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The impact of credibility of streamers on the acceptance of live streaming commerce: An extended UTAUT model



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ABSTRACT

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This study aims to explore how innovation adoption, based on the Unified Theory of Acceptance and Use of Technology (UTAUT), influences online shopping through live streaming platforms. It focuses on understanding the factors that drive customer acceptance and usage behavior in the context of live streaming commerce. The research employed a quantitative methodology, utilizing a survey instrument to collect data. The participants comprised 237 online customers in Malaysia who were familiar with live streaming as a shopping medium. The SmartPLS software, which is a tool for structural equation modelling, was utilized for data analysis. The findings suggest that performance expectation, effort expectancy, and social influence, which are important components of the UTAUT theory, have a considerable impact on consumer acceptance and usage behaviour in live streaming commerce. Additionally, the credibility of streamers emerged as a critical factor influencing purchase intentions. These findings highlight the importance of streamer credibility in the live streaming shopping experience. This research offers valuable insights for online retailers and businesses utilizing live streaming platforms for commerce. Understanding the factors that encourage customer engagement and purchase can help in strategizing marketing and operational approaches. It also suggests that the streamers' credibility is a vital aspect of the shopping experience, pointing towards the need for selecting and training streamers effectively. Moreover, this study extends the applicability of the UTAUT theory to live streaming commerce, providing a framework for further research in this emerging field.

Contribution/ Originality: This study is original in integrating streamer credibility into the UTAUT to examine live streaming commerce. Prior research focused on technological aspects and user interaction, but this study highlights the role of streamer credibility in influencing customer behavior and online purchase decisions in the context of live streaming shopping platforms.

1. INTRODUCTION

The overwhelming use of live streaming as an online shopping platform is reaping financial success for businesses. Live video streaming for product sale is one of the most popular platforms for online retailing. Live streaming commerce provides real-time face-to-face interactivity between sellers and customers (Hu & Chaudhry, 2020). Furthermore, the closer interaction also attracted the customer to understand and learn more about the products (Xie, Yu, Huang, & Zhang, 2022). Hence, the product knowledge gained was critical in involving the customers in the purchase process (Ree Chan Ho & Amin, 2023). Subsequently, it aided and influenced the purchase decision (Lu & Chen, 2021). Live streaming was suitable for online selling as it added human elements for better online collaboration. The real-time instant interaction enhanced the customer shopping experiences. It allows the customer to view and learn about the products faster (Payne, Keith, Schuetzler, & Giboney, 2017). When customers involved themselves, they were directed to the product link without much difficulty. Video presentations for the product were much more informative and memorable for customers. It also reduces the product return as customers who bought from live stream links have learned about the products better before purchase.

The live videos for streaming are often hosted by the streamers. They are often the social media influencers who are the product endorsers and often have flocks of followers on their social networking. They are popular in social media applications, i.e., tweets, blogs, and traditional social media apps such as Facebook. They were considered key opinion leaders who are the authorities in specialized areas or professional experts (Farivar, Wang, & Yuan, 2021). Hence, live streamers could attract viewers in certain niche markets. Hence, they can promote the products and serve as a bridge to connect retailers and consumers. The use of live streaming commerce is skyrocketing, with sales volumes increasing tremendously (Guo, Li, Xu, & Zeng, 2021). However, the complex nature of integrating the live video and shopping processes has its challenges. The configuration and business settings were complicated. It is reported that key opinion leaders would exaggerate and distort the information about brands and products to attract more followers (Duffy, Tandoc, & Ling, 2020). Hence, sales over some live stream channels were badly affected if the trustworthiness of the streamers were questionable (Zhang, Liu, Wang, & Zhao, 2022). The use of live streaming for retailing depends on the quality of the streamers to instill confidence in consumers (Xu, Wu, & Li, 2020). Hence, there is a need for the credibility of the streamers to promote the sales transactions in live streaming.

The purpose of this study is to investigate the influence of innovation adoption based on the UTAUT theory for live streaming. Delving further, the credibility requirements of the streamers were expected to be critical in driving the use of live streaming for product purchases. Therefore, we theorized streamer credibility as one of the key determinants for the adoption of live streaming commerce. This study contributed to the UTAUT theory by extending it to the use of live streaming for online shopping, with an additional variable derived from the streamers' aspect. Hence, a conceptual framework was developed to examine the use of the live stream for commerce and its practical implications.

2. LITERATURE REVIEW

2.1. Live-streaming Commerce

The burgeoning growth of live video technologies has paved the way for live stream use by a large population. It is followed by the mushrooming of live stream channels to showcase brands and products for commercial purposes. Live streaming commerce is defined as the use of live streaming to conduct electronic commerce activities (Xu et al., 2020). Live streaming refers to the transmission of video via the Internet in real-time and not recorded, as opposed to traditional methods. It uses the method of sending video files in a bitwise manner without the need to download the full file before starting to play them (Golan & Martini, 2019).

The widespread adoption of social media and mobile technology has accelerated the development of live streaming (Giertz, Weiger, Törhönen, & Hamari, 2022). The benefits went beyond the video and audio integration

but also included the interactive communication such as live chat and instant response. This is further supported by the existing literature in various research fields, such as education (Ree Chan Ho & Song, 2022), gaming (Lim, Choe, Zhang, & Noh, 2020), and entertainment (Ham & Lee, 2020). For instance, Lu and Chen (2021) found that streamers' interactive characteristics were key in driving the sales volume of cosmetic products. In addition, returning customers who were familiar with the business process from previous purchase experiences (Kaya, Behraves, Abubakar, Kaya, & Orús, 2019). They were more confident and had higher control over the transaction. This is aligned with the study by Zhang, Ghorbani, and Cohen (2007) that further validated the need for familiarity with the sales platform. Online retailers and brands were getting attention by implementing live stream channels as one of the main platforms to promote the products. As for the consumers, they were entertained and gained more information from live stream sales. This study is intended to uncover the gap that exists in the current situation for the use of live streaming. Hence, it is worthwhile to explore the antecedents to explain the choice of customers over live streaming for online shopping.

2.2. Theoretical Development

2.2.1. The Unified Theory of Acceptance and Use of Technology (UTAUT)

The theoretical foundation of this study was the Unified Theory of Acceptance and Use of Technology (UTAUT) theory (Venkatesh, Morris, Davis, & Davis, 2003). It is aligned with the aim of the study to reveal the comprehensive customer adoption of this new technological channel (Yu, 2012). Many existing studies were rooted in UTAUT to investigate the new business technologies from a functional perspective (Hu, Laxman, & Lee, 2020; Rahi & Abd. Ghani, 2019; Ronaghi & Forouharfar, 2020). Hence, the application of this theory was justified because it was able to explain the utility dimension. It offers a more comprehensive theoretical lens to uncover the need for innovative technology in business. Figure 1 shows the conceptual framework derived from UTAUT theory.

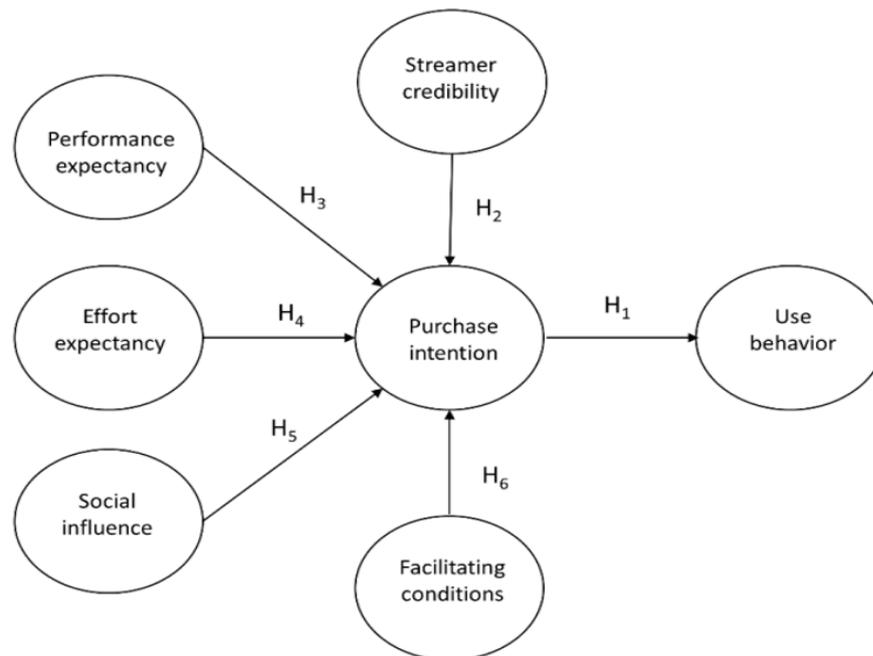


Figure 1. The conceptual framework.

Purchase intention is regarded as the chances of the customers buying the products or services (Gupta & Ramachandran, 2021). It is the willingness of customers to buy a particular product or to secure service in the future. The higher the purchase intention, the higher the probability of the actual purchase transaction being completed. Purchase intention is useful to predict the sales volumes of brands and products (Peng, Zhang, Wang, &

Liang, 2019). The existing literature on electronic commerce has validated it substantially (Bag, Tiwari, & Chan, 2019; Blaise, Halloran, & Muchnick, 2018; Lin, Wang, & Hajli, 2019). The streaming video with clearer brand- or product-related content such as usage instructions and price helped educate and guide the customers (Ho & Shafiq, 2021; Payne et al., 2017). Customers tend to place orders after watching streaming videos hosted by the streamers. In addition, the customers would engage with other streamers to shop for different products. The user behavior also includes the ability to use different types of live streaming apps for online shopping. In this study, we proposed that customers purchase the products driven by their intention to purchase. Hence, the following hypothesis was developed:

H₁: Purchase intention influences the adoption of live streaming commerce.

2.3. Streamer Credibility

Streamer refers to the person who hosts and presents the streaming video about the products (Friedlander, 2017). They are social media influencers or key opinion influencers who are normally independent third parties who share their expertise or experience (Farivar et al., 2021). Streamers have gained followers via a myriad of social media applications, i.e., Instagram, Facebook, Twitter, TikTok, and Youtube. They serve as the middleman between brands and customers by offering them a conversation platform to connect. Instant message applications such as Twitter have shown that the tweets by influencers have a direct impact on the purchase intentions of their followers (Leung, Bai, & Stahura, 2015). This is corroborated by the list of studies that validated the direct relationship between consumer behavior and the influencers' characteristics (Halvorsen, 2019; Jin, Muqaddam, & Ryu, 2019).

Credibility refers to the quality of being believable and reliable (Sokolova & Kefi, 2020). A credible advertisement is an important criterion for the consumer to decide on purchasing the products. Just like other platforms, customers would evaluate the authenticity of the video while conducting live streaming commerce (Moulard, Garrity, & Rice, 2015). The price, product features, and other product-related issues. With more relevant information obtained, it then enhances the customers' absorptive capacity to learn about the products better (Ho & Chua, 2015). The influencers' characteristics are as critical as the source of endorsement (Kim & Choo, 2019). In general, the streamer with a positive image was able to win their followers' trust. Credibility was hailed as important in enhancing the attractiveness of the streamers. However, streamers need to adjust to the products' image they endorse. The credibility of the streamer as the spokesperson for brands and products is hence worth investigating when they are involved in live stream commerce. Therefore, streamer image is hypothesized in this study to exert influence on purchase intention as follows:

H₂: Streamer credibility influences the purchase intention of live streaming commerce.

2.4. Performance Expectancy

Performance expectancy is regarded as the customers' belief in expecting the performance of novice technologies to suit their needs (Oh, Lehto, & Park, 2009). In many new technology adoption studies, it is proven that performance expectancy is important to affect the decision of users to accept the new technologies (Puriwat & Tripopsakul, 2021; Zhou, Lu, & Wang, 2010). Pai and Tu (2011) studied the practicality of the intended technology in customer relationship management systems as key to molding customer satisfaction. In the realm of electronic commerce, users would expect the performance of the new applications to be critical to their acceptance. Since the live stream channel is deployed as the transacting platform, its performance is expected to be anticipated, leading to its adoption. Additionally, the host of the live stream would test the recommended utilities. We theorized that customers need to ensure their purchase procedures are completed to influence their intention to purchase. Therefore, the following hypothesis was developed for testing:

H₃: Performance expectancy influences the purchase intention of live streaming commerce.

2.5. Effort Expectancy

Effort expectancy refers to the time and efforts spent using related tools to complete an intended task (He & Li, 2019). The major driving force behind the acceptance of newly launched technology is its ease of use and simplicity. The time taken to familiarize themselves with the procedures and features of the systems was also the deciding factor in their adoption of the new systems. The existing literature has abundant studies confirming that effort expectancy leads to customer satisfaction (Ho & Amin, 2019; Pappas, Pateli, Giannakos, & Chrissikopoulos, 2014; Tandon, Kiran, & Sah, 2018). For online shopping, effort expectancy is directly linked to purchase intention for social commerce and mobile commerce. The effort of obtaining product information is expected to be better with closer collaboration and clear content. Hence, we have posited that its role in obtaining customer acceptance from the live stream would be higher compared to other forms of electronic commerce. Therefore, we have presented the hypothesis as follows:

H₅: Effort expectancy influences the purchase intention of live streaming commerce.

2.6. Social Influence

Social influence is defined as the effect of other people on our decision or behavior to conform to the majority (Manca, Sivakumar, & Polak, 2019). It is common for us to seek advice from our peers in our social network before we've carried out a task (Ho & Cheng, 2020). The intensity of the influence would be higher if it were from our closer social group members, such as family members and friends. It is a tendency for an individual to perform behaviours and tasks commonly carried out by others to whom he or she is socially attached. This is evident in the social network community, with closer interaction among the members. Hence, this became more obvious in social commerce, where customers had frequent communication and collaboration. The impact of electronic word of mouth in electronic commerce further amplified its importance in influencing customers' purchase intentions (Kala & Chaubey, 2018). In this study, customers who have a past purchase history with the live stream channel are providing comments that were appreciated by other customers. Hence, social influence would generate valuable feedback on the purchase intention while using live streaming commerce. With that, the following hypothesis was formed:

H₆: Social influence influences the purchase intention of live streaming commerce.

2.7. Facilitating Condition

Facilitating conditions include necessary technical assistance and procedures related to the proper use of systems (Bhattacharjee, 2000). It included the required customer support and technological elements for the smooth operations of the system (Ho, 2021). The extant literature has investigated the crucial role of facilitating conditions in supporting various online business platforms, such as electronic commerce, mobile commerce, and social commerce (Verkijika, 2020; Yahia, Al-Neama, & Kerbache, 2018). There is a need for technological features to supplement the live stream channel's common infrastructure. This includes Internet bandwidth, good audio quality, lighting, and video recording equipment. Therefore, it is a more complex and sophisticated type of online shopping platform. Further, live stream commerce is more demanding when it has to be telecasted live in real-time mode. Hence, we propose the following hypothesis:

H₇: Facilitating conditions influence the purchase intention of live streaming commerce.

3. METHODS

3.1. Sample

The sample of this study consisted of live-stream commerce customers in Malaysia. They were invited to the questionnaire posted in the Google Form. An initial question would be asked if the respondents have previously been involved in live streaming commerce. Those who fulfilled this requirement were recruited as valid

respondents. As a result, 237 valid forms were collected. The demographic information of the sample is presented in Table 1.

Table 1. Profile statistics.

	Characteristics	Frequency	%
Gender	Male	119	50.21%
	Female	118	49.79%
Age	18 – 29	114	48.10%
	30 – 39	80	33.76%
	40 – 49	36	15.19%
	Above 50	7	2.95%
No. of years of use: Live streaming commerce	1 year	109	45.99%
	2 – 3 years	106	44.73%
	More than 3 years	22	9.28%
No. of monthly purchases with live streaming commerce	1 time	194	81.86%
	2 – 3 times	41	17.30%
	More than 3 times	2	0.84%

3.2. Measurement

The data for this study were obtained through the use of a questionnaire. The item measurements for the questionnaire were sourced from the previous scale used in the related technology adoption studies. The scale for the four variables from UTAUT was adapted from Okumus, Ali, Bilgihan, and Ozturk (2018). Streamer credibility was derived from Belanche, Casalo, Flavian, and Ibanez-Sanchez (2021). Purchase intention was modified from Chen and Barnes (2007) while the use behavior of live streaming commerce was adapted from Chopdar, Korfiatis, Sivakumar, and Lytras (2018). Table 2 depicts the measurement scale design.

Table 2. Measurement scale.

Construct	Scale	Source
Effort expectancy	EEP1: It is easy to learn how to use live streaming commerce. EEP2: Interacting with live streaming commerce is clear and easy to understand. EEP3: Live streaming commerce is easy to use.	Okumus et al. (2018)
Facilitating condition	FCN1: I had no difficulty finding and using the live streaming commerce. FCN2: I had no difficulty in customizing the live streaming commerce for my use. FCN3: Overall, live streaming commerce has good performance.	Okumus et al. (2018)
Performance expectancy	PEP1: Live streaming commerce can be useful in managing my online shopping. PEP2: Live streaming commerce can be valuable to my online shopping. PEP3: Live streaming commerce can be advantageous for better managing my online shopping.	Okumus et al. (2018)
Purchase intention	PIN1: I am likely to purchase the products from live streaming commerce. PIN2: Given the opportunity, I intend to place a purchase from live streaming commerce. PIN3: It is likely that I will purchase products through live streaming commerce in the near future.	Chen and Barnes (2007)
Streamer credibility	SCD1: I find streamers trustworthy. SCD2: I find streamers honest. SCD3: I believe they are experts on the topic. SCD4: I find streamers experienced.	Belanche et al. (2021)
Social influence	SIF1: I want to use live streaming commerce because my friends do so. SIF2: Using live streaming commerce reflects my personality to other people. SIF3: According to people who are important to me, I should use live streaming commerce.	Okumus et al. (2018)
Use behavior	UBH1: I have used live streaming commerce in order to purchase online products. UBH2: I have used live streaming commerce in order to shop for products from different online retailers. UBH3: I have used different kinds of live streaming apps for online shopping.	Chopdar et al. (2018)

3.3. Data Analysis

The data analysis was performed with two-stage factor analyses in both exploratory and confirmatory analyses under structured equation modeling. It permitted us to obtain both the measurement and structural models. The application of SEM was appropriate as this study involved multiple levels of latent variables (Valaei, Rezaei, Ho, & Okumus, 2019). Therefore, the list of hypotheses derived from the conceptual framework could be evaluated with path relationships for the variables. Hence, we applied SmartPLS which was able to examine the multiple paths needed to examine the outcomes.

4. RESULTS

4.1. Measurement Model

The measurement model's goodness was assessed by examining its validity and reliability. The acceptable result was achieved through the utilization of average variance extracted (AVE) and composite reliability. Both outcomes exceeded the accepted thresholds. The measurement model demonstrated satisfactory internal consistency.

The variables in the list obtained a Cronbach's alpha value that met the threshold of 0.7. This means that both the composite reliability (CR) and the average variance extracted (AVE) values were higher than what was considered acceptable. This proves that there was acceptable convergent validity. Table 3 illustrates the examinations conducted on the measurement model.

Table 3. Measurement model.

Constructs	Items	Loadings	CR	Cronbach alpha	AVE
Effort expectancy	EEP1	0.859	0.892	0.820	0.734
	EEP2	0.884			
	EEP3	0.826			
Facilitating conditions	FCN1	0.783	0.834	0.702	0.626
	FCN1	0.815			
	FCN1	0.776			
Performance expectancy	PEP1	0.870	0.893	0.820	0.735
	PEP1	0.857			
	PEP1	0.845			
Purchase intention	PIN1	0.834	0.864	0.767	0.680
	PIN2	0.798			
	PIN3	0.840			
Streamer credibility	SCD1	0.719	0.821	0.709	0.535
	SCD2	0.781			
	SCD3	0.713			
	SCD4	0.710			
Social influence	SIF1	0.865	0.878	0.791	0.705
	SIF2	0.836			
	SIF3	0.818			
Use behavior	UBH1	0.908	0.876	0.784	0.705
	UBH2	0.882			
	UBH3	0.715			

We applied the Fornell-Larcker criterion method to test the discriminant's validity. Table 4 shows the result and supports the achievement of discriminant validity for this study.

In summary, the measurement model has been achieved as the reliability and validity tests all met the required threshold.

Table 4. Fornell-Larcker discriminant validity.

Constructs	1	2	3	4	5	6	7
1. Effort expectancy	0.857						
2. Facilitating conditions	0.534	0.791					
3. Performance expectancy	0.371	0.481	0.857				
4. Purchase intention	0.435	0.443	0.656	0.824			
5. Streamer credibility	0.390	0.478	0.704	0.639	0.731		
6. Social influence	0.360	0.465	0.677	0.603	0.630	0.840	
7. Use behavior	0.371	0.468	0.600	0.484	0.577	0.678	0.840

4.2. Structural Model

The bootstrapping re-sampling technique was used to test the structural model. The procedure followed the guidelines created by Chin, Marcolin, and Newsted (2003). Figure 2 shows a graphical representation of the results. Table 5 displays the structural model's results. The test results of the standard error, t-value, and p-value were obtained after we performed the path analysis. The results were satisfactory to support the goodness of the structural model. The hypotheses of the study were examined, and they were significantly supported. The findings are shown in the following: The performance expectancy score was $t = 2.934$ and $p = 0.004$. It was followed by effort expectancy ($t = 2.071$, $p = 0.039$) and streamer credibility ($t = 2.763$, $p = 0.006$). The test results for social influence were $t = 2.417$ and $p = 0.016$. This is followed by facilitating conditions with $t = 0.193$ and $p = 0.847$, which indicated its non-significant influence.

Table 5. Test results for structural model.

Hypothesis	Path	Path coefficient	T-value	P-value	Significance						
H ₁	PIN → UBH	0.484	9.135	0.000	Supported						
H ₂	SCD → PIN	0.250	2.763	0.006	Supported						
H ₃	PEP → PIN	0.289	2.934	0.004	Supported						
H ₄	EEP → PIN	0.156	2.071	0.039	Supported						
H ₅	SIF → PIN	0.186	2.417	0.016	Supported </tr <tr> <td>H₆</td> <td>FCN → PIN</td> <td>0.014</td> <td>0.193</td> <td>0.847</td> <td>Rejected</td> </tr>	H ₆	FCN → PIN	0.014	0.193	0.847	Rejected
H ₆	FCN → PIN	0.014	0.193	0.847	Rejected						

We obtained the R² scores for the dependent constructs via the blindfolding method. Table 6 shows the values, respectively. R² for purchase intention was 53.6%, and use behavior was recorded at 23.1%. Therefore, the findings revealed that the proposed determinants from the conceptual framework were able to explain the variance in the dependent constructs. We also conducted the Stone Geisser assessment to determine the Q² values for effort expectancy, facilitating conditions, performance expectancy, streamer credibility, and social influence, and their scores were 0.423, 0.274, 0.517, 0.402, and 0.439 accordingly.

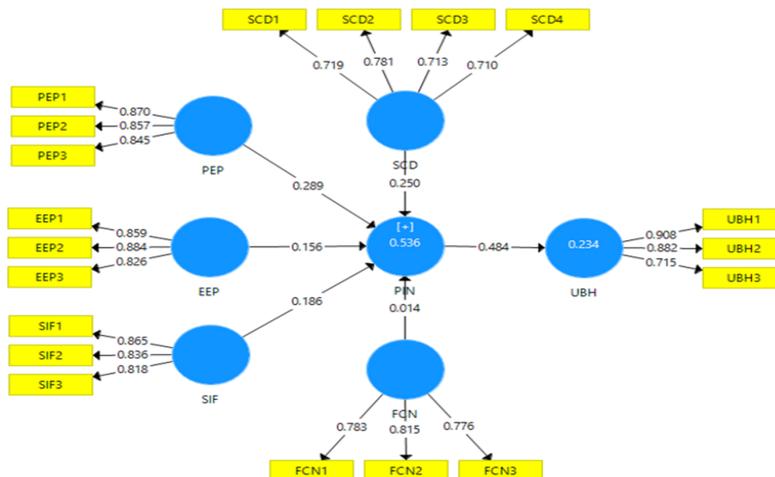


Figure 2. The structural model with results.

Table 6. Blindfolding indexes for constructs.

Construct	R ²	Q ²
Effort expectancy		0.423
Facilitating conditions		0.274
Performance expectancy		0.517
Purchase intention	0.536	0.415
Streamer credibility		0.402
Social influence		0.439
Use behavior		0.465

5. DISCUSSION

This study aimed to examine the effectiveness of live streaming commerce as a viable platform for online shopping. The antecedents of the acceptance of live streams were derived from the UTAUT theory. The test results from inferential data analysis supported the hypotheses derived from the conceptual framework. The findings of the study concluded that performance expectancy, effort expectancy, social influence, and streamers' image were influential in the customer's purchase intention while using live stream commerce. Facilitating conditions in live streaming commerce refers to the available technical resources for the customers to use the live streaming channels for purchase. The major resources include internet connectivity and the ability of customers' mobile devices to smooth live streaming during the buying process. Furthermore, the interface of the real-time live video is often friendly to use, in providing customers with ease in using it. Hence, online users have found the role of facilitating conditions to be minimal compared to other aspects of technology (Isaias, Reis, Coutinho, & Lencastre, 2017; Yuan, Ma, Kanthawala, & Peng, 2015).

We extended the UTAUT theory to uncover the live stream used for online shopping. The main constructs of the theory were applied and validated for their theoretical explanatory power to explain the adoption of live streaming commerce. The inclusion of streamer credibility as an additional construct was also supported. Based on the findings, performance expectancy was the most influential factor, followed by effort expectancy. Hence, this further strengthens the use of UTAUT as the underlying theoretical foundation for the use of the live stream. The credibility of the streamer, which was the extended construct in this study, was recorded as influential after performance expectancy and effort expectancy. Hence, it explains the need to maintain a positive image of the streamers when hosting the live stream session. Following that, the data also supported social influence. Social influence was critically expected, as it was largely supported by many studies on other business platforms. The insignificant construct was facilitating conditions when compared to other constructs. This fits with the next study by Venkatesh, Brown, Maruping, and Bala (2008) which replaced the word "facilitating conditions" with "behavioural expectation" to explain the weak link between those conditions and use behaviour. Hence, the overall result was anticipated, as it aligned with many other studies using the same theory. In general, this study extended the adoption factors from UTAUT with the inclusion of streamer credibility. Hence, it offers a theoretical understanding of the effectiveness of live streaming as a new form of electronic commerce platform. Therefore, this conceptual framework serves as guidance for managing the live stream channel operations. It explains the customer behavior on this new platform, which is gaining popularity among online customers.

5.1. Implications

The effectiveness and adoption of live streaming video for online commerce are on the rise. Customers are turning to this new shopping platform for its many unprecedented features. Online retailers need to offer the right types of deployment and marketing strategies to cater to customer needs in this new method of online business. The operators need to be customer-centric and offer the service to the niche target customer segments of their business. Besides the video being streamed, some other useful services, such as after-sale service advice, product demos, and other brand-related information, should be readily accessible on screen with embedded hyperlinks.

Another important consideration is that the user interface design must adhere to simplicity and ease of use principles. Further, streamers who host in real-time mode should also be carefully selected, as the image is one of the key factors in the purchase decision.

5.2. Conclusion, Limitations, and Recommendations

Although the study was able to meet its research objectives, it also has some limitations. The study was designed to investigate live stream commerce from a functional perspective. The service aspect of using it was not investigated. Hence, it did not paint a better picture because the services provided by the operators are critical to molding consumer behavior. In addition, the sample was constrained and skewed towards younger consumers. Hence, it has low generalizability power to represent the population at large. Furthermore, the study did not include some of the factors relevant to the technology adoption studies, such as personal traits, trust, privacy concerns, and risk elements. Therefore, it is suggested that future research could delve into these factors to further strengthen the understanding of the use of live streaming as a shopping platform.

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Institutional Review Board Statement: The Ethical Committee of the INTI International University, Malaysia has granted approval for this study (Ref. No. INTI/UEC/2023/021).

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Data Availability Statement: Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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