

Relationship between Live Streaming Features and Consumer Purchase Intention in the Context of Malaysian E-Commerce

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Abstract

Technological advancements have transformed consumer-business interactions, leading to the rapid expansion of e-commerce. A notable development within this domain is live streaming commerce, which integrates real-time interactive live streaming with online shopping. The COVID-19 pandemic significantly accelerated the growth of e-commerce in Malaysia, with live streaming emerging as a powerful tool to engage consumers and drive sales. The pandemic has precipitated long-lasting shifts in consumer behaviour and habits, necessitating a deeper comprehension of the factors influencing purchase intentions. This study aims to explore the relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce, focusing specifically on Malaysian consumers. A sample of 391 respondents was selected from approximately 33.4 million people in Malaysia. This study used a quantitative approach and questionnaires to gather primary data, which was then analysed using SPSS software to achieve the study's objectives. The findings reviewed show a significant relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce.

1. Introduction

The COVID-19 pandemic had an immediate and profound impact on retail businesses; however, the long-term ramifications of this crisis remain to be fully elucidated (Roggeveen and Sethuraman, 2020). The COVID-19 pandemic has acted as a catalyst for the accelerated growth of the Malaysian e-commerce market, which had already been experiencing an upward trajectory in recent years due to an increasing propensity among consumers to engage in online shopping, facilitated by governmental support initiatives and the availability of diverse payment modalities. The implementation of nationwide stay-at-home and work-from-home directives, aimed at mitigating the spread of COVID-19, has rendered numerous businesses unable to operate through traditional brick-and-mortar channels. Although the pandemic has disrupted virtually all sectors of the economy, it has concurrently catalysed a positive impact on the e-commerce industry (Eloksari, 2020). In order to adapt to these unprecedented circumstances and ensure business continuity, many enterprises have been compelled to transition their sales operations to e-commerce platforms (Oxford Business Group, 2020). Furthermore, this shift has not been unilateral, as consumer enthusiasm for online consumption has also experienced a marked increase. As businesses adapted to the new normal, live streaming emerged as a powerful tool to engage with consumers and drive sales.

According to the Malaysia Digital Economy Corporation (MDEC), the country's e-commerce revenue grew by 25.8% in 2020, reaching RM29.3 billion (approximately \$6.8 billion) compared to RM23.3 billion (\$5.4 billion) in 2019 (MDEC, 2021). Moreover, the head statistician of the Department of Statistics Malaysia (DoSM), Therefore, live broadcasting has become a source of income for millions of individuals during the pandemic. Additionally, this growth trend will definitely continue to expand in the market. According to a survey by the Malaysia Digital Chamber of Commerce (MDCC), Malaysia's e-commerce revenue is expected to reach RM50.3 billion in 2024 and grew by 15%, reaching MYR44.6 billion in 2023. As Malaysia continues to navigate the post-pandemic landscape, the e-commerce sector is expected to maintain its growth trajectory, with live streaming becoming an integral part of businesses' marketing and sales strategies. The pandemic has accelerated the adoption of digital technologies and reshaped consumer purchasing patterns, and businesses must adapt and innovate to meet the changing needs of the online market. The pandemic has precipitated long-lasting shifts in consumer behaviour and habits, necessitating a deeper comprehension of the live streaming features that influence consumer purchase intentions in the context of Malaysian e-commerce. As the e-commerce landscape continues to evolve in the post-pandemic era, it becomes imperative to further investigate the relationship between live streaming features and consumer purchase intentions, thereby providing enterprises with valuable insights and actionable strategies. This line of inquiry will prove vital for businesses seeking to optimise their e-commerce strategies and maintain a competitive edge in the highly dynamic Malaysian market. Additionally, such research endeavours will enrich the knowledge base within the domains of e-commerce and consumer behaviour, ultimately benefiting both businesses and consumers in the post-pandemic landscape.

The Malaysian e-commerce market has grown significantly in the last few years, which has made the use of innovative strategies like live streaming necessary to increase customer engagement and boost sales (Zheng *et al.*, 2023). Live streaming has emerged as an effective tool for e-commerce companies, offering dynamic material and real-time interaction to prospective clients. However, understanding the specific impact of live streaming features on customer purchase intention is critical for businesses aiming to maintain a competitive edge and achieve sustainable growth (Dong *et al.*, 2021). Despite its potential, there remains ongoing debate among academics and industry professionals regarding the effectiveness of different live streaming features, namely product demonstration, live interactivity, and social presence in influencing customer purchase behaviour (Guo *et al.*, 2021). This highlights the need for further investigation to bridge the gap in understanding and provide empirical evidence on the relationship between live streaming features and consumer purchase intention, particularly in the Malaysian context.

To address this gap, the study employs a quantitative research method and surveys a sample of e-commerce consumers in Malaysia. The sample is designed to capture diverse demographic characteristics to reflect the broad spectrum of Malaysian e-commerce users. By focusing on key live streaming features such as product demonstrations, live interactivity, and social presence, the study seeks to provide actionable insights for e-commerce businesses aiming to enhance their strategies and achieve sustainable growth. The feature of product demonstration in live streaming presents several current issues. According to Gu *et al.* (2023), a major challenge is offering a thorough and genuine experience that could replicate the in-person buying experience. Consumers frequently doubt the accuracy and reliability of online product demonstrations, which can have significant impacts on what they decide to buy. In order to enhance consumer confidence and purchase intention, demonstrations must be clear, informative, and trustworthy (Yu & Zheng, 2022). Another essential component of live streaming is live interactivity, which has its own set of challenges, especially when it comes to handling in-the-moment client inquiries and ensuring significant interaction (Kang *et al.*, 2021). The effectiveness of live interactivity depends on presenters' ability to respond to queries quickly and satisfactorily, which can be challenging given Malaysia's broad customer base and users' varying levels of technology knowledge (Moghavvemi *et al.*, 2021). Additionally, maintaining a high level of interactivity without overwhelming the presenter or the audience requires careful moderation and effective communication strategies.

Furthermore, establishing trust and increasing client buy intention requires a setting that exudes human warmth and empathy. It can be challenging to continuously sustain this degree of social presence, though, as it calls for presenters to possess exceptional interpersonal communication and sympathetic engagement skills (Ma *et al.*, 2023). Moreover, complicating efforts to improve social presence are technical problems like lag and poor video quality that can take away from the feeling of human contact (Dwivedi *et al.*, 2021).

Therefore, to achieve the research objectives, the level of live streaming features in the context of Malaysian e-commerce is determined. Furthermore, the level of consumer purchase intention in the context of Malaysian e-commerce is also determined. Consequently, the relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce is identified.

2. Literature Review

2.1 Consumer Purchase Intention

Purchase intention refers to a consumer's proclivity and desire to acquire a specific product or service, and its formation can span days or weeks (Barr, 2007; Khandelwal *et al.*, 2013). It represents the likelihood that a consumer will follow through with a purchase decision. Alternatively, consumer purchase intention can be defined as the deliberate action of customers to acquire a desired item or offering (Lim *et al.*, 2021). It encapsulates the cognitive processes through which customers analyse, evaluate, and ultimately determine whether a product or service warrants a purchase. Moreover, marketers can leverage purchase intention as a predictive indicator of future customer demand for their products (Nayak *et al.*, 2024). This research focuses on purchasing decisions rather than behaviour, as purchase decisions are inherently linked to individual behaviour and carry broader implications. Consumers' buying decisions may be influenced by the comments and content shared on social network sites (SNSs). Interactions such as liking, responding, or sharing videos posted on SNSs can shape consumer perceptions. Studies suggest that exposure to content with higher levels of engagement and resonance may lead to a heightened intention to purchase the featured product (Zhang & Lee, 2022). This intent to purchase is likely to manifest once consumers are adequately informed about the product's benefits and drawbacks.

2.2 E-Commerce

Live streaming e-commerce is a new selling method that allows sellers to directly communicate with and promote products to shoppers through live online demonstrations, promotional activities, and real-time shopping guidance (Li *et al.*, 2022). Traditional e-commerce overcomes the limitations of physical retail spaces by providing consumers with a new way of transaction (Patel, 2023). Building on this, live streaming e-commerce offers businesses an enhanced way to reach consumers, further breaking through time, space, and marketing constraints. Compared to traditional e-commerce, live streaming e-commerce has significant advantages in pricing and interactivity. Consumers can connect directly with brands and manufacturers, avoiding the additional costs of intermediaries. During live streams, consumers can interact in real-time with streamers and other viewers, increasing their understanding of products and fulfilling their desire for leisure and entertainment, thus enhancing the shopping experience (Hassim & Shamsudin, 2023).

Moreover, consumers can access live streams anytime and anywhere, unrestricted by time and location. Live streaming also creates rich, immersive experiences, delivering dynamic product content and enhancing the sense of presence, which significantly stimulates consumers' shopping desires (Hassim & Shamsudin, 2023).

2.3 Live Streaming Features Towards Consumer Purchase Intention

2.3.1 Product Demonstrations

Product demonstration is a source that livestream shoppers obtain product information passively by observation to reduce product uncertainty (Tang & Lin, 2019). Livestream shopping gives consumers more detailed information about products through its high visibility features that provide video files and sounds that complement product presentations (Chen & Lin, 2018). Consumers seek such detailed product information and product descriptions, such as how to display or use the product in online shopping contexts, as they have limited ability to assess products physically. While traditional online shopping platforms deliver typed or written product information with product pictures, livestream shopping provides streamers' product demonstrations that show how to use the product's features; further, they try on the items in place of the viewers. This visual information that streamers convey offers consumers the opportunity to experience products vicariously by giving them a sense of social presence (Li *et al.*, 2020). Because of the vividness of the livestreaming shopping experience (Yim *et al.*, 2017), consumers are attracted more readily to the streamer's demonstration of products, as it allows them to visualise products based upon their detailed descriptions and explanations.

2.3.2 Live Interactivity

Interactivity is a key element in live streaming shopping, enabling real-time communication between users and sellers, as well as among consumers. It refers to the degree of consumer engagement in social shopping activities and reciprocal communication (Steure, 1995; Ma *et al.*, 2022). Chopdar and Balakrishnan (2020) further define interactivity as the response needs between the audience and the communicator, characterised by playfulness, selectivity, connectedness, information collection, and reciprocal communication. Unlike traditional e-commerce, live streaming shopping facilitates direct interpersonal interaction through text, sound, and image, offering detailed product information to consumers (Zhang *et al.*, 2022; Wang *et al.*, 2022). Sellers can address consumer queries in real-time, increasing trust and enabling informed purchase decisions.

2.3.3 Social Presence

Presence, the subjective sense of "being there" in a computer-mediated environment, is significant across fields such as social commerce, live streaming, and augmented reality (Xu *et al.*, 2021; Sun *et al.*, 2019). It encompasses two dimensions: social presence, which evokes psychological intimacy, and telepresence, which creates physical proximity (Gao *et al.*, 2018; Ye *et al.*, 2020). Social presence, defined as "the degree of salience of the other person in mediated communication" (Short *et al.*, 1976, p. 65), fosters trust, loyalty, purchase intention, and continued use intention (Kim *et al.*, 2020; Nadeem *et al.*, 2020; Tan & Liew, 2020). Enhanced by social cues like audio, video, and reviews, as well as brand anthropomorphism and IT affordance, social presence plays a critical role in mediated environments (Sun *et al.*, 2019; Kim *et al.*, 2020). Despite its importance, the combined effects of social and telepresence remain underexplored (Gao *et al.*, 2018).

2.4 Research Framework

This research aims to provide further evidence on the relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce. The study's findings will provide insights into Malaysian consumers' digital preferences and behaviours, uncover the psychological and behavioural factors influencing their decision-making processes in digital markets, and help e-commerce businesses in Malaysia understand how live streaming features impact consumer behaviour and purchasing decisions. Fig. 1 portrays the conceptual research framework applied in this study.

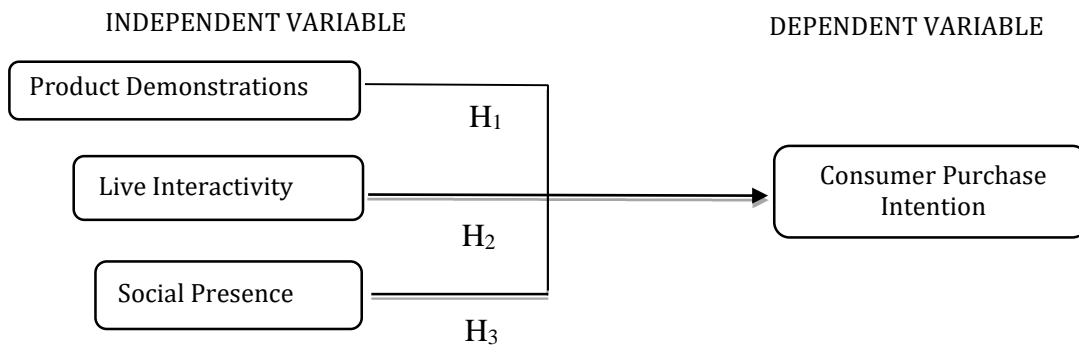


Fig. 1 Research framework

2.5 Hypotheses Development

From the discussion and literature review above, the researcher is examining and theorising both independent variables and dependent variables in this study. Correspondingly, the hypotheses are proposed as below.

H₁: There is a positive relationship between product demonstration and consumer purchase intention.

H₂: There is a positive relationship between live interactivity and consumer purchase intention.

H₃: There is a positive relationship between social presence and consumer purchase intention

3. Research Methodology

3.1 Research Design

The purpose of this study is to investigate the relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce. Besides, this research aims to explore how significantly live streaming features can enhance consumer purchase intentions within the context of Malaysian e-commerce. The type of investigation used in this research is a correlational study that describes the important variables associated with the problem, which determine the relationship between independent variables and dependent variables. Besides, there will be only minimal researcher interference in this study as the researcher is simply focusing on collecting and analysing existing data rather than directly altering the product demonstrations, live interactivity, and social presence. Researchers gathered the data and information by using quantitative methods through online surveying, which distributed questionnaires via Google Form. The questionnaire consists of three parts, which are Section A, B and C, which include demographic questions, questions related to live streaming features and consumer purchase intention. Fig. 2 illustrates the research flow for this study.

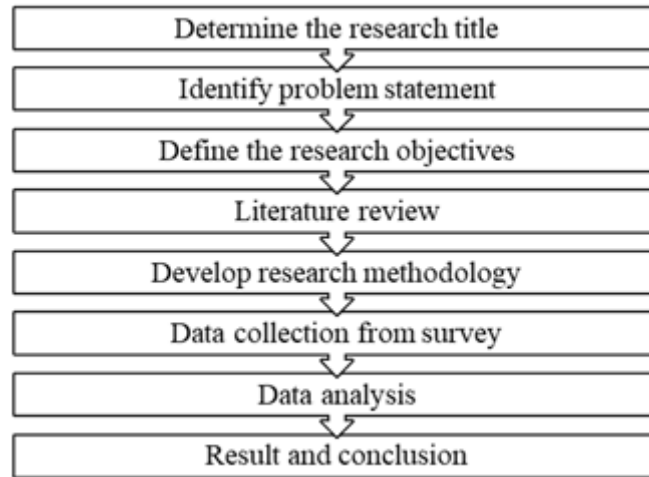


Fig. 2 Research flow chart

3.3 Research Population and Sample Size

The population chosen is Malaysian consumers who have experience using live streaming services and actively engage with e-commerce platforms. On the basis of the report from the Department of Statistics Malaysia (2023), there are 33.4 million total persons in Malaysia. Nevertheless, researchers have used the Krejcie and Morgan (1970) method to generate an imperative and efficient technique for estimating the sample size (Bukhari, 2021). Based on the Krejcie and Morgan (1970) table, the researcher chose 384 persons as the respondents to contribute to this research to answer the questionnaires. Therefore, 384 respondents in Malaysia will make up the study population. Table 1 is a sample size selection table developed by Krejcie and Morgan (1970).

Table 1 Determining sample size method Krejcie and Morgan (1970)

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3200	346
85	70	440	205	4000	351
90	73	460	210	4300	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.
Source: Krejcie & Morgan, 1970

3.4 Sampling Design

The researcher has chosen simple random sampling for this study because every individual in the population has an equal chance of being included in the sample, leading to unbiased and representative results (Mweshi & Sakyi, 2020). A researcher was selected completely randomly from the population by maintaining a voluntary participation mechanism and distributing personalised invitation links. Once the random selection was completed, the researcher contacted the selected individuals and invited them to participate in the study.

Obviously, the questionnaire of this study will be delivered and answered by a simple random sampling taken from the population. The samples of the population will be selected from the Malaysian consumers who have experience using live streaming services and actively engage with e-commerce platforms.

3.5 Research Instrument

Data collection is the process of acquiring, evaluating, and assessing proper insights for research utilising established and recognised procedures. A researcher may evaluate their hypothesis based on the evidence gathered. The first and most important part of the research process, regardless of the subject of study, is typically data collection. Various data collection methods are employed in various fields of study, depending on the information required. Table 2 shows the research instruments used in this research.

Table 2 Research instrument questionnaire

Section	Categories	Number of items	Sources
A	Demographic profile	11	Zhang (2023); Leong (2022)
B	Product demonstration	3	Hwang & Youn (2023)
	Live interactivity	7	Dong <i>et al.</i> (2022); Hwa (2023)
	Social presence	6	Dong <i>et al.</i> (2022); Zheng <i>et al.</i> (2023)
C	Consumer purchase intention	5	Addison & Aprilianty (2022); Liu <i>et al.</i> (2022)

3.6 Data Collection

3.6.1 Primary Data

Despite the fact that the research can be performed by applying secondary data, it is impossible to produce a valid conclusion without also using primary data. Primary data can typically be collected through various methods such as surveys, observations, interviews, focus groups, case studies, experiments, diaries, questionnaires and so forth. Therefore, the researcher utilised a questionnaire as the primary data source to collect data from respondents.

3.7 Pilot Study

The pilot study assisted the researcher in obtaining an accurate performance of a good study research since it aims to examine and improve the research methodology, which enhances the quality and efficacy of the overall research design. In spite of the pilot study boosting the possibility of success in the main trial, it cannot guarantee success in the research. A sample size of 20 to 30 respondents is widely accepted for pilot studies in research (O'Neill, 2022). Therefore, the researcher selected 30 respondents to conduct the pilot study. This sample size is adequate to collect meaningful feedback without making the pilot study overly complex or time-consuming. A group of 30 respondents provides sufficient diversity to identify common issues, such as unclear questions or technical problems, while remaining small enough to ensure a straightforward process. Feedback from these respondents enables the researcher to refine the research instrument and enhance its overall quality. Intentionally, the researcher distributed the questionnaire to Malaysian consumers who have experience using live streaming services and actively engage with e-commerce platforms in Malaysia to carry out the pilot study and achieve the goal of 30 respondents to evaluate the practicality and feasibility of the main study. This sample size provides sufficient data to identify and resolve potential issues while ensuring the reliability and validity of the research instruments. The purpose of testing was for its comprehension, understandability, and clarity, and the results from pilot testing were not included in the main study.

3.8 Data Analysis

The researcher utilised quantitative analysis in this study as the findings supported the expected relationships between independent and dependent variables. To ensure data accuracy and reliability, descriptive statistics, correlation analysis, and normality analysis were conducted using the Statistical Package for Social Sciences (SPSS) software.

3.8.1 Descriptive Analysis

The purpose of descriptive analysis is to examine variables for any violations of the assumptions underlying the statistical techniques used to address the research questions. Additionally, another objective of descriptive analysis is to simplify and summarise the data collected from the questionnaire for easier interpretation.

3.8.2 Normality Test

The Kolmogorov-Smirnov test and Shapiro-Wilk test are used to assess normality by comparing the research data to a normal distribution with the same mean and standard deviation as the sample. The primary purpose of applying for a normality test in this study is to assist the researcher in making accurate inferences from the collected data.

3.8.3 Correlation Analysis

Correlation analysis is used to measure the relationship between independent and dependent variables, which are live streaming features and consumer purchase intention in the context of Malaysian e-commerce

4. Data Analysis and Findings

4.1 Respond Rate

The target sample size for this study was 384 respondents based on Krejcie and Morgan (1970). The data collection for this study involved the distribution of online questionnaires through Google Forms to gather responses from the target population. All questionnaire forms were presented online to respondents by the researcher via sending a QR code method or sharing the questionnaire link through multiple online platforms, including social media platforms such as Instagram and WhatsApp and tracked manually once the respondents completed their responses. Google Forms provides analytics that show the number of times the form link was accessed, ensuring that only legitimate and non-duplicate responses were recorded. However, the actual number of respondents who responded and submitted the questionnaire was 391, resulting in a total response rate of 100%, which exceeds the initial target in Table 3.

Table 3 Response rate

Population	Sample Size	Questionnaire Distribute	Questionnaire Returned	Percentage
33.4 million	384	391	391	100%

4.2 Reliability Analysis

4.2.1 Pilot Study

The researcher conducted a pilot study with 30 respondents experienced in live streaming and Malaysian e-commerce to assess and refine the research instrument's reliability and validity. The study conducted reliability tests on four variables, which are "product demonstrations", "live interactivity", "social presence", and "consumer purchase intention". Table 4 outlines the reliability test revealed good internal consistency for the variables "product demonstration", "live interactivity", and "social presence", with Cronbach's alpha values of 0.875, 0.819, and 0.854, respectively, all falling within the range of 0.9 to 0.8. However, the variable "customer purchase intention" exhibited outstanding reliability with a Cronbach's Alpha of 0.910, indicating excellent internal consistency, as it falls within the range of equal to or higher than 0.9.

Table 4 Results of reliability test for pilot study

Variables	Cronbach's Alpha	N of items	Interpretation
Independent variable			
1. Product demonstration	0.875	3	Good
2. Live interactivity	0.819	7	Good
3. Social presence	0.854	6	Good
Dependent variable			
1. Consumer purchase intention	0.910	5	Excellent

4.2.2 Actual Study

Table 5 shows the results of reliability tests for the actual study. The researcher gathered 391 questionnaires from respondents experienced in using live streaming services and actively engaging with e-commerce platforms in Malaysia. The study assessed the reliability of four variables, which are "product demonstrations", "live interactivity", "social presence", and "consumer purchase intention". The "product demonstration" and "live interactivity" variables have good internal consistency, with a Cronbach's Alpha of 0.896 and 0.891, respectively, indicating strong reliability. Meanwhile, the "social presence" and "customer purchase intention" variables have excellent internal consistency, with a Cronbach's Alpha of 0.904 and 0.939, respectively, indicating high reliability.

Table 5 Results of the reliability test for the actual study

Variables	Cronbach's Alpha	N of items	Interpretation
Independent variable			
1. Product demonstration	0.896	3	Good
2. Live interactivity	0.891	7	Good
3. Social presence	0.904	6	Excellent
Dependent variable			
1. Consumer purchase intention	0.939	5	Excellent

4.3 Demographic Analysis

A systematic analysis was conducted on survey data collected through Google Forms, encompassing responses from 391 respondents. The purpose of this study was to serve as a fundamental tool for understanding the characteristics and composition of study populations. Researchers can identify patterns, trends, and relationships that influence the phenomenon under examination by examining variables such as gender, age, race, marital status, occupation, monthly income, platform of using for live streaming shopping, frequency of watching live streaming shopping, time of watching live streaming shopping, number of years of live streaming shopping experience varies among individuals, and amount spent on live streaming varies among individuals. A detailed presentation of the findings is demonstrated in Table 6.

Table 6 Results of demographic profile

Variables	Items	Frequency (f)	Percentage (%)
Gender	Male	189	48.34
	Female	202	51.66
Age	Below 18	6	1.53
	18 – 25	313	80.05
	26 – 33	25	6.39
	34 – 41	15	3.84
	42 – 49	11	2.81
	Above 49	21	5.37
Race	Malay	210	53.71
	Chinese	145	37.08
	Indian	29	7.42
Marital Status	Other	7	1.79
	Single	339	86.7
	Married	52	13.3
	Student	326	83.38
Occupation	Housewife	5	1.28
	Employed	45	11.51
	Self-Employed	13	3.32
	Unemployed	1	0.26
	Retired	1	0.26
Monthly Income	Below 2000	329	84.14
	2000 - 4999	29	7.42
	5000 - 7999	17	4.35
	More than 8000	16	4.09
Platform of Use for Live Streaming Shopping	Facebook	70	9.17
	Instagram	70	9.17
	Taobao	35	4.59
	Lazada	73	9.57
	Shopee	286	37.48
	Tiktok	227	29.75

	Shein	1	0.13
	CJ Wowshop	1	0.13
	Almost daily	72	18.41
	Weekly	92	23.53
Frequency of Watching Live Streaming Shopping	Monthly	74	18.93
	Only once per year	25	6.39
	Occasionally	128	32.74
	Less than 1 hour	270	69.05
	1 – 2 hours	83	21.23
Time of Watching Live Streaming Shopping	2 – 3 hours	26	6.65
	3 – 4 hours	7	1.79
	More than 4 hours	5	1.28
	Less than 1 year	213	54.48
Years of Live Streaming Shopping Experience	1-3 years	112	28.64
	3-5 years	44	11.25
	More than 5 years	22	5.63
	Less than 50	176	45.01
Amount Spent on Live Streaming	50 – 100	133	34.02
	100 – 300	45	11.51
	More than 300	37	9.46

4.4 Descriptive Analysis

Descriptive analysis was developed to examine the relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce in Table 7. In general, the overall mean score and standard deviation for product demonstration are 3.8261 and 0.81851, respectively, which reveals a high level of central tendency. As evidence, the overall mean score and standard deviation for live interactivity are 3.9514 and 0.69722, respectively, which reveals a high level of central tendency. The analysis of mean and standard deviation for various items related to live interactivity points out a constant highest mean score and low standard deviation across all dimensions. This indicates that live streaming features are well-received and effective in creating an engaging shopping experience, with particular emphasis on interactivity and communication among viewers and streamers. This highlights the potential for businesses to leverage these features to strengthen consumer purchase intentions and satisfaction. Simultaneously, the overall mean score and standard deviation for social presence are 3.6871 and 0.76600 respectively, which reveals a high level of central tendency. Meanwhile, the overall mean score and standard deviation for consumer purchase intention are 3.5345 and 0.89294 respectively, which reveals a moderate level of central tendency. However, the results showed that consumer purchase intention obtained the lowest mean score and the highest standard deviation. The results indicate opportunities for improvement in converting moderate perceptions into strong preferences. While they recognise its potential, they are not fully convinced of its superiority compared to other shopping methods. Platforms can work on improving trust, usability, and reliability to enhance consumer adoption rates.

Table 7 Overall analysis of mean and standard deviation for factors

Items	Mean (μ)	Std. Deviation (σ)	Level
Product demonstration	3.8261	0.81851	High
Live interactivity	3.9514	0.69722	High
Social presence	3.6871	0.76600	High
Consumer purchase intention	3.5345	0.89294	Moderate

4.5 Normality Test

The Kolmogorov-Smirnov test was used on 391 respondents in Table 8 to determine the normality of independent and dependent variables. All associated p-values were less than 0.001, which means the p-value is very small. The results showed that all data is considered not to follow a normal distribution. Therefore, Spearman's Rho correlation was used to measure the strength and direction of the association between independent and dependent variables, as the p-value is below 0.05, indicating non-normal data.

Table 8 Results of Normality Test

Variables	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Product demonstration	.177	391	<.001	.935	391	<.001
Live interactivity	.091	391	<.001	.946	391	<.001
Social presence	.104	391	<.001	.964	391	<.001
Consumer purchase intention	.114	391	<.001	.964	391	<.001

4.6 Spearman’s Correlation Analysis

Table 9 shows the results of Spearman’s correlation. The correlation coefficient between product demonstration and consumer purchase intention was 0.177, displaying a moderate association. The p-value was less than 0.001, indicating a positive relationship between product demonstration and consumer purchase intention. Therefore, Hypothesis 1, H₁, is being accepted. The statistically significant but moderate and positive relationship between product demonstrations and consumer purchase intention indicates that as the quality, clarity, and overall effectiveness of product demonstrations improve, consumer purchase intention also tends to increase. The relationship is not extremely strong, and other factors might also influence their consumer purchase intention. It is meaningful enough to suggest that improvements in product demonstrations could positively influence consumer purchase intention. This result aligns with the theoretical understanding that visually and interactively showcasing product features helps consumers reduce uncertainty and builds trust in the product. In the context of Malaysian e-commerce, product demonstrations during live streaming sessions can play a significant role in influencing consumer purchase intention.

Table 9 Result of Spearman’s correlation

Consumer Purchase Intention		
Variables	Correlation Coefficient	Sig (2-tailed)
Product demonstration	.476**	<.001
Live interactivity	.586**	<.001
Social presence	.630**	<.001

** Correlation is significant at the 0.01 level (2-tailed).

In the meantime, the correlation between live interactivity and consumer purchase intention was 0.586, indicating a moderate association. The p-value was less than 0.001, indicating that there is a positive association between live interactivity and consumer purchase intention. Therefore, hypothesis 2, H₂, is being accepted in the research. This result implies that it has a strongly significant correlation between live interactivity and consumer purchase intention, and has a moderate and positive relationship. Furthermore, it indicates that an increase in live interactivity corresponds to a moderate tendency for a parallel rise in consumer purchase intention. This suggests that while live interactivity is an important driver of purchase intention and creates a dynamic and engaging shopping experience, it also allows customers to feel involved and valued. In the context of Malaysian e-commerce, where live streaming has become increasingly popular post-pandemic, features like personalised engagement and real-time communication are pivotal in fostering trust and driving purchases.

In addition, the correlation between social presence and consumer purchase intention had a higher correlation coefficient of 0.630, indicating a strong association. The p-value was less than 0.001, indicating that there is a positive association between social presence and consumer purchase intention. Therefore, hypothesis 3, H₃, is being accepted in the research. This result implies that it has a highly significant correlation between social presence and consumer purchase intention, and that there is a strong and positive relationship. Social presence has a strong correlation with consumer purchase intention, suggesting it is a critical factor in driving purchase behaviour compared to other factors. A strong sense of social presence in live streaming e-commerce fosters trust, emotional connection, and engagement. In the Malaysian e-commerce context, this highlights the importance of building authentic and engaging connections with the audience to boost sales.

5. Conclusion

Descriptive analysis was implemented to evaluate the level of independent variables in achieving the primary research objective. There are three independent variables in this study, which are product demonstration, live interactivity and social presence. Based on the results, this indicated a high central tendency of mean values,

suggesting that respondents generally perceived the presence of live streaming features as significant. The high level of live streaming features in the context of Malaysian e-commerce demonstrated that the majority of respondents believe live streaming features are essential in a fast-paced and technologically advanced environment. The results are supported by the previous study stating that live streaming features can play a significant role in addressing the challenges of a fast-paced and technologically advanced environment from a social perspective (Zhang, 2023). For example, the challenges are time constraints, social anxiety and geographical barriers. It can cater to the needs of modern consumers, highlighting the importance in today's dynamic world. Live streaming features cater to individuals who prefer minimal face-to-face interactions, offering a comfortable, flexible way to engage with content and socialise virtually (Oloff & Raman, 2024). This digital shift allows people to participate in social interactions from home, reducing anxiety associated with in-person gatherings. Live streaming platforms enable users to interact through chats or comments, maintaining connections without direct physical engagement. The real-time nature also suits those who prefer structured, spontaneous interactions, allowing participation at their own pace. Therefore, live streaming features provide a valuable tool for those seeking to navigate their personal lives with reduced face-to-face contact, thereby accommodating their preferences and enhancing their well-being.

Descriptive analysis was conducted to assess the level of the dependent variable in achieving the second objective in this research. The results demonstrated notable patterns and trends regarding purchase intention. The descriptive analysis revealed high central tendency mean values, indicating that most respondents in Malaysia exhibit a generally positive purchase intention within the e-commerce landscape. Most respondents agreed that customer purchase intention is influenced by a combination of psychological, emotional, and cognitive factors that shape their decision-making process. The findings are consistent with previous research, such as Zhang *et al.* (2024), which found that trust, perceived value, and emotion were key drivers of influencing consumer purchase intention in e-commerce. The key elements play critical roles in fostering a strong desire to purchase a product or service. Trust is the cornerstone of purchase intention, particularly in e-commerce, where the lack of physical interaction can create scepticism. Customers are more likely to purchase from sellers they perceive as reliable and credible. Transparent product descriptions, authentic reviews, and responsive customer service build trust. Perceived value is the customer's evaluation of a product's benefits relative to its costs. It encompasses not just monetary aspects but also experiential and emotional dimensions. Customers weigh the price of a product against the quality, features, and benefits it offers. Higher perceived value leads to a stronger purchase intention. Emotional connection taps into the consumer's feelings, aspirations, and social needs, influencing their decision to purchase. Live stream hosts often share personal stories or testimonials related to the product, creating relatability and emotional appeal. Observing other viewers' interactions, excitement, and purchases during a live stream builds a sense of community and validation, further strengthening the emotional connection.

Spearman's correlation analysis was applied to examine the relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce. Based on the analysis results, this indicated a significant relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce, suggesting that respondents believe live streaming features as having a beneficial effect on consumer purchase intention and willingness to purchase. The findings are in agreement with previous research, such as the studies by Ye and Ching (2023), which highlight how live streaming features effectively merge the benefits of both traditional e-commerce and offline shopping to enhance consumer purchase intention. The results are supported by the previous study stating that live streaming features bridge the gap between traditional e-commerce and offline shopping by offering the ease of online shopping alongside immersive and interactive experiences similar to those found in physical stores (Zhang *et al.*, 2024). They address transparency and sensory limitations of e-commerce by providing detailed, real-time product demonstrations, showcasing items from multiple angles, and simulating practical usage scenarios. Hosts offer immediate responses to customer inquiries, fostering trust and personal engagement similar to in-store consultations. Additionally, live streaming creates a communal shopping experience through interactive features like live chats and virtual reactions, enhancing customer satisfaction, driving sales, and building brand loyalty.

In a nutshell, this study has provided useful insights into the relationship between live streaming features and consumer purchase intention in the context of Malaysian e-commerce. The study successfully achieved its three main objectives, which are determining the level of live streaming features, examining the level of customer purchase intention, and investigating the relationship between these variables in the context of Malaysian e-commerce. Based on the findings, the majority of respondents perceive a high level of live streaming features in the context of Malaysian e-commerce. Simultaneously, the study yields a high level of consumer purchase intention in the context of Malaysian e-commerce. However, the correlation between two variables which are product demonstrations and live streaming, and consumer purchase intention was found to be a positive but moderate relationship, while social presence displayed a strong positive relationship with consumer purchase intention.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: **study conception and design:** Teow Yi Fang, Hafizah Zulkipli; **data collection:** Teow Yi Fang; **analysis and interpretation of results:** Teow Yi Fang; **draft manuscript preparation:** Teow Yi Fang, Hafizah Zulkipli. All authors reviewed the results and approved the final version of the manuscript.

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