Sains Insani eISSN: [0127-7871]

A Preliminary Review of Consumer Comsumption Value Perceptions of 5G Technology in Malaysia

Ulasan Awal Persepsi Nilai Pengguna Terhadap Teknologi 5G di Malaysia

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Article progress
Received: 20 February 2024
Accepted: 15 June 2024
Published: 30 November 2024

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Abstract: The study focuses on purchasing intentions for fifth generation (5G) technology using Sheth and colleagues' 1991 model of consumption values, which considers five consumption values which are social value, emotional value, functional value, conditional value, and epistemic value. The value of these values has been expected to be significant in the past and lead to purchase intentions for 5G technology. Since the advancement of information technology (IT), 5G technology has become a new revolution in the field of technology and networks. The high-speed processing of data supported by artificial intelligence (AI) and machine learning (ML) is what 5G technology and IT network is all about. The main issue in the current market is that consumers are having difficulty accepting the value proposition provided by several companies. As a result, consumers are becoming more sceptical of the claims made by companies about their products and services. Malaysian consumers are not enthusiastic about using 5G technology, which is a hurdle for companies in selling their technology to the customers in Malaysia. The purpose of this study is to examine the relationship between consumption value and purchase intention.

Keywords: Consumer consumption value, Perception, 5G technology, Purchase intention;

Abstrak: Kajian ini memberi tumpuan kepada niat pelanggan untuk membeli teknologi 5G dengan menggunakan model nilai penggunaan dari Sheth (1991), yang mempertimbangkan lima nilai penggunaannya iaitu nilai sosial, nilai fungsi, nilai bersyarat dan nilai epikstemik. Nilai-nilai ini telah dijangka sejak dulu dan membawa kepada inovasi pengguna kini yang mempengaruhi niat pembeli untuk membeli perkhidmatan teknologi 5G. Sejak bermula kemajuan teknologi maklumat, perkhidmatam teknologi 5G telah menjadi revolusi baharu dalam bidang teknologi dan rangkaian. Pemprosesan data berkelajuan tinggi ini disokong oleh kecerdasan buatan (AI) dan pembelajaran mesin (ML) yang membawa maksud teknologi 5G dan rangkaian teknologi secara keseluruhan. Isu utama dalam pasaran semasa ialah pengguna menghadapi kesukaran untuk menerima cadangan nilai yang disedikan oleh beberapa Syarikat. Akibatnya, pengguna menjadi ragu-ragu terhadap justifikasi yang dibuat oleh Syarikat mengenai produk dan perkhidmatan mereka. Pengguna Malaysia tidak teruja untuk menggunakan teknologi 5G, yang juga merupakan halangan bagi Syarikat dalam mempromosikan pekhidmatan teknologi mereka kepada pelanggan

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di Malaysia. Tujuan kajian ini adalah untuk mengkaji hubungan antara nilai penggunaan iaitu mengrakumi, nilai fungsian, nilai sosial, nilai bersyarat, nilai epistemic dan nilai emosi terhadap inovasi pelanggan dan membawa kepada niat membeli pekhidmatan 5G.

Kata kunci: Nilai penggunaan, teknologi 5G, inovasi pelanggan, niat membeli;

Introduction

The world has changed due to the advent of automation, which is fuelled by artificial intelligence (AI) and machine learning (ML). According to McCann et al. (2018), the manufacturing sector hopes to leverage the innovations of fifth generation (5G) mobile communications through the automation of industrial technologies and the use of other enabling technologies, such as AI and ML. This is known as the fourth industrial revolution, or simply IR4.0. After 1G, 2G, 3G, and 4G networks, 5G is the fifth generation of mobile networks and a new worldwide wireless standard.

The industry anticipates that 5G will result in better outcomes for a range of vertical industries or more precise decision-making, such as automating physical chores based on previous data and knowledge. In addition to its own benefits, 5G has attracted the interest of academics and researchers due to current technological advances. Mobile broadband could be enhanced by 5G (Al-Turjman, 2020; Hassan et al., 2019; Singh, 2019). It is also critical to remember that the technology can facilitate large machine-to-machine communication, which can be crucial for a variety of industries and areas of life, as well as incredibly dependable, low-latency connection.

The industrial sector will be significantly impacted by 5G wireless technology in several ways, including sustainability management, robotics, machinery, and autonomous logistics. Global 5G wireless telecom launches occurred in late 2018, however, Malaysian, and Asian launches did not occur until late 2021 or the beginning of 2022. As such, Malaysia's dearth of statistics emphasizes the freshness of the nation. Purchase intent is crucial to 5G technological mobile communication because it indicates customers' readiness to invest in and use cutting-edge communications technology, which promotes innovation, construction of infrastructure, and industry expansion (Al-Turjman, 2019).

The smartphone business has undergone a revolution due to 5G technology. There will be an intense rivalry when 5G rolls out over who can use wireless connections to their advantage to stay competitive (Marr, 2019). Purchase intention has long been considered a key objective in marketing (Im et al., 2007; 2003; Reichheld & Schefter, 2000). As it offers a framework for understanding and evaluating consumer behaviour, choices, and methods of decision-making, consumption theory has become vital to research. It aids in the analysis of elements influencing consumption trends, forecasts consumer reactions to stimuli in marketing, and helps researchers create persuasive marketing campaigns that appeal to consumers' needs and desires. The established consumption values theory of Sheth et al. (1991) is the basis for the constructs employed in this investigation.

The implementation and impact of 5G technology as a communication medium are the main topics of discussion among academics in emerging countries. Nonetheless, only a small number of studies those by Zeithaml (2009) and Monroe (2003) investigate 5G technologies with a focus on underdeveloped countries. Perceived value in this study refers to the formula that researchers established between the perceived benefit and the perceived sacrifice that an individual experiences. Consequently, conditional value, social value, epistemic value, functional value, and emotional value are the conceptions of Sheth et al. (1991) related to the consumer values. This research convey will investigate a novel research angle, specifically the influence of 5G technology on the perceived value in cross countries. There is opportunity to learn a great deal about how 5G can be utilized to enhance the lives of people in underdeveloped nations in this area, which is comparatively understudied.

Literature Review

This study applies Sheth et al.'s (1991) Consumption Value Theory to investigate customer innovativeness and intention. The theory suggests that perceived benefits the favourable results customers anticipate from using a product or service and perceived sacrifices the unfavourable results customers anticipate from using a product or service associated with a product or service that have an impact on customers' decision-making processes. It can be achieved to have greater understanding of consumer value by first embracing the theory of consuming.

According to the unique features of the product and it relies on the consumer's decision to select a certain brand and product over another (Sheth et al, 1991). Since Malaysians aged 15 and older represent the majority of global technology users, it is important to examine the elements that shape their perceptions in order to strengthen the industry's consumer perception of the adoption of 5G technology. Furthermore, there have not been much research on 5G despite the industry's perceived rapid growth and the need to better understand its present users (Ho & Kuo, 2010; Liu et al., 2016; Mustafa et al., 2022; Yang et al., 2014).

The industry may expand and place 5G usage highest in the manufacturing and services sectors by using the 5G service, which considers the variables that can affect consumer perception. In order to explore the factors of consumption value functional, conditional, emotional, epistemic, and social value as well as consumer innovativeness which can influence purchase intention within the context of 5G services the current study attempts to take this path. In theory, understanding this procedure could assist technology developers in making well-informed choices about how to apply the technologies most effectively. Consequently, in order to close the gaps left by previous research, this study applies the consumption theory.

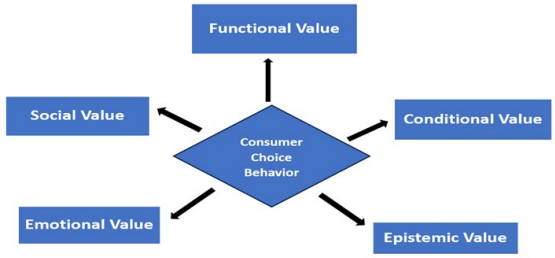
Purchase Intention

In the context of 5G technology in Malaysia, purchase intention matters since it indicates consumers intend to invest in and utilize this cutting-edge technology. Insights into customer behaviour and decision-making processes, as well as future market demand and 5G technology adoption, can be gained from purchase intention. The study by Chuah et al. (2018) underlines how important purchasing intent could be for Malaysia's adoption of 5G along with other forthcoming technologies. The study found that the individuals with higher purchase intentions for 5G technology were also more probable to find themselves persuaded to actively seek information, consider their alternatives, and make purchases. In addition, purchase intent has a key part in promoting the growth of 5G infrastructure and services. Shin et al. (2020) have demonstrated that the promising purchasing intention of consumers towards 5G technology impacts the demand for associated services. Thus, mobile phone companies allocate more resources towards the expansion and improvement of the 5G network.

Consumption value theory

The theory of consumption is the most generally recognized and has been empirically tested by earlier academics. This broad synopsis indicates the meaning of customer perceived value across settings and highlights conceptual gaps that give rise to certain hypotheses. They all come to the same conclusion, though, which is that it symbolizes what the consumer thinks of the trade-off between the perceived benefits and quality of a product and the perceived sacrifices associated with purchasing the price. Both Zeithaml (1988) and Holbrook (1996) reinforce this understanding.

Figure 1. Consumption Value Theory by Sheth et al. (1991)



Investigating specific hypotheses related to the research study is essential. One such theory is the theory of consumption put presented by Sheth et al. (1991). The adoption of 5G by consumers is seen in Figure 1, which aligns with the Consumption Value Theory. This model demonstrates how social, emotional, functional, conditional, and epistemic values simultaneously affect consumer choice behaviour. Building on past studies, this study specifies the proposed constructs: conditional value is determined by the trade-offs and potential alternatives a customer may evaluate, and social value is defined as the impact of friends, family, and other relations on decision-making. While functional value is concerned with a product's usability, emotional value is related to the novelty and status of decision-making, and epistemic value is related to both. Functional value concerns a product's functionality, emotional value is based on the attachment to a good or service that motivates a purchase, and epistemic value is related to the novelty and prestige connected with decision-making.

This study aims to build on previous research by investigating how inventive an individual is in terms of their intention to adopt 5G technology, which may be related to how innovative they consider themselves to be in terms of technology. Consequently, it gives insight into how consumers' inventiveness, which represents innovation in applying their purchasing values, may affect their intention to make a purchase.

Social Value

Several studies have demonstrated the crucial role that social value plays in encouraging customer innovation and adoption of 5G technology. Wang et al.

(2020) investigate the adoption of 5G in a Chinese smart city and find that social value which emphasizes the ability to engage with people, learn, and engage in creative endeavours is a significant motivator. Alqahtani et al. (2020) investigates the adoption of 5G technology in Saudi Arabia and emphasize the societal benefits of enhanced connection, quick speed, and the availability of new applications and services. According to Suki and Suki's (2019) study, which focuses on Malaysian consumers, claims that social values have a significant impact on adoption intentions.

The advantages of connectedness, information access, and online involvement are highlighted in this study. Besides, Sharma and Sharma (2021) examine at how Indian consumers intend to use 5G, stressing the value of social value in addition to better connectivity, quicker speed, and access to new services and apps. The collective findings of these research highlight the role that social value plays in fostering consumer innovation and 5G technology adoption intentions. This is because 5G's perceived benefits and value are accompanied by the ability to participate in creative activities, acquire information more quickly, and interact with others. These factors ultimately affect customers' readiness to adopt and use 5G.

Emotional Value

According to Alqahtani (2020), customers' emotional values have a big impact on their innovativeness when it comes to 5G technology in Malaysia. Emotional value is the positive feelings that customers have upon adopting a product or service (Suki, 2019). These feelings may be triggered by a range of purposes, such as the product's general user experience, design, and usefulness. Innovative consumer behaviour has been associated with positive customer experiences using 5G technologies. For example, they may be less inclined to look into new apps or services to utilize 5G technology in novel and creative ways. Companies stand to gain from this in a number of ways, such as increased brand recognition, improved customer loyalty, and increased sales (Wang & Chen, 2018).

Functional Value

Functional value, as defined by Sheth et al. (1991), is the total of the advantages that consumers experience as a result of a good or service. Such benefits could be concrete (convenience and peace of mind) or intangible (better speed and performance). The study discovered when consumers perceive high levels of practical value in 5G technology, they are more likely to use it creatively. This may manifest in their research and adoption of unique and creative 5G applications, such as remote surgery or driverless cars. Functional value has many benefits that organizations can receive (Javaid & Ismail, 2023).

Conditional Value

Conditional value is the perceived value of a good or service that is dependent on the ability of the user to use it and achieve their objectives. The potential of 5G technology for fostering creative and innovative applications can be utilized for determining its conditional value (Mehrotra & Sharma, 2020). 5G technology may facilitate applications for virtual reality (VR) and augmented reality (AR) that are useful in training, education, and entertainment. Hypothetically, conditional value increases the number of prospective consumers who adopt new products and services, which contributes to consumer innovativeness. Studies by Dholakiya & Joshi (2012), Rogers (2003), and Amit & Zott (2001) show that consumers are more inclined to look for a good or service if they think it can benefit them.

Epistemic Value

The value that customers place on information and expertise regarding a product or service is commonly referred to as its epistemic value (Balabanis et al., 2006). Regarding 5G technology, customers' perceived value of learning about 5G's new features and capabilities as well as potential benefits might be considered epistemic value. Epistemic value and customer innovativeness have a good correlation (Song & Kim, 2008). This is because they are more probable to believe that the new product or service will provide them attributes that they will find valuable. According to Wang and Zhang (2019), customers who are more interested in 5G and its potential benefits are more likely to accept 5G-enabled goods and services.

Consumer innovativeness

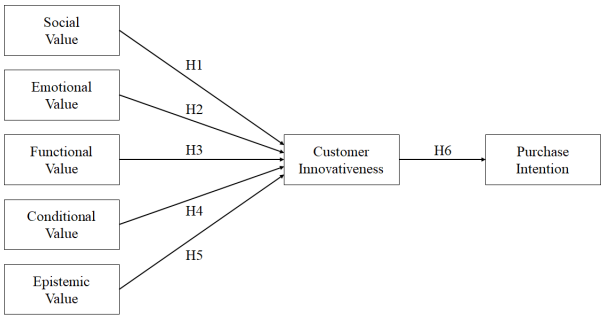
The innovativeness of the customer can have a big impact on whether they want to purchase 5G technology. Research indicates that customers with greater inventiveness are more probable to purchase new 5G goods and services (He et al., 2018). This is due to the fact that forward-thinking customers are more likely to be aware of and comprehend the beneficial effects of new 5G goods and services (Tuncer, 2021). Prior research has demonstrated a good relationship between customer innovativeness and 5G technology purchasing intention. The reason for this is that cutting-edge customers are more likely to be concerned of and appreciate the potential benefits of new 5G goods and services (Tuncer, 2021; Shafi et al., 2022). Besides, according to Shafi et al., (2022), Malaysian consumers adopt 5G technology will probably depend largely on its consumption value. Customers are more likely to be

interested in and purchase 5G technology if they believe it offers great value (Shafi et al., 2022). As a result, 5G technology is significant in Malaysia because it is a new technology that is still in its beginnings.

Theoratical framework and Hypotheses

The study's conceptual framework, which is based on concepts from Sheth et al, 1991, is shown in Figure 2.

Figure 2. Conceptual Framework



Source (Sheth et al, 1991)

Table 1 summarizes the proposed hypotheses of the study. The tested hypothesis and the research study's null hypothesis, which are to be produced to achieve the study's objectives, will be used as the basis for the research study hypothesis.

Table 1. Hypotheses

H1:	Social value has a significant relationship towards consumer innovativeness on the purchase intention.
H2:	Emotional value has a significant relationship towards consumer innovativeness on the purchase intention.
H3:	Functional value has a significant relationship towards consumer innovativeness on the purchase intention.
H4:	Conditional value has a significant relationship towards consumer innovativeness on the purchase intention.
H5:	Epistemic value has a significant relationship towards consumer innovativeness on the purchase intention.
H6:	Consumer innovativeness has a significant relationship towards purchase intention of 5G wireless technology in Malaysia.

Research Methodology

An exploratory research design was applied for this study. Since 5G is viewed as a novel field of study, exploratory research is deemed appropriate for this investigation. Quantitative research is utilized to quantify the variables of consumer consumption value and consumer innovativeness to examine the elements that impact customers' purchasing intention towards 5G technology. Thus, examining the relationship between the independent and dependent variables is the goal. The quantitative approach is belief to be appropriate for the objective of this research in measuring and analysing Malaysian consumers' perceptions of value, customer innovativeness, and purchase intentions. Convenience sampling, a popular technique in marketing research, was selected for this study due to its accessibility, affordability, respondent desire to participate, and flexibility to be scheduled at a specific time (Sarstedt et al., 2018).

Population

The study's population consists of up of Malaysians who lives in Kuala Lumpur, Malaysia. The city was selected for the study's geographic location since it is a major the city of an urban centre with a diverse population, and it has a broad network of 5G connections. By concentrating on Kuala Lumpur, the research hopes to learn more about how consumers perceive the value, are innovative, and intend to purchase 5G technology. Those who personally experienced 4G to 5G wireless communication technologies at least once make up the study's respondents. All respondents, despite their gender, ethnicity, income, occupation, social or cultural background, must be at least 18 years old. Engaging a diverse variety of age groups facilitates the collection of thoughts and viewpoints from various generations, hence enhancing comprehension of how different age groups' consumers perceive 5G wireless technology.

Sample Size

The sample size for this study is calculated using the table produced by Krejcie and Morgan (1970). According to the population size, confidence level, and margin of error, the table offers guidance for determining the right sample size (Krejcie & Morgan, 1970). For this study, a 95% confidence level has been chosen, indicating that the results obtained with 95% confidence accurately represent the population. Additionally, 5% margin of error is taken into account, allowing for a respectable degree of accuracy in the outcomes. Around 1.9 million people are expected to live in Kuala Lumpur in 2022 (Department of Statistics Malaysia, 2023). According to Krejcie and Morgan (1970), a population of more than one million demands a sample size of 384 respondents. The sample size of 384 respondents is reflected sufficient to achieve a representative of the population and to obtain reliable results in exploring consumer perceptions of consumption value and consumer innovativeness in relationships of purchase intention for 5G technology in Malaysia.

Data collection

This study focuses on a primary data collection method employing a questionnaire to collect data. The questionnaire for this study will be distributed online using Google Form via various social media applications

such as Facebook and Twitter. Online surveys such as SurveyMonkey, Google Forms and Qualtrics are used for its wide reach, convenience, cost-effectiveness, efficiency, and the ability to maintain participant privacy, which makes it a popular choice for research.

The questionnaire is allocated into two parts. Section A and Section B. Section A included demographic factors. Section B measured independent and dependent variables on a seven-point Likert scale, with 1 representing 'strongly disagree' and 7 representing 'strongly agree'. The reason for using a seven-point Likert scale is that it gives more choices for participants to express their views. Respondents can give more specific and detailed feedback, allowing for a better understanding of their attitudes and preferences. It helps to acquire a wider range of responses and provides more accurate data compared to simpler scales with fewer options (Lewis, 1993).

Conclusion

Researchers and academics have recently started promoting 5G wireless communication technology. Numerous concerns that require attention have been recognized by scholars and governmental agencies. According to Razif et al. (2022), most Malaysians are not familiar with the capabilities and advantages of 5G technology. There has been inadequate explanation of the social implications of 5G, which has left the public with little knowledge of its technological possibilities. Besides, the adoption of 5G wireless communication technology faces several major obstacles, which include deployment, safety concerns, cost, and radio frequency (RF) interference.

Moreover, many research studies (Roehrich, 2004; Rogers, 2003) indicate that consumer innovativeness plays a significant role in shaping the acceptability and uptake of new products by consumers. Though its significance is accepted, there is still debate about how to evaluate and determine consumer innovativeness. This suggests that measuring someone's degree of creativity is unable to be accomplished using a single approach. Many studies use different methods to measure consumer innovativeness, and these methods often generate results that are inconsistent. Researchers need to provide a more consistent way to evaluate customers' innovativeness. This may contribute to the advancement of concept knowledge in addition to allowing researchers to compare their findings across investigations. Additionally, it has been highlighted by Hauser et al. (2006) and Roehrich (2004) that there is no agreement in the academic literature. The inconsistency in the way consumer innovativeness is conceptualized and assessed highlights the need for further research and consistency in this field.

Finally, the research that is currently available shows that, given that 5G technology is still relatively new in Malaysia, there lack of studies specifically examining its consumption theory in Malaysia. Few studies have been conducted with a specific focus on Malaysia alternatively, most of the previous research has taken place in other countries, such as the United States, Germany, the Netherlands, Pakistan, and Tunisia (Lai, 2021; Zhang et al., 2022; Bokhari et al., 2020; Farooq et al., 2019). It thus seems appropriate for this study to examine the potential effects of 5G on customer innovativeness and value of consumption, as those variables will eventually influence purchase intention.

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