

Exploring the Impact of Live Streaming on Consumer Purchase Intention: An Analysis Using the Theory of Planned Behaviour

Ong Yen Yen¹, Juzaimi Nasuredin^{2*}, Rabiatal Adawiyah Ma'rof³

¹ Department of Technology Management, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, Parit Raja, 86400 Batu Pahat, Johor, MALAYSIA

² Faculty of Business and Management, Universiti Teknologi MARA (UiTM), Cawangan Terengganu Kampus Dungun, Terengganu, MALAYSIA

*Corresponding Author: juzaimi@uthm.edu.my

DOI: <https://doi.org/10.30880/jbsnexus.2024.01.01.008>

Article Info

Received: 30 September 2024

Accepted: 1 November 2024

Available online: 9 December 2024

Keywords

Live streaming, consumer purchase intention, theory of planned behaviour, online marketing, media richness, streamer credibility, interactivity,

Abstract

The rise of live streaming as a direct marketing tool has transformed online shopping, particularly during the COVID-19 pandemic, which accelerated the shift towards digital purchasing behaviours. Despite previous research on e-commerce and consumer behaviour, there remains a gap in understanding the specific factors influencing purchase intentions in live-streaming contexts. This study examines how streamer credibility, media richness, and interactivity influence consumer purchase intentions, guided by the Theory of Planned Behaviour (TPB). Data were collected through survey questionnaires from 384 consumers in Perak, Malaysia, with 286 responses analysed using Spearman's rho correlation in SPSS. Results demonstrate significant positive relationships between the independent variables and consumer purchase intentions. These findings offer practical insights for online marketers to leverage live streaming as an effective engagement tool and provide a foundation for further academic exploration in this field.

1. Introduction

Live streaming has emerged as a transformative tool in the e-commerce landscape, redefining how businesses interact with consumers. Unlike traditional online shopping, live streaming offers real-time engagement, fostering a sense of authenticity and immediacy. These elements are particularly relevant in the Malaysian context, where the growing penetration of internet and smartphone usage, combined with an increasing reliance on social media platforms such as Facebook Live, TikTok Live, and Instagram Live, has provided fertile ground for this innovative approach (Mentek, 2021).

The COVID-19 pandemic further accelerated this trend as consumers increasingly turned to digital channels for their shopping needs (Cai et al., 2021). Consequently, live-streaming platforms have gained significant traction, enabling businesses to bridge the gap between in-person and online shopping experiences. By offering dynamic and interactive features, live streaming creates a more personalised shopping experience, enhancing consumer trust and driving purchase intentions.

Despite the growing popularity of live streaming, research examining its influence on consumer behaviour remains limited, particularly in the Malaysian context. Multiple factors, including streamer credibility, media richness, and interactivity, can shape purchase intentions during live-streaming sessions. Streamer credibility, characterised by trustworthiness, expertise, and attractiveness, plays a crucial role in establishing consumer trust and driving purchases (Xu et al., 2020). Media richness enhances the consumer experience by providing diverse

This is an open access article under the CC BY-NC-SA 4.0 license.



and immersive content, while interactivity fosters direct communication between the streamer and audience, reducing uncertainties and improving consumer satisfaction (Liao et al., 2022).

Guided by the Theory of Planned Behaviour (TPB), this study aims to explore the relationship between these factors and consumer purchase intentions in the live-streaming context. TPB provides a robust framework for understanding how attitudes, subjective norms, and perceived behavioural control influence behavioural intentions (Ajzen, 1991). By applying this model, the study seeks to: (1) assess the level of live-streaming engagement among consumers in Perak, Malaysia, (2) evaluate consumer purchase intentions within live-streaming contexts, and (3) examine the relationships between live-streaming factors and purchase intentions.

This research aims to contribute to both academic and practical understanding of live streaming's role in e-commerce, providing insights for businesses looking to enhance consumer engagement and sales conversions through this dynamic medium.

2. Literature Review

2.1 Consumers' Purchase Intention

Consumer purchase intention refers to the likelihood or willingness of consumers to purchase a product, influenced by their attitudes, perceptions, and evaluations of both the product and the seller (Marlien et al., 2021). In the context of live-streaming e-commerce, purchase intention is determined by how effectively consumers engage with the streamer's presentation and their perception of the product being offered (Liu et al., 2022). Research indicates that various interactive elements—such as the level of trust in the seller, the quality of the content, and the engagement between the viewer and the streamer—play a critical role in shaping purchase intentions in live streaming (Apasrawirote & Yawised, 2022).

2.2 Live Streaming

2.2.1 Streamer's Credibility

Streamer credibility comprises trustworthiness, expertise, and attractiveness, all of which contribute to establishing trust and positively influencing consumer behaviour (Xu et al., 2020). When a streamer is seen as credible, consumers are likelier to believe that the products or services they promote are worth purchasing (Park & Lin, 2020). Research indicates that credibility strongly affects consumer trust and purchase intention, as viewers tend to purchase from reliable and trustworthy streamers (Arora & Agarwal, 2019).

2.2.2 Media Richness

According to media richness theory, platforms that offer a variety of content formats create a more immersive and comprehensive interaction (Li et al., 2021). In live streaming, high media richness—such as visuals, real-time feedback, and interactive features—can enhance consumer engagement and create a sense of presence, boosting purchase intention (Tseng & Wei, 2020).

2.2.3 Interactivity

Interactivity involves two-way communication that allows consumers to engage directly with the streamer in real time. This interaction helps reduce product uncertainty, enhances shopping experience satisfaction, and positively influences purchase intention (Kang et al., 2021). Previous research suggests that higher levels of interactivity foster trust and increase engagement, especially in e-commerce environments where real-time communication significantly impacts consumer decisions (Suntornpithug & Khamalah, 2010).

2.3 Underpinning Theory

The Theory of Planned Behaviour (TPB) posits that purchase intention is critical in determining consumer buying behaviour (Ajzen, 1991). This theory offers a framework for understanding how individual and environmental factors influence online shopping behaviour. TPB was initially proposed by Ajzen (1985) as a model to explain the relationship between behavioural intentions and attitudes toward the behaviour in question. In live streaming, this study translates consumers' purchase intentions into an indicator of live-streaming behaviour based on their willingness to engage in specific behaviours.

The TPB model suggests that behavioural intentions are shaped by three main factors: attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991). This study extends the traditional TPB model by incorporating three factors—streamer's credibility, media richness, and interactivity—as TPB variables to predict consumer behaviour intentions in live streaming.

2.4 Hypotheses Development

Source credibility is often conceptualised as comprising three key dimensions: trustworthiness, expertise, and attractiveness (Ohanian, 1990). The credibility of a source significantly impacts the recipient's attitude toward the product (Muda & Hamzah, 2021). In the live-streaming environment, the streamer's credibility is vital, as it influences the consumer's attitude towards the product being promoted and their likelihood of purchasing. This is consistent with TPB, as consumer attitudes toward a credible streamer positively affect their purchase intentions.

Media Richness Theory (MRT) suggests that media richness is the extent to which a medium can transmit a variety of cues (such as video, text, and audio) to facilitate effective communication (Brunelle, 2010). In live streaming, features such as real-time feedback, visual cues, and diverse content enhance the perceived media richness. These features align with the TPB model by influencing consumer attitudes and shaping their behavioural intentions to make a purchase. Research also highlights that consumers respond to media richness when making purchase decisions, especially in online settings (Tseng et al., 2022). Thus, media richness in live streaming directly affects consumer purchase intentions by enhancing interaction and engagement.

Interactivity, the ability for two-way communication between the consumer and the streamer, is another crucial element in shaping consumer behaviour. Research suggests that interactivity influences attitudes, subjective norms, and perceived behavioural control within the TPB framework (Zhang & Chen, 2023). In the live-streaming environment, real-time communication allows consumers to clarify doubts, interact with the product, and receive personalised information, thereby fostering trust and encouraging purchase intentions (Cai et al., 2018). The immediate feedback and personalised interaction provided by live streaming enhance the consumer's sense of control and participation, positively influencing their purchase intention. Based on the above discussion, the following hypotheses are proposed for testing:

- H1: There is a positive relationship between streamer's credibility and consumers' purchase intention.
- H2: There is a positive relationship between media richness and consumers' purchase intention.
- H3: There is a positive relationship between interactivity and consumers' purchase intention.

These hypotheses aim to explore how the key elements of live streaming (streamer's credibility, media richness, and interactivity) influence consumer purchase intentions, providing valuable insights into the role of live streaming in modern e-commerce.

2.5 Research Framework

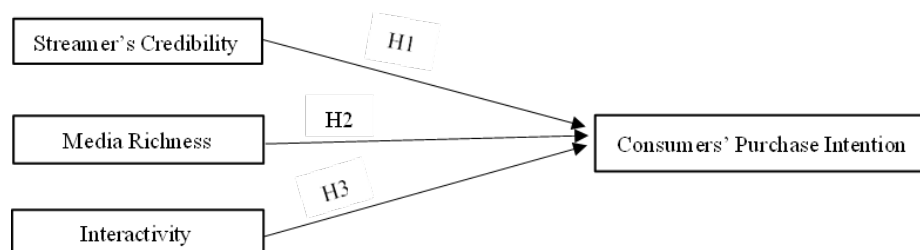


Fig. 1 Research framework

3. Research Methodology

3.1 Research Design

Research design refers to the strategic approach or method researchers use to answer research questions. It is based on a philosophical approach, methodology, and methods (Chun Tie et al., 2019). This study used a descriptive analysis approach to examine data and the characteristics of the population or phenomenon being studied by analysing quantitative data. In descriptive research, a questionnaire is employed to collect actual and precise figures from the participants, offering insights into the population's behaviours and opinions.

3.2 Quantitative Study

In quantitative research, numerical data is collected and analysed to explain, predict, or control variables and phenomena of interest (Gay et al., 2009). This research aims to explore the relationship between live streaming, including streamer's credibility, media richness, interactivity, and consumer purchase intention. Quantitative research is beneficial for gathering large volumes of numerical data across various variables. Given that this study

seeks to understand the relationship between these variables and consumer purchase intention, extensive data collection is required. Therefore, quantitative research was chosen as it allows for the measurement and analysis of the relationships between the identified variables.

3.3 Survey Method

The data collection method used for this study is the survey method, which is widely utilised in research for its cost-effectiveness and efficiency. Surveys allow researchers to gather a large amount of data from a targeted group in a relatively short period. The researcher employed a questionnaire to capture the opinions and perspectives of Perak consumers regarding live-streaming factors influencing their purchase intention. The questions were carefully designed and pre-tested through a pilot phase to ensure their relevance and clarity.

In total, 384 questionnaire sets were distributed to designated respondents through Google Forms and shared via online platforms such as WhatsApp, Facebook, WeChat, and other social media. This online distribution method ensures a broad reach and facilitates the accessible collection of responses, enhancing the efficiency and effectiveness of the data collection process. Online surveys also allow for quick aggregation of numerical data, which can then be analysed statistically to draw meaningful conclusions.

3.4 Respondents

3.4.1 Population

According to Majid (2018), the target population is the group from which a sample will be drawn for the study. The population serves as the foundation for reaching conclusions after data collection. The target population for this research is Perak consumers, specifically individuals residing in Perak, a state located in Malaysia. According to the Department of Statistics Malaysia (2020), the population of Perak is 2,496,041. Perak is one of the four most populous states in Malaysia. The state was selected as the research population due to its geographic relevance and time constraints, making it feasible to focus on consumers in this region.

3.4.2 Sampling

Sampling is the process of selecting individuals or units from a larger population to participate in the study (Martínez-Mesa et al., 2016). Based on the Krejcie and Morgan table, which suggests that a sample of 384 respondents is sufficient for a population of 1,000,000 or more, 384 respondents were selected from the total population of 2,496,041 in Perak. The data collection was conducted via an online survey distributed through Google Forms. Since there is no established sampling frame for the population of Perak consumers, the study employed non-probability sampling. Specifically, convenience sampling was used, as it allows for the selection of easily accessible and willing participants, making it a practical approach for this research.

3.4.3 Instrumentation

For this study, the research instrument used is a questionnaire distributed online to reach many respondents, especially Perak consumers, efficiently. The questionnaire was designed to gather data on various variables related to live streaming and consumers' purchase intentions.

The questionnaire consists of three sections:

- Section A: This section collects demographic information, such as gender, age, race, years of online shopping experience, frequency of watching live streaming shopping (times per week), and monthly disposable income.
- Section B: This section contains 21 questions about the independent variables, which include aspects of live streaming—such as the streamer's credibility, media richness, and interactivity.
- Section C: This section contains 5 questions about the dependent variable, which is consumers' purchase intention.

The questionnaire used a Likert scale in Sections B and C, with responses ranging from "Strongly Disagree" to "Strongly Agree" on a five-point scale. Section A utilised multiple-choice questions to gather demographic information from the respondents. This structure allows for quantitative analysis of the independent and dependent variables and demographic insights into the target population.

3.4.4 Measurement of Variables

The researcher adopted a questionnaire developed by Song and Liu (2021) and Liu et al. (2022) to collect primary data and answer the research questions. The questionnaire employs various measurement scales to capture the respondents' different attributes and behaviours. The scales used include the following. These measurement scales, used across different sections of the questionnaire, allow the researcher to capture a wide range of data,

from simple categorical information to more complex attitudes and perceptions, all of which contribute to answering the research questions effectively.

Nominal Scale

A nominal scale is used for categorising data into distinct groups without any inherent order (Stevens, 1946). This scale is appropriate for identifying demographic characteristics, such as gender, age, and race. In Section A of the questionnaire, respondents were asked to select from predefined categories, which are not ranked or ordered but simply classified for statistical analysis. The nominal scale helps to categorise respondents into groups based on these demographic attributes.

Ordinal Scale

An ordinal scale involves ranking data where the order matters, but the exact differences between ranks are not known or consistent (Sekaran, 2013). This scale is used when respondents' attributes can be arranged in a meaningful order, but the distance between the ranks is not necessarily equal. In Section A, ordinal scales are used to measure variables such as online shopping experience (years), frequency of watching live-stream shopping (times per week), and monthly disposable income (range categories). These scales allow the researcher to rank respondents' experiences and habits in a hierarchical manner, though without specific intervals between them.

Interval Scale

An interval scale is used to measure data where the differences between values are meaningful and consistent, but there is no true zero point (Saunders et al., 2012). A Likert scale, which is often used in social science research, is an example of an interval scale. A five-point Likert scale was applied for the independent and dependent variables in this study (streamer's credibility, media richness, interactivity, and consumers' purchase intention). Respondents were asked to rate their agreement with statements using the scale namely, 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Sections B and C of the questionnaire utilised this scale to measure respondents' attitudes towards live-streaming factors and purchase intention. The Likert scale provides interval data that can be analysed quantitatively, allowing the researcher to evaluate the strength of the relationship between the independent and dependent variables.

3.4.5 Validity and Reliability

The validity of the information collected explains how well the information covers the actual area of investigation (Ghauri & Gronhaug, 2005). Furthermore, the reliability test measures the degree to which it is error-free and ensures a constant measurement over time and with various items in the tool (Sekaran, 2013). This study performs a reliability test using Cronbach's Alpha Coefficient rule of thumb, as shown in Table 1.

Table 1 Internal consistency with Cronbach's alpha range

Cronbach's Alpha	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Source: George & Mallery (2003)

3.4.6 Pilot Test

A pilot test was conducted to assess the reliability and clarity of the survey questionnaire before distributing it to the target population. The pilot test involved distributing 20 sets of questionnaires to a sample of respondents who were similar to the study's target group, but not part of the final sample. This step ensured that the questionnaire was well-understood and effective in capturing the required data.

To evaluate the reliability of the instrument, Cronbach's Alpha was calculated for both the independent and dependent variables, based on the responses from the pilot test. The independent variables in the study included streamer's credibility, media richness, and interactivity, while the dependent variable was consumer purchase intention.

The results of the Cronbach's Alpha reliability test (α) for each variable are summarized in Table 2. For all variables, the Cronbach's Alpha values exceeded 0.700, which indicates high reliability and internal consistency. These results confirm that the instrument is reliable and that the variables are highly correlated.

Table 2 Reliability statistic pilot test

Variables	Cronbach's Alpha (α)	Number of Question
Independent Variables		
Streamer's Credibility (SC)	0.866	12
Media Richness (MR)	0.723	4
Interactivity (I)	0.740	5
Dependent Variable		
Consumers' Purchase Intention (CPI)	0.855	5

3.4.7 Analysis of Data

Descriptive Analysis

Descriptive analysis is a method of analysing data by quantitatively describing, transforming, and summarising raw data (LoBiondo-Wood & Haber, 2014). There are several types of descriptive statistics, including measures of central tendency such as mean, median, mode, and range, as well as measures of variability such as standard deviation and coefficient of variation. Tables have been used to present the descriptive analysis, which is more visually appealing and clearly illustrates the proportions. This study uses descriptive analysis of demographic data. According to Wiersma (2000), the mean value falls within the range of 1.00 to 2.33 is considered low, while a mean value between 2.34 and 3.67 is categorised as moderate. A mean value ranging from 3.68 to 5.00 is classified as high.

Correlation Analysis

Correlation analysis investigated the relationship between independent variables (live streaming, such as streamer's credibility, media richness, and interactivity) and dependent variables (consumers' purchase intention). Thus, researchers can examine whether the relationship between a dependent variable and the independent variable has a positive relationship, a negative relationship, or no correlation. Table 3 shows the correlation coefficient.

Table 3 Correlation coefficient

Correlation Coefficient	Strength Description
± 0.81 to ± 1.00	Strongest
± 0.61 to ± 0.80	Strong
± 0.41 to ± 0.60	Moderate
± 0.21 to ± 0.40	Weak
± 0.00 to ± 0.20	Weak to No Relationship

Source: Hair et al. (2010b)

4. Results

4.1 Data Collection Process and Survey Response

According to the Department of Statistics Malaysia (2020), Perak has a population of 2,496,041. The sample size was drawn from Krejcie and Morgan's (1970) table for sample size determination; 384 respondents from Perak consumers were selected to serve as the study sample. The researchers collected data during the data collection period, mainly through Facebook, WhatsApp, WeChat, and other social applications. The data collection period took about three months between August to October 2023. After three months of the data collection process, a total of 286 questionnaires were duly completed and returned, representing a 74.5% response rate.

4.2 Nonresponse Bias

A test procedure based on that proposed by Armstrong and Overton (1977) was used to determine whether early and late respondents had similar characteristics. Firstly, the 286 respondents were divided equally between early

and late responders based on timestamps. Secondly, a paired-sample t-test was performed to determine if there were significant differences between the two groups. As shown in Table 4, the results reveal no significant difference between early and late respondents. The results indicate that there are small statistical differences between the items. They need to be more significant to impact the overall results. Therefore, the differences are not too large, and there is no nonresponse bias. Statistical analysis indicates that no significant nonresponse bias exists in the data.

Table 4 Paired sample T-test comparison between early respondents and late respondents

Variable	Response	N	Mean	Std. Deviation	t-value	Sig.
Streamer's Credibility (SC)	Early	143	4.131	0.541	2.036	0.044
	Late	143	3.997	0.531		
Media Richness (MR)	Early	143	3.928	0.624	0.169	0.866
	Late	143	3.916	0.656		
Interactivity (I)	Early	143	4.035	0.641	-1.198	0.233
	Late	143	4.127	0.643		
Consumers' Purchase Intention (CPI)	Early	143	3.954	0.757	0.261	0.794
	Late	143	3.930	0.737		

4.3 Data Cleaning

4.3.1 Detection of Missing Data

Take advantage of the Google Forms online survey, which allows Google Forms to set questions that must be answered. Therefore, no missing responses were found in the returned questionnaires. However, the data also needs to be analysed to ensure no careless mistakes are made during the data entry process. The researcher analysed the questionnaire overall using the frequency command in SPSS version 27. According to the statistical table, there were no missing values. Therefore, all 286 respondents were included in the subsequent data analysis.

4.3.2 Outliers Analysis

In this study, the researchers used the approach to transform the value to the other non-outliers. Following this criterion for detecting outliers, 6 values were identified using standardised values as potential univariate outliers; these were transformed into the value of the other non-outliers. Thus, all 286 respondents were included in the final analysis.

4.4 Reliability Analysis

Table 5 shows the reliability analysis for the actual study. The streamer's credibility and interactivity have good reliability, while the media richness has acceptable reliability in this study. Consumers' purchase intention shows excellent reliability. The results indicate that the questionnaire is a reliable research instrument with a reliability level greater than 0.700.

Table 5 Reliability analysis actual study

Variables	Cronbach's Alpha (α)	No. of Question	Interpretation
Independent Variables			
Streamer's Credibility (SC)	0.873	12	Good
Media Richness (MR)	0.783	4	Acceptable
Interactivity (I)	0.844	5	Good
Dependent Variable			
Consumers' Purchase Intention (CPI)	0.914	5	Excellent

4.5 Descriptive Analysis for Demographic

The purpose of descriptive analysis is to summarise or describe data obtained from the surveys in ways that are useful and identify the demographic characteristics of the respondents of this study, such as gender, age, race, online shopping experience (years), frequency of watching live-streaming shopping (times/week), and monthly disposable income. Table 6 shows the respondents' demographic information.

Table 6 Respondents demographic information

Item	Frequency	Percent (%)
Gender		
Male	101	35.3
Female	185	64.7
Age		
18-24	129	45.1
25-30	87	30.4
31-36	40	14.0
37-45	18	6.3
46-50	6	2.1
51 or above	6	2.1
Race		
Malay	62	21.7
Chinese	213	74.5
Indian	11	3.8
Online shopping experience (years)		
1 or less	29	10.1
2-3	111	38.8
4-5	96	33.6
6-7	23	8.0
8 or above	27	9.4
Frequency of watching live-streaming shopping (times/week)		
1-2	167	58.4
3-4	70	24.5
5-6	25	8.7
6 or above	24	8.4
Monthly disposable income		
Below 2000	153	53.5
2000-3000	114	39.9
3001-4000	11	3.8
4000 above	8	2.8
Total	286	100

4.6 Descriptive Analysis for Independent Variables and Dependent Variables

All the variables, such as the streamer's credibility, media richness, interactivity, and consumers' purchase intention, reflect a high level, as shown in Table 7.

Table 7 Descriptive analysis data

	N	Mean	Standard Deviation	Level
Independent Variable				
Streamer's Credibility (SC)	286	4.067	0.522	High
Media Richness (MR)	286	3.923	0.636	High
Interactivity (I)	286	4.082	0.640	High
Dependent Variable				
Consumers' Purchase Intention (CPI)	286	3.946	0.734	High

4.7 Normality Test

Table 8 below shows the Kolmogorov-Smirnov and Shapiro-Wilk test that the significant value for each dimension, which is the streamer's credibility, media richness, interactivity, and consumers' purchase intention is 0.000, which explains that all the data are non-normal-(-p-value < 0.01).

Table 8 Kolmogorov-Smirnov and Shapiro-Wilk tests

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Streamer's Credibility (SC)	0.100	286	0.000	0.964	286	0.000
Media Richness (MR)	0.136	286	0.000	0.958	286	0.000
Interactivity (I)	0.117	286	0.000	0.955	286	0.000
Consumers' Purchase Intention (CPI)	0.131	286	0.000	0.953	286	0.000

4.8 Correlation Analysis

This study used Spearman's rho because the data were non-normal. The correlation between the streamer's credibility and consumers' purchase intention is 0.630, and the p-value < 0.01. Thus, a strong and positive correlation exists between the streamer's credibility and consumers' purchase intention. The correlation between media richness and consumers' purchase intention is 0.603, and the p-value is < 0.01. So, a strong and positive correlation exists between media richness and consumers' purchase intention. The correlation between interactivity and consumers' purchase intention is 0.721, and the p-value is < 0.01. Hence, there is a strong and positive correlation between interactivity and consumers' purchase intention. Table 9 shows the level of correlation coefficient in detail.

Table 9 Level of correlation coefficient

Item	Correlation Coefficient	Sig. (2-tailed)	Level
Correlation between streamer's credibility and consumers' purchase intention	0.630**	0.000	Strong
Correlation between media richness and consumers' purchase intention	0.603**	0.000	Strong
Correlation between interactivity and consumers' purchase intention	0.721**	0.000	Strong

4.9 Summary of the Hypothesis Testing

The outcome indicates that the correlation coefficient of the streamer's credibility is 0.630 (p-value < 0.01), media richness is 0.603 (p-value < 0.01), and interactivity is 0.721 (p-value < 0.01). As a result, the study accepted or supported the H1, H2, and H3 hypothesis. Detailed results of the summary hypothesis testing are shown in Table 10.

Table 10 Summary of the hypothesis testing

Hypothesis	Spearman's Correlation	P-value (sig.)	Prediction
H1: There is a positive relationship between streamer's credibility and consumers' purchase intention.	0.63	0.000	Supported
H2: There is a positive relationship between media richness and consumers' purchase intention.	0.603	0.000	Supported
H3: There is a positive relationship between interactivity and consumers' purchase intention.	0.721	0.000	Supported

5. Discussions and Conclusion

5.1 Demographics of Respondents

All respondents of the 286 questionnaires collected were from Perak. In the study completed by the researchers, the respondents' information can be summarised in terms of gender, age, race, online shopping experience (years), frequency of watching live-streaming shopping (times/week), and monthly disposable income. Overall, the respondents were between 18 and 24 years old, with more females than males. In addition, Chinese respondents had the highest percentage of respondents in this study. Most Perak consumers have 2-3 years of online shopping experience and watch live shopping 1-2 times per week. Most respondents had a disposable income of below RM 2000 per month.

5.2 First Objective: To Determine the Level of Live Streaming in Perak

This study's descriptive analysis reveals that Perak consumers highly value live streaming, particularly for its interactivity, credibility, and media richness. Interactivity scored the highest, as respondents appreciated features like quick responses, real-time interaction, and streamer advice, aligning with prior studies showing that live streaming offers effective, immediate engagement. Streamer credibility was also rated positively, with respondents recognising the expertise and reliability of streamers as critical for trust, consistent with research indicating that trustworthy sources attract more viewers. While scoring slightly lower, media richness was still seen as important; respondents valued the diverse, personalised communication that live streaming provides. These elements contribute significantly to consumers' positive engagement and purchase intention in e-commerce contexts.

5.3 Second Objective: To Determine the Level of Consumers' Purchase Intention in Perak

Descriptive analysis results indicate that consumers in Perak show a high level of purchase intention when engaging with live-streaming content. The dependent variable, consumers' purchase intention, yielded a mean of 3.9455 (SD = 0.73382), highlighting strong agreement among respondents on purchasing products recommended during live streaming. Most respondents expressed satisfaction with live-stream shopping, showing a preference for this format. This aligns with findings by Mathwick and Rigdon (2004), who noted that live shopping fulfils consumers' need for new product information, creating excitement and satisfaction. Additionally, vivid product presentations in live streaming enhance trust, further boosting purchase intentions (Hajli, 2015). Thus, live streaming appears to foster a high level of consumer purchase intention in Perak.

5.4 Third Objective: To Investigate the Relationship Between Live Streaming and Consumers' Purchase Intention in Perak

The correlation analysis in this study reveals solid and positive relationships between various aspects of live streaming and consumers' purchase intentions in Perak. H1 examined the connection between streamer credibility and purchase intention, finding a strong, positive correlation ($r = 0.630, p < 0.01$). This suggests that consumers view credible streamers—trustworthiness, attractiveness, and expertise—as reliable sources, positively impacting their purchase decisions. Previous research aligns partially, showing trustworthiness and attractiveness influence purchasing behaviour (Xu et al., 2020; Park & Lin, 2020), while others highlight mixed findings on the role of credibility (AlFarraj et al., 2021).

H2 analysed media richness, showing a significant positive correlation with purchase intention ($r = 0.603, p < 0.01$). Respondents valued live streaming platforms with high media richness, facilitating information sharing and immersive experiences and motivating purchase decisions. This supports findings from Brunelle (2009) and

Asyraf Hasim et al. (2020), though some studies found no significant effect (Song & Liu, 2021). Enhanced media richness, such as exclusive offers, can increase viewer engagement and drive purchases.

H3 explored the relationship between interactivity and purchase intention, revealing the strongest positive correlation ($r = 0.721$, $p < 0.01$). High interactivity, through real-time engagement and communication, enhances trust and allows consumers to make informed decisions. This result is consistent with studies by Suntornpithug and Khamalah (2010) and Liao et al. (2019), who noted that interaction positively affects purchase intent. However, contrary findings (Oktapiani & Febrianta, 2023) suggest that excessive interactivity might reduce purchase intention, underscoring the need to balance engagement to foster social presence and decision-making. These results highlight the importance of strategically leveraging streamer credibility, media richness, and interactivity to enhance consumer purchase intentions in live-streaming contexts.

5.5 Implications

5.5.1 Theoretical Implications

This study offers valuable theoretical insights by highlighting how Perak consumers' purchase intentions are significantly influenced by key factors in live streaming: streamer credibility, media richness, and interactivity. Utilising the Theory of Planned Behaviour (TPB) as its framework, this study extends traditional TPB applications by analysing these specific factors as variables that shape consumers' purchase intentions. According to TPB, behavioural attitudes, subjective norms, and perceived behavioural control collectively influence behavioural intentions. This study enriches the TPB model by examining how these three dimensions—credibility, richness, and interactivity—intersect with behavioural intention, providing a new reference point for future research in the field. The findings advance the understanding of TPB in a digital marketing context, offering insights into consumer decision-making processes. Furthermore, this study delivers a foundational model for researchers aiming to explore the impact of live streaming on consumer behaviour and purchase intentions, supporting the use of these TPB elements as key variables in future studies.

5.5.2 Practical Implications

Live streaming has become a powerful, widely adopted tool for businesses aiming to engage consumers in real-time. Beyond theoretical contributions, this study offers actionable insights for marketers and e-commerce practitioners aiming to enhance purchase intentions through live streaming. The findings emphasise the crucial role of streamer credibility, media richness, and interactivity in fostering consumer engagement and motivating purchasing decisions. Specifically, businesses are encouraged to leverage credible, knowledgeable, and attractive streamers to strengthen viewer trust and inspire purchase intentions. Moreover, the study underscores the value of high media richness—such as clear visuals, emotional cues, and informative content—to make interactions engaging and informative. By integrating these insights, e-commerce platforms considering live-stream marketing can strategically enhance their reach, creating immersive, interactive experiences that resonate with consumers. Ultimately, this study underscores how streamer credibility, media richness, and interactivity are essential elements in driving consumer intentions, offering a framework that businesses can apply to create compelling live-streaming content and improve marketing effectiveness.

5.6 Limitations

While this study provides valuable insights, several limitations should be acknowledged. First, time constraints limited the depth of data collection, as the researcher had only approximately three months to gather responses, resulting in challenges with reaching the target of 384 responses. Additionally, administering questionnaires online made it difficult to follow up with respondents, potentially impacting the accuracy and completeness of responses.

Second, the sample size presents another limitation. Of the 384 distributed questionnaires, only 286 were returned, which may not adequately represent the broader population of Perak. The demographic profile indicates a higher percentage of Chinese respondents and a significant portion of participants aged 18-24, suggesting that the data may broadly reflect the views of younger groups and might not capture the perspectives of older age groups or other ethnic communities in Perak. Consequently, demographic variability in attitudes toward live streaming may not be fully accounted for.

Finally, the study's reliance on quantitative methods restricted respondents to pre-set answer options, potentially missing more nuanced insights that qualitative data could provide. Future studies could achieve a more holistic understanding by combining quantitative and qualitative approaches, allowing participants to share broader perspectives on live streaming.

5.7 Directions for Future Research

Based on this study's findings, several recommendations are suggested for future research. First, future studies should prioritise obtaining a larger, more representative sample to enhance the reliability of the findings. Improved communication methods, such as personalised emails or face-to-face interactions, could facilitate broader outreach and improve response rates. Allocating more time for data collection would also support a more thorough and comprehensive sample.

Given Malaysia's diverse population, future research should aim for a balanced demographic representation to address the current study's over-representation of Chinese respondents and younger participants (aged 18-24). Ensuring a more inclusive approach across age and ethnic groups will provide a more holistic understanding of live streaming's impact on consumer behaviour.

Additionally, future research should consider adopting diverse data collection methods. Relying solely on questionnaires may limit the depth of insights; thus, incorporating semi-structured interviews alongside surveys could capture richer, nuanced data. A mixed-method approach would allow researchers to gather quantitative data for general trends and qualitative insights for a deeper understanding.

Lastly, researchers are encouraged to explore additional independent variables relevant to live streaming and consumer purchase intentions. Carefully selected variables could deepen insights into the factors influencing consumer behaviour in live-stream contexts, contributing to a more comprehensive model of consumer purchase intentions in Malaysia.

6. Conclusions

In conclusion, this study examined the relationship between live streaming and consumers' purchase intentions in Perak, focusing on three main factors: streamer's credibility, media richness, and interactivity. The study's objectives were to assess the levels of live-streaming engagement, consumers' purchase intentions, and the relationships between these factors. Results revealed a positive and significant relationship between each factor—streamer credibility, media richness, and interactivity—and consumers' purchase intentions in Perak. With all objectives met, this study enhances the understanding of live streaming's impact on consumer behaviour and offers valuable insights for future research. Additionally, the findings provide practical guidance for marketers and businesses to leverage live streaming to effectively enhance purchase intentions.

Acknowledgement

Authors would like to express sincere gratitude to Universiti Tun Hussein Onn Malaysia for providing the necessary support and resources for this research.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the paper's publication.

Author Contribution

*The authors confirm their contribution to the paper as follows: **study conception and design:** Ong Yen Yen, Juzaimi Nasuredin; **data collection:** Ong Yen Yen; **analysis and interpretation of results:** Ong Yen Yen, Juzaimi Nasuredin, Rabiatul Adawiyah Ma'rof; **draft manuscript preparation:** Rabiatul Adawiyah Ma'rof. All authors reviewed the results and approved the final version of the manuscript.*

References

- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl, & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 11–39). New York: Springer.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organisational Behavior And Human Decision Processes*, 50, 179-211. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.317.9673&rep=rep1&type=pdf>
- AlFarraj, O., Alalwan, A.A., Obeidat, Z.M., Baabdullah, A., Aldmour, R. and Al-Haddad, S. (2021). Examining the impact of influencers' credibility dimensions: attractiveness, trustworthiness and expertise on the purchase intention in the aesthetic dermatology industry. *Review of International Business and Strategy*, 31(3), 355-374. <https://doi.org/10.1108/RIBS-07-2020-0089>
- Aljanabi A. R. A. (2021). The impact of economic policy uncertainty, news framing and information overload on panic buying behavior in the time of COVID-19: a conceptual exploration. *Int. J. Emerg. Mark.* [Epub Online ahead of print] 10.1108/IJOEM-10-2020-1181

- Aman, A.S. (2022, September 6). Firmer online spending by consumers to fuel Malaysian e-commerce prospects. *New Straits Times*. Retrieved April 5, 2023, from <https://www.nst.com.my/business/2022/09/828978/firmer-online-spending-consumers-fuel-malaysian-e-commerce-prospect>
- Apasrawirote, D., & Yawised, K. (2022). Factors Influencing the Behavioral and Purchase Intention on Live-streaming Shopping. *Asian Journal of Business Research*, 12(1), 39–56. <https://doi.org/10.14707/ajbr.220119>
- Armstrong, J. S., and Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *J. Mark.Res.* 14, 396–402. doi: 10.1177/0022243777014 00320
- Arora, T., & Agarwal, B. (2019). Empirical study on perceived value and attitude of millennials towards social Media advertising: A structural equation modelling approach. *Vision*, 23(1), 56–69. <https://doi.org/10.1177/0972262918821248>
- Asyraf Hasim, M., Binti Wahid, R., Farid Shamsudin, M., Shahrin, M., & Ab Wahid, R. (2020). A review on media richness affecting purchase intention on Instagram: the mediating role of brand loyalty. *International Journal of Psychosocial Rehabilitation*, 24. <https://doi.org/10.37200/IJPR/V24I7/PR270386>
- Brunell, E., (2009) Introducing Media Richness into Integrated Model of Consumers' Intentions to Use Online Stores in Their Purchase Process, *Journal of Internet Commerce*, 8, pp 222-245
- Brunelle, E. (2010). Media Richness Theory and the Intention to Use Online Stores. *International Journal of Customer Relationship Marketing and Management*, 1(3), 27–42. <https://doi.org/10.4018/jcrrmm.2010070103>
- Cahyanaputra, M., Jimmy, Y., & Annas, M. (2022, April 27). Factors Affecting Purchase Intention and Purchase Behaviour Electronic Products (Home Appliance) in Online Transaction. <https://doi.org/10.4108/eai.7-10-2021.2316222>
- Cai, J., Wohn, D. Y., Mittal, A., Sureshababu, D.: Utilitarian and hedonic motivations for live streaming shopping. In: 2018 ACM International Conference on Interactive Experiences for TV and Online Video, pp. 81-88. Association for Computing Machinery, Seoul (2018)
- Cai, Y., Zhang, S., & Zhao, Y. (2021). The Study of Marketing Strategy of Live Streaming Studios In the Case of Li Jiaqi's Studio.
- Çelik, S., & Köse, G. G. (2021). Mediating effect of intolerance of uncertainty in the relationship between coping styles with stress during the pandemic (COVID-19) process and compulsive buying behavior. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 110. <https://doi.org/10.1016/j.pnpbp.2021.110321>
- Chun Tie, Y., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE Open Medicine*, 7. <https://doi.org/10.1177/2050312118822927>
- Dai, Q., & Cui, X. (2022). The influence and moderating effect of trust in streamers in a live streaming shopping environment. *Journal of University of Science and Technology of China*, 52(2). <https://doi.org/10.52396/JUSTC-2021-0219>
- Department of Statistics Malaysia (2020). *Kawasanku: Perak*. OpenDosm <https://open.dosm.gov.my/kawasanku/perak>
- Dong, X., Liu, X., & Xiao, X. (2023). Understanding the influencing mechanism of users' participation in live streaming shopping: A socio-technical perspective. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1082981>
- Fang, Y.H. (2012) 'Does online interactivity matter? Exploring the role of interactivity strategies in consumer decision making, *Computers in Human Behavior*, Vol. 28, No. 5, pp.1790–1804.
- Gaber, H. R., Wright, L. T., & Kooli, K. (2019). Consumer attitudes towards Instagram advertisements in Egypt: The role of the perceived advertising value and personalisation. *Cogent Business & Management*, 6(1), 1618431. <https://doi.org/10.1080/23311975.2019.1618431>
- Gay, L.R., Mills, G.E., & Airasian, P. (2009). *Educational Research: Competencies for analysis and application*. New Jersey: Pearson Education.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference*, 4th ed Boston: Allyn & Bacon.
- Ghuri, P. & Gronhaug, K. 2005. *Research Methods in Business Studies*, Harlow, FT/Prentice Hall. Haimson, O. L., & Tang, J. C. (2017, May). What makes live events engaging on Facebook Live, Periscope, and Snapchat (Chairs) In G. Mark, & S. Fussell (Eds.). *Proceedings of the 2017 CHI conference on human factors in computing systems* (pp. 48-60). New York, NY: Association for Computing Machinery.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, P. E. (2010b). *Multivariate data analysis* (7th ed.). Upper Saddle River, New Jersey: Prentice Hall, Inc.
- Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management*, 35(2), 183-191.

- Hajli, N. (2018). Ethical Environment in the Online Communities by Information Credibility: A Social Media Perspective. *Journal of Business Ethics*, 149(4), 799–810. <https://doi.org/10.1007/s10551-016-3036-7>
- Hasim, M. A., Shahrin, M., & Wahid, R. A. (2020). Influences of Media Richness on Instagram towards Consumer Purchase Intention: The Mediating Effect of Brand Equity. In *International Journal of Innovation, Creativity and Change*. www.ijicc.net (Vol. 10, Issue 11). www.ijicc.net
- Hilvert-Bruce, Z., Neill, J. T., Sjöblom, M., & Hamari, J. (2018). Social motivations of live-streaming viewer engagement on Twitch. *Computers in Human Behavior*, 84, 58-67.
- Hou, F., Guan, Z., Li, B. C., & Yee Loong, A. (2019). Factors Influencing People's Continuous Watching Intention and Consumption Intention in Live Streaming: Evidence from China. <https://www.nottingham.edu.cn/en/library/documents/research->
- Kamalul Ariffin, S., Mohan, T., & Goh, Y. N. (2018). Influence of consumers' perceived risk on consumers' online purchase intention. *Journal of Research in Interactive Marketing*, 12(3), 309–327. <https://doi.org/10.1108/JRIM-11-2017-0100>
- Kang, K., Lu, J., Guo, L., and Li, W. (2021). The dynamic effect of interactivity on customer engagement behavior through tie strength: evidence from live streaming commerce platforms. *Int. J. Inf. Manag.* 56:102251. doi: 10.1016/J.IJINFOMGT.2020.102251
- Keller, K. L. (1998). *Strategic brand management: Building, measuring, and managing brand equity*. Englewood Cliffs, NJ: Prentice-Hall
- Khan, A., & Lodhi, S. (2016). Influence of celebrity endorsement on consumer purchase decision: A case of Karachi. *Imperial Journal of Interdisciplinary Research*, 2(1), 102-111.
- Korgaonkar, P., Silverblatt, R., & Girard, T. (2006). Online retailing, product classifications, and consumer preferences. *Internet Research*, 16(3), 267–288. doi:10.1108/10662240610673691
- Krejcie, R. V. & Morgan, D. (1970). Small-Sample Techniques. *The NEA Research Bulletin*, 39, 99.
- Lee, Z.W.Y., Chan, T.K.H., Balaji, M.S. and Chong, A.Y.L. (2018), "Why people participate in the sharing economy: an empirical investigation of Uber", *Internet Research*, Vol. 28 No. 3, pp. 829-850.
- Li, B., Hou, F., Guan, Z., & Chong, Y. L. (2018). What drives people to purchase virtual gifts in live streaming? The mediating role of flow, 22nd Pacific Asia Conference on Information Systems.
- Li, Q., Chan, Y. M., Kong, Y., Ong, J. X., Toh, Y., Hui, H., Lee, M., Loh, G., & Tan, W.-H. (2021). EasyChair Preprint Driving Factors Towards Live-Stream Shopping in Malaysia.
- Liao, S. H., Hu, D. C., & Chou, H. L. (2022). Consumer perceived service quality and purchase intention: two moderated mediation models investigation. *SAGE Open*, 12(4). <https://doi.org/10.1177/21582440221139469>
- Liao, Shu Hsien; Chung, Yu Chun; Chang, Wen Jung (2019). Interactivity, engagement, trust, purchase intention and word-of-mouth: a moderated mediation study. *International Journal of Services Technology and Management*, 25(2), 116-. doi:10.1504/IJSTM.2019.098203.
- Lidija, L.; Christian, W. Consumers' reasons and perceived value co-creation of using artificial intelligence-enabled travel service agents. *J. Bus. Res.* 2020, 129, 891–901.
- Liu, F., Cheng, X., Fu, S., Qi, Y., Zhao, H., Wang, Y., & Dong, X. (2022). Marketing by live streaming: How to interact with consumers to increase their purchase intentions.
- Liu, L. (2022). Factors Affecting Consumers' Purchasing Behaviours in Live Streaming E-Commerce: A Review. In *Proceedings of the 2022 2nd International Conference on Economic Development and Business Culture (ICEDBC 2022)* (pp. 508–515). Atlantis Press International BV. https://doi.org/10.2991/978-94-6463-036-7_75
- Liu, X., Zhang, L., & Chen, Q. (2022). The effects of tourism e-commerce live streaming features on consumer purchase intention: The mediating roles of flow experience and trust. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.995129>
- LoBiondo-Wood, G., & Haber, J. (2014). *Nursing research: methods and critical appraisal for evidence-based practice*. 8th edition. St. Louis, Missouri, Elsevier.
- Ma, L., Gao, S., and Zhang, X. (2022). How to use live streaming to improve consumer purchase intentions: evidence from China. *Sustainability*. 14:1045. doi: 10.3390/su14021045
- Majid, U. (2018). Research Fundamentals: Study Design, Population, and Sample Size. *Undergraduate Research in Natural And Clinical Science And Technology (Urnst) Journal*, 2(1), 1-7. doi:10.26685/urnst.16
- Marlien, R. A., Putri, C., Basiya, R., & Suteja, B. (2021). Analysis of Factors Affecting Consumer's Purchase Intention Impact on Customer Behavior Outcomes.
- Martínez-Mesa, J., González-Chica, D. A., Duquia, R. P., Bonamigo, R. R., & Bastos, J. L. (2016). Sampling: How to select participants in my research study? *Anais Brasileiros de Dermatologia*, 91(3), 326–330. <https://doi.org/10.1590/abd1806-4841.20165254>

- Mathwick, C.; Rigdon, E. Play, flow, and the online search experience. *J. Consum. Res.* 2004, 31, 324–332. May, E., & May, R. more by E. (2022, April 29). Streamlabs and Stream Hatchet Q1 2022 live streaming industry report. Streamlabs. Retrieved April 15, 2023, from <https://streamlabs.com/content-hub/post/streamlabs-and-stream-hatchet-q1-2022-live-streaming-industry-report>
- Mentek, D. S. M., (2021). Malaysia has 28 million social media users as of January 2021, says Comms Ministry Sec-Gen. *The Star*. Retrieved April 5, 2023, from <https://www.thestar.com.my/news/nation/2021/09/22/malaysia-has-28-million-social-media-users-as-of-January-2021-says-comms-ministry-sec-gen>
- Muda, M. & Hamzah, M. I. (2021). Should I suggest this YouTube clip? The impact of UGC source credibility on eWOM and purchase intention. *Journal of Research in Interactive Marketing*, 15(3), 441-459. DOI: 10.1108/JRIM-04-2020-0072.
- Ohanian, R. (1990). Construction and Validation of a Scale to Measure Celebrity Endorsers' Perceived Expertise, Trustworthiness, and Attractiveness. *Journal of Advertising*, 19, 39-52. <https://doi.org/10.1080/00913367.1990.10673191>
- Oktapiani, T. & Febrianta, M. . Y. (2023). The influence of live streaming features on purchase intention from the consumer functional experience and emotional contagion perspective. *Jurnal Ekonomi*, 12(04), 659–667. Retrieved from <https://ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/2855>.
- Park, Hyun Jung; Lin, Li Min (2020). The effects of match-ups on the consumer attitudes toward internet celebrities and their live streaming contents in the context of product endorsement. *Journal of Retailing and Consumer Services*, 52, 101934. doi:10.1016/j.jretconser.2019.101934
- Pop, R. A., Hlédik, E., & Dabija, D. C. (2023). Predicting consumers' purchase intention through fast fashion mobile apps: The mediating role of attitude and the moderating role of COVID-19. *Technological Forecasting and Social Change*, 186. <https://doi.org/10.1016/j.techfore.2022.122111>
- Rajesh, S., Raj, G., Dhuvandranand, S., & Kiran, D. (2019). Factors influencing customers' Attitude towards SMS advertisement: Evidence from Mauritius. *Studies in Business and Economics*, 14(2), 141–159. <https://doi.org/10.2478/sbe-2019-0031>
- Rezek, A. (2022). Advertising and Promotion Management Commons Recommended Citation Recommended Citation Rezek, Alyssa. https://egrove.olemiss.edu/hon_thesis/2645
- Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research methods for business students* (6. utg.). Harlow: Pearson.
- Sekaran, U. (2013). *Research Methods for Business: A Skill-Building Approach Fourth Edition*. United States: John Wiley & Sons, Inc.
- Sharkey, C. (2023). Understanding the Persuasive Attributes of Twitch Advertisements: A Study on the Effects of Current Advertisements and Sponsorships. <https://dc.etsu.edu/etd/4188>
- Sheth, J. (2020). Impact of Covid-19 on consumer behavior: Will the old habits return or die? *Journal of Business Research*, 117, 280–283. <https://doi.org/10.1016/j.jbusres.2020.05.059>
- Song, C. & Liu, Y.-L. (2021). Standard-Nutzungsbedingungen. <http://hdl.handle.net/10419/238054> Stevens, S. S. (1946). On the theory of scales of measurement. *Science*, 103, 677–680.
- Stuart J., Barnes M. D., Michela A. (2021). Understanding panic buying during COVID-19: a text analytics approach. *Expert Syst. Appl.* 169:114360. [10.1016/j.eswa.2020.114360](https://doi.org/10.1016/j.eswa.2020.114360)
- Sun, Y., Shao, X., Li, X., Guo, Y., & Nie, K. (2019). How live streaming influences purchase intentions in social commerce: An IT affordance perspective. *Electronic Commerce Research and Applications*, 37. <https://doi.org/10.1016/j.elerap.2019.100886>
- Suntornpithug, N., Khamalah, J.: Machine and person interactivity: the driving forces behind influences on consumers' willingness to purchase online. *J. Electron. Commer. Res.* 11(4), 299– 325 (2010)
- Teo, T. S. H. (2006). To buy or not to buy online: Adopters and non-adopters of online shopping in Singapore. *Behaviour & Information Technology*, 25(6), 497–509. doi:10.1080/01449290500256155
- Tseng, C. H., & Wei, L. F. (2020). The efficiency of mobile media richness across different stages of online consumer behavior. *International Journal of Information Management*, 50, 353–364. <https://doi.org/10.1016/j.ijinfomgt.2019.08.010>
- Valaskova, K., Durana, P., & Adamko, P. (2021). Changes in consumers' purchase patterns as a consequence of the COVID-19 pandemic. *Mathematics*, 9(15). <https://doi.org/10.3390/math9151788>
- Wang, Z. (2022). Media Richness and Continuance Intention to Online Learning Platforms: The Mediating Role of Social Presence and the Moderating Role of Need for Cognition. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.950501>
- Wiersma, W. (2000). *Research Methods in Education: An Introduction*. 7th Edition, Ally & Bacon, Boston, MA.
- Wongkitrungrueng, A., & Assarut, N. (2020). The role of live streaming in building consumer trust and engagement with social commerce sellers. *Journal of Business Research*, 117, 543–556. <https://doi.org/10.1016/j.jbusres.2018.08.032>

- Xu, X., Wu, J. H., & Li, Q. (2020). What drives consumer shopping behavior in live streaming commerce? *Journal of Electronic Commerce Research*, 21(3), 144-167.
- Yang, J., Zeng, Y., Liu, X., & Li, Z. (2022). Nudging interactive cocreation behaviors in live-streaming travel commerce: The visualisation of real-time danmaku. *Journal of Hospitality and Tourism Management*, 52, 184–197. <https://doi.org/10.1016/j.jhtm.2022.06.015>
- Yu, E., Jung, C., Kim, H., & Jung, J. (2018). Impact of viewer engagement on gift-giving in live video streaming. *Telematics and Informatics*, 35(5), 1450–1460. <https://doi.org/10.1016/j.tele.2018.03.014>
- Zhang, R., & Chen, M. (2023). Predicting Online Shopping Intention: The Theory of Planned Behavior and Live E-Commerce. *SHS Web of Conferences*, 155, 02008. <https://doi.org/10.1051/shsconf/202315502008>