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Research Article

Online purchases among consumers during the COVID-19 pandemic in Malaysia

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ABSTRACT

This research investigates the factors influencing consumers' online buying behavior (OBB) through the examination of six hypotheses: attitude, perceived benefits and intention, subjective norms, cyberchondria, self-efficacy, and self-isolation intention. This study included 216 respondents in total. It was determined whether online purchasing behavior was valid using structural equation modelling. According to the study, every relationship is statistically significant and positive in orientation, highlighting the significance of these elements in determining consumers' OBB. The impact of attitude, perceived benefits and intentions, subjective norms, and self-efficacy is consistent with earlier research on consumer behavior, highlighting the psychological factors influencing online purchasing decisions. The significant effects of cyberchondria also highlight the importance of health-related considerations in online purchasing decisions. The impact of self-isolation intention highlights how crucial outside factors, like the COVID-19 pandemic, are in influencing consumers' online shopping behavior. The findings are significant as they provide detailed insights into the behavior of online shoppers in Malaysia, highlighting COVID-19's impact and function of diverse demographics, potentially contributing to existing knowledge in the field of consumer behavior.

Keywords: attitude, perceived benefits and intention, subjective norms, cyberchondria, self-efficacy, self-isolation intention

INTRODUCTION

Since the Malaysian Government's COVID-19 movement control order, online sales have expanded considerably. The COVID-19 epidemic has had an effect on consumers' buying and purchase habits. As a result of shifting consumer preferences, the future of retail in Malaysia is predicted to evolve. The COVID-19 pandemic brought this scenario to the Internet purchasing and its future evolution. Malaysia's e-commerce market will increase by 68.0% in 2021. Early in 2022, there were 14.43 million Internet users, and an additional three million digital consumers joined the market. More than 80.0% of Malaysian Internet users are digital clients. This applies throughout Southeast Asia. Malaysia (81.0%) trails Singapore (97.0%) and Thailand (90.0%) but leads Vietnam (71.0%), the Philippines (68.0%), and Indonesia (80.0%) (Factory, n. d.). Malaysia has 29.55 million people using the Internet in January 2022. At the beginning of 2022, 89.6% of Malaysia's total population of 32.98 million people had access to the Internet. Amid the outbreak, there was a surge in the Internet usage. In 2021, 11.0% of digital users in Malaysia became new consumers during the 2020 epidemic, with an additional 4.0% in the first quarter. Malaysians increased their online time for personal use from 3.7 hours per day to 4.8 hours during lockdowns. Although it decreased to 4.2 hours post-pandemic, daily Internet usage remains higher than it was before. In addition to the epidemic, improving the Internet speed has contributed to the growth of eCommerce in Malaysia during the past few years. The median mobile Internet

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speed in Malaysia increased by 8.23 Mbps (50.4%) and fixed Internet speed by 22.92 Mbps (44.1%), according to Ookla (Exploring Internet Performance in Malaysia, 2020). Digital services are used by 94.0% of pandemic customers. Malaysian pandemic consumers used digital services 94.0% in 2021 and 98.0% planned to do so in the future (Factory, n. d.). Malaysia's move to e-commerce is aided by its increased mobile phone usage. The country had 84.2% mobile phone penetration in 2021. When 2022 began, GSMA intelligence (Exploring Internet Performance in Malaysia, 2020) reported 42.11 million mobile connections in Malaysia; up 1.6 million (4.0%) between 2021 and 2022. With 55.9% of Malaysian e-commerce transactions made on mobile devices, smartphone penetration is expected to rise, encouraging more online purchases. In June of 2020, the Malaysian government began the "go eCommerce" campaign to promote electronic commerce. The government granted MYR140 million to encourage small merchants to adopt eCommerce and aid them in increasing their reach across Malaysia. By 2021's end, the number of Malaysians purchasing consumer items online will have increased to 14.43 million, an increase of 1.31 million from 2020. (10.2% growth rate). In 2021, Malaysians spent $8.17 billion on consumer items online, an increase of US$2.4 billion from the previous year (Factory, n. d.). As of the second quarter of 2021, the eCommerce market in Malaysia was dominated by Shopee, which also received the most clicks in the country. Shopee was Malaysia's and Southeast Asia's most popular online shopping site with 54 million clicks (AsiaPac, 2001).

Problem Statement

The present study aims to evaluate the unified theory of acceptance and use of technology (UTAUT), a technology acceptance model that has been extensively employed in research studies investigating user behavior in a variety of domains, including online communities (Rashidin et al., 2020), electronic learning (Ugur & Turan, 2018), mobile payment (Al-Saedi et al., 2020; Singh et al., 2017), training (Wong et al., 2013; Yakubu & Dasuki, 2019), website design quality and usage patterns (Al-Qeisi et al., 2014), electronic invoices assistance (Lian, 2015), online insurance coverage (Mendez-Aparicio et al., 2017), and online financial services (Alalwan et al., 2017; Bhatiasevi, 2016; Martins et al., 2014). Gaining insight into the preferences and behavioral intentions of online shoppers throughout their transactions is the main goal of this study. The goal of this study is to learn more about how information technology could boost the effectiveness of the online supply chain for a range of goods.

LITERATURE REVIEW

Prior studies have demonstrated that customer behavior can be influenced by factors such as business ethics, online platforms, perceived utility, flexibility of use, risk, and user acceptance (AlTarrah et al., 2021; Hanaysha, 2018; Uysal Toraman et al., 2022). However, notably in relation to the COVID-19 pandemic, a limited number of research have specifically examined the Internet shopping behaviors. Ozturk (2020) examined the impacts of hedonistic, utilitarian, and fatality risk factors. Eti et al. (2021) examined the impact of social media. SCISPACE (2021) discusses the impact of social media advertisement on consumer purchasing behavior. Aityoussef et al. (2020) examined the impacts of perceived usability, perceived utility, structural security, and societal influence. Addo et al. (2020) conducted a study during the pandemic that specifically examined the impact of dread attraction, presence on social media, and electronic loyalty on online buying behavior (OBB). Zwanka and Buff (2021) provided a paradigm for understanding the changes in consumer behavior, based on empirical research. Additionally, Sheth (2020) discussed the impact of COVID-19 on consumer habits. Prior studies on the Internet shopping during the COVID-19 pandemic have primarily focused on particular product categories or industries. Nevertheless, there has been no prior research investigating the relationship between pandemic worry and consumer behavior in Malaysia during the COVID-19 pandemic, specifically in terms of attitude, intention, perceived advantages, subjective norms, cyberchondria, self-efficacy, and social isolation (Chua et al., 2021; Kim & Im, 2021; Ong et al., 2021).

Attitude

The concept of attitude towards utilization is defined as "the extent to which a person assesses and associates the target system with their usage" (Davis et al., 1989). Attitude towards e-commerce involves the integration of positive or negative sentiments towards e-commerce interactions (Bianch & Andrews, 2012). Customers shape their attitudes and make decisions through motivation and perception. Attitude serves as

a predictor of e-shopping behavior and establishes a connection between a consumer's background traits and their consumption patterns (Shim et al., 2001). The association between attitude and purchase intent is notably advantageous on e-commerce platforms (Redda, 2019; Shu & Chuang, 2011; Tsai et al., 2016). The influence of consumer attitudes towards the Internet shopping on their purchase intentions has been consistently proven. Shu and Chuang (2011) discovered that good perceptions of online platforms increase customers' propensity to engage in online purchasing. This finding suggests that positive attitudes regarding e-commerce favorably affect purchase intent. Similar to this, Tsai et al. (2016) emphasized the significance of attitude in determining online repurchase intention and stressed that favorable views regarding online shopping encourage recurrent purchases. Additionally, Redda (2019) showed how trust, attitude, and risk perception all work together to affect consumers' intentions to make an online purchase. These findings emphasize the significance of attitude as a pivotal determinant in determining the intention to make e-commerce purchases. Although it might be difficult to change consumer attitudes, the COVID-19 outbreak forced people to change their usual behavioral patterns (Sumi & Ahmed, 2022). Due to constraints and safety worries, the pandemic caused an unusual shift in consumer behavior, leading people to shop online. Sumi and Ahmed (2022) noted that the epidemic had changed customer behavior, emphasizing the need for businesses to adapt. Consumers' adoption of e-commerce was sparked by the COVID-19 epidemic, highlighting the significant influence of attitude in determining online purchase intentions.

H1. Attitude (ATT) strongly influences the Internet shopping.

Perceived Benefits & Intention

Previous research has produced a wealth of information and spent a lot of time focusing on giving consumers advantages to encourage their purchase intentions. The studies of Jones et al. (2006) and Wang et al. (2013) have thoroughly explained the concept of consumer benefits and the importance of hedonic and utilitarian gains. Furthermore, recent investigations have highlighted the perception of perceived benefits, revealing a robust positive impact on online consumer behavior (Bangkit et al., 2022; Widyastuti et al., 2020; Yew & Kamarulzaman, 2020). A study by Jeong et al. (2003) on "online shoppers in the hotel industry" indicated that website information, dimensions, and features greatly affect users' "behavior intention." According to Chang and Kannan's (2006) study, consumers' intention to make a purchase has been positively influenced by the quality of websites. In terms of usability, functionality, customer happiness, and behavior intentions online, Bai et al. (2008) discovered statistically significant favorable outcomes. According to the survey, consumers value all of these attributes, which increases their propensity to buy. Consumers who successfully complete purchasing tasks would have increased recurrent buy intentions, according to Sajid et al. (2022).

Other investigations, such as those conducted have reported similar findings: consumers are drawn to online shopping due to its time-saving attributes (Teo, 2002), access to products not readily available locally (Xia et al., 2008), cost-effectiveness (Nazir et al., 2012), and convenience (Manu & Fuad, 2022). The simplicity and comfort of online shopping contribute to its increasing popularity in Malaysia (Iqbal & Hunjra, 2012). Furthermore, studies indicate that individuals opt for online shopping due to its user-friendly search and evaluation processes (Zhou & Zhang, 2007, competitive pricing, extensive product variety, detailed information on product features (Jiang, 2013), and insights into recent brand and fashion trends (Jhamb and Gupta, 2016). Consumers want complete product information, simplicity, online security, and simple vendor contact, according to Teo (2006). Online shoppers want fast delivery, a stable supply chain, and clear return procedures (Abdeldayem, 2010).

H2. Consumers' online purchasing behavior is significantly influenced by their perceived benefits and intentions.

Subjective Norms

According to Ajzan (1991), subjective norms are important preconditions for someone's intention to engage in a specific behavior. The formation of subjective norms is driven by how people interpret objective rules and their desire to engage in a certain action (Redda, 2019). Rehman et al. (2019) highlighted subjective norms are the perceptions of an individual that are influenced by his or her family, acquaintances, and relatives regarding whether or not to engage in a particular activity. These powerful individuals show how societal pressure can either encourage or discourage behavior (Chiu et al., 2018). We discuss subjective norms

in the context of the study as customers' opinions of whether their circle of influence recognizes, encourages, and uses online purchases (Pavlou & Fygenson, 2006). Customers' online purchasing intentions are positively influenced by social group opinions or those of other significant individuals. With the frequency and spread of COVID-19, family or friends who share the same health worries may have an impact on a customer's online buying inclinations (Chan et al., 2020). By consider above discussions, researchers able to make the following claim:

H3. Subjective norms have a significant impact on molding customers' online purchasing behavior.

Cyberchondria

Cyberchondria, characterized by excessive and distressing searches seek health knowledge online (Nair et al., 2022), has been found to have implications for OBB (Starcevic, 2013). Research carried out by Nair et al. (2022) revealed a significant connection between cyberchondria and online shopping, with 63.4% of participants showing a rise in the regularity of their online purchasing activities. This suggests that cyberchondria may influence consumer habits in online marketplace. The COVID-19 pandemic has brought about widespread consumer's convenience orders (orders from home), resulting in the closure of physical stores and an increased reliance on online shopping platforms (Varma et al., 2021). With more time spent at home and limited access to traditional brick-and-mortar retailers, individuals have turned to the Internet for their shopping needs. This shift in consumer behavior has created an environment, where cyberchondria can impact online buying decisions. Individuals experiencing heightened health concerns and anxiety related to the pandemic may exhibit a tendency to engage in repetitive and compulsive searches for information related to health. online (Starcevic, 2013). This incessant need for information can spill over into other online activities, including online transactions. The increased usage of the Internet during the pandemic has contributed to the emergence of cyberchondria, with individuals seeking solace or distraction through various online activities, including shopping (Varma et al., 2021). The presence of cyberchondria can have negative implications for OBB. Excessive searching for health-related information can distract individuals and impede their decision-making process when making online purchases (Nair et al., 2022). Moreover, cyberchondria has been linked to decreased satisfaction with online shopping experiences (Nair et al., 2022). The preoccupation with health concerns can divert individuals' attention away from the shopping process, leading to a less fulfilling and satisfactory online shopping experience. Understanding the impact of cyberchondria on OBB is crucial for businesses operating in the digital marketplace. Acknowledging the influence of cyberchondria can help companies tailor their websites to satisfy the unique requirements and concerns of consumers who may be affected by cyberchondria. This could involve providing clear and accurate health information, offering support resources, and creating a user-friendly interface that minimizes distractions and supports informed decision-making. In conclusion, cyberchondria has implications for OBB, particularly in the context the COVID-19 pandemic. Recognizing the impact of cyberchondria can help businesses adapt their strategies to better serve consumers affected by this phenomenon. So, the fourth hypothesis for this study is:

H4. Cyberchondria significantly influences consumers' online buying behavior.

Self-Efficacy

Tsarenko and Strizhakova (2013) stated an individual's self-efficacy, defined as their belief in their ability to complete a task, plays a crucial role in understanding consumer behavior in relation to e-services According to Hsu and Chiu (2004), self-efficacy plays a crucial role in influencing consumer behavior within the realm of e-services. Customers who possess a strong belief in their own abilities are more likely to invest effort and engage in online purchasing activities (Yi & Gong, 2008). The concept of self-efficacy revolves around individuals' confidence in their ability to influence their surroundings and actions (Rodgers et al., 2008). Customers who perceive themselves as having a significant influence in the decision-making process are susceptible to exhibit certainty regarding their capacity to make successful purchases. This confidence in their own abilities serves as a driving force behind their purchasing intentions. Based on the importance of self-efficacy in consumer behavior, we propose the following hypothesis:

H5. Customers exhibiting greater self-efficacy levels are more inclined to engage in online buying behavior.

By examining the influence of self-efficacy on consumer behavior, we can gain valuable insights into the factors that drive individuals' decisions to make online purchases.

Self- Isolation Intention

Self-isolation measures have significantly impacted customers' online shopping behavior, leading to notable changes in their shopping patterns (Ratten, 2020). The onset of the COVID-19 pandemic and the subsequent social isolation policies and stay-at-home directives have prompted individuals to heavily rely on the Internet marketplaces for their shopping needs. The accessibility, convenience, and safety offered by online shopping platforms have become particularly attractive during times of restricted mobility and limited in-person interactions (Grewal et al., 2020).

Research indicates that customers' isolation has resulted in an increased dependence on online shopping, leading to a surge in online sales across various industries. The prolonged period of isolation has also brought about a shift in customers' shopping preferences. Psychological factors, such as the desire for entertainment, comfort, and a sense of normalcy, have motivated consumers to explore new product categories, resulting in a diversification of online purchases (Chan et al., 2021). To adapt to the evolving demands and preferences of customers during self-isolation, businesses and enterprises have been compelled to modify their marketing strategies and enhance their online presence.

H6. Consumers' self-isolation intention significantly affects their online buying behavior.

Consumer Behavior

A consumer is someone who buys or has the means to buy goods and services from businesses in order to meet their own or their family's needs, preferences, or interests (Walters, 1974). In contrast, Schiffman and Kanuk (1997) provide a broader definition of consumer behavior, encompassing the actions exhibited when people are looking for, buying, using, and discarding products, services, and concepts. Schiffman and Kanuk also categorize consumers into two distinct types: personal and organizational. Personal consumers engage in buying goods and services for personal use, home use, or as gifts for others, with future consumption in mind. Organizational consumers, on the other hand, consist of government agencies, for-profit companies, nonprofit organizations, and institutions that procure commodities and services to support their operational needs. This study concentrates on individual customers who make purchases for themselves or their families. Here, a Likert scale (five-point) was employed to identify consumer behavior (**Figure 1**).

METHODOLOGY

Design of the Study

This study employed various data gathering and analytic methodologies to combine and process the acquired information. A quantitative survey served as the foundation for this study's methodology, with data being collected through a structured questionnaire. To ensure the inclusion of participants with relevant experiences and viewpoints, a purposive sampling survey was conducted, enabling the exploration of specific research topics and hypotheses. The study adopted a descriptive approach to capture and evaluate respondents' attitudes and actions towards online purchasing during the COVID-19 epidemic. This descriptive method facilitated a comprehensive understanding of the multifaceted aspects of people's OBB in response to the crisis.

Methods of Research Data Collection

This study aims to offer in-depth insights on Malaysian consumers' purchasing behavior by concentrating exclusively on the country's present online shoppers. Several criteria have been created for the selection of respondents in order to guarantee that the goals are met, and the study findings are accurate. In order for the survey to capture the subtleties and trends unique to the Malaysian setting, respondents must first be Malaysian citizens who currently reside there. Additionally, the respondents will span a wide age range, enabling a thorough understanding of how various age groups engage in online shopping. Additionally, a key requirement is prior online purchasing experience, which guarantees that respondents have enough knowledge of the procedure to offer insightful feedback. The primary data collection method has been

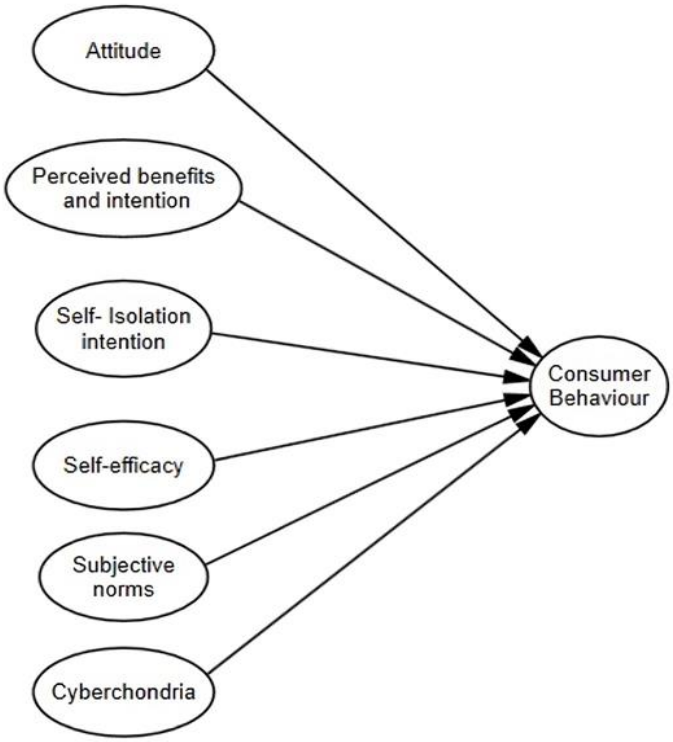

Figure 1. Research framework (Source: Authors)

selected as an online survey to increase the likelihood of reaching the targeted respondents. This choice was made in recognition of the likelihood that an Internet connection will be available to online shoppers, making an online survey an acceptable and effective method of data gathering. The online survey method enables the research to expand the participant pool, enhancing the diversity and representation of the sample by taking advantage of potential respondents' widespread Internet access. As a result, the accuracy and dependability of the study's findings have improved. This study aims to delve deeply into the intricacies and dynamics of online purchasing behavior within the distinctive Malaysian market by concentrating on existing online purchasers in Malaysia and setting particular criteria for respondent selection. The use of an online survey methodology further guarantees that a variety of viewpoints are included in the research, strengthening the validity of the findings.

Sampling Method

In this study, the researchers operated under the assumption that individuals who share similar attitudes and behaviors can be considered a group (Sekaran & Bougie, 2016). As a result, a combination of online purposive sampling techniques and a combination of probability and non-probability sampling methods was utilized. to select respondents. The choice of sampling methods in this study is driven by a combination of factors. The online purposive sampling technique was selected because it allows researchers to intentionally target individuals with specific characteristics and behaviors relevant to the research topic, ensuring the sample's alignment with the study's objectives. Non-probability sampling methods are employed due to their time and cost efficiency, as they do not necessitate the creation of a formal sampling frame, making them practical, especially during the COVID-19 pandemic when traditional data collection methods may be challenging or pose health risks. These criteria were used to optimize the selection of sampling methods for this research, facilitating the study's ability to gather relevant and diverse data while addressing the unique circumstances presented by the pandemic. The data collection for this study took place during the Corona Pandemic, which presented unique challenges and limitations. To overcome these obstacles, the researcher utilized a Google Form link to distribute the questionnaire. The link was shared extensively with as many individuals as possible, aiming to maximize the response rate and capture a diverse range of perspectives.

Sample Size

The researchers carefully chose individuals who met the specific criteria established for study. A total of 250 questionnaires were distributed to the selected respondents, aiming to capture their insights and perspectives on the research topic. 216 of the 250 surveys sent were returned by respondents. The original dataset for analysis was comprised of these returned surveys. However, after completing a preliminary analysis of the data, it was found that 15 cases had responses that were either inconsistent or incomplete. To guarantee the accuracy and trustworthiness of the data, these 15 examples were therefore removed from the final dataset. Consequently, 201 complete and accurate responses were kept for additional examination. These 201 responses served as the dataset from which inferences were made, conclusions were reached, and study goals were addressed.

Instrument

A web-based questionnaire was developed for data gathering in this study. The survey instrument was structured into four sections to cover various aspects of the research. The first section, section A, comprised social-demographic questions to gather information about the respondents' backgrounds. Section B focused on exploring respondents' online experience and their habits related to online shopping. The third section, section C, aimed to capture responses related to the key constructs of the research framework, including attitude, perceived benefits and intention, cyberchondria, self-efficacy, self-isolation intention, and consumer behavior. To guarantee the reliability and validity of the questionnaire every measurement item was checked carefully adapted from previous studies that are relevant to the research topic. By drawing upon established measurement items, the questionnaire content was designed to align with established concepts and construct validity, contributing to the overall robustness of the research. In this section, a total of 30 questions are included, each question was answered on a Likert-type five-level scale from one to five, with options for "extremely disagree," "disagree," "neutral," "agree," and "extremely agree." The instrument used to measure cyberchondria severity is the cyberchondria severity scale (CSS) as developed by McElroy et al. (2019), which originally consists of 33 items. These items can be summed to derive a total score or can be used to calculate scores for five subscales, capturing the respondents' time spent searching for information and its resulting distress or anxiety. For the purpose of this study, CSS-33 was shortened to a 15-item version known as CSS-15. It has exhibited robust psychometric properties, comparable to the original questionnaire, as validated by Barke et al. (2016). In this study, the 15 items modified to assess online purchase behavior among respondents were subjected to validation by experts in the field of psychology. We operationalized the measurement of self-efficacy by adapting the work of Islam et al. (2018), which further categorized it regarding computer, professional, and multitasking self-efficacy. Sample items included in the questionnaire are, as follows:

(1) "I am capable of making extraordinary purchases if I desire",

(2) "Extraordinary purchasing presents challenges for me", and

(3) "Extraordinary purchasing is effortless for me."

To assess respondents' attitudes, subjective norms, and consumer behavior towards online purchasing, we utilized questionnaire items from George (2004). These items were chosen to capture the relevant constructs in the context of this study. Self-isolation was gauged through survey items adapted from Varma et al. (2021). These items were specifically employed to explore the association between the desire to self-isolate and shop online. By employing established measurement items from previous research, we ensured the content validity and reliability of the questionnaire, enabling us to effectively examine the relationships and variables of interest in the study.

Data Analysis

This study examines the dependent variable, which is "consumers' OBB," which refers to the actions and patterns exhibited by individuals when making purchases through online platforms. It serves as the focal point for understanding the influence of various latent (independent) variables. The latent variables (independent) considered in this study include "attitude (ATT)," which represents the cognitive and affective aspects evaluation of individuals towards online shopping; "perceived benefits and intention," which

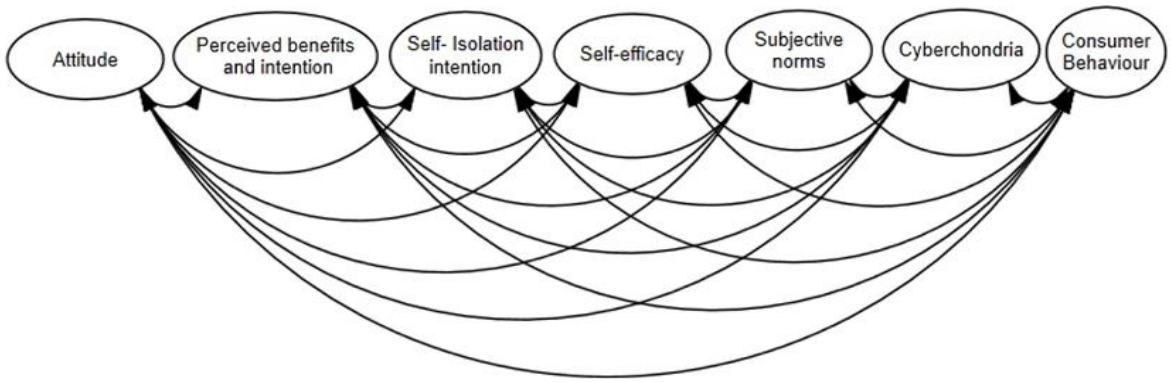

Figure 2. Measurement model (Source: Authors)

encompasses the perceived advantages and the intention to engage in online buying; "subjective norms," referring to the influence of social expectations and opinions on consumers' online buying; "cyberchondria," reflecting the tendency of individuals to experience excessive anxiety and concern related to health information found online; "self-efficacy," indicating individuals' belief in their capability to perform online purchasing tasks successfully; and "self-isolation intention," which focuses on individuals' intention to voluntarily isolate themselves from people that prefer the Internet buying. It examines the links between independent variables and the dependent variable (OBB) by utilizing using structural equation modelling with AMOS. Researchers analyzed and explored the collected data to see the variations in attitude, perceived benefits and intention, subjective norms, cyberchondria, self-efficacy, and self-isolation intention influence and shape consumers' OBB. Furthermore, assessing the model fit will provide valuable insights into the overall validity and adequacy of the proposed theoretical framework.

RESULTS

Respondents Profile

The study included a sample of 216 respondents who participated in the research, representing the diverse demographic landscape of Malaysia. The respondents were from various racial backgrounds, including Malay, Chinese, Indian, Iban, Kadazans, and others. The racial composition of the sample was, as follows: approximately 50.0% identified as Malay, 30.0% as Chinese, 15.0% as Indian, and the remaining 5.0% represented the Iban, Kadazans, and other ethnic groups. In terms of gender distribution, approximately 48.0% of the respondents identified as male, while 52.0% identified as female. Regarding income, the respondents spanned various income brackets, with the majority falling into the moderate-income range (RM 3,000-6,000). Around 30.0% of the respondents reported a low-income level (RM 1,000-3,000), while 40.0% reported a moderate income level, and the remaining 30.0% reported a high-income level (above 6,000). Age-wise, replies were diverse. A significant portion of participants fell between the ages of 25 and 45, representing 60.0% of the sample, while 20.0% were aged 18-24, and the remaining 20.0% were aged 46 and above.

Confirmatory Factor Analysis & Research Model Assessment

We first examined the measurement items' descriptive statistics and reliability and validity. Subsequently, we conducted a model fit test and evaluated the contributions of the path coefficients for the observable variables were also tested for statistical significance.

Figure 2 depicts AMOS' measurement model, showing latent components and their observable indicators. AMOS software furnishes factor loading estimates, reflecting the strength showing the indicator-latent construct relationship. Subsequently, we used Chi-square to assess the measurement model's fit. At the beginning an examination of the reliability and validity of the measuring items were assessed together with their descriptive statistics. were evaluated. After that, the model fit was checked, and the path coefficients of the manifest variables were looked at to see how they contributed and how statistically significant they were. In AMOS, **Figure 2** is a graph that shows the measurement model and the connections between the hidden factors and the things that can be seen about them.

Table 1. Fit-goodness statistics

Variable	Value
Chi-square	
Chi-square ($\chi 2$)	550.670
Degrees of freedom (df)	168
Absolute fit measures	
Goodness of fit index (GFI)	0.950
Root mean square error of approximation (RMSEA)	0.360
Root mean square residual (RMR)	0.087
Incremental fit indices	
Normed fit index (NFI)	0.950
Relative fit index (RFI)	0.930
Incremental fit index (IFI)	0.970
Tucker-Lewis coefficient (TLI)	0.960
Comparative fit index (CFI)	0.970
Parsimony fit indices	
Adjusted goodness of fit index (AGFI)	0.920
Parsimony normed fixed index (PNFI)	0.720

AMOS software generates estimates of factor loadings, indicating the strength showing how each indicator affects its latent component. We used Chi-square, CFI, TLI, and RMSEA to evaluate the measurement model's fit. Indexes measure how well the model represents observed data. A well-fitting model has a non-significant Chi-square and CFI and TLI values at or above 0.90. or approaching one, and an RMSEA value below 0.08.

Model Fit

Evaluation of the measuring model begins with examining fit indices, as these statistics play a crucial role in determining the model's adequacy. To explain data, fit indices compare the residual discrepancies between the model's covariance matrix and the data analysis matrix (Singh & Billingsley, 1998).

Fit statistics from confirmatory factor analysis (CFA) are shown in **Table 1**. Overall, the model has $\chi 2$=550.67 and 168 degrees of freedom yielding a significant *p*-value at a rate of .05. Consequently, the $\chi 2$ goodness-of-fit statistics showing that the observed covariance matrix does not match the sample variance-based estimate. However, additional scrutiny is applied to other fit statistics.

As a common practice, researchers typically incorporate include a minimum of one absolute and one incremental fit index, along with $\chi 2$ findings, for evaluation. In the case of the model encompassing 21 measurement variables and a sample size of 216, the absolute fit index, RMSEA, registers a value of 0.036. This value is notably low, falling below the recommended threshold of 0.08. Turning to incremental fit indices, the widely employed CFI attains a value of 0.97 in the measurement model (CFA), surpassing the guideline of 0.90 or higher, similar to RMSEA. Additionally, other incremental fit indices also exceed the suggested cutoff values. Based on CFA outcomes, It appears that the online shopping measuring model fits well and is suitable for further analysis. Subsequent steps involve scrutinizing construct validity issues and conducting model diagnostics to refine the specified model.

Validity

Convergent validity

Three approaches were developed by Fornell and Larcker (1981) to assess measuring item convergent validity to constructs. First, evaluate each measure item's reliability, then each construct's composite reliability, and finally the average variance retrieved. Each item's dependability was determined using factor loading of an item on the underlying concept, with a factor loading above 0.70 considered significant (Hair et al., 2010). The factor loadings for all items (**Table 2**), within 0.7 to 0.918.

This study used reliability (CR) instead of Cronbach's alpha since it may exaggerate dependability (Hair et al., 2010). A CR value equal to or greater than 0.70 is deemed appropriate for satisfactory composite reliability (Nunnally & Bernstein, 1994). **Table 2** shows that all seven latent variables met 0.70.

The concluding criterion for convergent validity was the average variance extracted (AVE) representing the proportion of an item's variance explained by the construct. As per the statistical analysis (**Table 2**), every AVE

Table 2. Factor loadings, composite reliability, & average variance extracted

Latent variable	Indicators	Loadings	CR	AVE	Discriminant validity
Attitude (AT)	AT1	0.835	0.855	0.663	Yes
	AT2	0.792			
	AT3	0.815			
Perceived benefits & intention (PBI)	PBI1	0.912	0.881	0.712	Yes
	PBI2	0.854			
	PB13	0.759			
Self-isolation (SI)	SI1	0.819	0.821	0.604	Yes
	SI2	0.777			
	SI3	0.734			
Self-efficacy (SE)	SE1	0.912	0.890	0.731	Yes
	SE2	0.856			
	SE3	0.792			
Subjective norms (SN)	SN1	0.789	0.826	0.614	Yes
	SN2	0.721			
	SN3	0.837			
Cyberchondria (CH)	CH1	0.825	0.814	0.595	Yes
	CH2	0.773			
	CH3	0.711			
Consumer behavior (COBB)	CB1	0.897	0.881	0.713	Yes
	CB2	0.841			
	CB3	0.792			

Table 3. Correlations between constructs & square roots of average variance extracted

Variable	ATT	PBI	SI	SE	SN	CH	CB
Attitude (ATT)	**0.814**						
Perceived benefits & intention (PBI)	0.182	**0.843**					
Self-isolation (SI)	0.304	0.256	**0.777**				
Self-efficacy (SE)	0.247	0.261	0.321	**0.854**			
Subjective norms (SN)	0.117	0.118	0.214	0.242	**0.784**		
Cyberchondria (CH)	0.217	0.245	0.154	0.305	0.487	**0.771**	
Consumer behavior (CB)	0.115	0.287	0.114	0.136	0.311	0.224	**0.844**

Note. Square roots of average variance extracted are **bold** along main diagonal

value exceeded the 0.5 threshold. Thus, the measurement model established convergent validity by meeting all three essential criteria, signifying strong reliability of the items within each construct.

Discriminant validity

A discriminant validity study examines distinct between constructs. Following the guidance of Barclay et al. (1995), two analytical methods were employed to evaluate discriminant validity. The first criterion, the square root of AVE for each construct had to exceed the correlation between constructs. Examination of the data (**Table 3**) supported discriminant validity, as the square root of AVE surpassed the inter-construct correlation for each construct. The second requirement for discriminant validity was met when an item would load more in a construct than in any other construct in the model, according to Gefen et al. (2000). All items had higher loadings on the construct they were supposed to assess than on other model constructs, according to cross-loading correlations. Consequently, both analyses affirmed the effective differentiation of individual constructs by the measurement instrument.

The structural model depicted in path diagram in **Figure 3** is ready for evaluation and assessment. This process will initially focus on structural equation model fit and subsequently examine whether the structural relationships align with theoretical underpinnings. Overall fit results for the online purchase behavior model are in **Table 4**.

As per the information in **Table 4**, the $\chi 2$ is 550.91 with 169 df ($p<.05$), with CMIN/DF is 1.68. The model's CFI is .91, and the RMSEA is 0.45. These values fall within the range typically associated with a good fit. These diagnostic indicators imply that the model demonstrates a satisfactory overall fit.

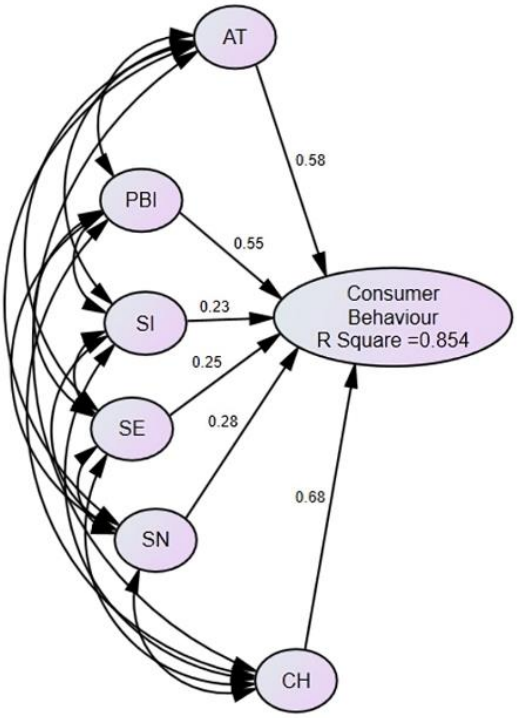

Figure 3. Online purchasing behavior structural model (Source: Authors)

Table 4. Goodness-of-fit measures of online purchasing behavior

Variable	Value
Chi-square	
Chi-square ($\chi 2$)	550.910
Degrees of freedom (df)	169
Absolute fit measures	
Goodness of fit index (GFI)	0.912
Root mean square error of approximation (RMSEA)	0.450
Root mean square residual (RMR)	0.010
Incremental fit indices	
Normed fit index (NFI)	0.910
Relative fit index (RFI)	0.900
Incremental fit index (IFI)	0.930
Tucker-Lewis coefficient (TLI)	0.920
Comparative fit index (CFI)	0.910
Parsimony fit indices	
Adjusted goodness of fit index (AGFI)	0.900
Parsimony normed fixed index (PNFI)	0.720

Table 5 shows each projected relationship's path coefficient and t-value. All potential associations were statistically significant ($p<0.001$) and exhibited a favorable direction. Given significance of all paths, the researchers choose to retain all of them.

DISCUSSION & CONCLUSIONS

Studies on consumer behavior highlight the pivotal role of attitudes in online shopping behavior. Favorable attitudes are frequently associated with factors such as ease of access, time savings, and perceived value of products or services. TRA and TPB theories predict intention and behavior, supporting these attitudes.

Critical factors in online shopping behavior include perceived benefits like cost savings, time efficiency, and access to information. Studies have consistently shown that consumers' perception of online shopping benefits, such as saving money, time, and convenience, drive them to choose online shopping as their

Table 5. Standardized path coefficients & *t*-values for hypothesized relationships in research model

Hypothesis	Path coefficient	*t*-value	Supported?
H1:AT→COBB	.58	1.76	Yes
H2:PBI→COBB	.55	3.47	Yes
H3:SI→COBB	.23	3.84	Yes
H4:SE→COBB	.25	7.22	Yes
H5:SN→COBB	.28	3.72	Yes
H6:CH→COBB	.68	10.25	Yes

preferred method. Intention, on the other hand, is a conscious decision to do a certain behavior. Higher levels of wanting to buy online are linked to more online shopping.

Research has consistently shown that perceived benefits and intention in understanding why consumers make purchases online. The probability of an individual participating in online purchasing is notably impacted by their attitudes towards it, trust in e-commerce platforms, and perceived risk. The assumption that perceived benefits and intention significantly affect online shopping supported by a large body of research.

Subjective norms significantly influence consumers' decisions in online purchasing, as they are the social pressure or social impact that people believe their friends, family, and other reference groups have on their online shopping behavior. Studies by Kwak and Kim (2007) and Park et al. (2006) discovered that consumers were more inclined to shop online if they believed their friends and family would enjoy it. Social influence theory, which suggests people are influenced by the attitudes, behaviors, and views of others around them, helps explain the influence of subjective norms on customers' online purchasing behavior. In conclusion, subjective norms significantly influence customers' Internet buying habits and the impact of social norms and social pressure on decision-making processes is well-established.

Previous research has also shown that cyberchondria, or excessive or disproportionate worry about one's health, has a major impact on consumers' online purchasing behavior. People with cyberchondria higher purchase likelihood health-related goods and services via online to find answers and treatments to their health issues. Studies by Stavropoulou (2011) and Tanis and Leuthesser (2019), provide evidence for the substantial impact of cyberchondria on customers' online purchasing decisions, showing that those with cyberchondria are more likely to make online purchases to solve their health issues or reduce their anxiety by obtaining the necessary medical supplies or services.

The study reveals that customers' self-efficacy significantly influences their online purchasing behavior, aligning with previous research. An individual's self-efficacy is their belief in their online task performance. High self-efficacy connects with positive attitudes towards online shopping and a more favorable attitude towards transactions. Bandura's social cognition theory implies that self-efficacy predicts online success.

The study also highlights the role of self-isolation intention, which refers to the desire to isolate oneself from physical retail settings, often due to health or social constraints. During the COVID-19 pandemic, online shopping was more likely for persons with higher self-isolation intents, showing how contextual factors affect consumer behavior.

The study's findings provide new insights into the variables affecting consumers' online purchasing decisions, emphasizing the importance of situational and psychological factors. Cyberchondria, health-related concerns, and external factors like the COVID-19 pandemic also affect online purchasing. This information can help marketers and policymakers develop strategies to meet the needs and preferences of online consumers.

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Data availability: Data generated or analyzed during this study are available from the authors on request.

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