

Factors Influencing Live-stream Shopping Behaviour among Malaysian Consumers

By

Yu Ting Lin

Department of Resource Management and Consumer Studies, Faculty of Human Ecology,
Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, MALAYSIA

Syuhaily Osman

Department of Resource Management and Consumer Studies, Faculty of Human Ecology,
Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, MALAYSIA

Kai Wah Cheng

Faculty of Business and Communications, INTI International University, Persiaran Perdana
BBN, Putra Nilai, 71800 Nilai, Negeri Sembilan, MALAYSIA

*Corresponding Author: kaiwah.cheng@newinti.edu.my

Toong Hai Sam

Faculty of Business and Communications, INTI International University, Persiaran Perdana
BBN, Putra Nilai, 71800 Nilai, Negeri Sembilan, MALAYSIA

Xue Ruiteng

Rising Capital Sdn. Bhd., 27-1, Jalan Eco Santuari 8/1C, Persiaran Eco Santuari, 42500,
Telok Panglima Garang, Selangor, Malaysia.

Subashini K Rajanthran

Teaching and Learning Center, INTI International University, Persiaran Perdana BBN, Putra
Nilai, 71800 Nilai, Negeri Sembilan, Malaysia

Abstract

This research generally examines the driving factors that influencing the live-stream shopping behaviour among Malaysian consumers. There were 200 users from Facebook Live-stream Channel chosen in the study by applying the method of simple random sampling. Data were collected through self-administered questionnaires and five-point Likert scale were adopted. The results of this research showed that live-stream shopping behaviour had positive significant relationship with perceived usefulness ($r=0.724$; $p=0.001$), perceived ease of use ($r=0.559$; $p=0.001$), perceived enjoyment ($r=0.663$; $p=0.001$), and perceived interactivity ($r=0.604$; $p=0.001$) among Malaysian Consumers. Perceived usefulness is the most significant factor that contributed to the live-stream shopping behaviour among Malaysian consumers in this study. The regression model which consisting of four factors has contributed about 79.4% according to the result of multiple linear regression. Consumer should adopt the live-stream commerce for online purchasing due to its benefit of usefulness. Moreover, online vendors should promote and create awareness to public about features and benefits as well as encourage consumers to use live-stream commerce during purchasing.

Keywords: Perceived usefulness, perceived ease of use, perceived enjoyment, perceived interactivity, Live-stream shopping behaviour

Introduction

Live-stream commerce refers to an interactive and entertainment channel that has grown globally (Liao, Widowati, & Puttong, 2022). Live-stream channel enable two-way communication as the streamers and viewers can interact with each other instantly (Sjöblom & Hamari, 2017). According to Chen et al. (2017); the new norm of e-commerce has emerged as live-stream channel integrates with online shopping nowadays. Live-stream commerce is known as a social commerce that allow two-way communication between the streamers and the viewers. They can promote their products or services to potential customer through the live-stream channel (Todd & Melancon, 2019).

The live stream commerce sector has grown up to 99% between the year 2019 and the year 2022 (Ibrahim, 2022). The largest group of the consumer in Live-stream commerce is millennials, which achieve 63% of population aged 18 from 34 have a habit of watching live-streaming content regularly (Hou, Guan, Li, & Chong, 2019). There is much reason explained why live stream become prevailing among e-commerce users. According to Ellis, Kao, Peaty, and Locke (2019), one of the main reasons is that live stream can catch viewers' attention up to 10-20 times longer than pre-recorded video-on-demand content.

According to Ong et al. (2019), Malaysia is no exception which live-stream commerce has become increasingly prevailing through many platforms. In 2018, Lazada Malaysia, as one of the e-commerce leading companies, first introduced a live-stream function followed by Shopee, which also adopted the same strategy next year. Nevertheless, live-stream commerce is still a new trend in the online business industry and there were only few research studies on factors that influence consumer behaviour in live-stream shopping (Sun et al., 2018).

Therefore, this study examined the factors influencing live-stream shopping behaviour among Malaysian consumers by adopting the Technology Acceptance Model. The reason of Technology Acceptance Model is applied as the theory based in this study because it posits that there are two factors that determine whether the acceptance and adoption of technology or system by its potential users according to perceived usefulness and perceived ease of use. The key feature of this model is its emphasis on the perceptions of the potential user, live-stream commerce emerged as an innovative method of e-commerce and allow real time interaction between consumers and vendors through the virtual live-streaming is considered as a new technology that adopted by the consumer. The importance of understanding the acceptance level of certain system including able to have better prediction on the utilisation level of new information resources. Therefore, increased knowledge able to contribute to better understanding and ability to enhance customer's experience and satisfaction level.

Problem Statement

Many nations have adopted live-stream commerce, including Europe, China, and United States (Junzhi, 2021). Nevertheless, the degree of acceptance of live-stream commerce different between nation. According to Zhang and Gu (2018), the acceptance level of interacting with consumers while purchasing is high in some countries, especially China. Still, live-stream commerce is still a comparatively new phenomenon. Therefore, in term of study, live-stream commerce is understudied area especially in the context of Malaysia (Chan et al., 2021). The research that related to live-stream commerce is still scarce even though it has been grow rapidly because of the pandemic of COVID-19 that happened in year 2020. Still, many studies have done to determine the factors influencing consumer's purchase intention and behaviour (Zhang & Gu., 2018).

According to Hasan et al. (2021), the influence of perceived usefulness on intention and behaviour in purchasing is lower than perceived ease of use. Thus, this research included perceived usefulness as one of the factors to examine the relationship of perceived usefulness on live-stream shopping behaviour. On the other side, while perceived usefulness has been determined as a consistently crucial behaviour formation, studies argue that perceived ease of use has been inconsistent and less significance (Bugembe, 2010).

Moreover, perceived enjoyment has been found to be not significant with consumer's purchasing behaviour (Troudi & Bouyoucef, 2020). To examine the relationship between perceived enjoyment and consumer behaviour on live-stream commerce is whether significant or not significant, the study has included perceived enjoyment as one of the independent variables. Besides, there are fewer study examines how perceived interactivity as an independent variable influence the consumer behaviour towards the live-stream commerce (Sun et al., 2018). Thus, this research included perceived interactivity as one of the independent variables to study the relationship with consumer behaviour on live-stream commerce.

There are many research gaps can be filled by academician as live-stream commerce emerged as new trend and there is still fewer existing research. Therefore, this study tries to study the factors influencing purchasing behaviour towards live-stream commerce among Malaysian consumers, aiming to fill the research gap.

Research Objectives

General Objective

This study generally aims to examine the driving factors that influence the live-stream shopping behaviour among Malaysian consumers.

Specific Objectives

1. To examine the significant relationships between perceived usefulness, perceived ease of use, perceived enjoyment, and perceived interactivity towards live-stream shopping behaviour among Malaysian consumers.
2. To analyse the most significant factor which influencing the Malaysian consumer's live-stream shopping behaviour.

Research Questions

1. What are the significant relationships between perceived usefulness, perceived ease of use, perceived enjoyment and perceived interactivity and the live-stream shopping behaviour among Malaysian consumers?
2. Which variable is the most significant factor which influencing the Malaysian consumer's live-stream shopping behaviour?

Research Hypotheses

H_{a1}: There is a significant relationship between a consumer's perceived usefulness and the live-stream shopping behaviour.

H_{a2}: There is a significant relationship between a consumer's perceived ease of use and the live-stream shopping behaviour.

H_{a3}: There is a significant relationship between a consumer's perceived enjoyment and the live-stream shopping behaviour.

H_{a4}: There is a significant relationship between a consumer's perceived interactivity and the live-stream shopping behaviour.

H₅: Perceived usefulness is the most significant factor towards the live-stream shopping behaviour.

Literature Review

Live-stream Commerce

Live-stream shopping is a new arising of trend which it integrates the social commerce attributes and unique media attributes (Sjöblom & Hamari, 2017). E-commerce business owner has utilized live-stream channel to promote and market their products or services. According to Pan, Feng, and Zhao (2022), live-stream seller will showcase their actual products with price and details to the buyer in real-time. By integrating live-stream with the business, e-commerce value will be more likely to increase (Luo et al., 2021). Live stream video able to catch the attention of viewer up to ten to twenty times longer than a pre-recorded video. According to Nagaraj et al. (2021), the worldwide internet traffic generated by videos form 82% of all consumer video traffic in 2020 and live internet video been forecasted to grow up approximately 15 times from year 2017 to 2022.

Facebook is one of the social media platforms that adopted by online vendor to approach the consumers effectively and it is the most popular for social commerce activities (Wu & Li, 2018). Facebook Live-stream accounted for 77.1 % of the live broadcasting platform, placing at the top of the list among SNS (social networking service). According to Kgatle (2020), Facebook users spend at least 3 times more in watching live-streaming compared to pre-recording video. Facebook Live platform initially adopted for a various purpose, such as streaming events, live chatting with friends but nowadays it is used as social commerce activities which businesses approach customer and promote their products and services. Social commerce is primarily characterised by three attributes including social interaction, social technology, and e-commerce's activities (Baghdadi, 2016). According to Vazquez et al. (2020), social interaction and immersive interaction can strongly stimulate the impulsive buying behaviours of consumer.

Facebook Live-stream commerce benefit both marketer and consumers by providing a new resource for social commerce through live-streaming. Through the Facebook Live-stream, the business owner can introduce and promote the products to the viewers while the customers can just drop their message through the function to ask questions or details about the products they interest. Compared to the traditional selling methods, Facebook Live-stream brings a new interactive and interesting experiences to consumer while purchasing goods. Moreover, it allows the consumer to have more authentic and clear understanding of the product to avoid the problem by traditional e-commerce activities which including mismatch of description with products received. The broadcaster can immediately respond to consumers' questions, more likely to influence the consumers' purchasing decision and behaviour. Adoption of social commerce by using Facebook Live, the inner needs of consumers may be satisfied and making Facebook Live be a dominant topic for further understanding of consumer purchasing behaviour (Wongkitrungrueng & Assarut., 2020). Therefore, this research chooses Facebook live-stream commerce as targeted research location due to its popularity as social commerce platform in Malaysia and its features which are convenience, and interactivity.

Perceived Usefulness of Live-stream Commerce

According to Yeh and Teng (2012), perceived usefulness refers to an individual believes where the utilisation of certain technology or system can enhance the work performance. Perceived usefulness defined as a person believes that usage of live streaming would enhance their performance while purchasing goods and services online (Yang et al.,

2016). The degree to which consumers believe that using live stream commerce would improve their performance and perceptions regarding the outcome of the experience with Live-stream commerce (Ho & Yang, 2015). Perceived usefulness has emerged as a consistently influential behaviour formation. Perceived usefulness of live-stream commerce was positively correlated with their behavioural intention to use them (Tao et al., 2022). Perceived usefulness will affect the consumer's attitudes and decision towards buying goods (Suleman & Zuniarti, 2019).

Usefulness of the e-commerce website including the sufficiency and validity of information of product and services offered by the business (Jiang et al., 2016). According to Sun (2010), the shopper can have better understanding on the product offered through live-stream commerce since the streamer can deliver the useful information of the product to the viewer which they do not need to search for extra information. Since the live-stream platform is well developed, the availability of product information is much sufficient to be given to consumer due to live features, consumer will perceive the live-stream commerce as useful system and adopt it to do shopping. Therefore, perceived usefulness known as a dominant factor on influencing the consumer purchase intention since whether they willing to purchase from certain online vendor are highly depending on sufficiency and relevancy of the information that they want to get know.

Moreover, the usefulness of influencer and their recommendations will have strong effects on influencing the consumer perception and attitudes thus generate an indirect effect on the customer purchase intention and behaviour. The business owner can utilise the benefit of live-stream to promote their products effectively and boost the revenue of business. They can invite popular influencer to join their live-stream channel to attract the viewers and encourage to make purchase through the live-streaming.

According to Ma (2021), perceived usefulness is the strongest predictor on live-stream shopping behaviour. Peoples nowadays prefer easier work and convenience so they prefer to do trial on something that can satisfy their needs in a very useful way. There are few previous studies suggested that perceived usefulness is positively correlated to behavioural intention on live-stream commerce (Lee & Chen, 2021; Ma, 2021; Tao et al., 2022). However, according to Ramayah and Ignatius (2005), perceived usefulness has less influence on consumer purchase intention and behaviour, and it is lower than perceived ease of use. Thus, this research included perceived usefulness as one of the independent variables to investigate the influence of perceived usefulness on live-stream shopping behaviour.

Perceived Ease of Use of Live-stream Commerce

According to Ho and Yang (2015), perceived ease of use refers to the degree to which an individual using live stream commerce without having to work hard. Perceived ease of use is something that people feel that the systems, the website, or an online platform is easy to use, control and brings convenience to the customers. To facilitate the features that ease of use, the live stream channel interface should be designed simple and easy to control (Hausman & Siekpe, 2009).

Facebook live-stream platform is well developed and designated easy to use. Facebook user can instantly enter to any channel of Facebook Live Commerce and watch the live selling that hosted by the streamer. The comment features in live-stream enable the streamer response instantly the enquiries of the shoppers which brings much convenience compared to traditional e-commerce website (Wang et al, 2022). Social commerce platform is defined as ease of use which it is determined that whether the data is openness and innovation enough. People nowadays prefer something that is innovative and at the same time easy to use and bring

convenience to them and Facebook social commerce can contribute to these aspects and needs. For example, consumer no need to spend much time to look for the product they want in a shopping mall. Moreover, they also can save time on doing research of a particular product since all the information will be given by the host during the live streaming. The effort of buying process from initial step to last step is much easier because it is just a click into the live-streaming and customers can get know about product description. If consumer have any enquiry about the products, they can instantly communicate with the host by asking through the comment session. Unlike traditional e-commerce website, consumer is not able to see the actual product. Moreover, the issue of mismatch between description and the product through the traditional e-commerce platform can be reduce effectively.

Perceived ease of use had a significant positive effect on purchasing behaviour on live-stream commerce (Lee and Chen, 2021). On the other hand, studies have found that perceived ease of use has been inconsistent and of less significance (Huang et al., 2022). Therefore, this research included perceived ease of use as one of the independent variables to investigate the relationship between perceived ease of use and live stream shopping behaviour is whether significant or not.

Perceived Enjoyment of Live-stream Commerce

Shopping enjoyment is defined as the extent to which an individual believes that shopping will enhance their right, and such enjoyment extends to the online channel aside from any performance impact. (Mandilas et al., 2013). According to Ho and Yang (2015), perceived enjoyment is a degree to which the utilisation of the live streaming channel is perceived as pleasure and fun. Perceived enjoyment in this study defined as how pleasant the user's subjective psychological experience are while adopt live-stream e-commerce in the purchasing process of goods and services. Online shopping is a voluntary and hedonic activity, which leading users to adopt since they are intrinsically motivated. Additionally, excitement and fun for consumer will lead to hedonic benefits especially they gain promotion price for the product that desired to purchase (Çavuşoğlu et al., 2020). The sense of joyful, pleasure, and excitement will strongly affect the behaviour of individuals and will promoting them to purchase since shoppers have been found to, they will appreciate if the shopping experience contributed them with entertainment and fun. Pereira and Tam (2021) also proved that the role of intrinsic motivation (perceived enjoyment) was the strongest predictor of customers' intention in their research. Therefore, the current study should consider the role of intrinsic value for future research purpose since such a role could be associated to the nature of social commerce which is an innovative and unique platform that provide few important attributes and features. In turn, it maximises the customers' feeling of happiness and enjoyment while adopting such technology or systems.

Intrinsic motivation variable such as perceived enjoyment will lead to strengthen the perceptions of extrinsic motivation which including perceived usefulness. Consumer with positive experience and favourable perception of the enjoyment towards a system are more probably to perceive it useful (Ng et al., 2019). Hence, seeing that the user feels that experience using live-stream commerce to purchase goods online is enjoyable, then they will positively perceive live-stream commerce as more productive and advantageous to them. The role of perceived enjoyment as the most dominant factor for explaining acceptance and use, it must be examined and proven for new emerging technologies such as live-stream commerce (Ma, 2021). On the other hand, perceived enjoyment is not significant with purchasing behaviour (Tao et al., 2022). Thus, this research designed to examine the relationship between perceived enjoyment and consumer behaviour on live-stream commerce is whether significant or not.

Perceived Interactivity of Live-stream Commerce

Perceived interactivity is the degree to which an individual believes that using a live streaming video platform would interact with other users (Ho & Yang, 2015). Contrasting with conventional e-commerce, direct interpersonal communication and interaction are essential and unique features of live streaming shopping (Zhang et al., 2022). Live streaming features provide real-time interaction between seller and shopper through the use of text, sound and image, which enable comprehensive and reliable product information to consumers, help consumer in better evaluate the performance of product offered in aspect of actual appearance, quality, and characteristics (Tong, 2017). Thus, the consumer can have a complete understanding of the relevant products, thus make their buying decisions as streamers' job is to use their knowledge about products to persuade consumers to make purchases (Chen et al., 2022).

This allocated time in information search is dependent on consumer's perception of risk, product experience and interest level on the products or services and consumer develops an alternative evoked set to choose from (Moutinho et al., 2011). Marketers should provide relevant and useful information to catch the attention of consumer (Kee & Yazdanifard, 2015). It is also mentioned by Van Kleef et al. (2005) that this stage of information gathering may be skipped when consumers receive sufficient details regarding the products or sources, a routinized response behaviour.

Interactivity affects innovation or new adoption behaviour positively (Kim et al., 2020). According to Hwang et al. (2020), interactivity plays dominant role as social stimulus in business and advertising which it can facilitate consumer's physiological arousal and lead to affect their attitudes and purchase intention. According to Li (2019), interactivity acts as an important stimulus to facilitate consumers' cognitive and emotional states and greatly affect their behavioural response in social commerce. Brodie et al. (2013) have suggested interactivity in different situations. They justified those three attributes of interactivity including two-way communication, participation, and problem-solving by business owner which these three dimensions are used to reflect the intensity and richness of the interaction during the process.

Live stream commerce is a mixed media that integrate social media platform and e-commerce activities. It serves as a virtual real-time interactive platform for business owner to approach the consumers through the live-streaming channel. According to Zhong et al. (2022), the streamer showcases the product and provide viewers with products information and descriptions through real time response, thus it is able to attract the interest and encourage the purchase intention of the consumer. Xu et al (2020) have proved that the benefit of live-stream commerce including immediacy and interactivity which causing it to be more attractive compared to conventional online shopping methods. Live-stream commerce can effectively raise the overall perceived value of consumer and reduce their's overall perceived risk, in turn can increase the positive influence on consumers' purchasing intentions and behaviour because the features of live-stream commerce provide the higher value in authenticity through the streamers' explanation and description of the product's, appearance, scent or feeling and other important product information. Thus, this research included perceived interactivity as one of the independent variables to study the relationship with consumer behaviour on live-stream commerce.

Live-stream Shopping Behaviour

Live-stream shopping behaviour is decision-making processes undertaken by consumers concerning live-stream commerce transaction before, during, and after purchasing a product or service in the live stream channel (Xu et al., 2020). In the context of purchasing behaviour,

several elements that may affect consumer decision making has been considered. For example, consumer involvement, degree of information search, the number of alternatives available or attributes importance, demographic variables, and social influence that potentially may influence consumer purchase decision and shopping pattern on goods and services (Chu & Kim, 2011). Perception is a psychological variable that involved in the purchase decision making process and it can greatly influence the consumer behaviour. Live Streamers' s persuasion and recommendation, positive feedback from other customer, promotion and discounts, emotional drive, and other aspect may facilitate the consumers' demand, stimulate the purchase motivation, and thus generate purchase behaviour. Moreover, nowadays influencer marketing has become one of powerful tools to attract attention and influence the purchasing decision of consumer in social commerce (Sudha and Sheena, 2017). Other than that, there are some prior research investigate on impulse buying behaviour through the live-stream commerce among consumers. Consumers are more probably to make impulse buying decision if they perceive enjoyment when interacting with the shopping environment (Xiang et al., 2016).

The perceptions of consumers on live-stream commerce dramatically affect purchasing behaviour (Chen et al., 2021). The study related to live-stream commerce is still scare even though it has been developed rapidly due to the COVID-19 pandemic (Rendell, 2021). Therefore, this study investigates the consumer's live stream purchasing behaviour to fill the research gap. Perceived usefulness has emerged as a consistently influential behaviour formation individuals' perceived usefulness of streaming media was positively associated with their behavioural intention to use them (Prayoga & Abraham, 2016). Löffler et al. (2021) concluded that perceived usefulness is the most significant factors that influence the live-stream shopping behaviour as peoples nowadays prefer to do trial on something that can fulfil their needs in a very useful and convenient way. However, the perceived usefulness of influence on consumer purchase intention and behaviour is lesser than perceived ease of use (Ramayah & Ignatius, 2005). Thus, this research included perceived usefulness as one of the independent variables to investigate the influence of perceived usefulness on live-stream shopping behaviour.

Technology Acceptance Model

Technology acceptance model is an information system theory that was initially suggested by Davis in year 1989. It is a theory that is based on Theory of Reason Action, but it designed specifically to establish the acceptance of user towards a system or technology. Two key factors in the theory including perceived usefulness and perceived ease of use that influence intention to use an information technology in Technology Acceptance Model (Davis et al., 1989). Technology Acceptance Model has been extensionally adopted in the prior research primarily study on the user's behaviour on information technology (Lu et.al., 2011) also included research that relate to live-stream social commerce. Even though Technology Acceptance Model has been applied widely to prove the validity and reliability on information system adoption but there are other many extensions to the Technology Acceptance Model have been proposed and tested (Amoako-Gyampah & Salam, 2004; Kim & Garrison, 2009).

In this research, researcher adopt the modified Technology Acceptance Model which is an extension of Technology Acceptance Model by adding two more variables, perceived enjoyment, and perceived interactivity. Extension of Technology Acceptance Model, including four independent variables (perceived usefulness, perceived ease of use, perceived enjoyment, and perceived interactivity) to comprehensive the driving factors influencing the shopping behaviours of live-stream commerce users.

Conceptual Framework

A research framework was constructed to access the variables shown in the Figure 1. The factors included perceived usefulness, perceived ease of use, perceived interactivity and

perceived enjoyment are use as the independent variables in this study. Besides that, consumer behaviour as dependent variable to examine consumer purchasing behaviour towards live-stream shopping among Malaysian consumers.

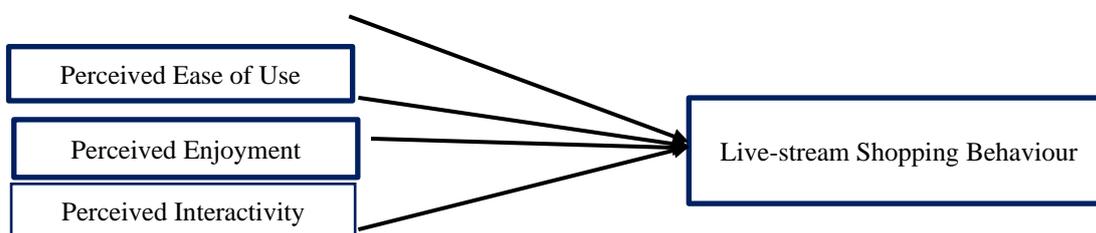


Figure 1: *Conceptual framework*

Research Methodology

Research Design

The present research focuses on determining the factors that included perceived usefulness, perceived ease of use, perceived enjoyment, and perceived interactivity that influence live-stream shopping behaviour among Malaysian consumers. A quantitative approach is applied for designing the questionnaire for the study. The quantitative method generally aids to approach theory and generate a conclusion after research is entirely done (Younus & Zaidan, 2022). The primary data in this study collected using a survey questionnaire generated by Google Forms. The target respondents in this research are the viewers from Live-stream channel on the Facebook platform.

Research Location

Facebook live-stream platform was chosen as the research location because they are the platform that has many live-stream activities daily, which have a large population of live-stream viewer and able to select as the respondent of this study. Facebook platform was targeted because of it is one of the most popular and well-known global social networking service for social commerce activities (Linda, 2010).

Due to the COVID-19 pandemic, the survey was conducted by using an online questionnaire in Google form to collect the data. The questionnaire was disseminated through the way of private message to the respondent. Next, a quantitative approach is applied for designing the questionnaire for the study. The target respondents in this research are the viewers from Live-stream channel on the Facebook platform.

Sample of Study

In this study, the target population was the Malaysian consumers who joined the Facebook live-stream commerce before. Malaysian consumers on Facebook Live-stream Commerce were selected as target respondents because the result of the study can give a more comprehensive understanding of consumer behaviour and benefit to the e-commerce owner. This study primarily selects the viewer of Facebook live-stream commerce to collect information and feedback from them who have the actual experience of viewing live-stream commerce and buying items through live-stream commerce. Therefore, the responses are more accurate and precise compared to those who did not watch live-stream commerce before. Hence, this study focused on Facebook live-stream commerce viewers that with Malaysia nationality as the target population for the understanding of the relationship between perceived usefulness, perceived ease of use, perceived enjoyment and perceived interactivity towards live-stream purchasing behaviour.

Sample Size

Krejcie and Morgan (1970) created a table for determining the sample size from given target population. The population of Malaysian Facebook user is estimated up to 24.67 million in 2021. However, due to the limitation of time constrains, this study only distributed 200 questionnaires to the Malaysian Facebook live-stream viewers.

Sampling Techniques

Simple random sampling was chosen as the sampling techniques in this study. Initially, a name list of the population members will be drafted before marking all of them with a specific number. For example, they will be numbered from 1 to n for each member. From the list, every consecutive 5th respondent on the list will be selected to answer the questionnaire while if the selected respondent is not able to answer the question due to do not fulfil the requirement, then 6th respondent and 11th respondent will be selected continuously.

Research Instrumentation

There are six sections in the questionnaire. They are Section A: Demographic background, Section B: Perceived usefulness, Section C: Perceived ease of use, Section D: Perceived enjoyment, Section E: Perceived interactivity, and Section F: Live-stream purchasing behaviour among Malaysian consumers. All the measurement were adopted and adapted from the previous research. The designed questionnaire applies 3 types of measurement scale which including interval, ordinal and nominal.

Perceived Usefulness of Live-stream Commerce

To measure perceived enjoyment of live-stream commerce among Malaysian consumers, five items were adopted from research by Ho and Yang (2015) and Khayati and Zouaoui (2013).

Table 1: *Perceived Usefulness of Live-stream Commerce*

No.	Item	Source
1.	Live-stream commerce improves my performance in searching and purchasing goods online.	Ho & Yang, 2015 Khayati & Zouaoui, 2013
2.	Live-stream commerce enables me to search and purchase goods faster.	
3.	Live-stream commerce enhance my effectiveness in searching and purchasing goods.	
4.	Live-stream commerce makes me easier in searching and purchasing goods.	
5.	Live-stream commerce increases my productivity in searching and purchasing goods.	

Perceived Ease of Use of Live-stream Commerce

Perceived ease of use of live-stream commerce among was tested on the Section C of questionnaire. There are a total of five questions adapted from previous studies of Bründl et al., (2017).

Table 2: *Perceived Ease of Use of Live-stream Commerce*

No.	Item	Source
1.	Live-stream commerce is easy to use.	Bründl et al., 2017
2.	I would find it easy to search and purchase goods.	
3.	Learning to purchase goods through live-stream commerce would be easy to me.	
4.	It would be easy for me to become skilled at using live-stream commerce.	
5.	My interaction with live-stream commerce would be clear and understandable.	

Perceived Enjoyment of Live-stream Commerce

To measure perceived enjoyment of live-stream commerce among Malaysian consumers, there are a total of five questions adapted from previous studies of Ma (2021).

Table 3: Perceived Enjoyment of Live-stream Commerce

No.	Item	Source
1.	I enjoyed to purchase goods through live-stream commerce.	Ma, 2021
2.	I feel attracted by live-stream commerce and do purchase goods through it.	
3.	I find it pleasurable to purchase goods through live-stream commerce.	
4.	I find it's a lot of fun to purchase goods through live-stream commerce.	
5.	When using live-stream commerce, I will not realise the time elapsed.	

Perceived Interactivity of Live-stream Commerce

Next, there are a total of five questions adapted from previous studies of Hsu (2019) as well as Li and Guo (2021).

Table 4: Perceived Interactivity of Live-stream Commerce

No.	Item	Source
1.	Live-stream commerce facilitate two-way communication between the streamer and consumer.	Hsu, 2019 Li & Guo, 2021
2.	I can get desired and instantaneous information when I request for further information.	
3.	Doubt about the products offered may be clearly understand after explanation given by the streamer.	
4.	I feel connected with the company.	
5.	Interactivity let me to be more confidence with the products offered.	

Live-stream Shopping Behaviour among Malaysian Consumers

Last section of questionnaire was comprising of five questions which measures the consumer purchasing behaviour through Facebook live-stream commerce. To measure this dimension, four items were taken from previous research by Yung et al. (2022).

Table 5: Live-stream Shopping Behaviour among Malaysian Consumers

No.	Item	Source
1.	I consider live-stream commerce is a good thing.	Yung et al., 2022
2.	I consider live-stream shopping is very essential.	
3.	I would describe my overall behaviour towards social media advertisements very favourably.	
4.	I like the idea of live-stream commerce.	
5.	To me, viewing live-stream commerce is a wise idea.	

Data Analysis and Discussion

Socio-demographic Background of Respondents

Table 6 presented the socio-demographic background of 200 respondents in the research. In this study, the socio-demographic background of respondents included gender, age, ethnicity, highest education background, occupational and living place.

Table 6: Socio-Demographic Background of Respondents (n=200)

Variables	Frequency (n)	Percentage (%)
Gender		
Male	71	35.5
Female	129	64.5
Age (Years old)		
10-19	5	2.5
20-29	79	39.5
30-39	51	27.0
40-49	40	20.0
50-59	22	11.0
Ethnicity		
Malay	70	35.5
Chinese	110	55.5
India	19	9.5
Others	1	0.5
Highest Education Background		
Graduated Bachelor (Doctorate / Master)	9	4.5
Bachelor's degree	68	34.0
Certificate	14	7.0
High School	49	24.5
Secondary School	41	20.5
Primary School	19	9.5
Occupational		
Employed	97	48.5
Unemployed	41	20.5
Retired	10	5.0
Student	52	26.0
Living Place		
Perak	16	8.0
Selangor	20	10.0
Kuala Lumpur	14	7.0
Putrajaya	20	10.0
Pulau Pinang	14	7.0
Kedah	14	7.0
Melaka	16	8.0
Johor	16	8.0
Pahang	16	8.0
Kelantan	18	9.0
Terengganu	6	3.0
Negeri Sembilan	4	2.0
Sarawak	14	7.0
Sabah	12	6.0

Data collected for this study were statistically analysed using SPSS. Based on the result, there is more than half of respondents were female (64.5%) and for the male respondents are (35.5%). The reasons for watching live-streams may be vary between the viewers, however what triggers the buying decisions is always the same. Males are more interested in live-streamed gaming, whereas female consumers are attracted by the immersive experience with social interactions like live-stream commerce. Previous research found that female respondents

were more probably to search for promotion and discounts while the shopping process of male counterparts was more efficient and quicker. Since watching and purchasing through live-stream commerce required longer time compared to other e-commerce website, therefore female will present greater proportion compared to male.

For the age of respondents, the range are between 20 to 55 years old. The mean age of all respondents was 38 years old. The age group of 20-29 had highest percentage because according to the previous study, it found that the age between 18 to 32 years old typically build up the largest participants of sales promotion and campaigns. Besides that, Chinese respondents (55.0%) is the largest group for the ethnicity composition, followed by Malay (35.0%) Indian (9.5%), and Others (0.5%).

Moreover, the highest education background proportion are distributed as of classification of bachelor's degree was (34.0%) followed by High School was (24.5%). For occupational for respondents, there are (48.5%) are employed and (20.0%) are unemployed. Moreover, there are respondents (5.0%) and are a student (26%). The largest group is person that are employed because they have higher spending power compared to the others group. Lastly, for the living place of respondents, the region that achieve the highest percentage (28%) is central region which consist of Kuala Lumpur, Selangor, Putrajaya, Negeri Sembilan and Melaka. According to Department of Statistics Malaysia, the average income by state of W.P. Kuala Lumpur recorded the highest monthly household income of RM10,549 followed by W.P. Putrajaya (RM9,983), Selangor (RM8,210) in year 2018.

Hypotheses Testing

In the study, Pearson correlation coefficient analysis are used to test H_{a1} , H_{a2} , H_{a3} , and H_{a4} . To test the H_{a5} , multiple linear regression analysis is applied. The results for H_{a1} to H_{a4} was tabulated in Table 7 and the findings of H_{a5} were tabulated in Table 8.

Relationship between Factors and Live-stream Shopping Behaviour among Malaysia

Consumers

Pearson correlation coefficient are used to analyse the relationship between perceived values and their shopping behaviour on live-stream behaviour. The results are stated in Table 7 for testing the hypotheses in this research.

Table 7: Results of Pearson Correlation Coefficient

Hypothesis	Pearson Correlation Coefficient (r-value)	Significance (p-value)
There is a significant relationship between a H_{a1} : consumer's perceived usefulness and the live-stream shopping behaviour.	0.724	0.000
There is a significant relationship between a H_{a2} : consumer's perceived ease of use and the live-stream shopping behaviour.	0.559	0.000
There is a significant relationship between a H_{a3} : consumer's perceived enjoyment and the live-stream shopping behaviour.	0.663	0.000
There is a significant relationship between a H_{a4} : consumer's perceived interactivity and the live-stream shopping behaviour.	0.604	0.000

Based on the results shown in Table 7, all the factors examined are found to have a significant relationship with the live-stream shopping behaviour. Moreover, they generated positive r-values each, which all the factors had a positively linear relationship with the live-stream shopping behaviour. As a result, all the study hypotheses are supported. However, perceived usefulness had the most substantial relationship ($r=0.724$) with live-stream shopping behaviour which indicated that the degree of perceived usefulness is strongly correlated to the consumer behaviour of live-stream commerce. The consumer will increase the usage of live-stream commerce if they think that live-stream commerce is very useful and effective. This finding is consistent with Su (2019), which proved that perceived usefulness will significantly affect the attitude and behaviour of consumer towards the live-streaming commerce. Moreover, perceived enjoyment reportedly had the second-strongest relationship with live-stream shopping behaviour which showed that the respondents perceived a high level of pleasure and fun would have a high influence on their behaviour using live-stream commerce. The respondents would be more motivated to use such services if they believed that it would help them improve their performance. This is consistent with the study of Bründl et al. (2017), perceived enjoyment as is also one of the strong predictors for explaining the acceptance and use, it must be examined and proven for new emerging technologies such as live-stream commerce.

In summary, all hypotheses H_{a1} , H_{a2} , H_{a3} , and H_{a4} generated in this study were supported since the p-values shown were 0.000, which are less than the 0.01 significant value. Besides that, perceived usefulness was found to be the most robust relationship among the others. Nevertheless, this initial result will be further discussed in next section multiple regression analysis.

Most Significant Factor that influencing the Live-stream Shopping Behaviour

To test H_{a5} which constructed perceived usefulness is the most significant factor on live-stream shopping behaviour among Malaysian consumers, multiple linear regression is applied. The results are displayed in the Table 8.

Table 8: Results of Multiple Linear Regression

Variables	Standardised Coefficients (β)	Beta (t)	p-value
(Constant)		1.513	0.132
Perceived Usefulness	0.478	8.728	0.000
Perceived Ease of Use	0.059	0.814	0.417
Perceived Enjoyment	0.268	4.137	0.000
Perceived Interactivity	0.132	2.100	0.037

Note: Dependent variable = shopping behaviour towards live-stream commerce
 $F = 83.194$, $p < 0.001$, $R_2 = 0.794$, $\Delta R_2 = 0.631$

The regression model was statistically significant because of the F-ratio value of 83.194 with a significant level of 0.001, which the level is below than 0.01. The overall model is considered significant while the fitness of the model is known as high. The results indicated that the proportional contribution of the perceived values (perceived usefulness, perceived ease of use, perceived enjoyment, and perceived interactivity) on influencing purchasing behaviour was quite high (0.794) with an adjusted R-square (ΔR_2) of 0.631. R-square value that higher than 0.26 indicate it consist of strong effect size of predictors to the dependent variable (Cohen, 1988). However, even though the four factors can predict a high percent of the result, but the remaining 20.60 percent of the model was explained by also other factors that able to contribute to influencing the live-stream shopping behaviour among Malaysian consumers.

Among all the significant variables, perceived usefulness was found to be the strongest influencing factor towards the purchasing behaviour on live-stream behaviour among Malaysian consumers since it had highest regression coefficient $\beta=0.478$, $p=0.000$ among the others variable. Therefore, H_{a5} was accepted as perceived usefulness is the most significant factor towards live-stream shopping behaviour among Malaysian consumers. This finding supported the previous study conducted by Lee and Chen (2021) which proved that perceived usefulness is the most significant factors that influence the live-stream shopping behaviour. For perceived enjoyment has both values of $\beta= 0.268$, $p=0.000$, indicated it is a significant factor to influence live-stream shopping behaviour but the influence is comparatively lower than perceived usefulness.

On the other hand, as the finding of perceived ease of use is showed as $\beta= 0.059$, $p=0.417$, it indicated that perceived ease of use shows non-significant relationship towards the shopping behaviour and will not effectively influence the shopping behaviour on live-stream commerce among Malaysian consumers. Besides, for perceived interactivity $\beta= 0.132$, $p=0.037$ also was not a significant factor to influence the purchasing behaviour of consumer. Nevertheless, in Pearson correlation coefficient analysis, perceived ease of use and perceived interactivity have positively influence on purchasing behaviour. The contrast of both findings is because Pearson correlation coefficient is a one-to-one analysis, but the multiple linear regression was involved simultaneous analysis altogether. Therefore, the results for test may be vary due to their differences.

Implications, Limitations, and Recommendation for Future Research

Implications

Even though the live-stream commerce has grown steadily and became a new norm of e-commerce, but there is still lack of research that analyse the factors that influencing the consumer behaviour among Malaysian (Wongkitrungrueng & Assarut, 2020). Therefore, this study shed light onto a social commerce adoption model and aimed to determine its determinants on consumer's behaviour. The phenomenal growth of live-stream commerce has attracted the business owner to begin their e-business through live-stream commerce. Hence, the e-commerce owner should study well the market needs and consumer's favour to attract the potential customer as much as possible. The findings for this study were beneficial to for business owner both companies, small business enterprise and individual. This study can provide insight for better understanding of perceived value including perceived usefulness, perceived ease of use, perceived enjoyment, and perceived interactivity with the purchasing behaviour of consumer on live-stream commerce. The research findings concluded that perceived usefulness is the most significant factors that influence the live-stream shopping behaviour. Peoples in these days prefer convenience and they prefer to do trial on something that can fulfil their needs in a very useful way. Therefore, the host which is the seller should provide various useful information of product which make consumer convenient and lead to purchase decision (Narisara, 2022).

Besides, the findings also beneficial to consumer as they can compare the different selling channel with the different perceived value including perceived usefulness, perceived ease of use, perceived enjoyment and perceived interactivity that provided by the business owner. The consumer can evaluate different seller according to the additional information such as feedback and reviews of the other social media users to compare the different brand of product before they are reaching the buying stage. Moreover, they can fully utilise the benefit that can obtaining from live-stream commerce. Consumer will be well-informed as they know

the advantage that can be provided by live-stream seller, and they will be smart consumers to avoid buying from those dishonest vendors.

Last but not least, this research will be a resource for the academician for further study in the future. It filled up the research gap in the literature as there is still a lack of research in examining the live-stream commerce. Moreover, many previous studies tend to focus on intention to purchase rather than highlighting it in their purchasing behaviour. Thus, this finding can provide an overview on consumer behaviour in purchasing and serve as a guideline for future research in the relevant field. In this study, perceived usefulness, perceived ease of use, perceived enjoyment and perceived interactivity were found to have a significant relationship with the purchasing behaviour. The result of the study can serve as a guidance and reference for academicians which they can utilise the results for their study to further explore and deepen in this discipline. They can also include the factors other than perceived usefulness, perceived ease of use, perceived enjoyment and perceived interactivity to find out the other factors that also influence the purchasing behaviour.

Limitations and Recommendation for Future Research

In this study, a few limitations are noticed and the consequent recommendations are suggested. Firstly, time constraints had presented difficulties in the execution of this study due to the period of data collection was limited to two weeks. Time limitation caused researchers unable to collect a huge number of respondents while only a limited number of completed questionnaires were received. Furthermore, due to the questionnaire being web-based and distribution of the questionnaire was through the virtual mode, many recipients ignored the request to complete the questionnaire. To get a higher number of respondents, time constraints should be reduced as time to collect the questionnaire should be longer in future studies.

Secondly, the sample size of the survey has limited the opportunity of generalization of the findings in this study. Generally, the higher the number of respondents targeted as sample size, the more likely to obtain a more accurate result conducted through the research. Therefore, a similar study can be conducted with a larger sample size, so that one may be able to use the diverse demographic information of respondents when comparing the results.

Moreover, the target population is specified which only focuses on viewers of Facebook live-stream commerce. Therefore, only the consumer on Facebook live-stream commerce will be investigated but the others live-stream commerce such as Instagram, Shopee and Lazada are not able to be studied. Thus, similar studies can be conducted by exploring a broader spectrum of live-stream commerce platforms such as Instagram, Shopee and Lazada.

Besides, since this study only uses quantitative research methods, qualitative research methods can be adopted to have a more comprehensive understanding on perceived values towards live-stream shopping behaviour in future research. For example, an in-depth interview technique can be used to interview the respondents in the study. Qualitative research can provide more accurate findings than quantitative studies, in particular survey research and laboratory experiments (Queirós et al, 2017).

Lastly, this study has only determined four factors (perceived usefulness, perceived ease of use, perceived enjoyment, and perceived interactivity) on the influence towards live-stream shopping behaviour among Malaysian consumers. The four perceived values in this study were able to predict up to 79.40 percent to influence the purchasing behaviour on live-stream commerce among Malaysian consumers. Hence, future researchers are recommended

to determine the other factors to acquire the broader insight on how the other differences factors influence the live-stream shopping behaviour among Malaysian consumers.

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