

Review

# Factors influencing e-commerce users' adoption of online shopping platforms infrastructure in Malaysia

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**Abstract:** The development and expansion of economies depend heavily on entrepreneurship, and Malaysia is no exception. Understanding the underlying elements that impact the success or failure of user adoption behaviour of online shopping activities is significant since entrepreneurship is critical in driving economic growth and innovation. The study includes 73 articles published from 2004 to the last of 2023 from Science Direct, Scopus, Google Scholar, and Web of Science. We utilised qualitative methods and systematic review issues through the findings of “qualitative” studies as the last step inside a systematic review using Nvivo14. Our study’s result illustrated that applying the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) in Malaysian e-commerce validates the relevance of established theoretical frameworks. This study explores the relationship between 20 independent variables and five mediator factors, with dependent variables, e-commerce in Malaysia. The results highlight the intricate relationships between these variables and their importance for companies, decision-makers, and other stakeholders involved in Malaysian infrastructure financing. This review provides legislators, educators, researchers, and businesspeople with new knowledge in Malaysia so that decision-makers, investors, and aspiring entrepreneurs can make informed decisions.

**Keywords:** online shopping; entrepreneurship; infrastructure finance; Malaysia; user behaviour; e-commerce; shopping platforms

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## 1. Introduction

Digital technologies have proliferated quickly, ushering in a new era of consumer behaviour and altering the traditional business environment (D’Cruz et al., 2022); it provides previously unheard-of convenience, accessibility, and variety, e-commerce, a cornerstone of this digital revolution, has transformed how people purchase (Haque et al., 2009). The e-commerce market in Malaysia is swiftly growing to be one of the biggest in Southeast Asia (Nasution, 2023). Malaysia has seen a significant upsurge in e-commerce activity in recent years, fuelled by expanding smartphone usage, higher internet penetration, and government programmes to support digital business. Incorporating e-commerce into infrastructure can optimise transactions, augment accessibility, and foster financial inclusivity. Its expansion is exceeding those of the region’s more established markets. In 2022 alone, the Malaysian online shopping industry was projected to rise by 20%. The popularity of online buying among consumers is increasing, and in recent years, more flexible payment alternatives have been available. These factors have all contributed to the expansion of e-commerce (Nasution, 2023).

With eBay Malaysia's introduction in 2004, Malaysia's experiment with online shopping began. Two big firms, Lazada, and ZALORA, established their Malaysian businesses in 2012 and 2015, respectively (Chan et al., 2018; Yang et al., 2022), Shopee followed in 2016. The most popular platform for online shopping in the nation, Shopee, has experienced rapid growth and currently draws more visitors each month (Yo et al., 2021). The country is now caught up to more developed online shopping markets to align its regulatory requirements, product availability, payment methods, and delivery times. Because of its strategic location and rich culture, Malaysia is a hub for Southeast Asia business (Hietala and Friedrich, 2023). The nation's use of digital technology has caused e-commerce to soar, building a solid ecosystem of online shopping platforms that cater to a range of customer needs (Salleh et al., 2020). The digital marketplace in Malaysia offers a wide range of possibilities for people to explore and engage with, from fashion and gadgets to groceries and services; understanding the elements that influence or impede users' adoption of online shopping platforms is crucial as Malaysia maintains its economic growth and technological development (Tan et al., 2020).

According to Berger et al. (1999), the Internet and finance are global phenomena. Countries like Brazil, India, South Korea, the United States, and Malaysia are witnessing the emergence of e-finance. According to Claessens et al. (2005), e-finance has rapidly advanced, particularly in online banking/broking. Internet banking is quickly growing in Southeast Asia, particularly Singapore, Thailand, and Malaysia. E-finance grew faster in countries with solid telecommunication infrastructure, while slower in countries with weaker telecommunication infrastructure. According to Evans and Schmalensee, the growth of e-finance is hindered by a lack of solid telecommunication infrastructure because it relies on internet functions. Shahrokhi (2008) demonstrated how E-finance transformed the financial markets, eliminating the need for physical locations and allowing various online financial activities. Organisation for Economic Cooperation and Development Joseph (2001) showed that the trading system is becoming global. Goyal et al. (2022) state that e-commerce adoption in developing countries is hindered by inadequate infrastructure, poor socioeconomic conditions, and the absence of a national strategy, preventing these countries from reaping the benefits of e-commerce. Cultural factors were deemed crucial by Goya et al. (2022) in comprehending the adoption and diffusion of e-commerce in developing nations.

E-commerce was considered an innovation in developing nations. According to Youssef and Dahmani (2023), security and privacy concerns, limited e-commerce knowledge, and high maintenance costs are the primary obstacles for SMEs in Iran, Malaysia, and India to adopt e-commerce. In their study, Mohammed and Tejay (Youssef and Dahmani, 2023) investigated how national culture affects the connection between privacy and e-commerce acceptance in Trinidad and Tobago. Cultural values shaped individual privacy concerns and societal acceptance of e-commerce, independent of technological and economic factors. The study emphasised the role of Internet security awareness, e-commerce acceptance, privacy, and personal interests in influencing online transaction usage.

However, as the e-commerce environment develops, various complications regarding consumer adoption behaviour emerge (Ong et al., 2020). People's choices

to use online shopping platforms are impacted by an intricate network of psychological, technological, and contextual factors. The adoption and usage patterns within this digital environment are shaped by the interaction between individual perspectives, technology capabilities, and cultural norms (Bhatt and Nagvadia, 2021; Yang et al., 2022). It is crucial to investigate the underlying dynamics determining users' actions when interacting with online purchasing platforms, given the revolutionary potential of e-commerce and its growing role in the Malaysian economy. This Systematic Literature Review (SLR) aims to review the existing body of research on the sufficient facets of e-commerce online shopping user adoption behaviour in the Malaysian context. This review sheds light on the underlying causes, problems, factors, and possibilities that characterise users' interactions with online shopping platforms by assessing and critically evaluating various scholarly contributions.

The research is organised into five sections: section 2 covers the method; Section 3 covers the systematic analysis and results; Section 4 covers the evaluation and discussion; and Section 5 concludes the study.

## **2. Materials and methods**

The method of the study was interpretative. Interpretivism asserts that there are multiple realities and that humans may describe the situation. The study combines the interpretative ideology technique with the qualitative method to better understand the factors influencing the adoption of e-commerce and online shopping. In a systematic review of the literature, which is what this study seeks to achieve, interpretivism and the qualitative approach are used to synthesise studies, according to Carrera-Rivera et al. (2022).

Selected papers on adopting and implementing online shopping in Malaysia as a developing country were chosen to use an SLR. The total knowledge of a topic can be determined as a crucial stage in advancing the study (Ilham et al., 2021). Using an SLR in the study of Information Systems (IS) and Information Management (IM), research aids in giving a snapshot of the field. It considers critical arguments, the direction of the area, potential problems that may arise, and the direction for future studies (Yang and Yuan, 2022). According to Reddy et al. (2022), an SLR can contribute by creating a model and a conceptual framework but is not required (as with empirical research); this research's principal aim is explanation, yet a study may adhere to a particular literature review, like a meta-analysis. As a result, this work contributes theoretically by creating a novel model of what factors affect the user adoption behaviour of online shopping in Malaysia.

### **2.1. SLR question**

The review addresses research issues related to Malaysian shopping adoption behaviour, aiding readers in navigating the challenging environment. The initial phase in the SLR evaluation process was to develop research questions (HamaMurad and Jusoh, 2022). Four SLR study questions were provided to achieve successful outcomes readily and clearly. The readers can understand online shopping or e-commerce and user behaviours by receiving obvious replies to the many study inquiries (Mengist et al., 2020). What influences user behaviours adaption when shopping online and other

difficulties and views are discussed? **Table 1** contains the SLR Questions SLRQ, the rationale for evaluating them, and the questions posed in that study.

**Table 1.** Systematic literature review questions and purpose.

SLRQ No.	SLR Research Question	Purpose
SLRQ1	What are the main factors affecting Malaysian users' use of online shopping platforms?	Identify the factors that affect online shopping use.
SLRQ2	What are factors that affect user online shopping in Malaysia	To identify the factors that affect online shopping users' behaviour.
SLRQ3	What theories can help explain and predict user online shopping adoption behaviour in the Malaysian context?	Explain the theories used to analyse e-commerce adoption behaviour in the Malaysian context.
SLRQ4	What factors affect the user adoption behaviour of online shopping platforms in Malaysia?	To identify factors that affect the user adoption behaviour of online shopping platforms in Malaysia.

## 2.2. Search strategy

Three electronic library databases, including Scopus, Web of Science, and ScienceDirect, were used for systematic literature searches. Another tool used to reduce the impact of location bias was Google Scholar. We collected data about the uptake and use of online shopping in Malaysia using Google Search. Scopus, Web of Science, and ScienceDirect were selected for our study because they offer results from a wide range of professional journals and allow the researcher to apply different filters to their searches to narrow them down to findings. Google Scholar was selected because it extended the search beyond specific databases. Google Search was used to find official statistical documents.

Researchers conducted the searches, which occurred during November and December 2023. The investigation was restricted to papers released between 2004 and 2023. The years 2004 to 2023 were selected because, with the introduction eBay Malaysia in 2004, Malaysia's experiment with online shopping began; this work wants to use the most recent research on the subject.

Online shopping, e-commerce, Malaysian nations, factors, effects, and adoption were searched. Various synonyms corresponding to the original keyword were added when searches were required to be honed to produce more or better results: online businesses, Internet-based businesses, online commerce, behaviour, online shopping, factors, and effects. As recommended by various writers (Watson and Webster, 2020; Webster and Watson, 2002), some papers were taken from the reference lists of the pertinent documents (backward search) and were relevant to the study. The sources of information that were searched and the queries that were used, including the revised queries, are shown in **Table 2**. Each row shows how the search word query was honed before being used to find the articles.

**Table 2.** Search word strategy quires.

Source database	Query
Scopus	(“online shopping platform” OR “online shopping platform”) (“online shopping” AND platform) AND (“users adoption behaviour”) (“e-commerce” OR “online shopping” OR “online shopping”) AND (adoption) (“online- shopping” OR “online shopping platform”) AND “users adoption behaviour”
Web of Science	factors AND online shopping AND adoption AND Malaysia OR e-commerce AND adoption AND (Behaviour OR influences OR effects OR determinants) (Online shopping OR online shopping OR e-business) AND Behaviour AND adoption AND (factors OR influences OR effects OR determinants)
Science Direct	e-commerce OR online shopping adoption in Malaysia adoption Factors influencing online shopping OR Malaysia’s online shopping user behaviour OR user behaviour
Google Scholar	Factors influencing behaviour user online shopping adoption in Malaysia peer-reviewed English. Online shopping adoption in Malaysia peer-reviewed English Actors OR influences OR determinants online shopping OR electronic commerce adoption in emerging OR Malaysia OR developing economies peer-reviewed English
Google Search	Online shopping user behaviour adoption in Malaysia or developing countries’ statistics

### 2.3. Criteria concerning inclusion and exclusion

It is crucial to outline the criteria for inclusion and exclusion used to choose the articles (papers or manuscripts) used for analysis in the SLR. Therefore, SLRs must clearly state what (and why) will be included in the research and what will be eliminated (Mulibana and Rena, 2021). According to Hamamurad et al. (2021), the search procedures, the kinds of sources a study will concentrate on, the time frame for which a search will be limited, and the discipline (if necessary) are all connected to the inclusion/exclusion criteria.

**Table 3.** Lists of the specific criteria for inclusion and exclusion.

Criteria	Inclusion	Exclusion
Language	English	Other languages
Year of publication	2004–2023	before 2004
Content	directly related to Malaysia	Other countries
Document Type	article and book	Article review, conference paper, and book chapter
Source type	Journal and book	Conference proceeding, Book series and Trade journal
Publication state	Final	Article in press

Our inclusion criteria included peer-reviewed works written in English that were published in digital databases between 2004 and 2023 (either as conference papers or journal articles) into consideration. The importance of the data from official technological and statistical reports released between 2004 and 2023 was also considered, including research where subjects (or consumers) are in developing nations and interact with companies based in Malaysia. Because of the authors’ restriction to the English language, we rejected papers not authored in English and

papers translated into English in another language that did not include any documents from before 2004. We eliminated from our study books, commentary, letters, news pieces, and publications that were not peer-reviewed. Finally, we disregarded duplicate research. **Table 3** provides a list of the specific criteria for inclusion and exclusion.

#### **2.4. Favouritism and bias**

Although the researchers attempted to minimise bias, bias still exists in the study according to the interpretive philosophy (Pervin and Mokhtar, 2022). We embrace bias rather than avoiding bias to increase trustworthiness and authenticity, which are indicators of rigour in interpretative studies (Peters, 2022). According to Tight (2023) and Skopec et al. (2020), researchers recognised and participated in research design, location, selection, and synthesis biases.

Review design bias was countered by ensuring an objective research topic was planned before using research databases and Google searches. The SLR research questions do not suggest or lead to any conclusions. All positive (benefits), unfavourable (challenges), or neutral factors are considered. Any Malaysian studies were taken into consideration. To verify that there are no skewed conclusions, we corrected the bias by linking the results. Location bias was eliminated by restricting the search to only English-language papers and peer-reviewed articles. Because other sorts of literature, such as government statistics materials, were also searched, Google Search was used. Several pertinent databases were examined to identify and use a wide variety of material.

To ensure that the content of this publication has not been limited to the comprehension of any one author alone, bias in selection has been addressed by ensuring that all authors have reviewed it (Baldwin et al., 2022). Key concepts are defined and explained without ambiguity to ensure they are understood completely and that a specific method is followed to reduce bias in the analysis. Various data, procedures, samples, and sample sizes were considered. The study question must consider all aspects, given the range of findings. Using the thematic analysis technique helped remove author-centricity by ensuring that the motifs found were shared across multiple studies and by all authors.

#### **2.5. Data synthesis and extraction**

A systematic process was used to extract and synthesise pertinent data for the chosen article. The research's objectives, methods, theoretical frameworks employed, and conclusions about Malaysian consumers' acceptance of online shopping were all vital information. For comparison study, this data was arranged into a structured matrix. The authors conducted the preliminary information extraction process from November 2023 to December 2023. All three online databases were searched using various search terms (query) combinations to produce as many distinct results as workable. Individual terms related to the Boolean operators "AND" and "OR" were used in the Scopus, Web of Science, and Science Direct advanced search. The researchers discovered that the words "online shopping" and "e-shopping" had to be utilised without a connecting dash - "online shopping", "online shopping", "e-

shopping” and “e-shopping”, because the dash displayed the Boolean Operator “NOT” which produced irrelevant results. However, as a dash did not affect Springer Connecting and Google Scholar’s databases, the complete search “e-shopping” OR “online shopping” was used. Similar searches were conducted repeatedly across the databases to determine whether they would yield unique or similar results. The researchers discovered many duplicate search results within and across databases. Because of this, duplicates were not found during initial searches, although some duplications were still discovered during the verification process.

The initial search conducted in Scopus included the terms “online shopping”, “adoption”, “behaviour”, and “Malaysia.” For each subsequent search, additional keyword searches were added to it, such as “online shopping”, “influences”, “factors”, “effects”, “determinants”, and “Malaysia”, to narrow the search further. Peer-reviewed articles and conference proceedings in English were used to narrow each Scopus search. The initial search in ScienceDirect was “Online Shopping User Behaviour Adoption in Malaysia.” For each subsequent search, additional search terms were added to the initial phrase, such as “online shopping”, “influences”, “factors”, “effects”, and “Malaysia” to narrow the search further. Every ScienceDirect search was honed using the 2004–2023 time frame, academic publications, conference information, open access, and the public archive. The Web of Science search bar received the phrase “factors online shopping behaviour adoption Malaysia”, but it was rearranged into multiple search phrases connected by Boolean operators. Then, it was further refined by the addition of other search phrases like “e-shopping”, “influences”, “factors”, “effects”, and “Malaysia.”. The timeframe 2004–2023 article, conference document, and English were used to narrow each search in the Springer Link.

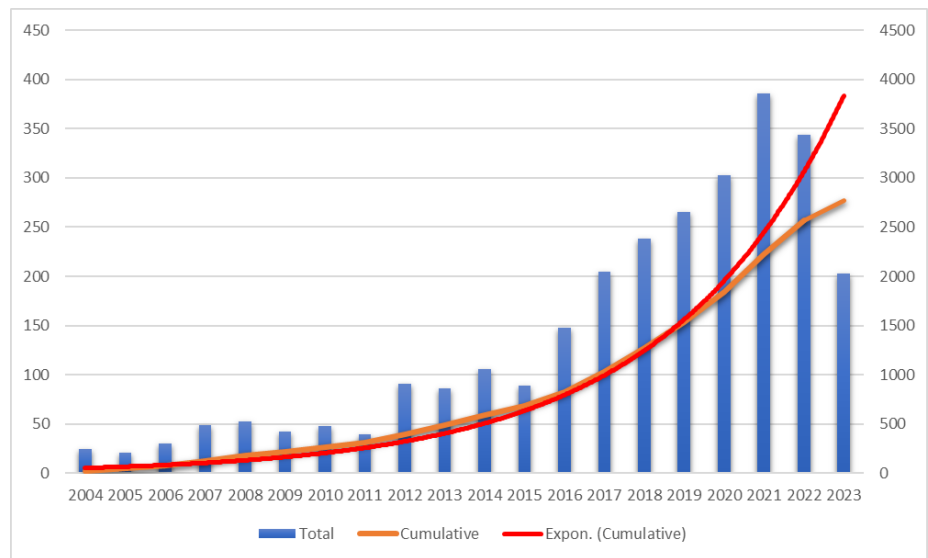
As the only filter option in Google Scholar is to refine by time, the first search was entered as a phrase incorporating two filters: “Factors influencing online shopping user behaviour adoption in Malaysia peer-reviewed English.” The first search was then further refined by the addition of new search phrases, including “online shopping”, “e-shopping”, “user”, “behaviour”, “influences”, “effects”, and “Malaysia.” Each search was filtered by adding “peer-reviewed” and “English” at the end, besides 2004–2023. “E-Commerce Users Adoption Behaviour of Online Shopping Platform in Malaysia” was typed into Google Search. No filters were applied because the results were presented chronologically, starting with the most recently published and relevant grey literature.

## **2.6. The productivity**

All four database searches recommended about 2772 studies. The 2772 amount is not a precise figure but a rough estimate because it includes overlapping, where most queries returned duplicate results from other searches in their systematic literature evaluation. As a result, a SLR may begin with more articles found in the first search but end up with fewer articles to study.

The number of articles devoted to online shopping or e-commerce in Malaysia study has grown over the past 20 years. Changes in publications and citations across the research period are shown in **Figure 1**. In this field of study, scientific output is growing at a 13.8% annual rate. However, after 2016, productivity in this field sped

up. After an increase in 2020 and a higher number in 2021, the yearly production of science climbed quickly. In fact, after 2016, 74.46% of the scholarly papers in this area were written. The number of citations increased along with the rapid expansion in scientific papers, and as a result, 86.67% of all citations were created after 2021. Despite fewer publications published in 2015, overall productivity is rising. Out of 2772 papers, as seen in **Figure 1**, 2021 published 386 documents annually, which is the most. In 2022, productivity lagged. The upward trend and the total amount of articles issued during the first eight months of 2023 (about 203 papers) show that output in 2023 will be higher than in 2022, although data for 2023 only includes articles through 27 December 2023.



**Figure 1.** The annual output of peer-reviewed publications and the accompanying citations in Malaysian research on online shopping or e-commerce.

Note: The analysis only includes items published up to 27 December 2023; thus, 2023 is not represented entirely.

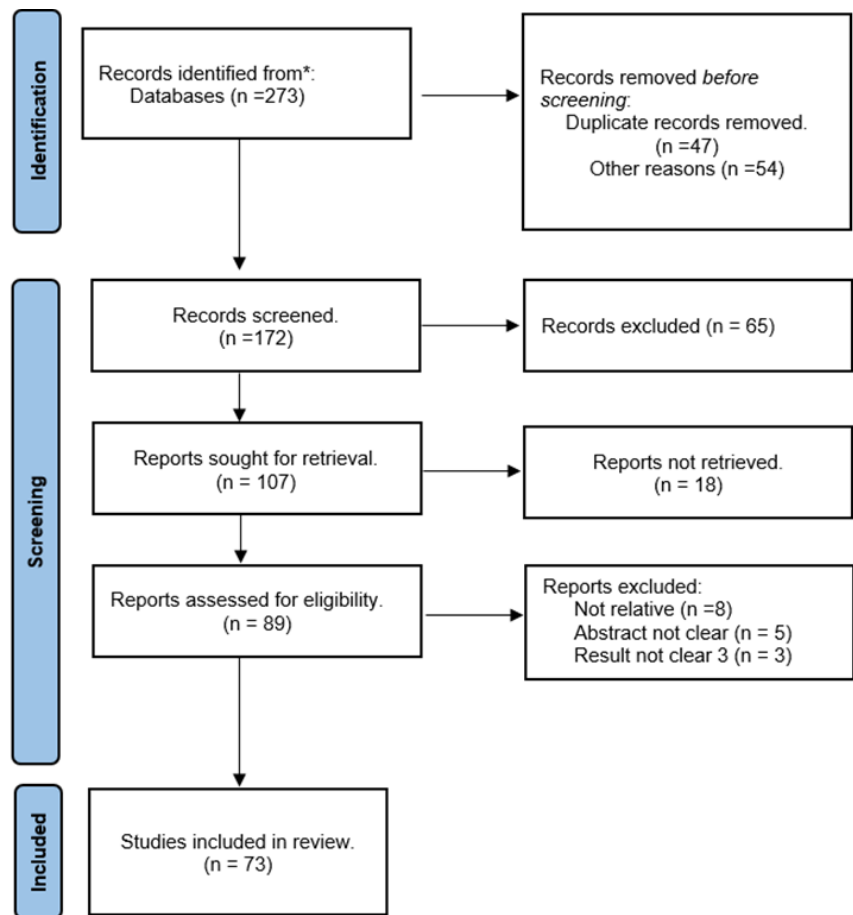
## 2.7. Flowchart for PRISMA

Preferred Reporting Items for Systematic Reviews and Meta-Analyses is known as PRISMA. It is a minimal collection of elements for reports in meta-analyses and systematic reviews supported by evidence. We printed out a copy of the PRISMA diagram and used it with our searches to finish it. Using PRISMA is crucial because it lowers the likelihood that researchers will read too sufficient papers that may not apply to their research. PRISMA usage improves research openness (Sohrabi et al., 2021). The searches were restricted by filters to only include peer-reviewed journal articles and conference papers, from 2772 to be published between 2004 and 2023 and to be written in English. Our review included 273 articles that were developed using these findings. To avoid biased exclusion of research, the study ensured that any detected keywords in the title were not used as grounds for exclusion.

Out of the 273 studies collected and assessed, 47 duplicates were found. After the duplicate studies had been eliminated, with 54 other articles excluded for different reasons, the rest of the remaining 172 studies had their abstracts and findings reviewed. Those that did not mention Malaysian nations, e-commerce, or online shopping in the



abstract or as findings were disregarded. The goal was to prevent selection bias by reviewing all full-text publications for relevant information. After the analysis, 65 records were removed, and the eligibility of 107 full-text publications was assessed based on their content and conclusions. Upon further examination, 18 records were removed from the 107 full-text studies. Of the 89 last records, eight articles were not relative, five articles' abstracts were unclear, and three articles' results were not precise; as a result, 73 articles contained research on the variables influencing the uptake of online shopping in Malaysia. **Figure 2** shows how we selected the last 73 articles for analysis, which were directly received in PDF format.



**Figure 2.** PRISM diagram for systematic reviews.

### 3. Results and discussion

#### 3.1. Thematic analysis

This work includes the qualitative research approach to provide deeper insights based on information from the 73 articles. In qualitative research, we analyse the articles utilising topics. According to Aronson (1995), thematic analysis has been chosen because it concentrates on finding patterns or themes that pertain to a particular way of life or behaviour and then analyses them utilising reflexivity as a crucial component.

O’neill et al. (2018) claim that we put the procedures into practice after doing a theme analysis. We first read all 73 publications to familiarise ourselves with the

information. Each researcher loaded all their articles into NVIVO 14 to prepare for phase 2 of the process. Each page was individually coded in the second stage while considering the shared codes. Paragraphs and sentences were both coded. We read the first paper and agreed with 91% of it. The remaining 72 articles were then coded, and we had conversations as issues cropped up. Even though it was a laborious process, we thought the first coding was crucial for the agreement and interpretation of our data.

Associated programs were compiled to create themes during the third phase. After analysing the data, we classified the results into sub-codes according to their underlying themes. The sub-codes and themes were assessed by tallying the articles that discussed them. The included themes were those referenced in multiple articles, while those mentioned only once or twice were labelled miscellaneous. Using NVivoTM's capabilities, researchers may rapidly find the words that appear most frequently in a source of literature by searching it for specific query phrases, words, or general keywords. The search criteria determine the visualisation outputs for these data. **Figure 3** serves as an illustration of NVivo word cloud, created from literature coded with the topic duality. This topic looks at problems with how people shop online.



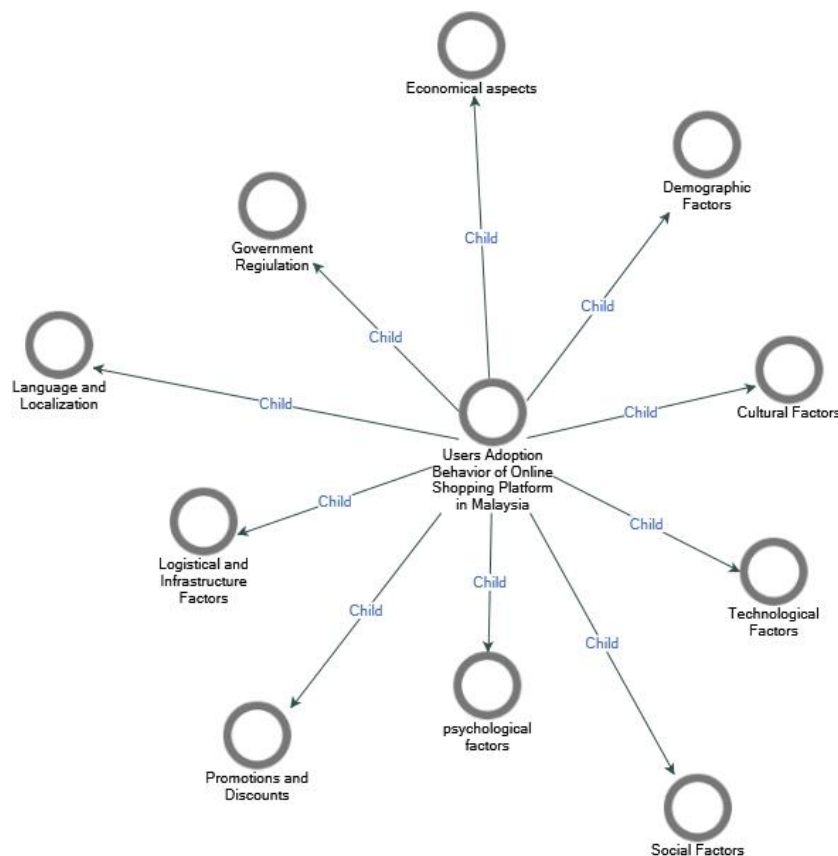
**Figure 3.** NVivo word cloud, created from literature coded with the topic duality.

Word clouds are being used to illustrate literature that has been coded on how people shop online. **Figure 3** shows how the word's size and usage frequency are directly associated. The most prominent ones are "online", "shopping", and "behaviour." The word cloud's frequency statistics may reveal relationships between publications that were not immediately apparent through manual note-taking alone. For example, a researcher may have solely considered "behaviour" when deciding between buying something or shopping online because of a preconceived notion. When "behaviour" is used with a user, e-commerce, or online buying, it additionally refers to "user behaviour", according to a study of all the settings across which the word appears.

### Literature’s topical coding for themes

The goal of a review of the literature is to develop an argument and set the study being considered in perspective, as was previously stated (Snyder, 2019). Organising the pertinent literature according to themes is necessary to support both the argument and the context. The code sub codes and themes were evaluated depending on how well they supported or addressed the study questions and how closely they were related (O’neill et al., 2018); this led to the combination or further separation of sub-codes or themes, which also involved generating internal homogeneity and exterior heterogeneity. Both projects were combined after the first author sent the second author the NVivo14 project package. The second researcher turned on the inter-coder mode; their agreement was 97%.

Involved in examining the relationships among the completed topics, determining whether they related to other themes and how they ought to relate to one another. Next, the themes were identified and given detailed descriptions. These descriptions include explanations of how they relate to one another. Technological variables, culture factors, internet factors, environmental aspects, customer trust factors, demographic factors, promotions and discussion, logistical and infrastructure factors, and government regulations are the central themes our investigation uncovered. The results’ final summary (this manuscript) was created by interpreting the identified themes and relationships to answer the investigated question thoroughly.



**Figure 4.** The primary result of the user online shopping behaviour from 73 articles in NVivo12.

It is crucial to keep taking a step back while coding progresses to see which literary works are being coded especially frequently and under which themes. Some

codes might seem filled up, but upon closer scrutiny, they might only include quotations from one source. **Figure 4**'s Explore diagram presents a quick check overview of all the data related to one theme. For instance, **Figure 4** displays the primary result of the user's online shopping behaviour and then links supporting data.

### 3.2. NVivo's qualitative thematic analysis results

Like in many other nations, online shopping in Malaysia refers to purchasing products and services via the Internet using various online platforms and websites. Because of its accessibility, diversity, and ease of use has become incredibly popular in Malaysia. Several factors can influence internet shopping in Malaysia, as in any other nation. These elements are subject to alteration throughout time because of technological modifications, customer behaviour, monetary situations, and other outside influences. The NVivo's qualitative thematic analysis results to answer the research questions.

#### 3.2.1. SLRQ1: What are the main factors affecting online shopping?

To identify the factors that affect online shopping, here are some of the significant variables that affect online shopping in Malaysia, as determined by our study analysis to answer the question shown in **Table 4**.

**Table 4.** Factors that affect online shopping in Malaysia.

Factors that affect	Description	References
Internet Accessibility and Penetration	For online shopping to succeed, high-speed internet access and penetration must be readily available. Higher online purchasing rates are typically found in areas with superior internet infrastructure.	(Muda et al., 2016)
Smartphone Adoption	With the popularity of smartphones, many Malaysians now use their mobile devices to access the Internet and conduct online shopping. The affordability of smartphones is a factor in the expansion of mobile commerce.	(Pelet and Taieb, 2022; Zariman et al., 2022)
Payment Options	The accessibility of safe and practical online payment options influences consumer shopping behaviour. Credit/debit cards, digital wallets (like GrabPay and Boost), and Internet banking are all the preferred payment methods in Malaysia.	(Razak et al., 2021)
E-commerce Platforms	The variety and usability of e-commerce platforms influences online purchasing experiences. Popular online marketplaces like Lazada, Shopee, and Zalora provide a variety of goods and services.	(Halabi et al., 2022; Kumar et al., 2021; Zhou et al., 2021)
Trust and Security	Worries about fraud, data privacy, and online security may impact consumers' shopping propensity. Building confidence through reputable e-commerce platforms and secure payment systems is crucial.	(Lim et al., 2016; Hong et al., 2019)
Product Variety and Availability	Online product selection and accessibility can have a big impact on consumer decisions. A broad assortment of domestic and foreign products may draw in more customers.	(Alam et al., 2020; Nasution, 2023)
Infrastructure For Delivery	The effectiveness of the delivery and logistics infrastructure impacts the whole experience of purchasing online. Quick and dependable delivery options help satisfy customers.	(Tanadi et al., 2015; Musa et al., 2022)
Reviews And Ratings	Consumer opinions about items and vendors might affect purchasing choices. High ratings and favourable reviews might increase confidence and buying.	(Chong et al., 2012)
Promotions and Discounts:	Like many other buyers, Malaysian consumers are drawn to promotions, discounts, and exclusive offerings. Platforms for e-commerce frequently hold sales events to promote online buying.	(Al-Tawara et al., 2022; Bhatt and Nagvadia, 2021)
Cultural Aspects	Cultural traditions and preferences might affect consumers' purchasing decisions. For instance, some events, such as holidays or festive seasons, may enhance internet buying activity.	(Hou and Elliott, 2021)

**Table 4.** (Continued).

Factors that affect	Description	References
Language and User Experience:	E-commerce systems with user-friendly and local language support will attract customers.	(Belkhamza and Niasin, 2016)
Returns and Refunds	A straightforward and hassle-free returns and refunds policy can boost consumer confidence by lowering the perceived risk of purchasing anything online without first seeing it.	
Regulations and Policies	Governmental e-commerce regulations, including taxation and consumer protection laws, may impact the development and sustainability of online shopping.	(Ong et al., 2020)
Social Media Influence	Social media websites impact how consumers' tastes are shaped and how products are promoted. Consumer decisions may be affected by social media advertising and influencer marketing.	(Osman and Leng, 2020)

### 3.2.2. SLRQ2: What factors affect users of online shopping in Malaysia?

Like any other nation, many factors affect how people shop online in Malaysia. Malaysia's online purchasing habits reveal a dynamic environment influenced by various factors, such as social factors, infrastructure, cultural preferences, and technological advancements. Malaysians are increasingly turning to online shopping as a quick and convenient way to satisfy their needs permanently. Because of the increasing usage of smartphones and improved internet connectivity, e-commerce has skyrocketed across the country. These elements can be divided into the following essential categories, as shown in **Table 5**.

**Table 5.** Factors that affect user online shopping in Malaysia.

Factors	Sub Factors	References	Details
Cultural Factors	Collectivism	(Zendehdel, Sabri, et al., 2020; Zendehdel et al., 2016)	Because of Malaysia's collectivist culture, family and friend's opinions can influence what people buy
	Religion	(D'Cruz et al., 2022; Mgm et al., 2020)	Islamic customs and principles, such as halal food, modest attire, and prayer accoutrements, may impact the goods people purchase online.
Economical Aspects	Income	(Bakhtiar et al., 2022; Susanto, 2021)	The kinds of things that consumers may afford to purchase online depend on their disposable income.
	Price Sensitivity	(Hanaysha, 2018; Shankar and Rangaswamy, 2014)	Because of Malaysia's wide range of income levels, people may be more price-sensitive, resulting in a propensity for discounts, promotions, and bargains.
	Payment alternatives	(Rahman et al., 2020)	The availability of various payment alternatives and methods can influence consumers' purchasing decisions. E-wallets and payment schedules can be standard options.
Technological Factors	Internet Penetration	(Ismail and Masud, 2020; Naz et al., 2022)	Online purchasing requires constant and fast internet access. Regions with superior connectivity typically have higher adoption rates for online shopping.
	Mobile Usage	(Kassim et al., 2021; Lim et al., 2020)	Malaysia has a high mobile penetration rate, which has increased mobile shopping and highlighted the significance of mobile-friendly platforms.
Social Factors	Social Media Influence	(Harun and Husin, 2019; Konar et al., 2020; Majid and Firend, 2017; Naz et al., 2022)	Because Malaysians are active on social media, influencer marketing significantly impacts consumer choices.
	Reviews and Ratings	(Cheong et al., 2020)	Online consumers frequently rely on product reviews and ratings to make wise judgements.

**Table 5. (Continued).**

Factors	Sub Factors	References	Details
Psychological Factors:	Trust	(Zendehdel et al., 2011; Tasin, 2017)	Motivation to shop online can be influenced by confidence in the online platform's safety and the merchants' reputation.
	Perceived Risk	(Ariff et al., 2014; Tham et al., 2019; Nawi et al., 2019)	Worries about the quality of the goods, delivery, and online fraud might influence shopping decisions.
	Convenience		A big part is convenience for browsing, picking, and shipping alternatives.
Demographic Factors	Age	(Nawi et al., 2019; Wong et al., 2018)	For younger generations who are more tech-savvy, online shopping may be more convenient.
	Urban vs. Rural	(Sulaiman et al., 2005)	Urban areas usually have better infrastructure and availability, which increases the popularity of Internet shopping.
Government and Regulatory Factors	Consumer Protection Laws	(Daud et al., 2020)	The existence of rigorous consumer protection rules and regulations can boost consumers' trust in online shopping.
	Customs and Import Regulations	(Bank, 2018)	These could affect the timing of international shipments and purchases.
Logistical and Infrastructure Factors	Delivery Services	(Siali et al., 2018)	The effectiveness and dependability of delivery services influence the total online purchasing experience.
	Returns and Exchanges	(Clegg et al., 2010; Cao and Gruca, 2004)	A simple and transparent return/exchange procedure might affect consumers' purchase decisions.
Promotions and Discounts	Flash Sales	(Aribovo et al., 2020; Prasetyo et al., 2020)	Limited-time offers and discounts may stimulate impulsive purchases.
	Festive Seasons	(Yo et al., 2021; Saleh et al., 2023; Abdullah, 2017)	Due to associated discounts, unique festivals like Ramadan, Chinese New Year, and Christmas can significantly increase internet buying.
Language and Localisation	Language Preference	(Zaini et al., 2021)	Online purchasing may become more widely available if platforms in regional tongues (like Bahasa Malaysia) are available.

### 3.2.3. SLRQ3: What theory can help explain and predict user online shopping behaviour?

It is challenging to comprehend and forecast consumer online shopping behaviour, requiring the integration of several theoretical frameworks from sociology, psychology, economics, and marketing. **Table 6** illustrates some theoretical frameworks that can describe and forecast customer online purchasing behaviour.

**Table 6.** Various theories that explain and predict the user online shopping behaviour adoption.

Theory	Details
Technology Acceptance Model (TAM)	(Ghazali et al., 2018; Jusoh et al., 2021; Ramlan and Omar, 2016; Yap et al., 2022) According to TAM, perceived utility and usability influence users' acceptance of and use of technology. Based on customers' opinions of the usefulness and simplicity of online shopping platforms, this paradigm can aid in forecasting consumers' online purchasing behaviour.
Theory of Planned Behaviour (TPB)	(Mgm et al., 2020; Tang et al., 2021) TPB states that behavioral intentions are influenced by perceptions of behavioral control, subjective norms, and attitudes toward the conduct. Online shopping considers elements like a person's perspective on online purchasing, the influence of social norms, and their evaluated capability to complete online transactions successfully.
Social Cognitive Theory	(Cheng and Fu, 2018) This theory emphasises how self-efficacy, observational learning, and self-regulation influence behaviour. Users' behaviour in online shopping may be influenced by what they learn from other people's experiences, their comfort level when utilising online tools, and their capacity to control their purchasing patterns.

**Table 6. (Continued).**

Theory	Details
Cognitive Dissonance Theory (Lazim et al., 2020)	According to this hypothesis, people have consistency between their beliefs and actions. When consumers make purchases online, cognitive dissonance may happen if they later have second thoughts. How people respond to this dissonance may be predicted, which can affect how they shop in the future.
Diffusion of Innovation Theory (See and ShaheenMansori, 2012; Soon et al., 2016; Yusuf and Derus, 2013)	This idea focuses on how various population segments adopt new technologies. It divides users into laggards, innovators, early majority, and early majority. Strategies for targeting and engagement can be improved by predicting which user segment a particular person belongs.
Self-Determination Theory (SDT.) (Tandon and Ertz, 2021)	According to SDT, people are driven by innate motivations, including autonomy, competence, and relatedness. Understanding how these elements affect users' incentives can influence their behaviour for online shopping.
Unified Theory of Acceptance and Use of Technology (UTAUT)/ UTAUT2 (Chopdar et al., 2018; Hassan et al., 2015; Kassim et al., 2021; Soh et al., 2020; Tandon and Ertz, 2021)	According to this hypothesis, the gap between users' expectations and their actual experiences determines whether they are satisfied with a product or service. Users' future behaviour can be predicted by anticipating how their expectations and online buying experiences interact.

### 3.2.4. SLQ4: What factors affect user adoption behaviour of online shopping platforms in Malaysia?

User adoption behaviour of online shopping platforms in Malaysia, or any other country, is influenced by sufficient factors. These factors can be broadly categorised into individual, social, and technological factors. **Table 7** summarises each category and subcategories.

**Table 7.** Summarises the main factors that affect online shopping user behaviour adoption in Malaysia from Qualitative analysis.

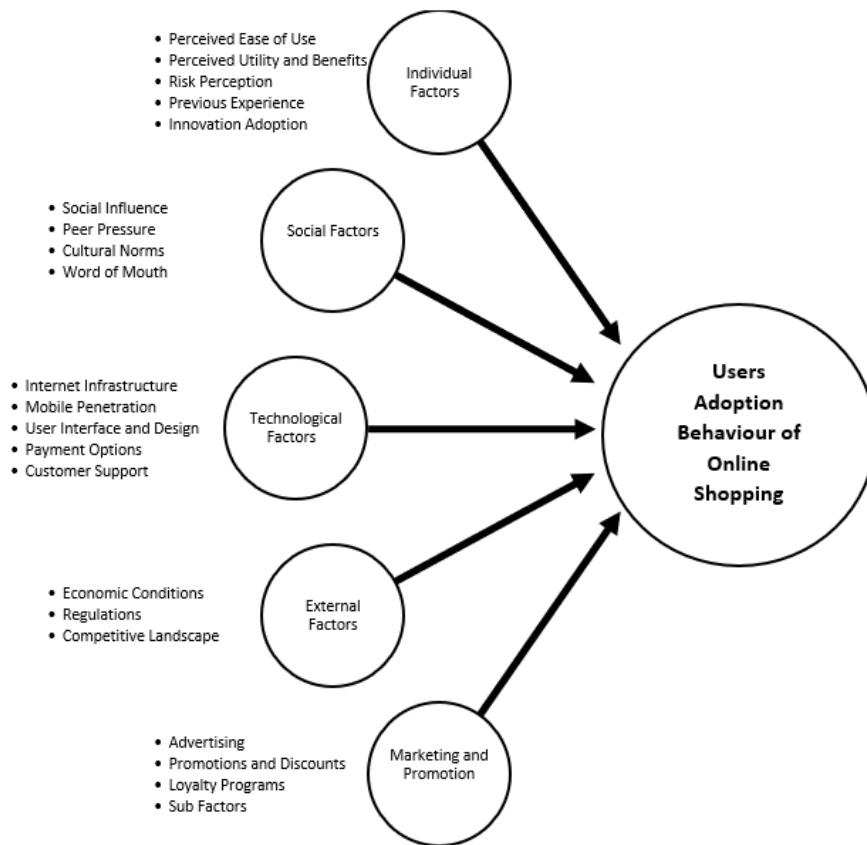
Main Factors	Sub Factors	References	Details
Individual Factors	Perceived Ease of Use	(Al-Gasawneh et al., 2022; Saoula et al., 2023; Sow and Mohammed, 2021)	Users are more likely to adopt an online shopping platform if they find it easy to navigate, search for products, and complete transactions.
	Perceived Utility and Benefits	(Majid and Firend, 2017)	Users will adopt the platform if they see value in using it, such as finding unique products, better prices, or convenience.
	Risk Perception	(Chan et al., 2018; Majid and Firend, 2017)	Users consider the security of their personal and financial information. Platforms with strong security measures are to gain more trust.
	Previous Experience	(Rezaei et al., 2014)	Individuals with positive experiences with online shopping are more likely to adopt new platforms.
Social Factors	Innovation Adoption	(Zendehdel and Paim, 2015)	Some individuals naturally try new technologies and platforms, while others prefer to stick with what they know.
	Social Influence	(Chan et al., 2023; Soh et al., 2020; Suki, 2013; Zendehdel et al., 2016)	Recommendations from friends, family, or influencers can significantly impact adoption behaviour.
	Peer Pressure	(Soong, Ahmed and Tan, 2020)	If a user's social circle adopts a particular platform, the user might feel compelled to do the same.
	Cultural Norms	(D'Cruz et al., 2022; Mgm et al., 2020; Zendehdel et al., 2020, 2016)	Cultural factors play a role in shaping user behaviour. In Malaysia, for example, collectivist cultural values might influence adoption decisions.
	Word of Mouth	(Hong et al., 2021; Hussain et al., 2018)	Positive feedback from existing users can enhance the credibility of the platform and encourage adoption.

**Table 7.** (Continued).

Main Factors	Sub Factors	References	Details
Technological Factors	Internet Infrastructure	(Alzoubi et al., 2022)	Access to stable, high-speed Internet is essential for a seamless online shopping experience.
	Mobile Penetration	(Ghazali et al., 2018)	Malaysia has a high mobile penetration rate. Platforms optimised for mobile devices have a better chance of adoption.
	User Interface and Design	(Eriksson and Stenius, 2023)	Intuitive and user-friendly interfaces can attract and retain users.
	Payment Options	(Rahman et al., 2020)	Providing secure payment methods familiar to Malaysians can reduce barriers to adoption.
	Customer Support	(Alam et al., 2020; Safie et al., 2019)	Responsive customer support can mitigate user concerns and build trust.
External Factors	Economic Conditions	(Shailashri et al., 2019)	The state of the economy can influence consumer spending and willingness to try new shopping methods.
	Regulations	(Bank, 2018)	Legal and regulatory frameworks for e-commerce can impact user trust and adoption.
	Competitive Landscape	(Rezaei et al., 2014)	The presence of other established platforms might affect a new platform's adoption.
Marketing and Promotion	Advertising	(Lazim et al., 2020; Majid and Firend, 2017;)	Effective marketing campaigns can create awareness and generate interest in the platform.
	Promotions and Discounts	(Al-Tawara et al., 2022; Zendejdel et al., 2020)	Limited-time offers and discounts can incentivise users to try the platform.
	Loyalty Programmes	(Ali Abumalloh et al., 2020)	Rewarding repeat customers can foster long-term adoption.

The interplay of factors in e-commerce online shopping user adoption: adopting online shopping platforms in Malaysia is a complex process shaped by various individual, technological, and contextual factors. The findings highlight perceived usefulness, ease of use, and trust in driving users' adoption decisions, as shown in **Figure 5**. These factors resonate with the TAM, demonstrating its applicability in Malaysian e-commerce. Users who perceive online shopping as valuable, easy to use, and secure are more likely to embrace the platform, supporting the central tenets of TAM. The influence of cultural norms and social interactions in adoption behaviour aligns with the UTAUT. Social influence and peer recommendations play a significant role in shaping users' attitudes toward online shopping. This suggests that cultural values and communal interactions contribute to the adoption process, underscoring the importance of sociocultural context in understanding e-commerce adoption behaviour.





**Figure 5.** Concept Model Map highlights factors that affect online shopping user adoption behaviour.

### 3.3. Main factors that affect

The main factors that affect online shopping user behaviour adoption in Malaysian infrastructure finance through qualitative thematic analysis interaction:

#### 3.3.1. Individual factors

- Perceived ease of use: Malaysian customers can choose websites with simple checkout procedures, well-organised product categories, and easy navigation. Platforms with difficult-to-use interfaces or nuclear layouts may postpone users, particularly those not used to online purchasing.
- Perceived utility and benefits: Adoption decisions are influenced by online shopping platforms' perceived benefits and usefulness. Compared to traditional stores, platforms offering competitive prices, a large selection of products, ease of use, and time savings are preferred by Malaysian consumers. Perceived usefulness might rise with value-added services like liberal return policies and home delivery.
- Risk perception: People's use of online buying may be discouraged by concerns about its risks. Malaysian customers could be concerned about security-related issues, such as the safety of their financial and personal information, the calibre of the products, and the dependability of the delivery. Consumer worries can be minimised by using encryption techniques, open regulations, and secure payment gateways.

- Previous experience: Individual experiences with online shopping influence people's beliefs and actions. Positive experiences, such as easy transactions, prompt delivery, and helpful customer service, increase the likelihood that customers will stick with the product. Customers can be discouraged from online buying by technical problems, shipment delays, or subpar products.
- Innovation adoption: A desire to adopt new behaviours and technologies affects how people shop online. In Malaysia, early adopters and tech enthusiasts are more likely to investigate and take up new features, functions, and trends in e-commerce platforms. Individuals with conservative inclinations might want assurance and a cautious introduction to novel features.

### **3.3.2. Social factors**

- a) Social influence: The adoption of online purchasing platforms is influenced by social networks, including those of family, friends, and online communities. Testimonials, positive suggestions, and shared experiences from reliable sources might influence adoption decisions. Adoption may be hampered by unfavorable comments or doubt from social networks, highlighting the value of peer and social validation.
- b) Peer pressure: Peer pressure in social circles can help or hinder the adoption of Internet purchasing. Malaysian consumers could experience peer pressure to adopt similar behaviours and preferences, particularly if they view internet buying as a social norm or a status symbol. People may be dissuaded from adopting internet buying if they are afraid of being judged or if their shopping habits differ from the norm. In Malaysia, cultural values influence attitudes and behaviors related to online shopping. Acceptance of authority, collectivism, and trust could affect adoption trends. When making online purchases, Malaysian customers who value interpersonal relationships and social connections, for instance, might give suggestions from friends and family more weight.
- c) Word of mouth: The way that something is discussed has a big impact on how others view and use it. Good word-of-mouth recommendations, evaluations, and testimonies can increase credibility and confidence, enticing people to visit online buying sites. Unfavorable client experiences or gossip regarding fraud, scams, or subpar service may discourage prospective users, highlighting the significance of reputation management and cultivating great customer experiences.

### **3.3.3. Technological factors**

- a) Internet infrastructure: People's capacity to access online shopping platforms is influenced by the dependability and availability of the Internet infrastructure. Adoption rates may be impacted by internet availability and connectivity variations across Malaysia's rural and urban locations. Wider adoption can be encouraged by lowering access obstacles and increasing broadband penetration, network coverage, and dependability.
- b) Mobile penetration: The extensive usage of mobile devices like smartphones has completely changed online purchasing in Malaysia. Mobile penetration rates impact online shopping platforms' accessibility and convenience because they offer responsive designs and mobile-friendly interfaces to appeal to smartphone

users. Users will be drawn to and retained by mobile apps and optimised websites that provide frictionless mobile shopping, browsing, and payment experiences.

- c) **User interface and design:** Their design and user interface impact how happy users are with online shopping platforms. Enhancing usability through intuitive layouts, eye-catching designs, and simple navigation promotes user engagement. Platforms that minimise distractions and complexity while providing tailored suggestions, easily navigable search features, and frictionless checkout processes are highly valued by Malaysian consumers.
- d) **Payment options:** Payment choices that are both convenient and diversified are essential for building confidence and satisfying the preferences of Malaysian consumers. Multiple payment methods such as bank transfers, e-wallets, credit/debit cards, and cash on delivery (COD) are supported by online shopping platforms to accommodate consumers' varied demands and preferences. Thanks to encryption technologies and secure payment channels, customers can feel secure knowing that their financial transactions are private and secure.
- e) **Customer support:** Good customer service enhances user satisfaction and makes it easier for customers and online retailers to develop trust. Responsive customer service channels, such as live chat, email, and helplines, allow for prompt resolution of questions, grievances, and purchasing problems. Sufficient post-purchase assistance, including order monitoring, returns handling, and post-sale support, improves client happiness and loyalty.

#### **3.3.4. External factors**

- a) **Economic conditions:** Socioeconomic variables that affect customers' purchasing power and spending habits include income levels, job stability, and disposable money. Economic swings such as recessions or inflation may impact consumer confidence and internet buying. Adoption can be boosted via price plans, promotions, and discounts that are customised to the current state of the economy.
- b) **Regulations:** Online shopping platforms are impacted by the legal and regulatory frameworks that control e-commerce activity and consumer protection laws. Establishing confidence and credibility with Malaysian consumers requires adherence to legislation about data privacy, consumer rights, electronic transactions, and taxation. When industry standards and best practices are followed, online transactions are more transparent and accountable.
- c) **Competitive landscape:** Consumer choices are influenced by the competitive environment in the online shopping sector. Online merchants, marketplaces, and platforms that provide comparable goods and services are accessible to Malaysian customers. Online shops can provide distinctive products, exclusive alliances, and value-added services to stand out and attract discriminating customers.

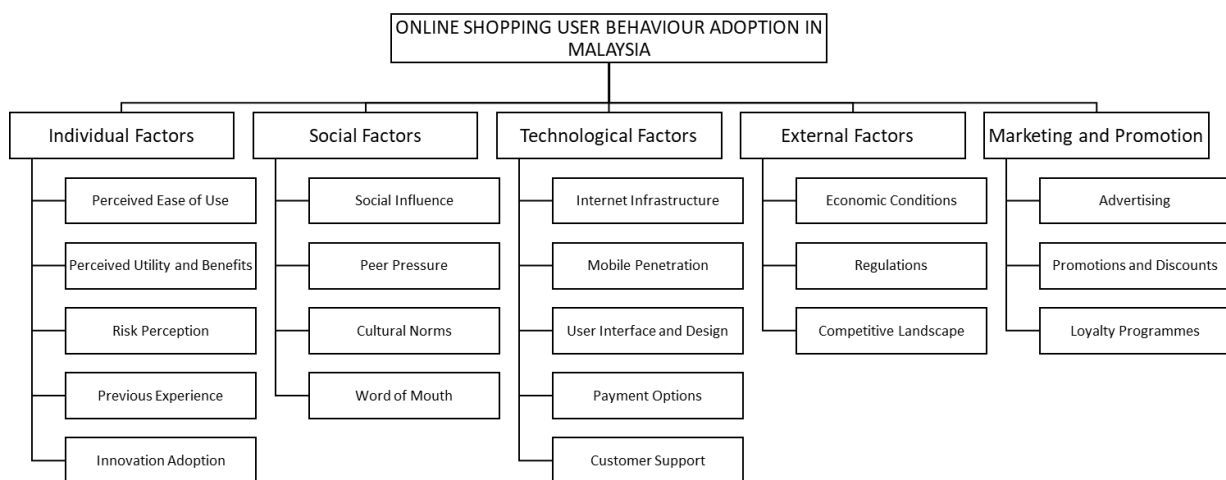
#### **3.3.5. Marketing and promotion**

Proactive marketing and advertising campaigns are essential for raising awareness, creating curiosity, and encouraging the use of e-commerce platforms. Online and offline advertising efforts increase awareness and strengthen brand messaging. Customers are encouraged to shop online via discounts and promotions

including flash sales, coupons, and seasonal specials. Rewards programs and loyalty initiatives encourage consumer interaction and reward consistent business.

### 3.4. Conceptual framework of online shopping user behaviour adoption in Malaysian infrastructure finance

**Figure 6** illustrates the factors that impact the adoption of online shopping platforms in Malaysia, encompassing individual, societal, technological, and external aspects. To increase user adoption, improve user experience, and take advantage of Malaysian e-commerce prospects, businesses, governments, and marketers must understand these characteristics and their sub-dimensions.



**Figure 6.** Conceptual framework of online shopping platforms in Malaysia.

### 3.5. Practical implications

The identified factors directly affect e-commerce businesses seeking to optimise their platforms and strategies. To enhance adoption rates, businesses should prioritise user-centric design and seamless functionality that aligns with users’ perceptions of ease of use. Equally important is cultivating trust through robust security measures, transparent transaction processes, and responsive customer support. These factors collectively influence users’ perceptions of usefulness and trustworthiness, which are central drivers of adoption. In a highly connected digital landscape, the role of social media and peer recommendations cannot be underestimated. Businesses should recognise the potential of social platforms as avenues for building trust, sharing user experiences, and influencing adoption behaviour. Engaging with users through interactive and personalised content can leverage the power of social influence to promote their platforms.

### 3.6. Theoretical insights and future research

The application of TAM and UTAUT in the Malaysian e-commerce context validates the relevance of established theoretical frameworks. However, the evolving nature of technology and user behaviour causes a nuanced approach. Future research could explore hybrid models that integrate elements from multiple theories to capture the intricate interplay of factors more comprehensively. Personalisation and

customisation, as identified gaps, merit further investigation. Understanding how tailored experiences impact adoption and engagement can guide businesses in designing platforms that resonate with users' preferences and needs. The rapid advancement of mobile commerce and virtual reality technologies presents exciting avenues for future research. Exploring how these technologies shape adoption behaviour and transform user experiences can enrich our understanding of e-commerce adoption in the digital age.

#### **4. Conclusion**

Research on online shopper behaviour in Malaysia can yield a significant outcome. In order to comprehend the latest research in the field, three databases were scanned for publications on implementing online shopping in e-commerce. After applying inclusion and exclusion criteria, we discovered 73 publications most relevant to our study's goals, issued between 2004 and 2023. The findings of this analysis show that implementing e-commerce online shopping procedures is underwhelming. Despite significant research on implementation variables for e-commerce, we have identified the most important one. At least among the papers we chose, no research projects have genuinely offered a solution or actions for implementing e-commerce online shopping behaviour in Malaysia. The technology adoption model, Social Cognitive Theory, Cognitive Dissonance Theory, Diffusion of Innovation theory TAM, and UTAUT have all been extensively used in the literature to analyse this issue. The result of the study illustrated that the five latent variables (factors) (individual, social, technology, external factor, and marketing promotion) include 20 other indicators (sub-factors) that impress user adoption behaviour on online shopping in Malaysia. This study has provided insight into how consumers behave when they shop online. However, the findings in this research have few urgent implications. This study adds to the first comprehensive evaluation of the literature, a model of the user behaviour of online shopping in e-commerce. Therefore, the findings of this review will be helpful to scholars studying the application of e-commerce.

Lack of technology awareness, IT skills, IT competence, management support, qualified e-commerce personnel, low-quality internet connections, high access costs, unreliable logistics-related networks, inadequate government infrastructure, lack of trust in the quality of the products sold online, and lack of trust in conducting online transactions are some of the major challenges that have been identified. Some key benefits had a chain reaction that increased performance. The main benefits are improved market reach, company knowledge, transaction costs, and competitiveness. Increased staff productivity enhances value chain quality, and improved customer satisfaction increases sales, earnings, and performance. This work also has practical and theoretical consequences. The challenge findings showed that few research studies examined the connection between factors and e-commerce, but fewer examined the relationship among factors.

Although e-commerce adoption has benefits, if the management of a business or government officials in Malaysia is sceptical that it will be helpful and valuable to them, they may decide rather than adopt it and thus miss out on its benefits. Identifying the correlations between elements might help developing countries find the best

approach to overcome e-commerce adoption hurdles and reap its benefits. The real-world consequences of management's lack of perspective on e-commerce adoption may push governments to implement initiatives to help organizations understand its value and benefits so they can adopt it. The study introduces a new technology adoption model, departing from TAM and UTAUT, by including consumer trust and performance factors. This model is specific to Malaysia and emerging countries. The approach also incorporates a business's eco-system and gives developing countries consideration of e-commerce stakeholders. This study advances ICTs and their development aspects, such as job creation (including the eradication of youth unemployment) and high value-added, in order to inform policy.

The study adds to the knowledge of e-commerce adoption in Malaysia by providing a new perspective on relevant elements. This study also addressed e-commerce adoption problems and benefits, something few had done. Most research found just general variables, obstacles, or benefits, but few recognised all three. Earlier studies used models of theory to identify e-commerce adoption variables, whereas the rest did not. This study's topic structure categorised and identified all previous literature findings.

This comprehensive review of the literature has some restrictions. Despite their diversity, the chosen articles may not cover all viewpoints on accepting online buying in e-commerce. The review may have missed pertinent relevant studies in other languages because of its emphasis on English language articles. Certain conclusions may have changed since the examined publications were published because of technology and customer behaviour dynamics.

## **5. Future research and recommendations**

In future studies, several key areas should be prioritised to deepen our understanding of online shopping adoption behaviours in Malaysia.

- a) Longitudinal studies: Tracking changes in online shopping adoption behaviours through longitudinal studies can uncover evolving trends and patterns among Malaysian users.
- b) Cross-cultural comparisons: Analysing different cultural contexts can help us understand the role of cultural factors in online shopping adoption and shed light on unique challenges and opportunities in Malaysia.
- c) Technological innovations: Examining how emerging technologies like AI, VR, and AR affect online shopping adoption behaviours can offer insights into future trends and innovation opportunities in Malaysia.
- d) Socioeconomic factors: By studying how socioeconomic factors like income, education, and urban-rural divide impact online shopping adoption, we can address disparities and develop targeted interventions for inclusive online shopping access.

Significant positive and negative relationships have been found concerning the adoption of user behaviours in Malaysia.

- a) Positive significant relationships: User adoption behaviours are positively influenced by trust in the online shopping platform and its vendors. User

- confidence and repeat purchases are encouraged by transparent policies, secure transactions, and reliable customer service.
- b) Convenience: User adoption behaviours are positively influenced by the convenience of online shopping, such as 24/7 accessibility, doorstep delivery, and a wide product selection. Improving the shopping experience and reducing obstacles can boost customer satisfaction and loyalty.
  - c) Negative significant relationships: Perceived risks of online shopping, such as security concerns, product quality uncertainties, and delivery issues, negatively impact user adoption behaviors. By implementing risk mitigation strategies and effective communication, user concerns can be eased, and adoption can be promoted.

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## References

- Abdullah, N. (2017). Malaysian Consumer Spending Patterns during Festive Season. *The International Journal of Humanities & Social Studies*. 5(5), 224–229.
- Alam, S.S., Ali, M.H., Omar, N.A. and Hussain, W.M.H.W. (2020). Customer satisfaction in online shopping in growing markets: An empirical study. *International Journal of Asian Business and Information Management*. 11(1), 78–91.
- Al-Gasawneh, J.A., Al Khoja, B., Al-Qeed, M.A., Nusairat, N.M., Hammouri, Q. and Anuar, M.M. (2022). Mobile-customer relationship management and its effect on post-purchase behavior: The moderating of perceived ease of use and perceived usefulness. *International Journal of Data and Network Science*. 6(2), 439–448.
- Ali Abumalloh, R., Ibrahim, O. and Nilashi, M. (2020). Loyalty of young female Arabic customers towards recommendation agents: A new model for B2C E-commerce. *Technology in Society*. 61(August 2019), 101253. Available at: <https://doi.org/10.1016/j.techsoc.2020.101253>.
- Al-Tawara, F., Salamin, S. and Qusef, A. (2022). Key Factors Influencing Consumers' Behavioral Intention towards Adopting and Using Mobile Commerce Services Amid and Post COVID-19 Pandemic. In *Proceedings - 2022 23rd International Arab Conference on Information Technology, ACIT 2022*. Princess Sumaya University for Technology, Department of Software Engineering, Amman, Jordan: Institute of Electrical and Electronics Engineers Inc. Available at: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85146838821&doi=10.1109%2FACIT57182.2022.9994222&partnerID=40&md5=243a5a40d691eae58e4d0245ff89a0d>.
- Alzoubi, H.M., Alshurideh, M.T., Kurdi, B. Al, Alhyasat, K.M.K. and Ghazal, T.M. (2022). The effect of e-payment and online shopping on sales growth: Evidence from banking industry. *International Journal of Data and Network Science*. 6(4), 1369–1380.
- Aribowo, D.H., Sulhaini and Herman, L.E. (2020). Effect of Flash Sale Method, Product Knowledge and in Home Shopping Tendency Toward Consumer Online Purchase Decisions. *Russian Journal of Agricultural and Socio-Economic Sciences*. 102(6), 97–107.
- Ariff, M.S.M., Sylvester, M., Zakuan, N., Ismail, K. and Ali, K.M. (2014). Consumer perceived risk, attitude and online shopping behaviour; Empirical evidence from Malaysia. *IOP Conference Series: Materials Science and Engineering*. 58(1).
- Aronson, J. (1995). A Pragmatic View of Thematic Analysis. *The Qualitative Report*. 2(1), 1–3.
- B, N.H.A., Sow, G.W. and Mohammed, F. (2021). *of Online Shopping Platforms in Malaysia* :, Springer International Publishing. Available at: [http://dx.doi.org/10.1007/978-3-030-70713-2\\_85](http://dx.doi.org/10.1007/978-3-030-70713-2_85).
- Bakhtiar, A., Bin, A., Amalina, N.U.R. and Zaki, M. (2022). November 2022 Accepted: 12. 2, 19–26.
- Baldwin, J.R., Pingault, J.B., Schoeler, T., Sallis, H.M. and Munafò, M.R. (2022). Protecting against researcher bias in secondary data analysis: challenges and potential solutions. *European Journal of Epidemiology*. 37(1), 1–10. Available at: <https://doi.org/10.1007/s10654-021-00839-0>.
- Bank, A.D. (2018). Embracing the E-commerce Revolution in Asia and the Pacific, Available at: [www.adb.org](http://www.adb.org).

- Belkhamza, Z. and Niasin, M.A.F. (2016). Understanding Mobile Shopping Behavior from a Utilitarian Perspective: a New Posteriori Framework. 15th Wuhan International Conference on E-Business, WHICEB 2016. (June), 251–263.
- Berger, A.N., Demsetz, R.S. and Strahan, P.E. (1999). The consolidation of the financial services industry: Causes, consequences, and implications for the future. *Journal of Banking and Finance*. 23(2), 135–194.
- Bhatt, V. and Nagvadia, J. (2021). Factors Influencing Consumer's Online Buying Behavior: An Empirical Study. [PhD Dissertation]. Gujarat Technological University Research Repository. Available at: <https://www.gtu.ac.in/159997292007>. (January).
- Cao, Y. and Gruca, T.S. (2004). The influence of pre- and post-purchase service on prices in the online book market. *Journal of Interactive Marketing*. 18(4), 51–62.
- Carrera-Rivera, A., Ochoa, W., Larrinaga, F. and Lasa, G. (2022). How-to conduct a systematic literature review: A quick guide for computer science research. *MethodsX*. 9, 101895. Available at: <https://doi.org/10.1016/j.mex.2022.101895>.
- Chan, S.W., Ahmad, M.F., Zaman, I., Omar, S.S., Ramlan, R. and Tam, C.X. (2018). Privacy perceptions of online shopping behaviour amongst Malaysian Lazada online shoppers. *AIP Conference Proceedings*. 2016(November 2001).
- Chan, T.J., Huam, H.T. and Hasan, N.A.M. (2023). Does Corporate Social Responsibility Reporting/ Communication Matter? Employees' Perception of the Corporate Social Responsibility and Competitive Advantage of Banking Corporations. *Journal of Content, Community and Communication*. 17(9), 80–96.
- Cheng, H.H. and Fu, T.J. (2018). The Determinants of Online Shopping Behavior. 2018 International Conference on Intelligent Autonomous Systems, ICoIAS 2018., 97–100.
- Cheong, J.W., Muthaly, S., Kuppusamy, M. and Han, C. (2020). The study of online reviews and its relationship to online purchase intention for electronic products among the millennials in Malaysia. *Asia Pacific Journal of Marketing and Logistics*. 32(7), 1519–1538.
- Chong, A.Y.L., Chan, F.T.S. and Ooi, K.B. (2012). Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia. *Decision Support Systems*. 53(1), 34–43. Available at: <http://dx.doi.org/10.1016/j.dss.2011.12.001>.
- Chopdar, P.K., Korfiatis, N., Sivakumar, V.J. and Lytras, M.D. (2018). Mobile shopping apps adoption and perceived risks: A cross-country perspective utilizing the Unified Theory of Acceptance and Use of Technology. *Computers in Human Behavior*. 86, 109–128.
- Claessens, S., Glaessner, T. and Klingebiel, D. (2005). Electronic Finance: Reshaping the Financial Landscape Around the World. *SSRN Electronic Journal*. (February).
- Clegg, B., Melián Alzola, L. and Padrón Robaina, V. (2010). The impact of pre-sale and post-sale factors on online purchasing satisfaction: a survey. *International Journal of Quality & Reliability Management*. 27(2), 121–137.
- D'Cruz, P., Du, S., Noronha, E., Parboteeah, K.P., Trittin-Ulbrich, H. and Whelan, G. (2022). Technology, Megatrends and Work: Thoughts on the Future of Business Ethics. *Journal of Business Ethics*. 180(3), 879–902. Available at: <https://doi.org/10.1007/s10551-022-05240-9>.
- Daud, N.A., Arif, A.M.M., Bakar, E.A. and Osman, S. (2020). Determinants of self-protection practices in online shopping among the students of higher education institutions, Malaysia. *Malaysian Journal of Consumer and Family Economics*. 25(S1), 91–110.
- Eriksson, N. and Stenius, M. (2023). What do regular online grocery shoppers want from online grocers going forward? Suggestions for service quality improvements. *Procedia Computer Science*. 219, 201–210. Available at: <https://doi.org/10.1016/j.procs.2023.01.282>.
- Ghazali, E.M., Mutum, D.S., Chong, J.H. and Nguyen, B. (2018). Do consumers want mobile commerce? A closer look at M-shopping and technology adoption in Malaysia. *Asia Pacific Journal of Marketing and Logistics*. 30(4), 1064–1086.
- Goyal, P., Goyal, K. and Chauhan, A. (2022). Emerging Trends of E-Commerce perspective in Developing Countries. *Journal of Positive School Psychology*. 6(4), 7090–7096. Available at: <http://journalppw.com>.
- Halabi, K.N.M., Lasi, M.A. and Chee, W.M. (2022). Malaysian Trend of Online Shopping During Pandemic Covid-19: Literature Review. *City University eJournal of Academic Research*. 4(1).
- HamaMurad, Q. and Jusoh, N.M. (2022). A Literature Review of Smart City: Concept and Framework. *Journal of Advanced Geospatial ...* 1(1), 92–111. Available at: <https://jagst.utm.my/index.php/jagst/article/view/34>.
- Hamamurad, Q.H., Jusoh, N.M. and Ujang, U. (2021). Dimensions and Attributes of Smart City Framework : Systematic Literature Review. In *International Conference on Smart Cities and Smart Grid (CSCSG 2021)*At: Hangzhou, China. pp.1–



12. Available at:  
[https://www.researchgate.net/publication/356840513\\_Dimensions\\_and\\_Attributes\\_of\\_Smart\\_City\\_Framework\\_Systematic\\_Literature\\_Review?\\_sg%5B0%5D=oiEF0qhIXq66xBS7Jz3KMpko03ObwRbaPXo09ns2v5QbbNv1MiBjKB\\_jQv4LuvqFlhjG9cJW6-6B7Rfjfr7OCOxND1TceNkPycIfcSzB.lh9b\\_q\\_qS](https://www.researchgate.net/publication/356840513_Dimensions_and_Attributes_of_Smart_City_Framework_Systematic_Literature_Review?_sg%5B0%5D=oiEF0qhIXq66xBS7Jz3KMpko03ObwRbaPXo09ns2v5QbbNv1MiBjKB_jQv4LuvqFlhjG9cJW6-6B7Rfjfr7OCOxND1TceNkPycIfcSzB.lh9b_q_qS) [Accessed December 19, 2021].
- Hanaysha, J.R. (2018). An examination of the factors affecting consumer's purchase decision in the Malaysian retail market. *PSU Research Review*. 2(1), 7–23.
- Haque, A., Tarofder, A.K., Rahman, S. and Raquib, A. (2009). Electronic Transaction of Internet Banking and its Perception of Malaysian online Customers. *African Journal of Business Management*. 3(6), 248–259.
- Harun, A. and Husin, W.H.R. (2019). Is the purchasing behavior of suburban millennials affected by social media marketing? Empirical evidence from Malaysia. *Kome*. 7(2), 104–127.
- Hassan, S., Rashid, R. and Li, F. (2015). Utilising modified UTAUT to understand students' online shopping behaviour: A case of e-retail co-operative website in Malaysia. *Journal of Electronic Commerce in Organizations*. 13(4), 74–90.
- Hietala, J. and Friedrich, V. (2023). Business and Investment in Malaysia - Asian Insiders. Available at:  
<https://asianinsiders.com/2023/02/21/business-and-investment-in-malaysia/> (Accessed August 26, 2023)
- Hong, J., He, J. and Qiu, X. (2019). Research on Influencing Factors of Users' Adoption Intention of WeChat Marketing. *Proceedings - International Joint Conference on Information, Media and Engineering, ICIME 2018.*, 152–157.
- Hong, L.M., Wan Zulkifli, W.F. and Che Amran, C.A. (2021). Online Feedback Impact Online Shoppers' Impulse Purchases in Malaysia. *Jurnal Manajemen dan Kewirausahaan*. 23(2), 197–203.
- Hou, J. and Elliott, K. (2021). Mobile shopping intensity: Consumer demographics and motivations. *Journal of Retailing and Consumer Services*. 63(August), 102741. Available at: <https://doi.org/10.1016/j.jretconser.2021.102741>.
- Hussain, S., Guangju, W., Jafar, R.M.S., Ilyas, Z., Mustafa, G. and Jianzhou, Y. (2018). Consumers' online information adoption behavior: Motives and antecedents of electronic word of mouth communications. *Computers in Human Behavior*. 80, 22–32. Available at: <https://doi.org/10.1016/j.chb.2017.09.019>.
- Ilham, I., Eliyana, A. and Agustina, T.S. (2021). A Systematic Literature Review Information Technology Capital and Performance. *Library Philosophy and Practice*. 2021.
- Ismail, N.A. and Masud, M.M. (2020). Prospects and Challenges in Improving E-Commerce Connectivity in Malaysia. *E-commerce Connectivity in ASEAN*. 5(April), 78–98.
- Joseph, R. (2001). Understanding the Digital Divide. *Prometheus*. 19(4).
- Jusoh, Z.M., Rahiman, N. and Saworo, S.N.W. (2021). Factors influencing consumer purchasing behaviour towards online food delivery services. *Malaysian Journal of Consumer and Family Economics*. 27(S1), 131–146.
- Kassim, N.M., Mohamad, W.N. and ... (2021). Mobile Shopping Acceptance Among Millennials in Malaysia Public University. ... *Journal of Business and ...* 6(1), 1–19.
- Konar, R., Balasubramanian, K. and Kumar, J. (2020). The Impact of Social Media on Consumers' Purchasing Behaviour in Malaysian Restaurants. *Journal of Spatial and Organizational Dynamics*. Available at:  
[https://www.researchgate.net/publication/344829541\\_The\\_Impact\\_of\\_Social\\_Media\\_on\\_Consumers'\\_Purchasing\\_Behaviour\\_in\\_Malaysian\\_Restaurants\\_-\\_Journal\\_of\\_Spatial\\_and\\_Organizational\\_Dynamics](https://www.researchgate.net/publication/344829541_The_Impact_of_Social_Media_on_Consumers'_Purchasing_Behaviour_in_Malaysian_Restaurants_-_Journal_of_Spatial_and_Organizational_Dynamics).
- Kumar, S., Lim, W.M., Pandey, N. and Christopher Westland, J. (2021). 20 years of Electronic Commerce Research, Springer US. Available at: <https://doi.org/10.1007/s10660-021-09464-1>.
- Lazim, N.A.M., Sulaiman, Z., Zakuan, N., Mas'od, A., Chin, T.A. and Awang, S.R. (2020). Measuring Post-purchase Regret and Impulse Buying in Online Shopping Experience from Cognitive Dissonance Theory Perspective. 2020 6th IEEE International Conference on Information Management, ICIM 2020., 7–13.
- Lim, K.B., Yeo, S.F. and Wong, J.C. (2020). Factors affecting purchasing intention by using mobile shopping applications in Malaysia. *International Journal of Business and Society*. 21(3), 1058–1067.
- Lim, Y.J., Osman, A., Salahuddin, S.N., Romle, A.R. and Abdullah, S. (2016). Factors Influencing Online Shopping Behavior: The Mediating Role of Purchase Intention. *Procedia Economics and Finance*. 35(October 2015), 401–410. Available at: [http://dx.doi.org/10.1016/S2212-5671\(16\)00050-2](http://dx.doi.org/10.1016/S2212-5671(16)00050-2).
- Majid, M. and Firend, A.R. (2017). Social Media, Online Shopping Activities and Perceived Risks in. *International Journal of Economics and Financial Management*. 1(1), 12–24. Available at:  
[https://www.researchgate.net/publication/317729585\\_Social\\_Media\\_Online\\_Shopping\\_Activities\\_and\\_Perceived\\_Risks\\_in\\_Malaysia](https://www.researchgate.net/publication/317729585_Social_Media_Online_Shopping_Activities_and_Perceived_Risks_in_Malaysia).

- Mengist, W., Soromessa, T. and Legese, G. (2020). Method for conducting systematic literature review and meta-analysis for environmental science research. *MethodsX*. 7, 100777. Available at: <https://doi.org/10.1016/j.mex.2019.100777>.
- Mgm, J., Jaharadak, A.A. bin and Ferdous Azam, S.M. (2020). Factors Affecting E-Commerce Adoption in Malaysia. *Systematic Reviews in Pharmacy*. 11(1), 1082–1093.
- Muda, M., Mohd, R. and Hassan, S. (2016). Online Purchase Behavior of Generation Y in Malaysia. *Procedia Economics and Finance*. 37(16), 292–298. Available at: [http://dx.doi.org/10.1016/S2212-5671\(16\)30127-7](http://dx.doi.org/10.1016/S2212-5671(16)30127-7).
- Mulibana, L. and Rena, R. (2021). Innovation activities of informal micro-enterprises in Gauteng, South Africa: A systematic review of the literature. *African Journal of Science, Technology, Innovation and Development*. 13(4), 425–435. Available at: <https://doi.org/10.1080/20421338.2020.1818921>.
- Musa, R., Nasaratnam, S., Rethinam, K., Varatharajoo, P.M. and Shanmugam, A. (2022). A Study of Factors Influenced Online Shopping Behavior in Malaysia: A Structural Approach. *WSEAS Transactions on Business and Economics*. 19, 531–541.
- Nasution, T.A. (2023). E-Commerce in Malaysia From Law Perspective. 2(1), 11–15.
- Nawi, N.C., Al Mamun, A., Hamsani, N.H.B. and Bin Muhayiddin, M.N. (2019). Effect of consumer demographics and risk factors on online purchase behaviour in malaysia. *Societies*. 9(1), 1–11.
- Naz, F., Karim, S., Houcine, A. and Naeem, M.A. (2022). Fintech Growth during COVID-19 in MENA Region: Current Challenges and Future prospects. *Electronic Commerce Research*.
- O’neill, M., Booth, S. and Lamb, J. (2018). Using nvivo™ for literature reviews: The eight step pedagogy (N7+1). *Qualitative Report*. 23(13), 24–39.
- Ong, T.S., Teh, B.H., Kasbun, N.F., Mahroeian, H. and Hossain, M.I. (2020). Electronic commerce adoption among Malaysian SMEs. *Journal of Critical Reviews*. 7(19), 555–565.
- Osman, S. and Leng, T.P. (2020). Factors influencing behavioural intention for mobile banking adoption among students of Universiti Putra Malaysia. *Malaysian Journal of Consumer and Family Economics*. 24, 79–100.
- Pelet, J.É. and Taieb, B. (2022). Context-aware optimization of mobile commerce website interfaces from the consumers’ perspective: Effects on behavioral intentions. *Computers in Human Behavior Reports*. 7(November 2021).
- Pervin, N. and Mokhtar, M. (2022). The Interpretivist Research Paradigm: A Subjective Notion of a Social Context. *International Journal of Academic Research in Progressive Education and Development*. 11(2), 419–428.
- Peters, U. (2022). What Is the Function of Confirmation Bias? *Erkenntnis*. 87(3), 1351–1376. Available at: <https://doi.org/10.1007/s10670-020-00252-1>.
- Prasetyo, E.B., Sopiiah and Zen, F. (2020). The Effect of Discount Price on Purchasing Intentions Through Consumer’s Perceived Risk in the Flash Sale Program at Shopee. 124, 633–643.
- Rahman, M., Ismail, I. and Bahri, S. (2020). Analysing consumer adoption of cashless payment in Malaysia. *Digital Business*. 1(1), 100004. Available at: <https://doi.org/10.1016/j.digbus.2021.100004>.
- Ramlan, R. and Omar, F.Z. (2016). A study on factor that influence online shopping in malaysia. *Pengaruh penggunaan pasta labu kuning (Cucurbita Moschata) Untuk Substitusi Tepung Terigu Dengan Penambahan Tepung Angkak Dalam Pembuatan Mie Kering*. 15(1), 165–175. Available at: <https://core.ac.uk/download/pdf/196255896.pdf>.
- Razak, A.A., Chelliah, S., Yusliza, M.Y. and Saputra, J. (2021). Identifying the contributing factors influencing customers’ buying behaviour: Case study of Majelis Bandaraya Petaling Jaya, Malaysia. *Proceedings of the International Conference on Industrial Engineering and Operations Management*. (July), 4781–4789.
- Reddy, R.C., Bhattacharjee, B., Mishra, D. and Mandal, A. (2022). A systematic literature review towards a conceptual framework for enablers and barriers of an enterprise data science strategy, Springer Berlin Heidelberg. Available at: <https://doi.org/10.1007/s10257-022-00550-x>.
- Rezaei, S., Amin, M. and Ismail, W.K.W. (2014). Online repatronage intention: An empirical study among Malaysian experienced online shoppers. *International Journal of Retail and Distribution Management*. 42(5), 390–421.
- Safie, N., Satar, M., Dastane, O., Yusnorizam, M. and Arif, M.’ (2019). Customer Value Proposition for E-Commerce: A Case Study Approach School of Accounting & Business Management, FTMS Global Malaysia Block 3420, Persiaran Semarak Api, Cyber 4, 63000 Cyberjaya, Malaysia 2. *IJACSA International Journal of Advanced Computer Science and Applications*. 10(2), 454. Available at: [www.ijacsa.thesai.org](http://www.ijacsa.thesai.org).
- Saleh, N.S.B.M., Rosli, N.S.B., Halimi, N.S.B., Hisham, N.S.I.B.B. and Gangurde, A.L. (2023). Are You an E-consumer? A Case Study on Finding Factors Impacting Consumers’ Purchase Behaviour and Their Willingness to Pay on Average on E-Commerce Platforms in Malaysia. *International Journal of Accounting & Finance in Asia Pasific*. 6(2), 110–119.

- Salleh, F., Yatin, S.F.M., Radzi, R.M., Kamis, M.S., Zakaria, S., Husaini, H., Zaini, M.K. and Rambli, Y.R. (2020). Malaysian's New Digital Initiative to Boost E-Commerce – Where We Are? *International Journal of Academic Research in Business and Social Sciences*. 10(11).
- Saoula, O., Shamim, A., Mohd Suki, N., Ahmad, M.J., Abid, M.F., Patwary, A.K. and Abbasi, A.Z. (2023). Building e-trust and e-retention in online shopping: the role of website design, reliability and perceived ease of use. *Spanish Journal of Marketing - ESIC*, 178–201.
- See, S.Z.J. and ShaheenMansori (2012). Young Female Motivations for Purchase of Organic Food in Malaysia. *International Journal of Contemporary Business Studies*. 3(5), 61–72. Available at: <http://www.akpinsight.webs.com>.
- Shahrokhi, M. (2008). E-finance: status, innovations, resources and future challenges,
- Shailashri, V.T., Aithal, P.S. and Shenoy, S. (2019). Factors Which Influence on-Line Buying Behavior During Festive Season. (June), 21–26.
- Shankar, V. and Rangaswamy, A. (2014). The Online Medium and Customer Price Sensitivity ( Working Paper ) eBusiness Research Center Working Paper The Online Medium and Customer Price Sensitivity Venkatesh Shankar Arvind Rangaswamy Michael Pusateri 117F Technology Center Building. (January 2001).
- Siali, F., Wen, A.W.S. and Hajazi, M.U.A. (2018). Booming of Online Shopping in Malaysia: Do Customers Satisfy with Parcel Delivery Service? *International Journal of Academic Research in Business and Social Sciences*. 8(12).
- Skopec, M., Issa, H., Reed, J. and Harris, M. (2020). The role of geographic bias in knowledge diffusion: a systematic review and narrative synthesis. *Research Integrity and Peer Review*. 5(1), 1–14.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*. 104(August), 333–339. Available at: <https://doi.org/10.1016/j.jbusres.2019.07.039>.
- Soh, P.Y., Heng, H.B., Selvachandran, G., Anh, L.Q., Chau, H.T.M., Son, L.H., Abdel-Baset, M., Manogaran, G. and Varatharajan, R. (2020). Perception, acceptance and willingness of older adults in Malaysia towards online shopping: a study using the UTAUT and IRT models. *Journal of Ambient Intelligence and Humanized Computing*. (0123456789). Available at: <https://doi.org/10.1007/s12652-020-01718-4>.
- Sohrabi, C., Franchi, T., Mathew, G., Kerwan, A., Nicola, M., Griffin, M., Agha, M. and Agha, R. (2021). PRISMA 2020 statement: What's new and the importance of reporting guidelines. *International Journal of Surgery*. 88(March), 39–42.
- Soon, K.W.K., Lee, C.A. and 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.
- Soong, K.K., Ahmed, E.M. and Tan, K.S. (2020). Factors influencing Malaysian small and medium enterprises adoption of electronic government procurement. *Journal of Public Procurement*. 20(1), 38–61.
- Suki, N.M. (2013). Consumer shopping behaviour on the Internet: Insights from Malaysia. *Electronic Commerce Research*. 13(4), 477–491.
- Sulaiman, A., Jaafar, N.I. and Kadam, P. (2005). Factors Affecting Online Purchasing Among Urban Internet Users in Malaysia. *Proceedings of the 4th International Conference on eBusiness*. (March), 1–7.
- Susanto, S.F. (2021). The Impact of Financial Literacy and Financial Well-Being toward Online Shopping Activities during COVID-19 among Students Residing in Malaysia. *SSRN Electronic Journal*. (November 2021).
- Tan, S. W., Mohd Satar, N., Annizah Ishak, N. and Ating, R. (2020). Finance and Business (IJAFB) eISSN: 0128-1844 Malaysia. *International Journal of Accounting*. 5(27), 93–117.
- Tanadi, T., Samadi, B. and Gharleghi, B. (2015). The impact of perceived risks and perceived benefits to improve an online intention among generation-Y in Malaysia. *Asian Social Science*. 11(26), 226–238.
- Tandon, U. and Ertz, M. (2021). Customer Satisfaction Towards Online Shopping by Empirical Validation of Self-Determination Theory. (September), 177–203.
- Tang, H., Rasool, Z., Khan, M.A., Khan, A.I.A.A., Khan, F., Ali, H., Khan, A.I.A.A. and Abbas, S.A. (2021). Factors Affecting E-Shopping Behaviour: Application of Theory of Planned Behaviour. *Behavioural Neurology*. 2021.
- Tasin, N.B. (2017). Factors Influencing Customer's Trust in Online Shopping Among Executives in a Bank. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*. 2(3), 46–59. Available at: [www.msocalsciences.com](http://www.msocalsciences.com)
- Tham, K.W., Dastane, O., Johari, Z. and Ismail, N.B. (2019). Perceived risk factors affecting consumers' online shopping behaviour. *Journal of Asian Finance, Economics and Business*. 6(4), 246–260.
- Tight, M. (2023). Positivity bias in higher education research. *Higher Education Quarterly*. 77(2), 201–214.

- Watson, R.T. and Webster, J. (2020). Analysing the past to prepare for the future: Writing a literature review a roadmap for release 2.0. *Journal of Decision Systems*. 29(3), 129–147. Available at: <https://doi.org/10.1080/12460125.2020.1798591>.
- Webster, J. and Watson, R.T. (2002). Analyzing the Past to Prepare for the Future: Writing a Literature Review. *MIS Quarterly*. 26(2), xiii–xxiii.
- Wong, R.M.M., Wong, S.C. and Ke, G.N. (2018). Exploring online and offline shopping motivational values in Malaysia. *Asia Pacific Journal of Marketing and Logistics*. 30(2), 352–379.
- Yang, L., Xu, M. and Xing, L. (2022). Exploring the core factors of online purchase decisions by building an E-Commerce network evolution model. *Journal of Retailing and Consumer Services*. 64(October 2021), 102784. Available at: <https://doi.org/10.1016/j.jretconser.2021.102784>.
- Yang, X. and Yuan, Q. (2022). Six important theories in information behaviour research: a systematic review and future directions. *Information Research*. 27(4), 1–23.
- Yap, Y.Y., Tan, S.H., Tan, S.K. and Choon, S.W. (2022). Integrating the capability approach and technology acceptance model to explain the elderly's use intention of online grocery shopping. *Telematics and Informatics*. 72(April), 101842. Available at: <https://doi.org/10.1016/j.tele.2022.101842>.
- Yo, P.W., Kee, D.M.H., Yu, J.W., Hu, M.K., Jong, Y.C., Ahmed, Z., Gwee, S.L., Gawade, O. and Nair, R.K. (2021). The influencing factors of customer satisfaction: A case study of shopee in malaysia. *Estudios de Economia Aplicada*. 39(12), 1–16.
- Youssef, B. A., and Dahmani, M. (2023). Examining the Drivers of E-Commerce Adoption by Moroccan Firms: A Multi-Model Analysis. *Information (Switzerland)*. 14(7), 1–19.
- Yusuf, M.B.O. and Derus, A.M. (2013). Measurement model of corporate zakat collection in Malaysia: A test of diffusion of innovation theory. *Humanomics*. 29(1), 61–74.
- Zaini, M.H., Razali, A., Mohd Sahidol, J.N. and Ariffin, K. (2021). Preferred Language in Business: An Analysis of Shop Signs in Kuantan City, Malaysia. *International Journal of Academic Research in Business and Social Sciences*. 11(10).
- Zariman, N.F.M., Humaidi, N. and Abd Rashid, M.H. (2022). Mobile commerce applications service quality in enhancing customer loyalty intention: mediating role of customer satisfaction. *Journal of Financial Services Marketing*. (0123456789). Available at: <https://doi.org/10.1057/s41264-022-00190-9>.
- Zendehdel, M. and Paim, L.H. (2015). Investigating the Perceived Innovation Attributes , Toward Online Shopping in Malaysia. *Asian Journal of Social Sciences & Humanities*. 4(2), 15–23.
- Zendehdel, M., Paim, L.B.T.H.J., Bojei, J.B. and Osman, S.B.T. (2011). The effects of trust on online Malaysian students buying behavior. *Australian Journal of Basic and Applied Sciences*. 5(12), 1125–1132.
- Zendehdel, M., Paim, L.H. and Delafrooz, N. (2016). The moderating effect of culture on the construct factor of perceived risk towards online shopping behaviour. *Cogent Business and Management*. 3(1). Available at: <http://dx.doi.org/10.1080/23311975.2016.1223390>.
- Zendehdel, M., Sabri, M.F. and Wijekoon, R. (2020). Consumer attitudes towards online shopping: An empirical study among Malaysian college students. *Journal of Theoretical and Applied Information Technology*. 98(9), 1490–1513.
- Zhou, M., Huang, J., Wu, K., Huang, X., Kong, N. and Campy, K.S. (2021). Characterizing Chinese consumers' intention to use live e-commerce shopping. *Technology in Society*. 67(October), 101767. Available at: <https://doi.org/10.1016/j.techsoc.2021.101767>.