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Determinants of Technology Acceptance towards 5G Mobile Repurchase Intention: An Empirical Study on Malaysian Customer Satisfaction

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Abstract

This study investigates the elements influencing consumer satisfaction and repurchase intention in the context of 5G technology adoption. The study uses the Technology Acceptance Model (TAM) as its theoretical framework within a positivist design, emphasising deductive reasoning and empirical evidence to predict human behaviour, employing a methodical methodology matched with research as a means of acquiring and analysing data. It emphasises experimental study, which allows for variable isolation and causal inference while adhering to scientific norms. The survey will use a sample size of 125 respondents and focus on Klang Valley, Malaysian urban regions and tech-savvy smartphone users with 5G access. Data collected using a 5-point Likert scale and convenience sampling via online questionnaires, allowing for an organised examination of customer retention behaviour in telecoms. The research constructs were painstakingly specified, conceptualised, and operationalised, including perceived usefulness, perceived ease of use, and network effects, in addition to satisfaction and repurchase intention. Afterwards, the collected data was examined using SPSS 26 & AMOS 23 software. Through different testing, rigorous preparatory analysis ensured instrument reliability and validity. The findings revealed that customer satisfaction (CS) had an average variance extracted (AVE) value of 0.474 initially, which improved to 0.594 after item adjustments. Similarly, repurchasing intention (RI) showed an AVE value of 0.665, indicating robust convergent validity. The AVE values of the other parameters, PU 0.590, PEOU 0.554 & NEf 0.602, were found satisfactory. In summary, this study adheres to a rigorous research method by using an online self-administered questionnaire. Its painstaking design, testing, and early analysis create a solid platform for future data collecting and analysis, providing genuine insights on 5G technology uptake and repurchase intention.

Keywords: 5G Technology, Repurchase Intention, Technology Acceptance Model (TAM), Customer Satisfaction

Introduction

The internet's pervasive growth and the rise of electronic commerce have transformed Malaysia's business landscape since the 1990s (Alam et al., 2021). Mobile commerce, fuelled by increased internet adoption and innovative mobile devices, is thriving, impacting customer satisfaction and loyalty in the telecommunications industry (Andronie et al., 2021; Kilaba & EC, 2020). The evolution of mobile technology, coupled with prepaid services, has led to a surge in mobile telecommunications, shaping how people communicate and share information (A. Malhotra & Malhotra, 2013). As mobile commerce expands, driven by the convenience of mobile internet, customer experiences are enhanced with features like time savings and location flexibility (Taneja, 2021). 5G cellular systems mark a significant advancement, characterised by higher frequencies, specifically in centimetre/millimetre wave bands. This shift results in broader bandwidths, surpassing those in 3G and 4G bands (Rappaport, 2013). To realise 5G objectives, emphasis lies on transforming both the network architecture and handset radio design. The network becomes a dynamic, cost-effective configuration of networks passing IPV6 packets (Antioco & Kleijnen, 2010; Metz, 2003; Storck & Duarte-Figueiredo, 2020). The industry's growth is evident in the quality improvements and partnerships, advancing from 4G to 5G (Czarnecki & Dietze, 2017). In the realm of mobile commerce, 5G is anticipated to revolutionise connectivity, influencing augmented reality and the Internet of Things (Goloventchika & Vlasenkob, 2022). This study focuses on the mediating role of customer satisfaction for repurchase intention of 5G mobile services in Malaysia while addressing the gap in understanding factors driving Malaysian consumers' adoption of 5G technology, contributing to the evolving landscape of mobile services.

In Malaysian telecommunications, mobile technology has surpassed old, fixed landline lines, owing to the appeal of portability and the constant improvement of gadgets. The introduction of pre-paid services has accelerated this transformation, catalysing sectoral expansion and changing information distribution via video conversations, SMS, and social networking apps (Ting et al., 2020). The upcoming deployment of 5G technology marks a new age for customers, promising revolutionary features as Malaysia seeks a strong presence in the global mobile industry. However, the shift to 5G is not without obstacles; it demands antenna design breakthroughs as well as significant advancements in network infrastructure and device technologies. The need for 5G is obvious in the context of the fourth industrial revolution, which has seen significant advances in AI, quantum computing, and other new technologies (French et al., 2021; Signé, 2023). The introduction of 5G technology, which is expected around 2020, disrupts existing operational models, emphasising the significance of understanding customer satisfaction's critical role in generating repurchase intentions within the diverse service categories offered by 5G.

The research problem at hand revolves around understanding the mediating role of customer satisfaction in shaping the repurchasing intention of 5G mobile services in Malaysia. The integration of 5G technology into the Malaysian telecommunications landscape requires a nuanced exploration of consumer behaviour, considering the unique characteristics of 5G services, such as immersive, intelligent, omnipresent, autonomous, and public (Zikria et al., 2018). As Malaysia embarks on the journey towards the fourth industrial revolution, marked by breakthroughs in artificial intelligence, quantum computing, robotics, and smart technologies, it is imperative to decipher how these advancements impact consumer preferences and repurchasing intentions in the context of 5G. The study on repurchasing

intention of 5G mobile services in Malaysia is important due to the country's high performance in providing a 5G experience, with an average 5G download speed of 322.7 Mbps and plans to achieve 80% coverage in populated areas by the end of 2023 (Safiah, 2023). Additionally, previous research has shown that factors such as perceived ease of use, perceived usefulness, concentration, and trust can influence consumers' intention to use 5G technology (Jericho & Jayadi, 2023). Furthermore, customer satisfaction and loyalty are important factors in the telecommunication service industry in Malaysia (Ting et al., 2020). The adoption of 5G technology also raises concerns about device compatibility, cost, health risks, electromagnetic radiation, data privacy, cyberattacks, electronic waste, and energy (Safiah, 2023; Shah et al., 2023). Therefore, understanding the drivers of customer satisfaction and repurchase intention in 5G technology is crucial for the development of the digital economy, smart city initiatives, remote learning, and telecommuting, as well as the New Industrial Master Plan 2030 in Malaysia (Safiah, 2023).

The present research attempts to analyse the complex connections between parts of the Technology Acceptance Model (TAM) and their impact on consumer satisfaction, eventually impacting repurchase intention in the context of Malaysian 5G technology adoption. TAM factors such as perceived usefulness (PU) and perceived ease of use (PEOU) are critical in developing user attitudes and behavioural intentions towards 5G technology. The focus of this research is on understanding how these elements interact and determine consumer satisfaction, which in turn influences repurchase intention. This study tries to bridge the gap in understanding the delicate interplay between user perceptions, satisfaction, and future behavioural intentions by scrutinising these factors within the TAM framework, offering vital insights into the dynamics of 5G technology adoption. As mobile communication becomes increasingly ingrained in every aspect of Malaysian society, creating a multidimensional, user-centric information ecosystem (Xu et al., 2020), the disruption of traditional business models by Mobile Broadband (MBB) services sets the stage for the commercialisation of 5G (Zikria et al., 2018).

Literature Review

Perceived Usefulness

Perceived usefulness (PU), first studied by Davis et al. (1989) in the Technology Acceptance Model (TAM) (Silva, 2015), is important as a key factor, known as 'relative advantage', in Rogers' Diffusion of Innovations Theory (1995) (Rogers, 2003). In the context of 4G mobile technology implementation in Malaysia, perceived usefulness emerges as a crucial factor directly impacting satisfaction (Hamidi & Jahanshaheefard, 2019). Derived from TAM, PU is a key component in various models for accepting new technologies (Trikoilis & Papanastasiou, 2021). According to Davis (1989) and Trikoilis (2021), perceived usefulness refers to the belief that using a specific technology will enhance performance. In the context of smart learning, PU represents confidence that smart learning will enhance student performance (Alice et al., 2021; Hao et al., 2022). Students are likely to embrace 5G technology if they believe it will enhance their learning performance (Chai et al., 2021).

H1: Perceived usefulness has a positive effect on customer satisfaction of 5G mobile services in Malaysia.

Perceived Ease of Use

The concept of perceived ease of use (PEOU) is initially introduced in the Technology Acceptance Model and later incorporated as the opposite of 'complexity' in Rogers' Diffusion of Innovations Theory (Rogers, 2003; Silva, 2015). In the context of 4G mobile technology acceptance, perceived ease of use is posited as a crucial factor directly impacting satisfaction (Hamidi & Jahanshaheefard, 2019). PEOU, a fundamental factor in TAM, is widely employed in technology acceptance research (Shah et al., 2021). It signifies an individual's belief in the minimal effort expected to use a system (Silva, 2015), reflecting the elimination of physical and mental stress in a specific area. In this study, PEOU is associated with the easy access, use, interface, and flexibility of 5G smart learning technology, representing the degree of effortlessness in utilising it. Particularly crucial in the initial phases of technology adoption, ease of use is essential as users expect minimal effort (Yu et al., 2021). Additionally, users perceive easy technology use as more beneficial.

H2: Perceived ease of use has a positive effect on customer satisfaction of 5G mobile services in Malaysia

Network Effects

Network effects play a pivotal role in driving 5G technology adoption and satisfaction, where the value of the service increases with a growing user base, creating a positive feedback loop for further adoption (Kim et al., 2023). Rooted in systems thinking (Pagani & Fine, 2008), Farrell and Saloner's (1985) exploration of network effects contribute insights into the dynamic benefits of network expansion in the 5G context (Farrell & Saloner, 1985). Arthur's (1989) concept of positive feedback loops highlights how network externalities create a self-reinforcing mechanism for adoption (Arthur, 1989). The impact of network effects on 5G adoption and satisfaction is evident in increased value as the network grows, offering enhanced functionality and a richer user experience (Hu et al., 2023; Li et al., 2021; Nikolopoulou et al., 2021). Connecting with more users through 5G services, like video calls and multiplayer games, significantly boosts its perceived usefulness. The positive feedback loop attracts more users, amplifying the value proposition and driving satisfaction. Network effects contribute to market concentration, potentially leading to a dominant player. This self-reinforcing mechanism ensures continuous adoption and satisfaction by emphasising the need for stakeholders to develop strategies that foster network growth and long-term success in the mobile telecommunications industry.

H3: Network effects have a positive effect on customer satisfaction of 5G mobile services in Malaysia.

Customer Satisfaction

Customer satisfaction serves as a crucial mediator in the telecommunications industry, bridging the connection between diverse factors and positive outcomes. It encapsulates the difference between expectations and the actual service received (G. A. Churchill & Surprenant, 1982; Hayyat Malik, 2012). Customer satisfaction plays a key role in the telecommunications industry by linking different factors to good results. Its strong influence on positive results is highlighted by its connection to customer loyalty, positive recommendations, higher profits, and growth in market share. Operating as a mediating force, customer satisfaction channels the positive effects of other factors on various outcomes. For instance, high-quality service leads to increased customer satisfaction, fostering loyalty, positive word-of-mouth, and heightened profitability. Likewise, perceived

value and positive customer experiences contribute to satisfaction, influencing loyalty and positive word-of-mouth. In crafting a conceptual model for the telecommunications industry based on a literature review, it becomes evident that customer satisfaction plays a critical role in steering success and profitability for service providers.

H4: Customer satisfaction has a positive effect on the repurchase intention of 5G mobile services in Malaysia.

The Effect of PU and POU on Repurchase Intention

A study conducted by Guriting and Ndubisi (2006) in the Malaysian banking sector found that customers' perceptions of utility and simplicity of use had a significant and favourable impact on their desire to engage in additional transactional activities with the same bank. In addition, a separate study in the UK's mobile apps sector found that either the perceived usefulness or perceived ease of use of a mobile app had a significant and positive effect on customers' intention to use the app, which subsequently influenced their intention to use the app again in the future (Stocchi et al., 2019). Another research study conducted in China yielded similar results, showing that both the perceived usefulness and perceived ease of use had a positive impact on people's inclination to use and continue using the same technology (Dong et al., 2017). The following theories are derived from previous research (Keni, 2020):

H5: Perceived usefulness has a positive effect on repurchase intention of 5G mobile services in Malaysia.

H6: Perceived ease of use has a positive effect on repurchase intention of 5G mobile services in Malaysia.

The Effect of Network Effects on Repurchase Intention

As per a press release on June 8, 2023, the Chief of Ericsson Malaysia, Sri Lanka, and Bangladesh, David Hägerbro, states that the swift implementation of the 5G network and excellent customer experience in Malaysia have acted as a driving force for the process of digital transformation and the transition to a digital economy. Adopting 5G technology allows the government to enhance economic growth, attract global investment, and position itself as a global frontrunner. Malaysia's 5G network is rapidly gaining recognition as a prominent example, not just within the area but also on a worldwide scale. Mobile data traffic had a 17-fold rise during the last five years (2012–2017). Mobile broadband (MBB) services on 4G networks constituted 72% of the total mobile traffic in 2017. The global mobile user equipment (UE) and communication market grew to 8.6 billion in 2017, compared to 7.9 billion in 2016. Smartphones comprised 51% of the entire quantity of mobile devices and accounted for 88% of the overall volume of traffic in 2017. The VNI report offers valuable anticipated data for the years 2017 to 2022 in the context of MBB forecasting (Shayea et al., 2021).

H7: Network effect has a positive effect on repurchase intention of 5G mobile services in Malaysia.

Perceived Usefulness, Perceived Ease of Use, Network Effects, Customer Satisfaction and Repurchase Intention Relationship

Prior studies conducted by Wilson (2019) and Keni (2020) have shown that the perceived ease of use of Indonesian C2C e-commerce platforms has a substantial and favourable influence on customers repurchase intentions and loyalty. This effect is seen both directly and indirectly, mediated by the level of satisfaction experienced by consumers (Ayu et al., 2021).

In addition, a recent study conducted by Tu et al. (2012) discovered that the perception of ease of use had a positive and significant impact on both satisfaction and loyalty. Similarly, Amin et al. (2014) and Anugrah (2020) found that when consumers view a service as easy to use, it leads to improved satisfaction and a greater inclination to purchase or reuse the same service from the same provider or company (Wilson et al., 2021). Perceived usefulness refers to the general evaluation and perception of mobile consumers about the utility of 3G phones, as stated by Amin et al. (2014). In addition, Davis et al. (1989) defined perceived usefulness as "the extent to which an individual believes that utilising a specific system will enhance their job performance." Consequently, it can be deduced that in this research, perceived usefulness refers to customers' assessment and perception of whether the new system they are using will provide them more value compared to the prior system (Wilson, 2019). Trick's (2021) study reveals that 5G wireless networks exhibit distinct characteristics compared to earlier generations. Technology is the primary driving force behind 5G wireless networks. Standardisation is a very effective way of transmitting radio signals, capable of achieving transmission speeds of up to 10 Gbps. The latency between devices is less than or equal to 5 milliseconds. 5G technology is very efficient since it maintains similar energy consumption and deployment costs to a 4G network while providing transmission speeds that are 100 times faster, as required by the application scenario. The 5G cellular network utilises Network Function Virtualisation (NFV) and Software-Defined Networking (SDN) in the cloud while maintaining the integrity of the core network. Consequently, the 5G system may implement Fixed Mobile Convergence, thus enhancing communication between buyers and sellers (Rohayu Ab Majid et al., 2022). Prior studies conducted by Zhou et al. (2009), Shams et al. (2020), Garcia et al. (2020), and Slack et al. (2020) have identified a significant and positive impact of customer satisfaction on their inclination to make future purchases from the same company (Wilson et al., 2021).

H8: Customer satisfaction mediates the effect of perceived usefulness on repurchase intention of 5G mobile services.

H9: Customer satisfaction mediates the effect of perceived ease of use on repurchase intention of 5G mobile services.

H10: Customer satisfaction mediates the effect of network effects on repurchase intention of 5G mobile services.

Repurchase Intention

Repurchase intention is a crucial concept for predicting how customers will shop in the future and how companies can maintain their sustainability over the long term (Bebber et al., 2017; Chaudhary & Bisai, 2018). It's like expecting a customer's response after a successful purchase. In simple terms, it means the likelihood of someone buying the same product again in the future (Bartosik-Purgat et al., 2018). Researchers define it differently: Hellier et al. (2003) say it's the process of buying things, tangible or intangible, from the same company (Hellier et al., 2003), while Rajaobelina and Bergeron (2009) suggest it's how a customer thinks about buying a particular product or service again from a specific company (Harris & Goode, 2010; He et al., 2018; Rajaobelina & Bergeron, 2009). Essentially, repurchase intention is a strong assurance to buy again from a company (Liu et al., 2016). Goh et al. (2016b) add that it starts when a customer tries to buy the same things from the same brand (Goh et al., 2016). Adekunle and Ejechi (2018) describe it as a commitment to buy and use a product from a particular brand in the future (Adekunle & Ejechi, 2018). Kotler contributes by talking about how satisfaction or dissatisfaction after using something can change how we feel inside and

affect our future actions (Keller & Kotler, 2015; Suchánek et al., 2018). A happy customer is more likely to buy again and suggest the product to others (Jibril et al., 2019).

Reserch Framework

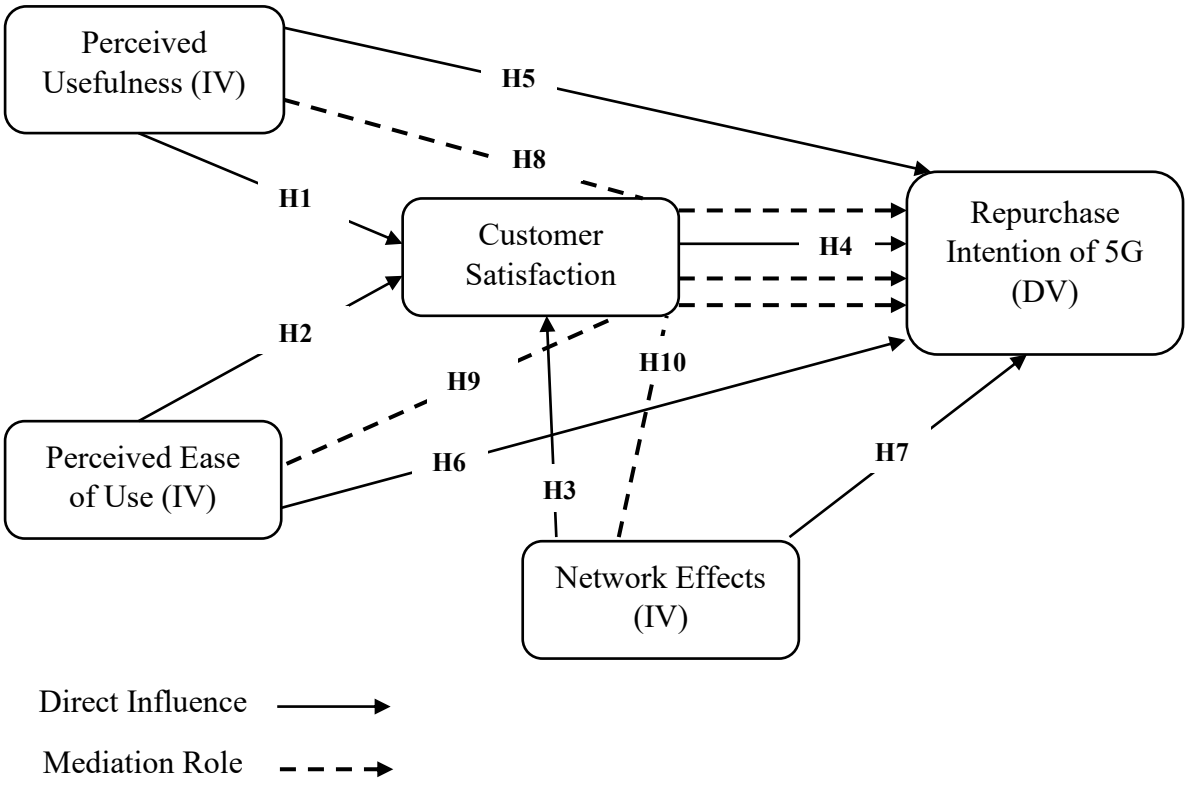

Figure 1. Proposed Model for Study

Figure 1 presents a visual representation of the proposed research model. This framework and hypotheses provide a foundation for investigating the factors influencing customer satisfaction and repurchase intentions of 5G services in Malaysia. By analysing the relationships between these factors, this research aims to provide valuable insights for service providers and stakeholders to develop strategies that enhance user experiences, promote 5G adoption, and achieve sustainable growth in the Malaysian market.

Research Methodology

Theoretical Background

These theoretical frameworks offer helpful hints about the complex factors influencing 5G adoption. By understanding how these factors interact, researchers and marketers can develop strategies to promote widespread 5G adoption and unlock its full potential. The present research bases its framework on the Technology Acceptance Model (TAM). A key strength of TAM is its predictive power. It has been empirically verified as a tool for predicting technology use (Moon & Kim, 2001a; Szajna, 1996) and emerged as the dominant model in the literature (Venkatesh, 2000) (Silva, 2015; Szajna, 1996; Venkatesh & Brown, 2001; Venkatesh & Davis, 1996). Its capability has been demonstrated to explain between 17% and 33% of the variance in attitude and usage intentions (Davis et al., 1989; Moon & Kim, 2001a; Thompson et al., 1991). The variables introduced in this model—perceived ease of use and

perceived usefulness—continue to collect empirical support and momentum for predicted technology acceptance behaviour (Venkatesh, 2000; Venkatesh & Davis, 1996). Researchers have also investigated network effects using the technology acceptance model (Huo, 2021; Kim et al., 2023). As its popularity is growing, TAM is being used outside of IS research within the marketing discipline of consumer research around online retail shopping (Childers et al., 2001; O'Cass, 2003), buying intentions on the web (Gentry & Calantone, 2002), and understanding technology-based self-service usage (Dabholkar & Bagozzi, 2002; Moon & Kim, 2001b).

Population Sample

This 5G technology adoption study focuses on smartphone users in Malaysia's Klang Valley urban areas. This study aims to determine how these individuals adopt and use 5G services. Urban locations were picked because they are more likely to have an early 5G rollout. The group of persons selected for analysis is known as the sample. A high sample size is essential to get reliable research findings (Bryman and Cramer, 2004). To improve response rates, the lead researcher distributed the questionnaire manually using a non-probability (convenience) sampling approach. All 125 questionnaires were sent to respondents, and, happily, all 125 completed questionnaires (100%) were found to be valid for further investigation. The sample size was determined following a professional guideline (Hair et al., 2018). It offers a sample size of five times the number of items on the questionnaire. Based on this criterion, the current sample size of 125 may be regarded as adequate. After collecting data, the Cronbach alpha (α) test was employed to assess internal consistency.

Exploratory Factor Analysis (EFA)

Prior to doing factor analysis, it is essential to verify that the sample size meets the necessary criteria. Each item should get a maximum of five replies. The study included 24 variables and a sample size of 125 individuals. Factor analysis (FA) is a statistical technique used to determine the fundamental components that contribute to the variability and interrelationships within a dataset (Green & Salkind, 2008: 313). FA is a statistical method used to decrease the amount of data by consolidating several correlated measurable variables into a smaller set of components. (FA) has three primary applications: firstly, to ascertain indicators of constructs or measures; secondly, to establish dimensions for an existing measure; and thirdly, to choose items or scales for inclusion in a measure. Exploratory factor analysis (EFA) is the first step in developing a robust structural equation model (SEM). The objective of EFA is to identify data-driven components and maximise the variance accounted for (Kline, 2011). EFA analyses the data and provides the researcher with information on the optimal number of variables needed for accurate data representation. (EFA) determines the number of latent variables (factors) required to account for the correlations among observable variables (Field, 2005; Hair et al., 2006, 2010). Varimax rotation may provide a pattern matrix that helps identify distinct and independent components without any overlap. We recognise the elements as orthogonal; we can apply varimax rotation or employ Promax rotation.

Pattern Matrix

Field (2005), Hair et al. (2006, 2010), and Kline (2011) have identified nine procedures that are necessary to generate a clear pattern matrix. To verify the nine criteria, it is necessary to have the following nine output tables: Statistical analysis often involves the use of the

following terms: The tests administered include the pattern matrix, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, the Bartlett's sphericity test, total variance explained, the goodness-of-fit test, the replicated correlation test, the community analysis, the factor correlation matrix, and the Cronbach's alpha reliability test.

Table 1
Model fit indices and its cut-off Value

Model fit test	Name of Index	Level of Acceptance	Literature
Absolute fit	RMSEA*	Range 0.05 to 0.1	Browne and Cudeck (1993)
Incremental fit	CFI**	More than 0.90	Bentler (1990)
Parsimonious fit	Normed x 2	Less than 5.0	Marsh and Hocevar (1985)

Notes: *RMSEA is refers to root mean square of error approximation; **CFI is refers to comparative fit index; Normed x 2 refers to chi square/degrees of freedom

Adequacy Tests

The Kaiser-Meyer-Olkin (KMO) test assesses the suitability of sample selection for research purposes (Kaiser, 1970). This approach scrutinises the variables and ascertains the percentage of variance attributable to an underlying component. Barbara et al. (2019) and HAIR et al. (1998) categorise KMO levels below 0.5 as poor and values between 0.5 and 0.6 as moderate. The range of values from 0.6 to 0.7 is deemed suitable. (Netemeyer et al., 2003). We view an evaluation within the range of 0.7 to 0.8 as outstanding and consider a value of 0.8 or more as extraordinary. The collected data was used to perform an exploratory factor analysis (EFA). EFA is a technique used in multivariate statistical analysis to uncover underlying patterns or structures within a large set of variables. The objective of this analysis is to decrease the quantity of variables to a feasible number of components. Moreover, it specifically aims to highlight the consistency of its fundamental elements. This study included two main types of tests: the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity. Bartlett's test of sphericity is often used to determine if a correlation matrix conforms to an identity matrix, characterised by diagonal elements of 1 and off-diagonal elements of 0. After acquiring the data, this condition signifies that the researcher may go on with the further stages of factor analysis. A p-value below 0.05 in Bartlett's test indicates a significant correlation between variables, which enables component analysis. The KMO score of 0.874 in Table 1 indicates a favourable outcome for the present study. When the research meets the 0.8 requirement, it indicates that it is suitable for factor analysis. The Bartlett's test of sphericity produces a highly significant value of 0.000, which is much below the threshold of 0.005. The result demonstrates that the constituent elements of the variable are deemed sufficient.

Table 2
KMO and Bartlett's Test

Test		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.874
Bartlett's Test of Sphericity	Approx. Chi-Square	1677.810
	df	276
	Sig.	.000

Results and Discussion

Demography

Table 1 provides the demographic information of respondents in terms of gender, age, educational qualification, position in current profession, mostly used internet service, and internet-using experience. The percentages of male and female respondents for this research are 55% and 44%, respectively. Most (64.8%) of the respondents' education level is a bachelor's degree, while the rest have a postgraduate degree (26.4%), secondary education, or no formal education (1.6%). Among all the age groups mentioned in Table 1, 25.6% of the respondents' ages are between 26 and 30; 31 and 35 are 17.6%; 36 and 40 are 15.2%; 41 and 45 are 12.8%; and more than 45 are 3.2%.

Reliability Test

Reliability analysis is vital for the investigation as it confirms the overall steadiness of a measure. Reliability can be understood as the extent to which a study is free from errors of measurement (Neuman & Larry, 2003). The consistency of the submitted responses in a survey is measured by reliability (Heale & Twycross, 2015). In this respect, Cronbach's alpha (α) is frequently used as the measure to determine internal consistency (Bonett & Wright, 2015). According to Louangrath (2018), if the (α) value is found to be .70 and above, then it is considered to be profoundly reliable. In this particular study, a total of 24 items of the construct, which were made up of both dependent and independent, were tested using Cronbach's alpha (α) = 0.791.

Model Fit for CFA

EFA facilitates the construction of a precise measurement framework. The items in the pattern matrix have been verified as suitable for inclusion in the model. Model fit refers to the selection of a visual representation for the elements deemed appropriate for inclusion in the model. Figure 2 illustrates an analysis of the measurement model using several structural equation modelling (SEM) criteria. We found no estimations in violation, and the model demonstrates a good match. Hair et al. (2006) said that the estimated value in question had a regression weight that exceeded 1.00. Table 3 presents a concise overview of the results obtained from Figure 2, specifically focusing on the fit indices. All fit indices supported the proposed model. The chi-square test resulted in a value of 183.172 (109, N = 125), with a p-value of 0.000, indicating statistical significance. The statistical significance of the chi-square fit in the measurement model should not indicate an acceptable match. Due to the chi-square's high sensitivity to sample size, Hancock and Mueller (2006) suggest adopting the

normed chi-square (CMIN) as an alternative. The CMIN value of 1.680 meets the requirement of being less than 5, indicating that the measurement model is a good match. In addition, the CFI value of 0.934 indicates a high level of agreement between the measurement model and the data. Having an RMSEA score of 0.074, this is also below the threshold of 0.08. In accordance with the suggestion made by Hancock and Mueller (2006), this measurement model showcased the capability of an appropriate structural model. When examining the model shown in Figure 2, there were five latent components that were not directly observed: The variables in question include perceived usefulness (PU), perceived ease of use (PEOU), network effects (NEf), customer satisfaction (CS), and repurchase intention (RI). PU had four observed variables, PEOU had five observed variables, Nef had two observed variables, CS had three observed variables, and RI had three observed variables. The 17 observed variables functioned as indicators, linked by single-headed arrows to their associated components. Every observed variable indicator is accompanied by an error term. The items were assigned labels ranging from e1 to e17. The presence of error words associated with observed variables suggests the presence of measurement mistakes, which may affect the accuracy of measuring the underlying parameters (PU, PEOU, Nef, CS, and RI). The dual-headed arrows symbolise a correlation between two latent components that are not directly observable.

Table 3
AVE, MSV and ASV with Validity Concerns

Factors	CR	AVE	MSV	MAXR (H)	PU	PEOU	NEf	CS	RI
PU	0.848	0.590	0.459	0.913	0.768				
PEOU	0.860	0.554	0.516	0.874	0.660	0.745			
NEf	0.752	0.602	0.760	0.753	0.678	0.718	0.776		
CS	0.730	0.474	0.760	0.733	0.454	0.648	0.872	0.689	
RI	0.851	0.664	0.425	0.916	0.576	0.630	0.614	0.652	0.815

Note. Validity concerns

Convergent Validity: The AVE for Factor CS 0.474 is less than 0.50.

Table 4 shows that there were no validity concerns after deleting Item CS4. Factor RI had the highest AVE value of 0.665, while Factor PEOU had the lowest AVE value of 0.554; they were all within the 0.50 threshold. Therefore, the measurement model (Figure 8) had been validated.

Table 4
AVE, MSV and ASV with No Validity Concerns

Factors	CR	AVE	MSV	MAXR (H)	PU	PEOU	NEf	CS	RI
PU	0.848	0.590	0.459	0.912	0.768				
PEOU	0.860	0.554	0.514	0.874	0.661	0.744			
NEf	0.752	0.602	0.514	0.752	0.678	0.717	0.776		
CS	0.744	0.594	0.499	0.757	0.377	0.538	0.707	0.771	
RI	0.851	0.665	0.397	0.916	0.576	0.630	0.614	0.567	0.815

Note. No Validity Concerns

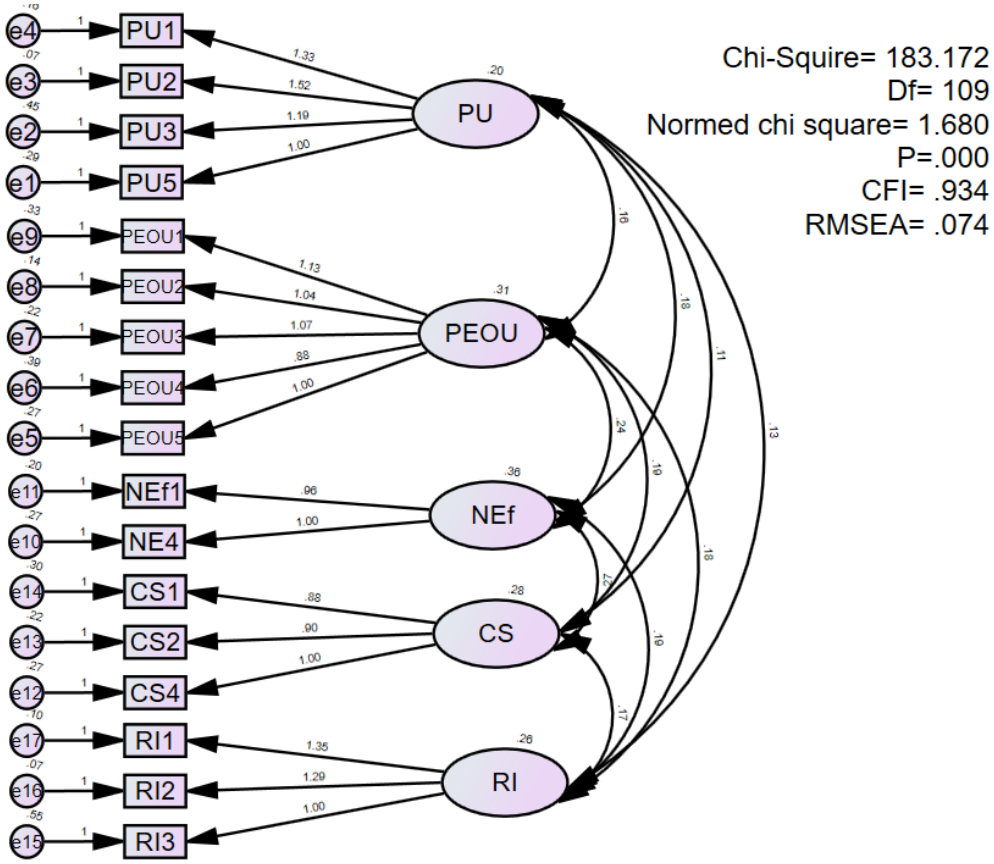

Figure 2: Measurement Model (Fit Model)

Validating The Measurement Model

Figure 7 presents the results of the AMOS output. The external Excel Stats Tool Package was used to validate the measurement model. Table 12 shows that there were convergent validity concerns. Factor RI had the highest AVE value of 0.664, while Factor CS had the lowest AVE value of 0.474, which was less than the 0.50 threshold. It was found that the best feasible solution was to delete Item CS4, which had the second lowest loading of .591 under Factor CS.

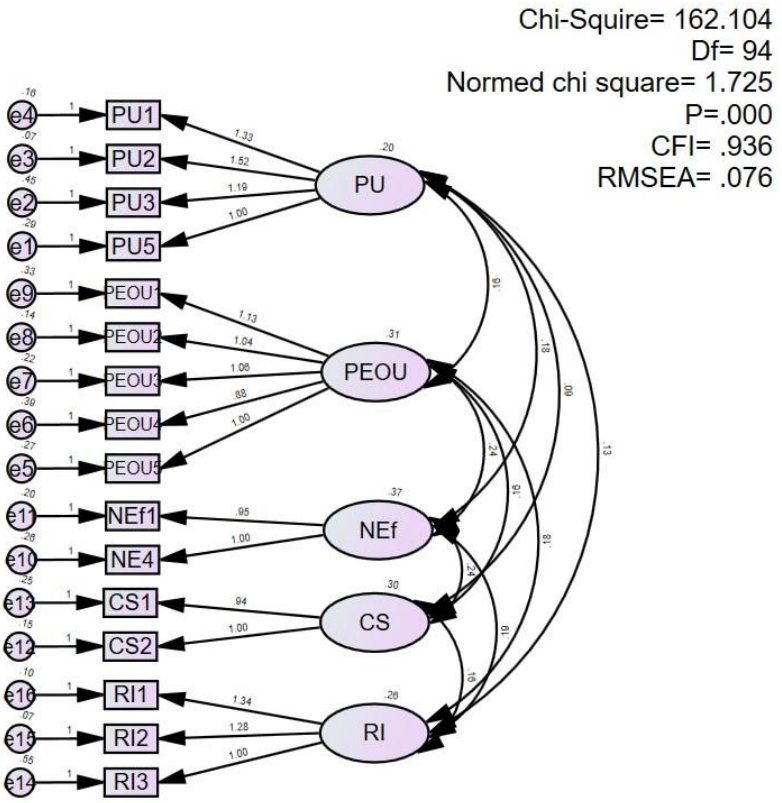

Figure 3: Measurement Model (Validated Model)

Full Structural Equation Model (SEM)

Once the goodness-of-fit model was established, a thorough structural equation model (SEM) was constructed. This study used three exogenous variables: perceived utility (PU), perceived ease of use (PEOU), and network effects (NEf). The mediating variable, customer satisfaction (CS), was both endogenous and exogenous. CS was internally determined by PU, PEOU, and NEf but externally influenced by repurchase intention (RI). Except for PEOU, all components were rearranged in their appropriate positions. A residual error term, denoted as e17, was included in the CS variable, whereas e18 was included in the RI variable. The residual error term measures the difference between the expected and actual values of the internal components, using outside factors.

The new model was analysed as a transformed version of the validated model. Figure 4 displays the complete structural equation model (SEM) together with the fit indices.

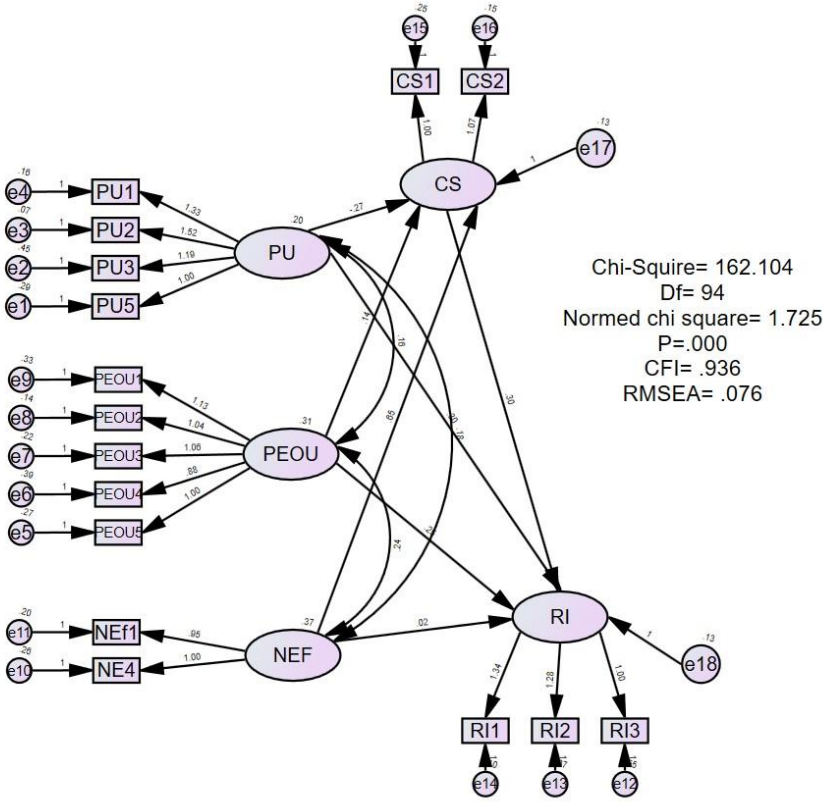

Figure 4: Full Structural Equation Model (SEM) Fit Indices

Table 5 displays all the fit indices for the whole structural equation model. The CMIN value was 1.725, which is below the threshold of 5. The RMSEA value was 0.076, indicating moderate acceptability and lower than the cutoff of 0.080. The CFI value was 0.936, which exceeds the minimum requirement of 0.90. They were quite satisfactory. Moreover, there were no concerns about legitimacy. This model satisfies the criteria for becoming a structural model. The evidence demonstrates that the proposed model accurately matched the observed data. Consequently, this model is suitable for the investigation.

Table 5
Full Structural Equation Model (SEM) Fit Indices

Fit Indices	Recommended Threshold	SEM Model Output	Remark
CMIN	≥ 5	1.725	Fit
P-value	≥ .05	.000	Acceptable
RMSEA	≤ .08	.076	Fit
CFI	≥ .90	.936	Fit

Implications

This paper investigates the lack of empirical data on customers' willingness to repurchase 5G services, providing insight into the elements that influence these choices. Focusing on Malaysian customers, it investigates their views, awareness, and attitudes regarding 5G, as well as the importance of customer satisfaction in influencing repurchase behaviour. Recognising the unique characteristics of 5G services, such as their immersive and intelligent

natures, is consistent with Malaysia's progress in mobile communication. It also addresses the obstacles faced by 5G's higher frequencies, including architectural complications and technical constraints.

As Malaysia welcomes breakthroughs like AI and quantum computing in the 5G environment, this study navigates customers' shifting tastes throughout the fourth industrial revolution. Deconstructing key factors provides practical insights for service providers and regulators, paving the way for long-term 5G adoption in Malaysia. This research bridges the gap between consumer expectations and technical developments, allowing society and consumers to make more informed decisions about cutting-edge mobile technology.

With Malaysia positioned as a prominent participant in the global mobile communication industry, knowing the mediating role of customer happiness in repurchasing 5G services is critical. This study not only empowers consumers by identifying key factors influencing their satisfaction and repurchase intentions, but it also provides policymakers and service providers with invaluable insights for developing effective strategies and services tailored to consumer needs in the evolving 5G landscape.

Conclusion

Finally, this research comprehensively investigates the difficulties in consumer behaviour in connection with the deployment of 5G technology in Malaysia. Using the Technology Acceptance Model (TAM) as its theoretical framework, this research explores the numerous aspects that influence customer satisfaction and repurchase intention. The study's strong methodology, which includes an experimental approach and thorough data gathering using online surveys, ensures the legitimacy and correctness of the results. The research investigates the complex link between perceived usefulness, perceived ease of use, network effects, customer satisfaction, and repurchase intention, demonstrating their influence on consumer behaviour. The findings emphasise the relevance of customer happiness in determining repurchase intentions for 5G mobile services. In addition, the study's results have practical consequences for service providers and regulators as they negotiate Malaysia's shifting mobile communication ecosystem. Through a thorough examination of the elements that impact customer happiness and repurchase intentions, stakeholders may develop effective strategies to enhance user experience and encourage wider adoption of 5G technology.

Theoretical and Contextual Contribution

This study extends the Technology Acceptance Model (TAM) to the realm of 5G mobile services, encompassing post-adoption behaviours, specifically the inclination to repurchase. It enhances the model by incorporating network effects and customer satisfaction as indirect and direct variables, illustrating how social and experiential factors are influenced by prolonged technology usage. Incorporating network effects enhances the model's applicability for predicting the functionality of modern communication technologies, where perceived value is determined by user quantity and the extent of individual connectivity. The role of customer satisfaction helps explain how key factors in the Technology Acceptance Model (TAM) relate to the intention to buy again, especially in areas like mobile phone use. This study enhances the existing literature by. The insights collected from the study can assist

telecom providers, regulators, and legislators in enhancing marketing strategies and service delivery to align with national digital economy objectives.

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