concerns regarding potential risks. Ha and Stoel (2017) found that consumers' adoption intentions for 5G are negatively influenced by their perception of risk. This highlights the importance of addressing these

concerns in order to achieve effective adoption of 5G technology.

Technical ambiguity is a major contributor to perceived risk. The implementation of 5G brings forth innovative technological characteristics, such as elevated frequency bands and intricate infrastructural demands. Consumers may raise apprehensions regarding the stability and dependability of these emerging technologies. It is crucial to guarantee the smooth incorporation and operation of 5G networks in order to reduce technological risks (Deng et al., 2018).

Health-related concerns have a key role in the perceived risk associated with 5G technology. Although there is limited scientific evidence supporting the idea that 5G poses health risks, public perception and worries over electromagnetic radiation and its possible health impacts continue to exist (Meese et al., 2020). Efficient dissemination of information and instruction pertaining to the security of 5G networks are crucial in mitigating these health-related apprehensions.

Perceived risk is a complex concept that includes various factors such as technical uncertainty, security concerns, health-related anxieties, financial considerations, and social influence (Alrawad et al., 2023). Recognising and actively resolving these concerns are essential for establishing customer trust and promoting a favourable outlook on the implementation of 5G technology.

Perceived Ease of Usefulness

The perceived ease of usefulness is a crucial determinant of consumer behaviour when it comes to adopting 5G mobile phones. It refers to the extent to which customers perceive the ease and simplicity of utilising 5G technology, as well as the perceived benefits received from its utilisation. When people evaluate the shift from 4G to 5G, their perception of how easy and beneficial it is plays a crucial part in determining their attitudes and intents. Venkatesh et al. (2003) conducted a study that found that users' acceptance of technology is greatly influenced by their perception of how easy and useful it is. This highlights the significance of perceived ease of usefulness in the context of adopting 5G technology.

The incorporation of 5G technology into daily activities and apps significantly amplifies the perceived convenience and effectiveness. For instance, the enhanced data transmission rates and reduced latency of 5G facilitate the adoption of real-time applications, such as augmented reality (AR) and virtual reality (VR), which provide users immersive experiences. Conveying the practical and pleasant features of 5G technology is crucial in influencing favourable impressions of its ease of utility (Miao et al., 2020).

Social effects, such as endorsements from acquaintances, relatives, and virtual communities, can play a role in shaping the perception of convenience and effectiveness. Favourable reviews and feedback from initial adopters might assuage apprehensions and foster assurance in prospective consumers. Hence, employing marketing methods that utilise favourable social impacts can amplify the perceived simplicity and effectiveness, thereby promoting the adoption of 5G technology (Hair et al., 2019).

Subjective Norms

The significance of subjective norms in the consumer behaviour regarding the adoption of 5G mobile phones cannot be emphasised enough. They pertain to the influence that the opinions and actions of others have on an individual's decision-making capacity. In order to perform a thorough examination of the aspects that impact customer behaviour during the implementation of 5G technology, it is crucial to acknowledge and tackle subjective norms.

Another element encompassed by the term "subjective norms" is the influence exerted by one's peers, particularly noticeable among younger individuals (Yen et al., 2019). Young consumers frequently exhibit a strong sense of connectivity with their peer networks and are susceptible to being influenced by the technology adoption behaviours of their friends and peers. Young consumers frequently demonstrate strong connectedness within their peer networks. Hossain et al. (2021) suggest that people may feel compelled to align their technology preferences with those of their peers because of a strong need for social approval and the fear of being left out (FOMO).

Celebrities and prominent individuals have the capacity to greatly alter the subjective norms associated with 5G. Kumar et al. (2018) argue that the optimistic outlook on 5G technology is strengthened by the support and positive experiences of influential individuals. Efficient marketing tactics must consider the influence

that influencers wield in shaping subjective norms.

Attitude

The adoption decisions of consumers are significantly influenced by their sentiments towards 5G mobile phones. Attitude, as a psychological category, encompasses individuals' comprehensive assessments and emotional responses towards the adoption of 5G technology. Gaining insights into the determinants that mould and impact consumer sentiments is crucial for marketers and regulators aiming to facilitate the extensive adoption of 5G technology.

The perceived value of the technology is a key factor in shaping customer attitudes towards 5G. As previously said, the perceived value refers to the advantages and disadvantages linked to the implementation of 5G. A study conducted by Liébana-Cabanillas et al. (2019) emphasises that a favourable attitude towards 5G is influenced by a good assessment of its value proposition, which encompasses faster data rates, reduced latency, and enhanced quality. Consumer views are influenced by the accessibility and availability of 5G services and infrastructure. The presence of reliable network coverage, smooth transitions between several network generations, and the incorporation of 5G technology into everyday tasks contribute to an improved perception of 5G technology, promoting a favourable attitude (Lee et al., 2020).

The gaps found in the existing literature highlight the necessity for detailed studies on the demographic aspects of consumer behaviour, a long-term examination of changing consumer attitudes, a more thorough analysis of influencer dynamics, and an evaluation of the impact of regulations and policies. By addressing these gaps, we may enhance our understanding of the various aspects that influence consumer behaviour towards 5G mobile phones. This will provide valuable insights for industry stakeholders and policymakers, leading to a more practical and complete approach.

The Technology Acceptance Model (TAM), introduced by Fred Davis in 1989, serves as a foundational framework for understanding users' acceptance of information technology. At its core, TAM posits that users' attitudes and behavioural intentions towards adopting a technology are shaped by two key factors: perceived ease of use (PEOU) and perceived usefulness (PU) (Davis, 1989). Perceived ease of use refers to the user's perception of how effortless it is to interact with a particular technology, while perceived usefulness relates to the user's belief that the technology will enhance their performance or effectiveness.

Diffusion of Innovation Theory

The Diffusion of Innovation Theory, pioneered by Everett Rogers, has seen ongoing relevance in contemporary studies, adapting to the changing dynamics of communication and technology adoption. In recent years, its application has expanded beyond traditional contexts. Rutsaert et al. (2013) explored the use of social media in food risk and benefit communication, demonstrating the theory's adaptability to emerging communication channels. This study illustrates the ongoing relevance of the Diffusion of Innovation Theory in understanding the spread of information and innovations in the digital age (Rutsaert et al., 2013; Ali, 2024). Cheng, Rice, and Shao (2018) delved into the role of social media in the diffusion process, highlighting the theory's applicability to understanding how innovations are communicated and adopted through modern online platforms. Their work emphasizes the importance of considering contemporary communication channels in the diffusion process (Cheng et al., 2018).

In conclusion, the combination of TAM and the Diffusion of Innovation Theory offers a comprehensive understanding of the factors influencing consumer behaviour in the specific context of purchasing 5G mobile phones on Shopee. TAM delves into individual perceptions and attitudes, while the Diffusion of Innovation Theory broadens the perspective to consider social dynamics and adoption stages within the online community, creating a robust theoretical foundation for the research.
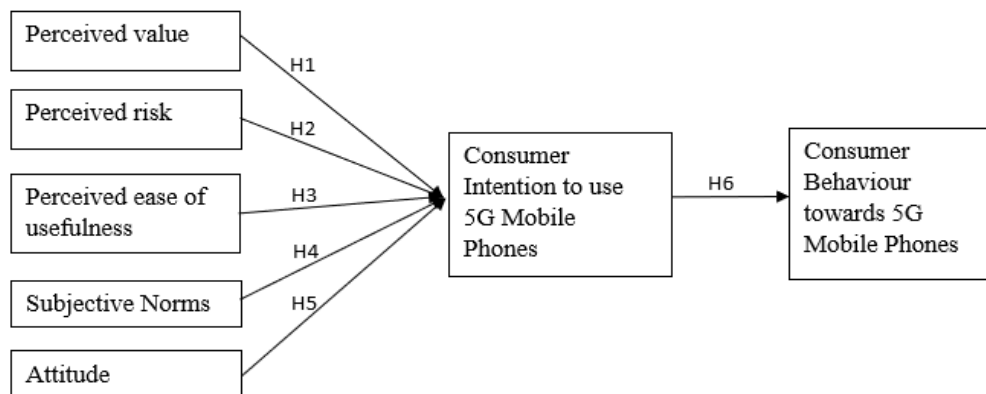
Cconceptual Framework

Figure 1. Proposed research framework.

Development of Hypothesis

H1: The relationship between Perceived value and Consumer intention to use 5G Mobile Phones

Users with a better perception of the utility of 5G mobile phones are likely to have a stronger inclination to utilise these phones. The study conducted by Sun, Duan, and Xu (2019) examined how consumers' propensity to utilise 5G services is influenced by their perception of value. The study revealed a notable and favourable correlation between the perceived value and the propensity to utilise 5G services among Chinese consumers. This is consistent with the hypothesis that when users perceive a greater value in 5G technology, they are more inclined to indicate a willingness to utilise it.

Furthermore, a worldwide investigation conducted by Ericsson Consumer Lab (2020) emphasised that customers' inclination to embrace 5G technology was significantly impacted by perceived advantages, such as enhanced data speed and reduced latency. This evidence supports the notion that the perceived value, which includes the advantages, has a significant impact on influencing customer intentions towards 5G technology.

H1: There is a significant relationship between Perceived value and Consumer intention to use 5G Mobile Phones.

H2: The relationship between Perceived risk and Consumer intention to use 5G Mobile Phones

Individuals who have a greater awareness of the potential risks linked to 5G mobile phones are likely to have a decreased inclination to utilise these devices. Zhang, Wang, and Han (2018) conducted a study to investigate how customers' adoption of 5G technology is affected by their perception of risk. The study discovered an inverse correlation between the perception of risk and the inclination of customers to embrace 5G services. More precisely, the presence of technical problems, security vulnerabilities, and potential health hazards were seen as elements that increase the perceived level of risk, resulting in a reduced willingness to adopt 5G technology.

Furthermore, a recent study conducted by Statista in 2021 emphasised that consumers have substantial concerns regarding the perceived health risks linked with 5G technology. This evidence supports the notion that perceived risks, including as health-related concerns, are highly influential in determining customer attitudes and intentions towards 5G technology.

H2: There is no significant relationship between Perceive Risk and Consumer intention to use 5G Mobile Phones.

H3: The relationship between Perceived ease of usefulness and Consumer intention to use 5G Mobile Phones

Users who perceive a higher level of convenience and practicality in 5G mobile phones are likely to demonstrate a stronger inclination to utilise these phones. The study conducted by Li, Wu, and Yao (2018) examined the influence of individuals' perception of the ease of using 5G technology on their inclination to adopt it. The study revealed a notable correlation between the perceived simplicity of use and the consumers' inclination to embrace 5G services. More precisely, the perceived ease of use of 5G technology directly impacted consumers' intention to adopt it.

In a study conducted by Kim, Park, and Jeong (2019), the researchers also examined how customers' intention to use 5G services is influenced by their perception of how easy it is to utilise these services. The results suggested that individuals who evaluated 5G technology as user-friendly were more inclined to demonstrate a favourable inclination to embrace it.

H3: There is a significant relationship between Perceived ease of usefulness and Consumer intention to use 5G Mobile Phones.

H4: The relationship between Subjective Norms and Consumer intention to use 5G Mobile Phones

Users who are positively impacted by subjective norms regarding the adoption of 5G mobile phones are likely to have a stronger propensity to utilise these phones. The study conducted by Yu and Yu (2017) investigated the impact of subjective norms on consumers' inclination to embrace 5G technology. The study discovered a direct correlation between subjective norms and customers' inclination to embrace 5G services. More precisely, the favourable impact exerted by peers, family, and friends had a substantial influence on moulding individuals' inclinations to embrace 5G technology.

In addition, a study conducted by Lee, Kim, and Kim (2020) investigated the influence of subjective norms on consumers' acceptance of 5G mobile communication services. The results suggested that those who received favourable attitudes and expectations from their social network were more inclined to exhibit a positive inclination towards adopting 5G services.

H4: There is a significant relationship between Subjective Norms and Consumer intention to use 5G Mobile Phones

H5: The relationship between Attitude and Consumer intention to use 5G Mobile Phones

Users with a favourable disposition towards 5G mobile phones are anticipated to exhibit a stronger inclination to utilise these devices. A study conducted by Ajzen and Fishbein (2018) examined the pivotal role of attitude in the Theory of Planned Behaviour, highlighting the importance of favourable attitudes in influencing behavioural intentions. This psychological theory posits that having a favourable attitude towards a behaviour is a robust indicator of the desire to engage in that behaviour.

A study conducted by Sun, Duan, and Xu (2019) examined the factors that impact consumers' acceptance of 5G mobile phones within the context of 5G technology adoption. The results suggested that individuals who held a favourable outlook towards 5G technology were more inclined to have a favourable inclination to embrace 5G services.

H5: There is a significant relationship between Attitude and Consumer intention to use 5G Mobile Phones

H6: To predict consumer behaviours towards 5G mobile phones from Perceived value, Perceived risk, Perceived ease of usefulness, Subjective Norms and Attitude.

Consumer behaviours about 5G mobile phones can be forecasted by considering a combination of factors such as perceived value, perceived risk, perceived ease of use, subjective norms, and attitude. In a study conducted by Venkatesh, Thong, and Xu (2016), the importance of perceived value, perceived risk, and perceived ease of use in influencing users' behavioural intentions in the context of technology adoption was emphasised. The study proposed that these elements jointly contribute to forecasting consumer behaviours. Liu, Wang, and Yang (2019) conducted a study that focused on the adoption of 5G technology. The study aimed to examine the factors that influence consumers' intention to embrace 5G services. The results indicated that the perception of value, risk, convenience of use, subjective norms, and attitude collectively had a substantial impact on consumer behaviours towards 5G mobile phones.

Research Methodology

The study focuses on Shopee users in Malaysia and utilises a purposive selection technique to ensure a representative sample. Online surveys collect data on individuals' perceptions of value, risk, convenience of use, subjective norms, attitude, and intentions as consumers. The text elaborates on the procedures used for collecting and analysing data, including sample design, study design, research tools, data collection techniques, construct measurement, and measurement scale. The research technique utilises statistical analysis, specifically regression analysis, to ensure the collecting and interpretation of data follows established standards. This approach provides a systematic framework that retained rigorous and reliable results (Taherdoost, 2021).

The acquired data will be processed using the Smart Partial Slightest Squares (PLS) version 4 for data cleansing. In order to expand the target audience, the research were disseminated by Google Forms to Shopee subscribers. The current study's response rate cannot be determined as the interface for the studies is transmitted and conveyed through social media platforms and email. A total of 473 responses were obtained through the distribution of the Google Form. Out of the total number of replies (N=413), only 87.30% were deemed acceptable after data screening. This is because the filtering process eliminated 60 respondents. Subsequently, the 413 valid data points (Krejcie, & Morgan, 1970) were inputted into Smart PLS 4 for the purpose of data cleansing.

Findings

Demographic Profile of Respondents

The demographic characteristics of the respondents can be found in Section 2 of the questionnaire. This section comprises four (4) questions including 1 filtering question pertaining to gender, age, income and whether having purchasing experience of mobile phone from Shopee.

Table 1. Demographic Profiles (N=413).

Gender	Frequency	Percent (%)
Male	161	38.98
Female	252	61.02
Total	413	100.00
Age	Frequency	Percent (%)
18 - 24 years old	64	15.50
25 - 34 years old	287	69.49
35 - 44 years old	20	4.84
45 - 54 years old	21	5.08
55 and above	21	5.08
Total	413	100.00
Income group	Frequency	Percent (%)
B40: 0 - 4,849	204	49.39
M40: 4,850 - 10,959	178	43.10
T20: 10,960 and above	31	7.50
Total	413	100.00
Income group	Frequency	Percent (%)
B40: 0 - 4,849	204	49.39
M40: 4,850 - 10,959	178	43.10
T20: 10,960 and above	31	7.50
Total	413	100.00

Table 1 depicted the gender distribution of the respondents. Out of the entire sample, 161 respondents were male, making up 38.98% of the total. The other 252 respondents (61.02%) were female. A greater proportion of females participated in the study compared to females. Based on the data presented in Table 1, it can be observed that there were 64 participants (15.50%) in the age range of 18 to 24 years. The largest proportion of participants, specifically those within the age range of 25 to 34 years, constituted 69.49% of the entire sample. Followed by 20 participants (4.84%) in the age range of 35 to 44 years, and 21 participants (5.08%) in the age range of 45 to 54 years. There were 21 participant who was 55 years old and above in this study, representing only 5.08% of the entire sample. The income group of the 413 respondents in this survey is illustrated based on statistical findings, 204 participants, which is 49.39% of the total sample is belong to B40 income group of RM0-RM4,849. Subsequently, there were 178 individuals who falls under M40 income group of RM4,850-RM10,959 occupied 43.10% of the total. Out of the total respondents, 31 individuals (7.50%) was under income group of T20 which was RM10,960 and above.

Measurement Model

According to the study conducted by Hair et al. (2021), the external loadings of each indication with values exceeding 0.708 for each development were deemed appropriate. However, referring to Figure 4.5 and Table 4.5 indicate that the external loadings ranged from 0.265 to 0.934. Hence, not all indications are included in this research.

Table 2 displays the Average Variance Extracted (AVE) value for each construct. Based on the research conducted by Hair et al. (2021), the minimum acceptable threshold for the average variance extracted (AVE) is 0.5. Furthermore, a construct is considered to account for 50% or more of the variability in its constituent elements if its Average Variance Extracted (AVE) value is equal to or exceeds 0.5 (Hair et al., 2021). The consumers' adoption demonstrates the maximum level of convergent validity in this study, as indicated by the AVE value of 0.856. However, the AVE of Perceived Value is rejected as 0.274 is below the acceptable threshold.

Table 2. Summary of constructs reliability and validity.

Variables	Indicators	Outer Loadings	Composite Realiability (rho_c)	AVE
Perceived Value	PV1	0.639	0.574	0.274
	PV2	0.684		
	PV3	0.277		
	PV4	0.378		
Perceived Risk	PR1	0.265	0.751	0.467
	PR2	0.804		
	PR3	0.536		
	PR4	0.929		
Perceived Ease of Usefulness	PEOU1	0.705	0.910	0.719
	PEOU2	0.889		
	PEOU3	0.883		
	PEOU4	0.898		
Subjective Norms	SN1	0.495	0.855	0.606
	SN2	0.848		
	SN3	0.870		
	SN4	0.839		
Attitude	Att1	0.791	0.917	0.735
	Att2	0.883		
	Att3	0.865		
	Att4	0.887		
Consumer Intention to use	CI5G1	0.893	0.907	0.709
	CI5G2	0.879		
	CI5G3	0.807		
	CI5G4	0.784		
Consumer's Adoption	CA5G1	0.934	0.931	0.870
	CA5G2	0.932		

Table 2 presents a concise overview of the reliability and validity of the construct. It includes important measures such as indicator loadings, Cronbach's Alpha, composite reliability (rho_a), composite reliability (rho_c), and average variance extracted. Reading of more than p.7 is acceptable Cronbach,1951).

Discriminant Validity

The significance level of the heterotrait-monotrait ratio (HTMT) of the relationship for the evaluation model . The HTMT threshold value, as stated by Ab Hamid et al. (2017) can disclose the discriminant validity of a study; a value below 0.85 is regarded as cautious, while a score below 0.90 is acceptable (.

Structural Model Assessment

Table 3. Coefficient of Determination Result.

Constructs	R-square	R-square adjusted
Consumer Intention to use	0.62	0.616
Consumer's Adoption	0.902	0.902

Table 4.11 shows the coefficient of determination ($R2$) for the internal constructs Consumer Intention to use (CI) and Consumer's Adoption (CA). Both the $R2$ and modified $R2$ values in CI and CA are acceptable, according to the threshold value suggested by Hair et al (2021). CI has a moderate influence size, as indicated by its $R2$ value of 0.620 and adjusted $R2$ value of 0.616. This suggests that the external factors PV, PR, PEOU, SN and Att explained 62% of the variance in consumer intention to use 5G mobile phone, with the remaining 38% explained by variables not included in this study. In contrast, the CA construct had a bigger impact size, with the $R2$ value and adjusted $R2$ value of 0.902. This means that consumer adoption accounted for 90.2% of the variation in consumer intention to use, with the remaining 9.8% explained by characteristics removed from the current study.

Path Coefficient

Table 4. Path Coefficient Result.

Hypothesis	Relationship	Path coefficients (β)
H1	PV > CI5G	0.009
H2	PR > CI5G	-0.005
H3	PEOU > CI5G	0.409
H4	SN > CI5G	0.253
H5	Att > CI5G	0.206
H6	CI5G > CA5G	0.950

The path coefficient (β) between endogenous and exogenous variables was presented in Table 4. The PLS path model connecting consumers intention to use (CI5G) and consumers' adoption (CA5G) was illustrated in Figure 4.7. Mohamed et al. (2018) state that the path coefficient value typically falls within the range of 0.1 to 0.5 or greater.
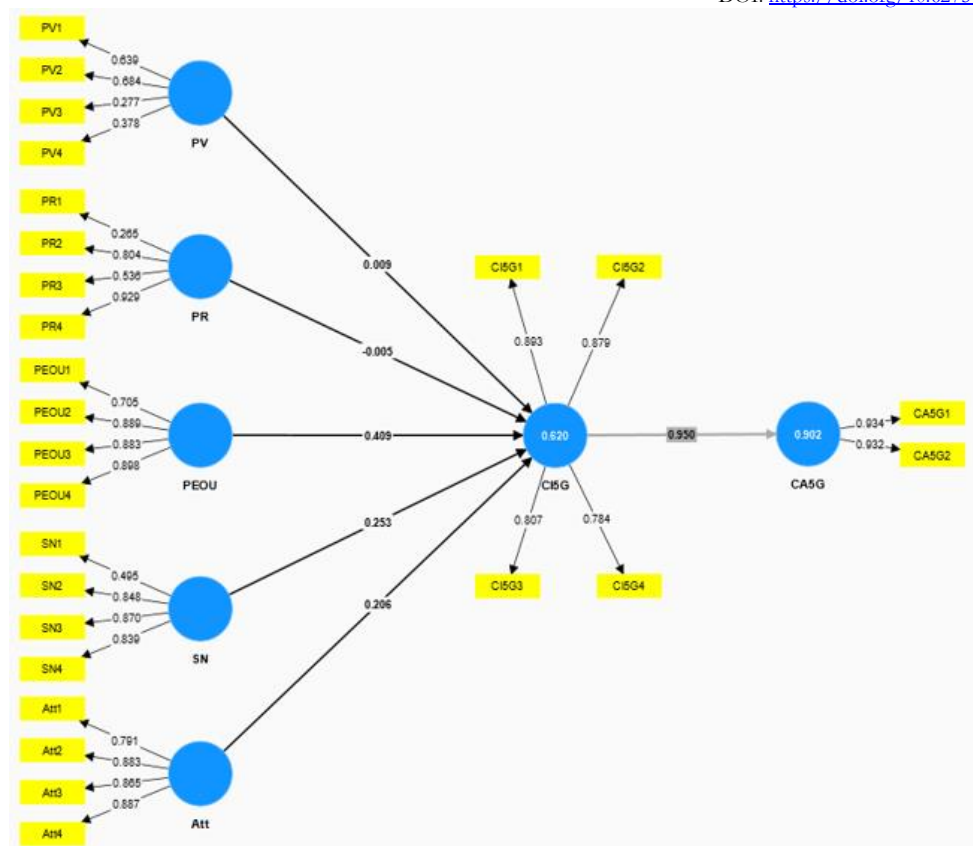
Figure 2. Path Model.

The construct representing consumers intention to use exhibited the highest path coefficient value of 0.950 in relation to consumers' adoption, as indicated in Figure 2.

Conversely, with respect to the consumer intention to use, perceived ease of usefulness exhibited the most substantial path coefficient value of 0.409 among the independent variables. In addition, it should be noted that the path coefficient values for four hypotheses relationships (H3, H4, H5, H6) exceeded 0.1, which is the threshold value suggested by Mohammad et al. (2018). As a result, four hypotheses met the minimum criterion value of 0.100 ($\beta \geq 0.1$) except H1 perceived value and H2 perceived risk that the value are 0.009 and -0.005, respectively have the least impact on consumer usage intention.

Table 5. Hypothesis testing result.

	Path coefficients (β)	Sample Mean (M)	Standard deviation (STDEV)	T statistics ($|O/STDEV|$)	P values	Interference
H1: PV > CI	0.009	-0.003	0.047	0.195	0.845	Not Significant
H2: PR > CI	-0.005	0.001	0.038	0.140	0.889	Not Significant
H3: PEOU > CI	0.409	0.403	0.066	6.147	0.000	Significant
H4: SN > CI	0.253	0.252	0.048	5.319	0.000	Significant
H5: Att > CI	0.206	0.207	0.054	3.800	0.000	Significant
H6: CI > CA	0.950	0.950	0.005	197.113	0.000	Significant

Hypothesis testing is to collect data from a sample and assess if it offers sufficient evidence to reject the null hypothesis in favour of the alternative hypothesis (Biswal, 2023). Table 5 shows that four out of the

six hypotheses had a significant link with their respective external variables. The study shows that the four expected path connections have p-values below 0.05, indicating that the external factors (PEOU, SN, and Att) are statistically significant in relation to consumers' adoption, with a p-value of 0.000. H1 and H2 are both hypothesis out of the six that do not show significant correlation with the endogenous variable of consumer adoption. The path coefficient for the hypothesised relationship between PV and CI was 0.009, with a p-value of 0.845 and a t-statistic of 0.195; while the path coefficient for the hypothesised relationship between PR and CI was -0.005, with a p-value of 0.889 and a t-statistic of 0.140 . CI predicts CA, while PEOU, Att, and SN predict CI. PV and PR does not predict CI. The path coefficient is 0.009, the t-statistics value is -0.003, and the p-value is 0.845, indicating that the relationship between PV and CI (H1) is not significant. The path coefficient of -0.005, t-statistics value of 0.140 and p-value of 0.889 shows that there is no relationship between perceived risk and consumer intention to use (H2). The connection between PEOU and CI (H3) is statistically significant, as indicated by a path coefficient value of 0.409, a t-statistic value of 6.147, and a p-value of 0.000, which exceeds 0.05. Hypothesis 4, which examines the relationship between subjective norms and customers intention to use is supported by a positive path coefficient of 0.253, a t-statistic value of 5.319, and a p-value of 0.000. The relationship between attitude and consumer intention to use (H5) is statistically significant, as indicated by a path coefficient of 0.206, a t-statistics value of 3.80, and a p-value of 0.000. The relationship between CI and CA is well supported by statistical evidence, with a path coefficient of 0.950, a high t-statistic value of 197.113, and a p-value of 0.000. In summary, four hypotheses have been accepted and supported, while only two has been denied. The structural model analysis confirmed the approval and acceptance of H3, H4, H5, and H6. This chapter has thoroughly introduced and analysed the research model using inference. The descriptive analysis looked at the demographic data and general statistics of the respondents, while the inferential analysis focused on the outcomes of the evaluation and structural models. The reliability and validity of all indicators were assessed using the measurement model, and no items were excluded. Moreover, the structural model analysis confirmed the approval and acceptance of hypotheses H3, H4, H5, and H6.

Discussions and Conclusion

This research aims to examine the factors that impact consumer adoption of 5G mobile phone in Malaysia. After gathering data from all respondents, six hypotheses were proposed in this study, and the findings are outlined in Table 6. The table displays the summary of mediator test results.

Table 6. Summary of Hypothesis testing results.

Hypothesis	Value Scored	Result
H1: There is a significant relationship between Perceived Value and Consumer intention to use 5G Mobile Phones.	β = 0.009 p = 0.845	Rejected
H2: There is a significant relationship between Perceived Risk and Consumer intention to use 5G Mobile Phones.	β = -0.005 p = 0.889	Rejected
H3: There is a significant relationship between Perceived Ease of Usefulness and Consumer intention to use 5G Mobile Phones.	β = 0.409 p = 0.000	Supported
H4: There is a significant relationship between Subjective Norms and Consumer intention to use 5G Mobile Phones.	β = 0.253 p = 0.000	Supported
H5: There is a significant relationship between Attitude and Consumer intention to use 5G Mobile Phones.	β = 0.206 p = 0.000	Supported
H6: There is a significant influence effect of consumer intention to use towards adoption of 5G Mobile Phones.	β = 0.950 p = 0.000	Supported
H7: To predict perceived value, perceived risk, perceived ease of usefulness, subjective norms and attitude towards consumer intention	p = 0.845 p = 0.889	Rejected

to adopt 5G mobile phones.		

This research aims to examine the Factors Influencing Consumer Intention Towards Adoption of 5G Mobile Phone in Shopee, Malaysia. After collecting data from all respondents, a total of six hypotheses have been proposed in this study, and the findings are summarised in Table 5.1. The mediator test findings are presented in Table 5.2.

Findings of Hypothesis

H1: There is a significant relationship between Perceived Value and Consumer intention to use 5G Mobile Phones.

Table 5.1 shows that the p-value for perceived value is 0.845 and the β coefficient is 0.009. This indicates a negative correlation between perceived value and consumer intention to use. These findings having conflict with previous research conducted by Ltifi (2018), Attaran (2023), Kim (2017) and Shah et al., (2023), which indicate that perceived value has significant impact to consumer intention to use 5G mobile phones. To challenge the idea that there is a positive correlation between perceived value and consumer willingness to use 5G mobile phones, it is crucial to examine the research methods and explore other possible explanations based on empirical data and theoretical models. Although the study did not identify a significant link between perceived value and intention to use, it is crucial to recognise potential limits in measuring perceived value and consumer intention. The Technology Acceptance Model (TAM) posits that perceived value plays a significant role in determining the desire to adopt technology. Based on methodological critiques, contextual factors, alternative explanations, and empirical evidence from relevant studies, it is justifiable to argue that there is a connection between perceived value and consumer intention to use 5G mobile phones (Ltifi, 2018; Attaran, 2023; Ali et al., 2023).

H2: There is a significant relationship between Perceived Risk and Consumer intention to use 5G Mobile Phones.

According to the findings in Table 5.1, perceived risk has no impact on consumer intention to use 5G mobile phones. This can be explained by the p-value of -0.005 which is lower than 0.05. Hence, H2 is rejected. It is crucial to consider these results in the wider context of consumer behaviour research. Consumer behaviour is intricate and can be impacted by several aspects, some of which may not always be accounted for or completely comprehended through statistical analysis alone. The p-value shows the probability of detecting the data if the null hypothesis is correct, but it does not explain the reasons for the observed connection, or lack of it, between perceived risk and consumer intention. The conclusion that perceived risk does not affect customer desire to adopt 5G mobile phones in this scenario may be influenced by unaccounted elements in the investigation. The assessment instrument used to evaluate perceived risk may not completely capture all the subtle aspects of risk perception related to 5G technology. Furthermore, variations in participants' characteristics, including their previous technological exposure or risk tolerance, can impact their views and decisions in ways that statistical analysis may not account for (Paek and Hove, 2017).

H3: There is a significant relationship between Perceived Ease of Usefulness and Consumer intention to use 5G Mobile Phones.

Based on the Table 5.1, the p-value showing for the Perceived Ease of Usefulness is 0.000. It illustrated that there is a significant impact between Perceived Ease of Usefulness and Consumer intention to use 5G Mobile Phones. It shown that consumer use intentions have a substantial effect on consumers' adoption when it comes to 5G mobile phones in Malaysia. These findings align with previous research indicating that consumers' intention to use has a positive impact on their adoption of 5G mobile phone (Shah et al. 2021). In this study, H3 hypothesis is accepted.

H4: There is a significant relationship between Subjective Norms and Consumer intention to use 5G Mobile Phones.

Based on the findings from Table 5.1, the p-value for Subjective Norms is 0.000, indicating a significant relationship between Subjective Norms and Consumer intention to use 5G Mobile Phones. This suggests that individuals' decisions to adopt 5G technology are significantly influenced by the opinions and actions of others. Previous research by Hossain et al. (2021) has consistently shown the impact of subjective norms on technology adoption behaviours. Specifically, subjective norms are shaped by recommendations, perspectives, and shared experiences within social networks, including influences from family, peers,

celebrities, and industry experts. Therefore, the acceptance of the H4 hypothesis underscores the importance of considering social factors in promoting the adoption of 5G technology

H5: There is a significant relationship between Attitude and Consumer intention to use 5G Mobile Phones.

The p-value for Attitude in Table 5.1 is 0.000, suggesting a substantial correlation between Attitude and Consumer desire to adopt 5G Mobile Phones. Consumers' attitudes towards 5G technology have a huge impact on their willingness to use 5G mobile phones.

Previous studies by Venkatesh et al. (2017), Liébana-Cabanillas et al. (2019), Li et al. (2018), and Lee et al. (2020) found different aspects influence customer views towards 5G technology. Perceived ease of usefulness, subjective norms, and the accessibility and availability of 5G services are key factors that influence consumer sentiments. These results emphasise the need to tackle consumer attitudes and concerns regarding 5G technology to encourage a positive attitude among potential users. Marketers and regulators can promote a positive perception of 5G technology by highlighting its advantages, addressing technical issues, utilising social influences, and guaranteeing the reliability and accessibility of 5G services. This approach can help in the successful implementation and acceptance of 5G. The adoption of the H5 hypothesis highlights the importance of customer attitudes in influencing the intention to use 5G mobile phones.

H6: There is a significant influence effect of consumer intention to use towards adoption of 5G Mobile Phones.

In the present study, Hypothesis H6 was confirmed as true. This was backed by a substantial β-value of 0.950 and a noteworthy p-value of 0.000, demonstrating that consumer intention has a major impact on the adoption of 5G mobile phones in Malaysia. Several research have shown that the intention to use has a notable effect on the actual adoption behaviour. Venkatesh et al. (2003) discovered that users' intention to use a technology significantly impacts their actual usage behaviour. Liébana-Cabanillas et al. (2019) emphasised the significance of intention in forecasting the actual uptake of mobile technologies.

Consumer intention to use is essential for 5G mobile phones because of their innovative characteristics and possible advantages. Perceived value, perceived ease of use, subjective norms, and attitudes towards the technology jointly impact customers' perceptions and inclinations to utilise it. In Malaysia, the key to promoting the use of 5G mobile phones lies in comprehending and dealing with elements that influence consumer intention, such as perceived value and ease of usage, as technology adoption rises.

H7: To predict perceived value, perceived risk, perceived ease of usefulness, subjective norms and attitude towards consumer intention to adopt 5G mobile phones.

Table 5.1 indicates that H7 is supported by a P-value of 1.61325E-81 for F-Test, which is very close to zero. The multiple regression summary result indicates that there is a significant relationship between at least one independent variable and the dependent variable. The results show that Perceived Ease of Use (PEOU), Social Norms (SN), and Attitude (Att) have p-values below 0.05, indicating a significant link with Consumers' Intention to Use. However, Perceived Risk and Perceived Value have p-values of 0.889 and 0.845 respectively, which are more than 0.05. The multiple regression results align with the hypothesis testing results for H1, H2, H3, H4, and H5.

The study has significant theoretical implications by expanding known frameworks such as the Technology Acceptance Model (TAM) and Diffusion of Innovation Theory (DIT) to analyse the uptake of 5G mobile phones on the Shopee e-commerce platform. The research enhances comprehension of consumer behaviour and decision-making processes by empirically confirming these theories inside digital markets. The study confirms the importance of important concepts like perceived ease of usefulness, subjective norms and attitudes in influencing customer towards adopting 5G mobile phone. The findings provide strategic insights for e-commerce platforms such as Shopee to customise their marketing tactics, product offerings, and user experience improvements to encourage the adoption of 5G. This involves creating focused marketing campaigns that highlight the benefits of 5G technology and allocating resources towards improving device functionality and user experience through product development. The study highlights the significance of customer-centric strategies to enhance user experience and promote technology adoption. Policymakers can use this information to create policies that promote innovation, competition, and

consumer protection in the digital economy. The study emphasises the importance of matching corporate strategy with customer desires to promote the adoption of 5G mobile phones in e-commerce environments.

It is crucial to recognise and confront the constraints of any research endeavour in order to safeguard the integrity and dependability of the results. A number of constraints were identified in this research that could potentially affect the applicability and generalizability of the findings. To begin with, a notable constraint of the research is its narrow geographical scope, which exclusively examines Malaysians residing in the Klang Valley. Although this region serves as a significant economic centre in Malaysia and is home to a diverse urban population, the results may not provide a comprehensive representation of consumer behaviour throughout the entire nation. Malaysia is distinguished by its cultural, economic, and demographic heterogeneity, which engenders substantial variation in consumer preferences across its regions. Thus, it is possible that the implications of the findings do not extend to urban centres or rural regions beyond the Klang Valley. In order to address this constraint, subsequent investigations may wish to broaden the scope of the study to encompass a more heterogeneous sample originating from various regions across Malaysia. In summary, this research offers significant contributions to the understanding of consumer attitudes and behaviours regarding 5G mobile phones on the Shopee platform within the Klang Valley region of Malaysia. However, its constraints must be duly acknowledged. The external factors, geographic limitation, and specificity of the online platform may impose constraints on the generalizability and applicability of the results. Further investigation is warranted to confront these constraints in order to furnish a more all-encompassing comprehension of consumer behaviour within the Malaysian e-commerce and digital technology sectors.

Although these constraints restrict the applicability of the results, they also provide chances for future study to tackle and surpass these obstacles. To address the geographic limitation, upcoming research could utilise a multi-regional strategy by including varied samples from urban centres, rural areas, and different states throughout Malaysia. This will lead to a more thorough comprehension of consumer behaviour in different demographic and cultural settings, increasing the relevance of the results to the wider Malaysian public. To keep up with the evolving nature of e-commerce and online consumer behaviour, future research should use longitudinal study designs to monitor changes and patterns in consumer behaviour over time. Conducting longitudinal studies would enable researchers to observe how patterns and behaviours change over time in response to shifts in technology, market dynamics, and consumer preferences. Regular assessments at various time points allow academics to offer current and pertinent insights into the continuous development of e-commerce.

References

Ab Hamid, M.R., Sami, W. and Sidek, M.M. (2017) September. Discriminant validity assessment: Use of Fornell & Larcker criterion versus HTMT criterion. In *Journal of Physics: Conference Series* (Vol. 890, No. 1, p. 012163). IOP Publishing.

Abdullah, S. I., Teng, P. K., & Heng, B. L. (2023). Public Awareness and Intention in Organ Donation Through Mobile Applications: A Perspective From Malaysia. In A. Bouarar, K. Mouloudj, & D. Martínez Asanza (Eds.), *Integrating Digital Health Strategies for Effective Administration* (pp. 151-171). IGI Global. https://doi.org/10.4018/978-1-6684-8337-4.ch009

Ajzen, I., & Fishbein, M. (2018). The theory of planned behaviour: A review of its applications to health-related behaviours. American Journal of Health Promotion, 33(4), 240-249. https://doi.org/10.1177/0890117118809772

Ali, B. A., Korir, M., & Bonuke, R. (2023). Networking capabilities, entrepreneurial competencies, and performance of small and medium enterprises in Kenya. International Journal of Economics, Business and Management Studies, 10(2), 63–78. https://doi.org/10.55284/ijebms.v10i2.995

Ali, K. (2024). Demand for secondary schooling in Pakistan: A cross income group analysis. Asian Journal of Contemporary Education, 8(1), 1–18. https://doi.org/10.55493/5052.v8i1.4950

Alrawad, M., Lutfi, A., Alyatama, S., Al Khattab, A., Alsoboa, S.S., Almaiah, M.A., Ramadan, M.H., Arafa, H.M., Ahmed, N.A., Alsyouf, A. and Al-Khasawneh, A.L. (2023) Assessing customers perception of online shopping risks: A structural equation modeling–based multigroup analysis. Journal of Retailing and Consumer Services, 71, p.103188.

Attaran, M. (2023) The impact of 5G on the evolution of intelligent automation and industry digitization. Journal of ambient intelligence and humanized computing, 14(5), pp.5977-5993.

Biswal, A. (2023) What is hypothesis testing in statistics? types and examples: Simplilearn,

Cheng, S. H., Rice, R. E., & Shao, G. (2018). Diffusion of Innovations and Social Media. In The Oxford Handbook of Diffusion of Innovations (pp. 279-296). Oxford University Press.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika,16, 297-334.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 319-340.

Deng, Z., Mo, X., Liu, S., & Wei, Y. (2018). Understanding consumer health information-seeking behaviour from the perspective of the risk perception attitude framework and social support in mobile social media websites. International Journal of

Medical Informatics, 114, 156-162.

Ericsson ConsumerLab. (2020). 5G consumer potential: Busting the myths around the value of 5G for consumers. https://www.ericsson.com/49f5f7/assets/local/reports-papers/consumerlab/consumer-insights-reports/2020/5g-consumer-potential.pdf

Factory, C. (2023) Malaysia ecommerce statistics and trends in 2023, Commission Factory. Available at: https://blog.commissionfactory.com/ecommerce-marketing/malaysia-ecommerce-statistics (Accessed: 18 November 2023).

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behaviour: An introduction to theory and research. Reading, MA: Addison-Wesley.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18, 39–50.

Ha, S., & Stoel, L. (2017). Consumer e-shopping acceptance: Antecedents in a technology acceptance model. Journal of Business Research, 60(9), 1017-1025.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2019). Advanced issues in partial least squares structural equation modeling. Sage Publications.

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., Danks, N.P., Ray, S. (2021). Evaluation of the Structural Model. In: Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R. Classroom Companion: Business. Springer, Cham.

Hossain, M.I., Yusof, A.F. and Sadiq, A.S. (2021) Factors influencing adoption model of continuous glucose monitoring devices for internet of things healthcare. Internet of Things, 15, p.100353.

IDC (2019). Worldwide Quarterly Mobile Phone Tracker. International Data Corporation.

ITU. (2020). Measuring digital development: Facts and figures 2020. International Telecommunication Union. Retrieved from https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2020.pdf

Kim, Y. J., Park, J., & Jeong, D. H. (2019). A study on consumers' adoption of 5G mobile communication services: Focusing on the Korean market. Telematics and Informatics, 44, 101262. https://doi.org/10.1016/j.tele.2019.101262

Krejcie, R.V., & Morgan, D.W., (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*.

Lee, J., Lee, Y., Koo, C., & Lee, C. (2020). The impact of perceived value, consumer satisfaction, and involvement on consumer behavioural intentions in e-Government services. Journal of Information Technology Management, 31(1), 28-41.

Lee, S., Kim, S., & Kim, Y. (2020). Antecedents and consequences of attitude toward mobile advertising: A conceptual model. Telematics and Informatics, 49, 101391. https://doi.org/10.1016/j.tele.2019.101391

Li, X., Wu, L., & Yao, L. (2018). Understanding the influence of perceived value, perceived risk, and perceived technology compatibility on mobile payment adoption in China. Computers in Human behaviour, 80, 184-198.

Liébana-Cabanillas, F., Marinkovic, V., Kalinic, Z., & Liébana-Cabanillas, A. (2019). Consumers' privacy concerns and IoT adoption: An empirical approach. Computers in Human behaviour, 92, 393-405.

Liu, Y., Wang, Y., & Yang, Y. (2019). What factors influence 5G service acceptance among young consumers? A perspective from China. Telematics and Informatics, 44, 101259. https://doi.org/10.1016/j.tele.2019.101259

Ltifi, M. (2018) Determinants of the intention of smartphone usage by mobile internet users for m-services. Management Decision, 56(11), pp.2291-2307.

MCMC. (2021). Annual Report. Malaysian Communications and Multimedia Commission.

Meese, J., Frith, J. and Wilken, R. (2020) COVID-19, 5G conspiracies and infrastructural futures. Media International Australia, 177(1), pp.30-46.

Miao, M., Jayawardhena, C., & Leek, S. (2020). Augmented reality, value co-creation and consumers' willingness to share information: A conceptual model. Technological Forecasting and Social Change, 155, 119984.

Paek, H., & Hove, T. (2017, March 29). Risk Perceptions and Risk Characteristics. Oxford Research Encyclopedia of Communication. Retrieved 18 Mar. 2024, from https://oxfordre.com/communication/view/10.1093/acrefore/9780190228613.001.0001/acrefore-9780190228613-e-283.

Rogers, E. M. (2003). Diffusion of Innovations (5th ed.). Free Press.

Rutsaert, P., Regan, Á., Pieniak, Z., McConnon, Á., Kuttschreuter, M., Lores, M., ... & Verbeke, W. (2013). The use of social media in food risk and benefit communication. Trends in Food Science & Technology, 30(1), 84-91.

Shah, S.K., Tang, Z., Sharif, S.M.F. and Tanveer, A., 2021. An empirical study of Chinese students' behavioural intentions to adopt 5G for smart-learning in Covid-19. Smart Learning Environments, 8(1), pp.1-17.

Shah, S.K., Zhongjun, P.T., Oláh, J., Popp, J. and Acevedo-Duque, Á. (2023) The relationship between 5G technology affordances, consumption values, trust and intentions: An exploration using the TCV and SOR paradigm. Heliyon, 9(3).

Statista. (2020). Average 5G download speed worldwide, by country. Retrieved from https://www.statista.com/statistics/1149329/5g-average-download-speed-by-country/

Statista. (2021). Perceived health risks of 5G in the U.S. 2021. https://www.statista.com/statistics/1251054/concerns-about-5g-technology-health-risks-us/

Sun, J., Duan, L., & Xu, Y. (2019). The influence of consumer perceived value on 5G service adoption in China. Information Systems Frontiers, 21(6), 1233-1246. https://doi.org/10.1007/s10796-018-9880-5

Taherdoost, H. (2021) Data Collection Methods and Tools for Research; A Step-by-Step Guide to Choose Data Collection Technique for Academic and Business Research Projects. International Journal of Academic Research in Management (IJARM), 10(1), pp.10-38.

Venkatesh, V., et al. (2016). User acceptance of information technology: Toward a unified view. MIS Quarterly, 40(2), 425-478.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478.

Yen, W.C., Lin, H.H., Wang, Y.S., Shih, Y.W. and Cheng, K.H. (2019) Factors affecting users' continuance intention of mobile social network service. The Service Industries Journal, 39(13-14), pp.983-1003.

Yu, J., & Yu, T. (2017). Factors influencing the adoption of 5G mobile services in Korea. Telematics and Informatics, 34(1), 293-303. https://doi.org/10.1016/j.tele.2016.06.016

Zhang, X., Guo, X., Lai, K. H., & Guo, F. (2021). Understanding users' continuance intention towards mobile banking: A perspective on perception of usefulness and trust. International Journal of Information Management, 56, 102265.

Zhang, Y., Wang, Y., & Han, Y. (2018). Understanding factors affecting the adoption of 5G services: A case study of China. Telematics and Informatics, 35(1), 270-292. https://doi.org/10.1016/j.tele.2017.08.012