

Factors affecting purchase intention and consumer behavior of gym equipment through live streaming



Wong Chee Hoo^{1,*}, Sanmugam Annamalah², Pradeep Paraman², Ng Chee Pung¹

¹Faculty of Business and Communications, INTI International University, Nilai, Malaysia

²Research and Innovation Management Centre (RIMC), SEGi University, Petaling Jaya 47810, Malaysia

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ABSTRACT

This study looks into why more people are choosing to shop through live streams rather than in traditional, physical stores. Despite the growing trend, there's not much information on why this shopping method is preferred. The goal of this research is to explore the reasons behind consumers' preference for live stream shopping and how it affects their intention to make future purchases. This study uses several theories to understand this behavior: the use and gratification theory, which suggests people enjoy the entertainment and information provided by live streams; the source credibility theory, focusing on the presenter's attractiveness and trustworthiness; and the theory of planned behavior, which helps explain how people decide to buy something. The research focuses on online users earning more than RM1,000 who have bought fitness equipment during a live stream. A survey was shared through social media, gathering 393 responses. The analysis was done using linear regression. The results aim to help sellers understand what motivates buyers to complete a purchase, offering insights to develop better sales strategies. The findings also suggest how fitness equipment companies can use these theories to improve their online sales model.

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1. Introduction

Live streaming shopping is an innovative approach that merges the strengths of traditional retail stores with online e-commerce platforms (Merritt and Zhao, 2022). This model allows traditional retailers to concentrate on delivering high-quality customer service, while e-commerce platforms can reach an unlimited number of customers worldwide simultaneously. The rise in popularity of live streaming shopping is due not only to its availability on various platforms like Facebook, Alibaba, and TikTok but also to the involvement of influential figures and celebrities who use these platforms to showcase and recommend products to potential buyers (Chen et al., 2023). The growth of live streaming shopping in Malaysia has been rapid, attributed to widespread mobile phone and internet usage, positioning Malaysia as a leading e-commerce market in Southeast Asia (Chan et al., 2022). Data

from June 2019 show that Malaysia had approximately 25 million social media users, 40.24 million mobile subscriptions, and 24 million mobile connections. By 2020, the number of social media users in Malaysia increased to 26 million, and mobile connections rose to 40.70 million. This increase in e-commerce and social media usage suggests a corresponding rise in live streaming shopping activities, highlighting its growing significance in the Malaysian market (Trade.gov).

The obesity rate in Malaysia is alarmingly high, with nearly half of the adult population struggling with obesity. The World Health Organization (WHO) reported in 2020 that obesity has become a global epidemic, causing at least 2.8 million deaths annually. Specifically, in 2019, Malaysia recorded an obesity rate of 15.6%, the highest in Asia. The National Health and Morbidity Survey (NHMS) of the same year found that 50.1% of Malaysian adults were either overweight or obese, with 30.4% overweight and 19.7% obese. This significant health concern is further aggravated by lifestyle changes due to the pandemic, which restricts physical activities.

Acknowledging the health implications for Malaysian citizens, this study aims to explore the role of live streaming in promoting a healthier lifestyle through the sale of workout equipment

* Corresponding Author.

Email Address: cheehoo.wong@newinti.edu.my (W. C. Hoo)

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Corresponding author's ORCID profile:

<https://orcid.org/0000-0003-0691-4463>

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(Rock et al., 2022). Live streaming has gained popularity as a sales channel, allowing sellers to present their products in detail to a wide audience without the need for physical handling. With the increase in e-commerce revenue by 32.7% in 2020 compared to 2019, there's a clear shift towards more frequent online purchases. Although there have been many studies on online shopping and the influence of social media on marketing, research on live streaming shopping, especially its impact on purchasing behavior for gym equipment, is lacking.

This research seeks to identify the factors that motivate consumers to purchase gym equipment via live streaming and to determine how these motivations influence their purchasing decisions. By focusing on live streaming as a sales medium, the study aims to understand the potential of this platform to contribute positively to the health and well-being of Malaysians by encouraging physical activity through the purchase of workout equipment.

2. Literature review

This section will introduce the founders of the three theories (Uses and gratifications theory, source credibility theory, and theory of planned behavior) that our research will utilize. Additionally, this chapter will establish the theoretical foundation.

2.1. Theory of uses and gratification (UGT)

UGT is a hypothesis that does not adhere to rigorous social science principles. It is about the needs and motivation theory and its extensions, which are overseen by Abraham Maslow. This study employs HG and UG. Hedonic pleasure is the satisfaction that comes from settling the sensory and emotional sensations of internet buying. HG will be composed of two dimensions. The two dimensions are pleasure and passing time. This study also included entertainment pleasure since it might have a significant impact on consumer intention (Ru et al., 2021). Shopping has exploded into notions like social media, e-commerce, and so on, implying that it is now an amusement. It supported the use of EG in this investigation.

2.2. Source credibility theory (SCT)

In SCT, there are three attributes: ethos, pathos, and logos, which are persuasive modalities used to convince and appeal to an audience. There are characteristics that must be present for the audience to accept the seller's information. SCT was determined to be built on expertise and dependability. According to SCT, if customers feel the communicator is extremely trustworthy, they will be more likely to accept the message, and vice versa. According to Singh and Banerjee (2018), celebrity endorsements in advertising may boost clients. Purchase-intention celebrities are seen as trustworthy and well-liked by the general people.

2.3. Theory of premeditated behavior (TPB)

The theory of planned behavior (TPB), which evolved from the theory of rational action in 1980, tries to forecast individuals' intentions to participate in a certain behavior at a specific time and place while concentrating on explaining people's abilities to engage in self-controlled behaviors. The model's central concept is behavioral intention, which is impacted by attitudes about the likelihood of the desired outcome and a subjective assessment of the risk and value of the outcome (Kim and Jeong, 2021). Human behavior is guided by three factors, according to the idea of planned behavior. Beliefs can cause actions (behavioral beliefs), belief in the normative expectations of others (normative beliefs), and the existence of belief elements can promote or impede behavior performance (control beliefs) (Bosnjak et al., 2020).

2.4. Entertainment gratification (EG)

EG occurs when customers enjoy their online shopping experience. This enjoyment arises when customers feel happy and satisfied with shopping online, leading them to shop more frequently for products and services through internet platforms. There is also a link between EG and the intention to make a purchase. Essentially, if a customer finds more fun and interest in the entertainment aspect of online shopping, their likelihood of intending to buy something increases (Ranawi et al., 2019).

2.5. Informativeness gratification (IG)

After social media networks expanded globally, Instagram has become more effective in sharing precise and helpful information about fitness equipment through live stream shopping. There's a need for live stream sellers to communicate this information effectively to motivate consumers' purchase intentions (PI). Sellers should provide timely, specific details and use social media to connect with consumers, thus boosting their PI. However, some studies highlight that the link between Instagram use and PI is not straightforward and may even conflict with findings from other research. This suggests a complex relationship between social media engagement and consumers' decisions to buy (Gan and Li, 2018).

2.6. Attractiveness

Because of this, attractiveness may relate to a product's look as well as its personality and its likeness to other items on the market since this ensures a greater level of customer acceptability (Park and Lin, 2020). Also, customers will be drawn in because of the appealing and self-aware faces and forms, which will bring about positive social, cognitive, and economic outcomes (Lin et al., 2021).

2.7. Expertise

Experts point out that the content definition of e-commerce live stream service as a medium can effectively convey marketing expertise and help online audiences make purchase decisions. The expertise of anchors refers to the audience's perception of the credibility of their information sources. The audience judges the expertise of anchors according to their experience, ability, achievement, status, and understanding of specific topics.

Since consumers cannot experience fitness equipment online and there is no relevant consumption experience, inviting persuasive experts or celebrities to endorse fitness equipment can improve consumers' understanding and trust of fitness products to the greatest extent (Chen et al., 2019). In the live broadcast environment, the professional level of the live broadcast seller will directly affect the PI of consumers. Consumers will have more trust in expert live streaming sellers who are considered highly intelligent (Wang and Scheinbaum, 2018).

2.8. Trustworthiness

Trustworthiness is the primary factor customers consider when deciding to purchase products during a live stream. This trust impacts their intention to buy, influenced not just by the security offered by the live stream platform but also by how private they perceive their interaction to be. Furthermore, the seller's perception and willingness to engage authentically play significant roles in establishing trustworthiness. The behavior of the seller has a more profound effect on the trustworthiness of the live stream than the seller's attitude alone. Essentially, trust is built on a foundation of secure, private interactions and genuine, engaging seller conduct (Takahashi et al., 2020).

2.9. PI and purchase behavior

Intention is not the same as actual action; it is more about the desire to undertake a specific behavior (Ajzen, 1985). In this study, PI is utilized to predict buying actions. The research suggests that an individual with a positive attitude toward online shopping is likely to exhibit favorable purchase behavior (PB) online (Tran et al., 2018). It's important to note that while PB and PI are distinct concepts, they influence each other. This means that someone's intention to buy can give us clues about their future purchasing actions, but it does not guarantee those actions will occur.

2.10. Proposed theoretical framework

Fig. 1 presents the research model being proposed in this study. This model incorporates two concepts from the UGT, namely EG and Information Gratification (IG), and three concepts from the Source Credibility Model (SCM), which are Attractiveness, Expertise, and Trustworthiness. These concepts are used to predict the PI of individuals who watch sellers during live streams. Additionally, this study aims to investigate how PI is related to PB. According to the review of the literature, the following hypotheses are developed:

- H1: Entertainment has a positive relationship with the consumer's PI.
- H2: Informativeness has a positive relationship with the consumers' PI.
- H3: Live stream sellers' attractiveness has a positive relationship with the consumers' PI.
- H4: Live stream sellers' expertise has a positive relationship with the consumers' PI.
- H5: Live stream sellers' trustworthiness has a positive relationship with the consumers' PI.
- H6: PI has a positive relationship with the consumers' PB.

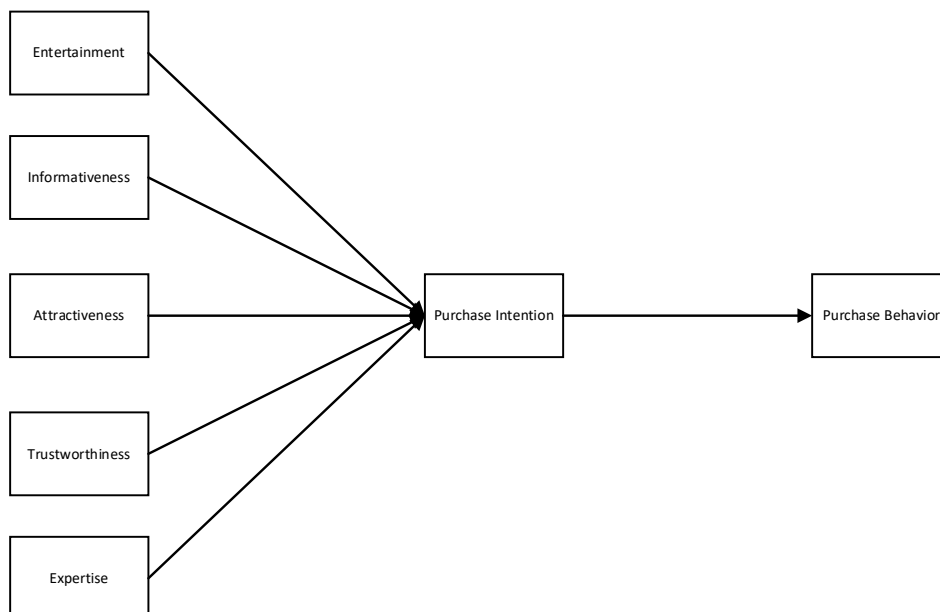


Fig. 1: Proposed research model

3. Methodology

This study aims to explore the motivational factors influencing PB in the context of live stream shopping for workout equipment in Malaysia. The target group for this research includes Malaysian internet users who have watched livestream videos of workout equipment on social media. It will be conducted as a cross-sectional study, gathering data at a specific point in time without any follow-up, which allows for quick results and insights into the attitudes, behaviors, and potential risk factors of a population at that time, as noted by Levin (2006).

The method used will be quantitative research, focusing on understanding participants' opinions on their PI and actual PB through statistical analysis of survey data. A self-administered questionnaire, proven effective in previous research within the Malaysian context, will be employed to collect data. This approach ensures respondent privacy and reduces intrusion, potentially increasing the cooperation rate. Although the study aims to understand a global perspective, including respondents from Malaysia, Singapore, and China, it

will primarily focus on the Malaysian market. Non-probability sampling methods, specifically convenience and judgmental sampling, will be utilized due to their practicality when probability samples are unattainable. The use of convenience sampling is particularly justified for distributing questionnaires across countries efficiently. In contrast, judgmental sampling will target respondents with relevant experience. Data collection will primarily occur in Malaysia through social media, facilitating access to qualified respondents and focusing on the Malaysian populace's livestream shopping behaviors for workout equipment.

3.1. Variables and measurement

The study will utilize the interval scale to measure all preceding factors because the interval scale allows for mathematical operations. It includes 31 items, with five constructs assessed using a five-point Likert scale. The details of the variables and their measurements will be presented in Table 1.

Table 1: Variables and measurements

Variable	Definition	Source
EG	The pleasure and enjoyment come when the live stream sellers interact.	Lim and Ting (2012)
Informativeness	Accurate, perceived timely, and also the information that live stream sellers give about consumers' interest	Lim and Ting (2012)
Gratification		
Attractiveness	The look of the live stream sellers	Choi and Lee (2019)
Expertise	How the live stream seller's precise knowledge and how familiar with their field	Choi and Lee (2019)
Trustworthiness	The extent to which the recipient will consider the source to be honest or valid	Choi and Lee (2019)
PI	The willingness of consumers to make purchases in the future	Peng et al. (2019)
PB	The purchases of consumers have been made in the actual live stream	Chaudhary and Bisai (2018)

4. Results and discussion

4.1. Respondents demographic profile

In the study involving 393 questionnaires, all responses were complete, thanks to a questionnaire design that required participants to answer each question before moving on. The majority of participants were aged 18-24 years (60.6%), followed by those aged 25-44 years (20.6%) and 45-54 years (10.4%). The group under 18 years old made up 5.9%, and those 55 years or older were the smallest group, at 1.8%.

The study categorized participants by country, with the majority from Malaysia (74%), followed by China (14%), Singapore (11.5%), and other countries making up a small fraction (0.5%). In terms of ethnicity, Chinese respondents were the largest group (79.6%), with Malay (8.7%), Indian (5.6%), and other ethnicities (2.8%) following.

Income levels varied, with a significant portion (31.8%) earning between RM2001 and RM3000 and 28.2% earning below RM1000, mainly students. Respondents earning RM1000-RM2000 and RM4001-RM5000 constituted similar proportions (12.5% and 11.5%, respectively), while those earning RM3001-RM4000 represented 16%. Viewing habits for live streams showed 36.9% spent less than 30 minutes, 31.6% around one hour, and

19.1% over two hours. A small group (12.5%) watched for exactly two hours. Facebook was the most preferred livestream platform (34.3%), followed by TikTok (28.2%), with Taobao, Instagram, and others also used. Consumption frequency via online streaming ranged from never to weekly, with percentages fluctuating between 10%-20%. Table 2 summarizes the Cronbach's Alpha values for different variables, indicating their reliability. The values range from 0.782 to 0.871, suggesting that all the items within the variables are reliable and acceptable, as they all exceed the benchmark of 0.70 for reliability (Bonett and Wright, 2017). Table 3 shows that an R-square value of 0.632 indicates that 63.2% of the variation in PB can be explained by PI. This high percentage suggests a strong relationship between PI and PB. The significance of this relationship is further supported by a large F-value (672.010) and a P-value below the accepted threshold, indicating that the results are statistically significant. According to Nahm (2017), a P-value less than 0.05 signifies a significant relationship between the dependent variable (DV) and IV. Given that the P-value is below this threshold, Hypothesis 6 (H6) is supported, confirming the predicted relationship is statistically significant and reliable. The regression equation is:

$$PB = -0.040 + 0.973 (PI)$$

Table 2: Result of reliability test

Variable	No. of items	Cronbach's alpha
EG	5	0.881
Informativeness Gratification	5	0.827
Attractiveness	4	0.782
Expertise	5	0.804
Trustworthiness	5	0.804
PI	4	0.862
PB	3	0.871

Table 3: Coefficients (Simple Linear Regression)

Model	Unstandardized coefficients		Standardized coefficients	t	P-Value	Collinearity statistics		Hypothesis testing
	B	Std. Error	Beta			Tolerance	VIF	
1 (Constant)	-.040	.138		-.288	.774			
PI_1	.973	.038	.795	25.923	.000	1.000	1.000	Supported

The information in Table 4 suggests that 61.3% of the changes in PI can be explained by Trust (T), Entertainment Gratification (EG), IG, Attractiveness (A), and Expertise (E), with an R-square score of 0.613. The F-value of 122.694 and a P-value less than 0.05 indicate a statistically significant relationship between these independent variables (IVs) and the DV, making the research model relevant for this study. Referring to Table 5, it is noted that hypotheses H1 (related to EG), H3 (related to A), and H5 (related to T) are supported because their P-values are below 0.05, indicating significant effects.

However, H2 (related to IG) and H4 (related to E) do not have P-values lower than 0.05, suggesting they do not significantly impact PI. Therefore, EG, A, and T significantly positively correlate with PI, whereas IG and E do not significantly affect PI. EG is identified as having the most substantial influence on PI, followed by T, and then A. This summary helps to understand which factors are most critical in influencing PI in the context of this study.

$$PI = -0.061 + 0.498 (EG) - 0.017 (IG) + 0.199 (A) - 0.016 (E) + 0.338 (T)$$

Table 4: Model summary (Multiple linear regression)

Model	R	R-square	Adjusted R-square	Std. error of the estimate
1	.783	.613	.608	.51346

Table 5: Coefficients (Multiple linear regression)

Model	Coefficients							
	Unstandardized coefficients		Standardized coefficients	t	P-Value	Collinearity statistics		
	B	Std. error	Beta			Tolerance	VIF	
(Constant)	-.061	.174		-.349	.727			
1 EG	.498	.043	.489	11.542	.000	.557	1.796	
IG	-.017	.058	-.014	-.291	.771	.459	2.178	
A	.199	.054	.174	3.719	.000	.456	2.194	
E	-.016	.066	-.013	-.242	.809	.368	2.716	
T	.338	.064	.262	5.270	.000	.404	2.475	

Dependent variable: PI_1; Independent variable: EG, IG, A, E, T

Based on the results presented in Table 5, the outcomes for hypotheses H1 to H5 are determined as either supported or not supported. A hypothesis is considered supported if its P-value is less than 0.05, indicating a significant relationship exists. On the other hand, if the P-value is more than 0.05, the hypothesis is not supported, showing a lack of significant relationship. Specifically, H1, H3, and H5 are supported, meaning they have a significant relationship with the Purchase Intention (PI) of consumers buying workout equipment via live stream. However, H2 and H4 are not supported, as their P-values are higher than 0.05 (specifically 0.771 and 0.809, respectively), indicating no significant relationship exists for these hypotheses.

enjoyment comes from the interactive nature of live streaming, where consumers can directly engage with sellers through comments, shares, and likes, adding entertainment value to their shopping experience. This interactive engagement is not only entertaining for consumers but also increases their intention to purchase during the live stream. This concept, where the entertainment aspect of mobile use during live streaming affects consumers' PI, is consistent with the findings of Ijaz and Rhee (2018) and further supported by research from Oscarius Yudhi Ari Wijaya et al. (2022). These studies suggest that the perception of entertainment significantly impacts consumers' shopping behaviors in the context of live streaming.

4.2. Discussions

4.2.1. EG

The finding that EG has a positive relationship with consumer PI aligns with past research, indicating that consumers' enjoyment significantly influences their intention to buy. Specifically, this

4.2.2. Informativeness gratification

This study initially set out to determine if there is a positive relationship between the IG offered by sellers and consumers' PI in the context of live stream shopping. However, the findings do not support the idea that a seller's IG positively influences consumers' PIs during live stream

shopping. This result contrasts with earlier studies, such as the one conducted by [Tien et al. \(2019\)](#), which suggested a positive correlation. A possible explanation for this discrepancy might be that the participants in this study did not perceive the information provided by live stream sellers as reliable or sufficient. As a result, they did not consider the useful and timely information from live broadcasts to be influential in their decision to purchase.

4.2.3. Attractiveness

Consumer PI tends to increase when live stream sellers are visually appealing. People browsing the internet are more likely to pay attention to and favor sellers whose products are presented attractively. For a message to effectively influence a buyer's decision, it's crucial for sellers to present themselves and their products in an appealing manner. However, research by [Malik and Qureshi \(2017\)](#) suggests that in Pakistan, the physical attractiveness of a seller does not significantly impact their PI. This implies that the effect of a seller's physical appearance on buying decisions may vary by country. This observation aligns with findings from [Kim and Park \(2023\)](#), indicating that the influence of a vendor's physical attractiveness on consumer purchasing decisions is not universal.

4.2.4. Expertise

This study makes the assumption that a seller's level of expertise has a positive correlation with the likelihood of a shopper making a purchase during live shopping. The findings of the study, however, contradict this theory. There is no correlation between the sellers' level of expertise and the customers' willingness to buy fitness products through live streaming. The majority of consumers are of the opinion that there is a distinction to be made between information that is verbal and information that is sensory and that gaining knowledge through one's own direct experience is more trustworthy than gaining knowledge through the use of online sellers ([Esmailpour and Mohseni, 2019](#)). The reason for this could be that online sellers advertise fake fitness equipment experiences in order to trick customers into purchasing their products so that they can make more money. Because of this, customers appear to disagree with the notion that online sellers have the expertise to advertise fitness products, and unfortunately, this is not going to have a positive effect on customers' intentions to make purchases in the long run.

4.2.5. Trustworthiness

The live seller's trustworthiness affects clients' buying intentions. This portion is based on the preceding study on product or seller quality or service, which may be found in buyer comments.

Study settings determine it. Live stream contexts differ from eWOM. eWOM allows customers and live stream sellers to communicate or alter information to increase credibility and persuade buyers. The outcome also matches the other study. Meanwhile, experts are debating whether the live stream dealer's data is trustworthy and beneficial in the buying process. The seller's dependability is the biggest factor in buyers' streaming buying intentions. The seller's credibility will influence customers' purchasing decisions. Sellers must create trust and entice clients buy intentions to sustain live streaming users. The conclusion supports the proposition. This finding was in line with [Wang et al. \(2022\)](#).

4.2.6. PI

PI significantly influences customer PB in the context of live streaming. Drawing from previous research in e-commerce, PI is recognized as a key predictor of actual PB, using the Theory of TPB as a foundational framework to assess a customer's likelihood of making an online purchase. This study suggests that customers with higher PI are more likely to complete a purchase compared to those with lower PI. Therefore, this research aims to explore the connection between customer PI and their PB further, emphasizing the importance of understanding how intention translates into actual buying actions ([Dong et al., 2021](#)).

5. Conclusion

This research incorporates the UGT, SCT, and TPB to delve into the motivational factors influencing buyers' PI and PB during live stream shopping for workout equipment. The findings indicate that EG, informativeness, attractiveness, and trustworthiness all play significant roles in shaping PI, which in turn positively impacts PB. These insights are valuable for sellers in the live stream market or those considering entering it, offering a clear direction for their marketing strategies.

EG specifically refers to the pleasure and enjoyment buyers derive from shopping or interacting with sellers during live streams. This study reveals that buyers appreciate being able to interact with sellers through immediate replies, response buttons, and comments, making the shopping experience more engaging and enjoyable. The use of live stream platforms can also lower promotional costs for sellers while enhancing the perceived entertainment value for consumers, thus increasing their PI. Ultimately, the interaction between sellers and buyers on live stream platforms can effectively boost PI and, subsequently, product sales.

In the research model, the integration of UGT, SCT, and TPB will be used to gain a strong understanding of the motivational factors that influence the obesity shoppers' PI and PB in the workout equipment live stream environment.

Theoretically, this study assists in filling a gap in research and correcting previous research deficiencies. In addition to the UGT, it has also included SCT in the research model to investigate the impact of the attributes of live stream sellers on buyers' PI and PB in live stream, which has not been covered in previous studies. Cross-sectional studies collect data once. Thus, the data analysis may become less relevant and more likely to be wrong over time. To get results that can be used later, future researchers should do a longitudinal study in the same setting. Live stream shopping may change online shoppers' opinions over time. This study also has 0.613 and 0.632 R-squares. In this study, the independent variable explains less than half of the dependent variable variation. Income, age, nation, and gender affect PI. This study ignored the independent variable's moderating effect on the dependent variable. Future researchers could use income, social influence, experience, and functional factors to predict changes in obesity shopper PI to overcome this limitation. Respondent demographics should also modify existing associations.

The survey questionnaires were distributed by convenience sampling in Malaysia, China, Singapore, and other countries via WeChat, WhatsApp, Facebook, and Instagram. This method helped us distribute and collect questionnaires faster and reach a large number of potential respondents for free. However, these respondents' data may be inaccurate or inappropriate, reducing this study's reliability. A face-to-face interview will fix this. Face-to-face interviews with respondents may help researchers understand live stream buying. Open-ended questions during the interview can help respondents explain how IVs affect DV. Respondents can detail how IVs affect DV. This study helps us understand the motivations of obese online shoppers in live streaming and whether PI affects their PB. This study shows that all IVs positively affect consumers' PI. Expect expertise and informativeness satisfaction. Entertainment satisfaction is crucial for live streaming because EG has the highest tolerance, 0.557. Therefore, sellers can use the live stream to comment, share, and like to interact with consumers and influence their PIs. In addition, this study found that obese consumers' PI improves their PB. There is a reason why live sellers' expertise and informativeness do not significantly and positively affect obese consumers' PI. In conclusion, the research objectives were met by identifying motivational factors that affect obesity shoppers' PI and PB in the workout equipment live stream environment.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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