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Perceived Ease of Use, Perceived Usefulness, and Intention to Use E-Commerce Platforms by Agribusiness Owners in Malaysia: A Review

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Abstract

Malaysia's e-commerce is rapidly expanding, driven by increased online shopping among businesses and consumers. In the agriculture sector, companies are adopting e-commerce for efficiency, cost reduction, and revenue growth, supported by government initiatives such as NEP 2030, MyDigital, and PENJANA, recognizing its positive economic impact. Given the importance and challenges of agriculture in Malaysia, agribusinesses must leverage e-commerce and government support in this endeavour is vital. In Malaysia, e-commerce in agribusiness has potential, but many businesses hesitate due to perceived risks, lack of expertise, and high transition costs from traditional to online models. While e-commerce offers opportunities, immediate cost savings might not always be evident, with businesses needing to invest in online growth and customer engagement. Furthermore, challenges in logistics and delivery services, especially in remote areas, impact businesses' ability to efficiently serve customers. A comprehensive analysis of extant literature has revealed significant research gaps, particularly in understanding the factors influencing agribusiness owners' adoption of e-commerce. Thus, this paper aims to address the knowledge gap on e-commerce usage in agribusiness using TAM as the theoretical framework. Specifically, the paper reviewed the perceived ease of use, perceived usefulness, and intention to use, which are three (3) components of the model, and how they can be used to investigate e-commerce adoption by business entities in Malaysia. The paper also reviewed the benefits and challenges faced by agribusiness in Malaysia and provided insight on studies related to the adoption of e-commerce. In conclusion, although the TAM model has been widely used to understand technology adoption, including in Malaysia, there is a need for sector-specific studies. Therefore, this paper advocates for tailored TAM studies to precisely gauge the level of e-commerce acceptance within the Malaysian agribusiness sector, providing valuable insights for future digital integration strategies.

Keyword: Technology Acceptance Model, E-commerce, Adoption, Agribusiness, Malaysia

Introduction

With the ever-changing landscape of market conditions coupled with advances in technology, the utilization of e-commerce platforms has increased worldwide. Across the globe, numerous business owners have migrated their businesses to digital platform from physical counterparts (Hafiz et al., 2020), and this is also true for Malaysia. As reported by the Department of Statistics (2022), Malaysia's e-commerce income breached the RM 1 trillion mark for the first time in 2021, totalling RM 1.09 trillion, a 21.8% jump over 2019. The upward trend continued in 2022, with e-commerce revenue in Quarter 3 2022 totalling RM 289.2 billion, up 0.3% from Quarter 2 2022 (Department of Statistic, 2022).

The growth of e-commerce in Malaysia has been significant in recent years, with an increasing number of businesses adopting e-commerce as alternative route for businesses, and in most cases, act as a replacement for traditional business practice (Wei-Loon & Nur Afiqah, 2020). Furthermore, adoption of e-commerce platforms by businesses in Malaysia has accelerated due to COVID-19 pandemic, which has resulted in several restrictions due to the pandemic itself or by the government, prompting many businesses to turn to e-commerce platforms as consumers unable to move freely to shop (Yusof et al., 2021). The growth of e-commerce in Malaysia is not only attributed to advancements in technology and the pandemic, but also to the government's policies and planning, making the country one of the most promising for further involvement in e-commerce activities (Hafiz et al., 2019). Policies, such as MyDigital Initiative and National Entrepreneurship 2030, indicated that the government recognises the benefits of e-commerce platforms to business and economic wellbeing and showcasing their commitment to further improving the use of e-commerce in Malaysia.

The use of e-commerce by business in Malaysia has been discussed by many researchers (Khatibi et al., 2003; Tan et al., 2009; Noor Azuan, 2006; Syed Zambri et al., 2015; Hakimin et al., 2021; Mira et al., 2018; Tze et al., 2020). However, research focusing on the use of e-commerce by agribusiness is still scarce, with researchers focusing on specific platform (Nor Farzana & Faudziah, 2011) or on customers' perspective (Suhana & Nik Rozana, 2015; Nor Farzana & Faudziah, 2011). It is also imperative to perform quantitative research on factors affecting the e-commerce platforms adoption utilizing Technology Acceptance Model (TAM) or its extension to better understand the extent to which these agriculture sector businesses accept e-commerce platforms (Nor Farzana & Faudziah, 2011). As a response, this paper intended to address the knowledge vacuum on e-commerce usage in agribusiness using TAM as main framework. Specifically, the paper reviewed the perceived ease of use, perceived usefulness, and intention to use, which are three components of the model, and how they can be used to investigate e-commerce adoption by agribusiness in Malaysia. This paper also reviewed e-commerce and its benefits and provide insight on studies related to e-commerce adoption by business in Malaysia.

Agribusiness in Malaysia

Agribusiness encompasses various businesses involved in agricultural production, processing, and distribution. This includes inputs, processing, and distribution companies. In recent years, agribusiness has been influenced by globalization, changing consumer preferences, and advancements in digital technology. Globalization has expanded trade opportunities for agricultural products, leading to the rise of global agribusiness corporations. Consumer preferences for sustainable and locally sourced food have also impacted agribusiness

strategies (Jansen & Vellema, 2004). Digital technologies, such as precision agriculture and data analytics, have transformed farming practices, improving resource management and productivity (Javaid et al., 2022). Agribusiness continues to evolve to meet the challenges of feeding a growing global population, ensuring food security, and addressing environmental concerns. It combines science, technology, economics, and sustainability to adapt to a changing world.

Agribusiness in Malaysia plays a vital role in the country's economy and food security. The sector encompasses a diverse range of activities, including crop cultivation, livestock farming, fisheries, and forestry. Government policies and regulations have a considerable impact on the growth of agribusiness in Malaysia. The Malaysian government has shown its support for the agricultural sector through various initiatives and policies with the aim to enhance agricultural productivity, improve food security, and promote sustainable practices (Shahiida & Firdaus, 2022).

Furthermore, the adoption of technology in agribusiness in Malaysia is growing, with an increasing focus on precision agriculture, digital farming practices, and IoT (Internet of Things) applications (Saifan et al., 2021). Application of new or modern technology in agriculture has the potential to elevate production capacity and development of agriculture (Rehman et al., 2016; Khanna, 2001). Technology used to achieve sustainability in agriculture can increase productivity and maximize economic benefit, while conserving the environment (Zilberman et al., 1997; Tandogan & Gedikoglu, 2020). Farmers in Malaysia are receiving loans from different institutions to improve crop production using effective practices advised through agricultural extension services. Moreover, insurance organizations are assisting financially challenged farmers in acquiring the necessary resources to enhance their income through the adoption of innovative agricultural techniques (Saifan et al., 2021).

The agribusiness sector in Malaysia faces several challenges that hinder its growth and development. Labour shortages and the lack of a skilled workforce are also major challenges faced by the agribusiness sector in Malaysia. Many young Malaysians are reluctant to pursue careers in agriculture due to the perception that it is physically demanding and financially unrewarding (Athukorala & Loke, 2009). Natural disasters such as droughts and floods pose a significant threat to Malaysia's agriculture sector, hindering its productivity and profitability (Alam et al., 2011). Climate change further exacerbates these challenges, imperilling food security through reduced crop and livestock production triggered by temperature changes (Athirah et al., 2018).

The COVID-19 pandemic's far-reaching impact continues to be felt long after its initial outbreak, disrupting productions and supply chains. Among the affected sectors is Malaysia's agribusiness, which has been severely hampered by pandemic-related measures such as lockdowns, business closures, and travel restrictions. A survey by the Department of Statistics Malaysia (2020) found that 70.0% of people in agriculture experienced income reduction, and the sector had the highest job loss rate (21.9%) compared to other sectors. Marketing difficulties arose due to the Movement Control Order, leading to farmers, restaurants, and supermarkets discarding their goods. As a result, some agriculture businesses had to shut down and face bankruptcy due to their inability to sell products (Hazlin & Trinna, 2020; Ng & Ramiza, 2020).

E-commerce

According to Azuan (2006), e-commerce is defined as the sharing of business information, maintaining business relationships, and conducting transactions through internet-based technology, based on the widely accepted definition by (Zwass, 1996). The increasing use of technology, such as smartphones and computers, affected consumers' purchase behaviour. Consumers today are more comfortable making online purchases, a trend that has fuelled the meteoric rise of e-commerce platforms (Hou et al., 2016). This shift towards e-commerce platforms is driven by several factors, including the vast array of products availability, convenience, and the ability to compare prices (Skaržauskienė et al., 2015).

The utilization of e-commerce not only has a good influence on customers, but it also has a favourable impact on businesses. E-commerce streamlines business processes and reduces the need for excessive documentation. Digital transactions and automated systems can replace manual paperwork, saving time and resources for businesses. This increased efficiency allows companies to focus on core activities and innovation rather than getting bogged down by administrative tasks (Daniel et al., 2002). E-commerce offers businesses a cost-effective alternative to traditional brick-and-mortar operations. The elimination of physical storefronts and associated expenses, such as rent and utilities, can lead to significant cost savings. Additionally, digital marketing and online advertising tend to be more affordable and targeted compared to traditional advertising methods, resulting in increased return on investment (Quayle & Christiansen, 2004; Xu et al., 2008; Taher, 2021). By adopting e-commerce, businesses can directly reach their customers without the need for intermediaries like wholesalers or retailers. This direct-to-customer approach not only reduces distribution costs but also allows businesses to have better control over their products' pricing and availability (Quayle & Christiansen, 2004; Xu et al., 2008).

Furthermore, businesses have been proven to be able to enhance their sale reach and customer service through e-commerce, which contribute to the businesses gaining new customers while having better customer retention (Taher, 2021). E-commerce enables businesses to transcend geographical boundaries and reach a broader audience. By having an online presence, businesses can access potential customers both domestically and globally. This expanded market reach opens new growth opportunities and revenue streams. E-commerce is also beneficial for retaining customers and encouraging repeat business since it makes online buying easy and simple for consumers.

The adoption of e-commerce has a transformative effect on businesses, leading to improved efficiency, cost savings, enhanced distribution channels, and better customer service. By embracing e-commerce, businesses can tap into the vast potential of the digital market, gain a competitive edge, and achieve sustainable growth in today's rapidly evolving business landscape. As more businesses in Malaysia recognize these benefits, the e-commerce sector is expected to continue its positive trajectory and play an increasingly crucial role in the country's economic development.

E-commerce in Malaysia

Technology has the potential to address issues in agribusiness in Malaysia and contribute to its growth. Simple solutions like agro-based websites can provide helpful and informative information, products, and services to the agricultural community (Farah Adilla & Bahaman,

2013). Mobile web platforms offered by agriculture agencies can also provide timely and accurate information, ensuring that the community has access to the right person with the right information at the right time (Salleh et al., 2010).

Another technology that can elevate agribusiness is e-commerce. Indeed, Malaysia's e-commerce ecosystem has shown positive developments, although it remains at a developing stage, and businesses have been slow to adopt it (Wei-Loon & Nur Afiqah, 2020). Several studies have indicated that Malaysian businesses view the adoption of e-commerce platforms as risky and challenging, contributing to their hesitation (Khatibi et al., 2003; Tan et al., 2009). Furthermore, there is lack of expertise and knowledge to effectively apply e-commerce platforms to their full potential by business owners and managers (Khatibi et al., 2003; Noor Azuan, 2006; Zambri et al., 2015).

Low e-commerce adoption by businesses can also be caused by high cost of switching from traditional to digital business (Khatibi et al., 2003). While e-commerce adoption can undoubtedly improve business performance and open new opportunities, as highlighted by Mira et al (2018), it may not always lead to immediate cost reductions. The cost savings from e-commerce might be more apparent for certain aspects of the business, such as reducing the need for physical retail space or streamlining inventory management. However, in other areas, such as marketing and technology investment, businesses may need to allocate resources to drive online growth and customer engagement.

In addition to the challenges faced by businesses, the logistics and delivery infrastructure in Malaysia, while improving, still present challenges in certain regions, impacting the overall customer experience (Tamizi, 2021; Azina & Mehedi, 2020). This logistical concern can affect businesses' ability to efficiently serve their customers, particularly in areas with limited access to reliable delivery services.

Continued efforts in establishing a suitable environment for enterprises to embrace digital transformation, boosting digital literacy among the populace, and eliminating logistical obstacles would be required to sustain and accelerate the growth of e-commerce in Malaysia. Nonetheless, the general picture for e-commerce in Malaysia remained positive, with the industry expected to prosper in the future years with the correct strategies and support.

Technology Acceptance Model

Technological advancements have had a profound impact on people's lives, leading to notable changes in how businesses and consumers operate. The adoption of technology has significantly improved the efficiency and effectiveness of performing tasks, bringing about substantial changes in the way work is conducted (Cascio & Montealegre, 2016). Given the substantial impact of technology on daily life and operations, numerous researchers have been drawn to the field to study technology adoption across various industries, whether among enterprises or consumers.

One of the popular theories related to technology adoption is Technology acceptance model (TAM). TAM is a theory introduced by Davis (1989) and was derived from Theory of Reasoned Action (TRA) and Theory of Perceived Behaviour (TPB). TAM suggested users' beliefs about perceived usefulness (PU) and perceived ease of use (PEOU) influenced users' intention to

use the system, which determined user acceptance of the system (Davis, 1989). PU can be explained as the level to which a person believes that using a particular system will enhance his or her performance and PEOU refers the level of which a person believes that using a particular system will be free of effort. These two beliefs will create an intention of users towards technology, and as an effect, the level of usage of said technology (Davis, 1989). Figure 1 depicts the Technology Acceptance Model (TAM), which explains how external variables influence perceived ease of use (PEOU) and perceived usefulness (PU), shaping attitudes, intentions, and ultimately, the actual system use.

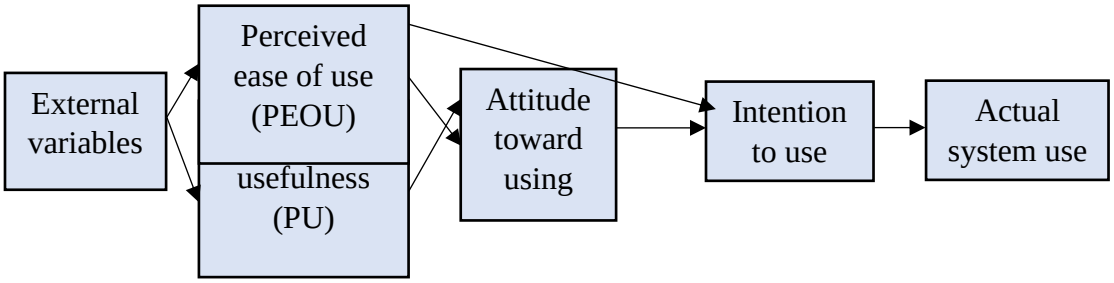

Figure 1: Technology Acceptance Model
(Source: Davis, 1989)

External variables, such as computer literacy and system design, can affect the individual's behavioural intention through perceived ease of use and perceived usefulness (Venkatesh & Davis, 1996). The primary method for identifying external variables is through a thorough literature review. This process helps establish a theoretical foundation for causal relationships between model variables and research hypotheses. These hypotheses are required since they will establish the links between the model variables (Venkatesh & Davis, 2000).

TAM model has been used and further extended in much research to explain behaviours in technology adoption. Venkatesh et al (1994) postulated and confirmed that the initial users' PEOU of any system is related to their general computer efficacy and adjust these beliefs to form PEOU that are more system specific. Gefen and Straub (2000) confirmed in their study that PEOU has no influence on information technology (IT) adoption when using the website for product purchase but has an effect on IT adoption when the website is used for product inquiry. This is implies that ease of use is not an inherent quality of products when purchasing, whereas during inquiries, the required information is embedded in the IT, and its quality directly tied to ease-of-use of the IT. Ashraf et al (2014) validated the importance of perceived ease of use and perceived usefulness on consumers' intentions to shop online, although there are complex relations of perceived ease of use, perceived usefulness, and intention to adopt in different geographical settings.

According to several studies, attitude toward using (ATT) is not a significant component in determining behaviour. Davis et al (1989) discovered that PEOU and PU were the best predictors of a computer-based information system's intention to use (ITU) and attitude to use (ATU), but ATT was not a significant predictor. Adams et al (1992) also found that perceived usefulness and perceived ease of use were the strongest predictors of intention to use and actual use of a spreadsheet software, while attitude toward using was not a significant predictor. This has led to exclusion of ATT by researchers in building research framework, such as by (Tao, 2008; Hong et al., 2002). Furthermore, Tao (2008) excluded ATT

in his research based on (Ajzen & Fishbein, 1980; Davis, 1989). They argued that attitude is formed concurrently with belief, and that PEOU, PU, and ITU are robust predictors of individual behaviour.

Perceived Ease of Use (PEOU)

PEOU can be defined as the degree to which an individual believes that using a technology can be effortless (Davis, 1989). PEOU is considered as a cognitive and affective evaluation of the technology and is believed to be based on an individual's prior experience with the technology, as well as their perception of the technology's characteristics. It is the degree to which an individual perceives the technology to be easy to use, simple, and understandable (Davis, 1989; Venkatesh & Davis, 1996).

PEOU is a significant predictor of an individual's desire to utilise a technology (Davis, 1989; Venkatesh & Davis, 1996). According to TAM, an individual is more likely to use a technology if they believe it is simple to use. This is because people are more inclined to accept a technology that they feel they can utilise successfully and efficiently. Furthermore, people are more likely to be happy with technology if they believe it is simple to use. Satisfaction with a technology can led to prolonged usage, resulting in a greater adoption rate of the technology.

Perceived Usefulness (PU)

PU can be defined as the degree to which an individual believes that using a technology will enhance their job performance or overall life (Davis, 1989). PU is considered a cognitive evaluation of the technology and is believed to be based on an individual's prior experience with the technology as well as their perception of the technology's characteristics. It is the degree to which an individual perceives the technology to be beneficial for them in their work performance or daily life (Davis, 1989; Venkatesh & Davis, 1996).

This variable is believed to be a key factor of an individual's intention to use a technology. It is argued that if a person perceives a technology to be beneficial, they are more inclined to accept it. This is because people are more willing to accept technology if they feel it will help them achieve their objectives or enhance their performance (Davis, 1989; Venkatesh & Davis, 1996).

Intention to Use (ITU)

ITU can be defined as the willingness for an individual to use the system (Davis, 1989). ITU stemmed from BI introduced in TRA (Ajzen & Fishben, 1980), which emphasized that a specific behaviour can be predicted by the intention for doing the behaviour in question.

Numerous researchers have centred their studies around the ITU as the focal dependent variable. For example, Brezavšček et al (2017) discovered that PEOU has a stronger impact than PU on ITU statistical software used by students throughout their studies, while PU has a stronger impact on their ITU level in the long run. Hakimin et al (2021) showed that ITU e-commerce among rural micro-entrepreneurs in Malaysia is influenced by both PEOU and PU. Lee et al (2010) discovered that ITU retail self-checkout by customers is indirectly influenced by customer traits. The researchers also found a negative relationship between technology anxiety and ITU retail self-checkout, and older customers have a negative level of ITU retail self-checkout. Kim et al (2010) discovered that PEOU and PU are both strong predictors of

ITU, and early adopters of mobile payment prioritised ease of use more than late adopters who emphasised usefulness in their intention to use the system.

Application of TAM and its Variable in Context of Malaysian Businesses

TAM model has been utilised by researchers in the context of Malaysian businesses. Oly Ndubisi & Jantan (2003) discovered the use of information system by small and medium enterprises in Malaysia is influenced directly by PU and indirectly by PEOU via PU. In another study, Mohamed et al (2005) investigated the relationship between TAM and organizational agility using managers and executives of manufacturing firms in Malaysia as respondents. They discovered that actual system or technology usage had the strongest direct effect on organizational agility, while PU and PEOU of IT influenced organizational agility indirectly through actual systems or technology use and attitudes towards using the technology. Meanwhile, a study by Soon et al (2016) found that adoption of big data by companies in Malaysia is significantly influenced by PU, but PEOU does not have significant influence.

Mahroenian (2012) found that PEOU and PU, along with organizational readiness significantly influenced e-commerce adoption by SMEs in Malaysia. Ong et al (2020) reinforced this finding and emphasized that while many Malaysian SMEs have embraced e-commerce, the actual rate of adoption remains underwhelming. Meanwhile, Hakimin et al (2021) in their study on rural micro-entrepreneurs in Malaysia found that PEOU and PU level positively influenced their ITU e-commerce by the micro-entrepreneurs, bypassing their low level of skill and education to use e-commerce platforms in their business. Lee and Anuar (2022) reported that women micro entrepreneurs in Malaysia are more likely to adopt e-commerce in their business if they have better growth mindset, as the micro entrepreneurs are more likely to have higher level of PEOU and PU.

Even though there are several studies that use the TAM model and its components in the context of Malaysian business, with some concentrating on e-commerce as the focal technology, these studies focused on varied sectors. For instance, some studies use different segmentation, such as women microentrepreneurs by Lee and Anuar (2022) or on SMEs, which include several sectors (Hakimin et al., 2021). Therefore, there is a need for research that uses TAM, its variables, and derivatives tailored for business for specific business sectors because each sector has unique traits and attributes that distinguish it from the others. This is also true for agribusiness, and as suggested by Farzana and Faudziah (2011), a better understanding on how agribusiness accepting e-commerce can be achieved by utilising this model or its other derivatives, which can be used to specific planning and initiatives can be tailored for agribusiness.

Conclusion

The e-commerce industry in Malaysia has experienced significant growth in recent years. Technology advancement has fuelled the growth with many businesses and consumers engaging in online shopping. The government also has made efforts to support the development of the e-commerce sector, such as the initiatives aimed at e-commerce adoption. It is expected that e-commerce platforms usage will continue to grow, as technology advancement, along with government's recognition and influence, are expected to fuel further the adoption of e-commerce platforms.

TAM model has been extensively adapted and applied in numerous research in the past, demonstrating its ability to provide insight on the technology adoption. Researchers worldwide, including those in Malaysia, have utilized TAM and its variables to identify factors influencing the use of specific technology. Some Malaysian researchers have successfully applied TAM to investigate e-commerce platforms as the focal technology. Given the unique characteristics of each sector, tailored studies are essential for specific sector, and agribusiness is no exception. Considering the knowledge gap regarding the level of e-commerce adoption among agribusiness in Malaysia, conducting study utilizing TAM is recommended to explore the extent of e-commerce adoption among agribusiness in Malaysia.

Contribution of the Research

This research makes a significant theoretical contribution by applying the Technology Acceptance Model (TAM) to the agribusiness context in Malaysia, thereby addressing a crucial knowledge gap in the specific adoption factors of e-commerce platforms within this sector. While TAM has been extensively employed in understanding technology adoption across various industries, its application to agribusiness has been notably limited. Through an in-depth examination of perceived ease of use, perceived usefulness, and intention to use, the study provides nuanced insights into the unique challenges and opportunities faced by agribusinesses in Malaysia when adopting e-commerce technologies. The thorough exploration of factors such as perceived ease of use and perceived usefulness contributes to a comprehensive understanding of the barriers and motivators for e-commerce adoption in a sector that plays a pivotal role in Malaysia's economy and food security. This research not only sheds light on the intricacies of technology adoption in agribusiness but also offers valuable insights that can inform policymakers, industry stakeholders, and researchers, enabling the development of tailored strategies to promote digital integration and enhance the competitiveness of agribusinesses in Malaysia.

References

Adams, D. A., Nelson, R. R., & Todd, P. A. (1992). Perceived usefulness, ease of use and usage of information technology: A replication. MIS Quarterly, 16, 227-247.

Athirah, A., Shaidatul Azdawiyah, A. T., & Rozana, N. M. M. (2018). Malaysian government initiatives to reduce the impact of climate change towards the agriculture industry. FFTC Agricultural Policy Platform.

Ajzen, I., & Fishbein, M. (1980). Understanding Attitudes and Predicting Social Behavior. Englewood Cliffs, NJ: Prentice- Hall.

Alam, A. S. A. F., Er, A. C., & Begum, H. (2015). Malaysian oil palm industry: Prospect and problem. Journal of Food, Agriculture and Environment, 13, 143-148.

Athukorala, P., & Loke, W. H. (2009). Agricultural incentives in Malaysia: Trends, patterns and policy implications. Malaysian Journal of Economic Studies, 46. 151-173.

Ashraf, A. R., Thongpapanl, N., & Auh, S. (2014). The application of the technology acceptance model under different cultural contexts: The case of online shopping adoption. Journal of International Marketing, 22(3), 68-93.

Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. MIS Quarterly, 25(3), 351–370.

Brezavšček, A., Šparl, P., & Žnidaršič, A. (2017). Factors influencing the behavioural intention to use statistical software: The perspective of the Slovenian students of social sciences. Eurasia Journal Of Mathematics, Science and Technology Education, 13(3), 953-986.

Cascio, F., & Montealegre, R. (2016). How technology is changing work and organizations. Annual Review of Organizational Psychology and Organizational Behavior, 3. 349-375

Daniel, E. M., Wilson, H., & Myers, A. (2001). Adoption of e-commerce by SMEs in the UK. International Small Business Journal, 20, 253-270.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13, 319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989) User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. Management Science, 35, 982-1003.

Department of Statistics Malaysia. (2020). Laporan Survei Khas Kesan Covid-19 Kepada Ekonomi Dan Individu (Pusingan 1*).*

Department of Statistic. (2022). Quarterly Services Statistics Third Quarter 2022.

Economic Planning Unit. (2021). Malaysia Digital Economy Blueprint. Prime Minister's Department.

Adila, F. A., & Bahaman, A. S. (2013). Factors impinging farmers' use of agriculture technology. Asian Social Science, 9(3), 120-124.

Gefen, D., & Straub, D. (2000). The relative importance of perceived ease of use in is adoption: a study of e-commerce adoption. Journal of the Association for Information Systems, 1, 1-28.

Hafiz, M. Y., Ahmed, M. A., Adilah, N. A. L., Motea, S. A. (2018). Effect of e-commerce platforms towards increasing merchant's income in Malaysia, International Journal of Advanced Computer Science and Applications, 10(8), 466-470.

Hafiz, M. Y., Mohammad, A. A., Adilah, N. A. L., & Fazamin, W. M. A. W. H. (2020). Evaluation on customer satisfaction in using e-commerce platforms: Malaysia as a case study. International Journal of Engineering Trends and Technology*,* 32-37.

Hakimin, M. N. Y., Anwar, F. Z., Razman, H. R., Mohammad, I., & Asyraf, A. (2021). Psychological traits and intention to use e-commerce among rural micro-entrepreneurs in Malaysia. Journal of Theoretical and Applied Electronic Commerce Research, 16(5), 1827-1843.

Hazlin, H., & Trinna, L. (2020). Coronavirus: Farmers dump their stock after police impose restrictions at wholesale market. The Straits Times.

Hong, W., Thong, J. Y., Wong, W., & Tam, K. Y. (2002). Determinants of user acceptance of digital libraries: An empirical examination of individual differences and system characteristics. Journal of Management Information Systems, 18, 124-97.

Hou, Y., Chen, H., & Yang, S. (2016). Research on the business model of e-commerce platform based on value co-creation theory. International Journal of U and E-Service, Science and Technology, 9(3), 415-424.

Jansen, K., & Vellema, S. R. (Eds.) (2004). Agribusiness and society: Corporate responses to environmentalism, market opportunities and public regulation. London, UK: Zed Books.

Javaid, M., Haleem, A., Singh, R., & Suman, R. (2022). Enhancing smart farming through the applications of Agriculture 4.0 technologies. International Journal of Intelligent Networks. 3, 150-164.

Khan, A. G. (2016). Electronic commerce: A study on benefits and challenges in an emerging economy. Global Journal of Management and Business Research, 16(B1), 19-22.

Khanna, M. (2001). Sequential adoption of site-specific technologies and its implications for nitrogen productivity: A double selectivity model. American Journal of Agricultural Economics. 83, 35-51.

Khatibi, A., Thyagarajan, V., & Seetharam, A. (2003). E-commerce in Malaysia: Perceived benefits and barriers. Vikalpa, 28, 77-82.

Kim, C., Mirusmonov, M., and Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. Computers in Human Behavior, 26, 310-322.

Lee, H. J., Cho, H. J., Xu, W., & Fairhurst, A. (2010) The influence of consumer traits and demographics on intention to use retail self-service checkouts. Marketing Intelligence & Planning, 28, 46-58.

Lee, G. H. Y., Anuar, M. H. B. Z. (2022). E-Commerce Adoption by Women Microentrepreneurs in Malaysia. In Kwok, A. O. J., Watabe, M., Koh, S. G. (eds), COVID-19 and the Evolving Business Environment in Asia (pp 99-120). Singapore: Springer.

Mahroeian, H. (2012). A study on the effect of different factors on e-Commerce adoption among SMEs of Malaysia. Management Science Letters, 2(7), 2679-2688.

Salleh, M. H., Azril, H. M. S., Bahaman, A. S., Sham, M. S. A., & Sabila, N. R. (2010). Agriculture communication in Malaysia: The current situation. American Journal of Agricultural and Biological Sciences, 5(3), 389-396.

Ministry of Entrepreneur Development and Cooperatives. (2019). National Entrepreneurship Policy 2030.

Mira, K., Husnayati, H., Adam, M. S., Razi, M. J., & Ruhul, M. A. (2018). Impact of external factors on determining E-commerce benefits among SMEs in Malaysia. Journal of Global Entrepreneurship Research, 8(18).

Mohamed, Z., Raduan, C. R., Iskandar, A., & Maslin, M. (2005). The relationship between information technology acceptance and organizational agility in Malaysia. Information & Management, 42(6), 829-839..

Tamizi, M. (2021). Challenge e-commerce to the logistics courier services provider during MCO in Malaysia. IOSR Journal of Business and Management, 23, 59-62.

Azina, N. I., & Mehedi, M. (2020) Prospects and Challenges in Improving E-Commerce Connectivity in Malaysia. In Chen, L., F. Kimura (eds.), E-commerce Connectivity in ASEAN (pp 78-98). Jakarta, Indonesia: Economic Research Institute for ASEAN and East Asia

Azuan, N. H. (2006). E-commerce adoption issues in Malaysian SMES [Paper presentation]. International Conference on E-Commerce (ICoEC) 2006, Penang, Malaysia.

Farzana, N. A. G., & Faudziah, A. (2011). An interpretive analysis of factors contributing to issues in Agribazaar's implementation. WSEAS Transactions on Information Science and Applications. 8, 329-339.

Ng, X. Y., & Ramieza, W. (2020, March 25). Cameron Highlands farmers dump hundreds of tonnes of vegetables. MalaysiaKini.

Oly Ndubisi, N., & Jantan, M. (2003), Evaluating IS usage in Malaysian small and medium-sized firms using the technology acceptance model. Logistics Information Management, 16(6), 440-450.

Ong, T. S., Teh, B. H., Nur Fatin, K., Mahroeian, H., & Hossain, M. I. (2020). Electronic commerce adoption among Malaysian SMEs. Journal of Critical Reviews, 7, 555-565.

Quayle, M., & Christiansen, J. K. (2004). Business Issues in the 21st Century: An Empirical Study of E-Commerce Adoption in UK and Denmark SMEs. In N. Al-Qirim (Ed.), Electronic Commerce in Small to Medium-Sized Enterprises: Frameworks, Issues and Implications (pp. 53-68). Hershey, PA: IGI Global.

Rehman, A., Jingdong, L., Khatoon, R., & Hussain, I. (2016). Modern agricultural technology adoption its importance, role and usage for the improvement of agriculture. American-Eurasian Journal of Agricultural & Environmental Sciences, 16, 284-288.

Saifan, S., Shibli, R., Junainah, A. H., Ariffin, I. A., & Tham, J. (2021). Agriculture technology adoption in Malaysia: the extension service's role, rural financing, and the lender's institutional context. AgBioForum, 23(2), 92-101.

Shahiida, M., & Firdaus, M. A. A. (2022). Agribusiness marketing, its challenges and current trends. Journal of Agribusiness Marketing, 9(1), 1-12.

Skaržauskienė, A., Baubonienė, Z., & Gulevičiūtė, G. (2015). Factors influencing consumers online shopping decision: present and future evidence from Lithuania. Social Technologies, 5(1), 301-311.

Soon, K. W. K., Lee, C. A.,& Boursier, P. (2016). A study of the determinants affecting adoption of big data using integrated Technology Acceptance Model (TAM) and diffusion of innovation (DOI) in Malaysia. International Journal of Applied Business And Economic Research, 14(1), 17-47.

Zamberi, S. A., Abdul Rahim, A. B., Mohamed, T. F., & Anwar, K. M. Z. (2015). An empirical study of factors affecting e-commerce adoption among small- and medium-sized enterprises in a developing country: Evidence from Malaysia. Information Technology for Development, 21(4), 375-399.

Suhana, S., & Rozana, N. M. M. (2015). Consumers' perception and acceptance of fresh agriculture product purchased through e-business. Journal of Agribusiness Marketing, 7, 49-59.

Taher, G. (2021). E-commerce: Advantages and limitations. International Journal of Academic Research in Accounting Finance and Management Sciences, 11(1), 153-165.

Tan, K. S., Chong, S. C., Lin, B., & Eze, U. C. (2009). Internet-based ICT adoption: Evidence from Malaysian SMEs. Industrial Management & Data Systems, 109(2), 224-244.

Tandogan, N. S., & Gedikoglu, H. (2020). Socio-Economic Dimensions of Adoption of Conservation Practices: What Is Needed to Be Done? In Das, S. K. (ed), Organic Agriculture. IntechOpen.

Tao, D. (2008). Understanding intention to use electronic information resources: A theoretical extension of the technology acceptance model (TAM). AMIA Annual Symposium Proceedings, 2008, 717–721.

Tze, S. O., Boon, H. T., Nur Fatin, K., Hamidreza, M., & Imtiaz, M. H. (2020). Electronic commerce adoption among Malaysian SMEs. Journal Of Critical Reviews, 7(19), 555-565.

Yusoff, M. N. H. B., Zainol, F. A., Ridzuan, R. H., Ismail, M., & Afthanorhan, A. (2021). Psychological traits and intention to use e-commerce among rural micro entrepreneurs in Malaysia. Journal of Theoretical and Applied Electronic Commerce Research, 16(5), 1827–1843.

Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. Decision Sciences, 27, 451-481.

Venkatesh, V., & Davis, F. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management Science. 46, 186-204

Venkatesh, V., Davis, F., Gorgone, J., Longenecker, H., & Miller, D. (1994). Modeling the determinants of perceived ease of use. ICIS 1994 Proceedings, 48, 213-227.

Wei-Loon, K., & Afiqah, N. S. (2020). The motivation to adopt e-commerce among Malaysian entrepreneurs. Organizations and Markets in Emerging Economies, 11(1), 189-202.

Xu, M., Rohatgi, R., & Duan, Y. (2008). Engaging SMEs in e-business: insights from an empirical study. In I. Lee (Ed.), E-Business models, services and communications (pp. 119-137). Hershey, PA: IGI Global.

Zilberman, D., Khanna, M., & Lipper, L. (1997). Economics of new technologies for sustainable agriculture. Australian Journal of Agricultural and Resource Economics, 41, 63-80.

Zwass, V. (1996). Electronic commerce: structures and issues. International Journal of Electronic Commerce, 1(1), 3-23.