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DRIVING GREEN PRODUCT PURCHASE INTENTION THROUGH THE ELABORATION LIKELIHOOD MODEL: THE ROLES OF PARA-SOCIAL INTERACTION AND INFORMATION QUALITY IN LIVE-STREAMING E-COMMERCE

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Abstract

This study examines how Information Quality and Para-Social Interaction influence Green Product Purchase Intention in live-streaming e-commerce using the Elaboration Likelihood Model (ELM). Driven by rising sustainable consumption trends, it explores their impact through Subjective Product Knowledge as a mediator, extending ELM by integrating cognitive and affective cues in Indonesia's growing digital market. Data were collected from 140 young consumers (aged 17–37) in Semarang, Indonesia, who engage in live-streaming e-commerce. The analysis tested hypotheses, revealing that Information Quality enhances Subjective Product Knowledge, which drives purchase intention, while Para-Social Interaction directly and indirectly affects both. Subjective Product Knowledge mediates these relationships. This offers a novel application of ELM in sustainable consumer behavior in de-veloping countries. Practically, businesses can use high-quality information and trusted streamers to boost green product sales in global markets.

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INTRODUCTION

In contemporary business, environmental considerations have become integral to product design and development, reflecting an increasing awareness of collective responsibility for environmental preservation (Hoşgör, Güngördü, and Hoşgör 2023). The growth of modern industries, driven by mass production, demands that products satisfy market needs and align with evolving consumer expectations, particularly concerning sustainability (Bonera, Codini, and Miniero 2020). Consequently, sustainable development has the organization is considered to have poor performance in carrying out the plans it emerged as a pivotal focus among industry practitioners and scholars alike, given its crucial role in shaping future business paradigms (De La Calle, Freije, and Oyarbide 2021; Wang 2020). Heightened awareness of environmental issues and global economic shifts have redefined the approaches to production, consumption, product development, and marketing strategies (Hoşgör et al. 2023), while a growing consumer preference for environmentally friendly products — perceived to minimize ecological harm and promote health benefits — further propels this transformation (Serrano-Arcos, Sánchez-Fernández, and Pérez-Mesa 2021).

Achieving long-term sustainability necessitates profound changes in business practices, as companies increasingly operate within a global framework that demands sustainable resource management (Nunhes, Bernardo, and José de Oliveira 2020). In response, forward-thinking firms are implementing sustainable initiatives to ensure that

their products and operations minimize environmental impact (Sharma 2016). Amid intensifying public concern over climate change and environmental degradation, green consumption has gained prominence; however, fostering consumer demand for eco-friendly products remains a significant challenge, requiring innovative and strategic interventions. Green marketing emerges as a promising solution, encompassing product modifications, sustainable production processes, packaging innovations, and environmentally conscious promotional strategies, enabling firms to fulfill consumer expectations for sustainable products while reinforcing their commitment to corporate environmental responsibility. In Indonesia, several companies have actively encouraged consumers to participate in environmental conservation efforts. These include reducing plastic bags, promoting reusable cloth bags, offering returnable packaging for recycling, conserving electricity, and discontinuing animal testing. Environmentally friendly products, or green products, are made from materials that do not pollute the environment. Their packaging is biodegradable and minimizes waste generation. Furthermore, in line with ethical business practices, the production process is designed to reduce environmental impact at every stage, from raw material selection to final output. The green concept extends beyond product development, including recyclability, sustainable sourcing, and responsible production processes. In support of this transition, the Indonesian government has promoted eco-friendly products through the Ministry of Trade and actively encouraged the e-commerce sector to play a more significant role in their distribution. In recent years, consumer awareness and acceptance of green products have shown notable growth, indicating a positive trend toward sustainable consumption (Nguyen, Lobo, and Greenland 2017).

Live streaming e-commerce has emerged as a new trend in online business (Hu, Zhang, and Wang 2017). It provides an innovative sales channel for promoting products and raises consumer awareness and interest in environmental issues through real-time explanations and interactions with streamers (Long, Yuan, and Wu 2024). Selling products or services via live streaming has become a significant marketing strategy for many companies (Chen, Zhao, and Wang 2022). Live streaming enables the delivery of information and persuasive messaging and helps viewers to evaluate and understand products in greater depth (Gao et al. 2021). These platforms, characterized by high interactivity, allow audiences to engage directly with streamers and fellow viewers through features such as live chat (Scheibe, Fietkiewicz, and Stock 2016). Due to this interactive nature, streamers or influencers are often perceived as trustworthy by their audience (Djafarova and Rushworth 2017). Previous studies on live-streaming viewer behavior have explored various aspects, including continuous viewer engagement and their intention to purchase (Chen and Lin 2018; Hu et al. 2017). To better understand how different cues during online shopping influence consumer attitudes and purchase intentions, several researchers have adopted the Elaboration Likelihood Model (ELM) (Zhou, Lu, and Wang 2016). Developed by Petty and Cacioppo (Petty 1986) within the field of social psychology, the Elaboration Likelihood Model describes two distinct routes through which attitude change can occur: the central and peripheral routes. Individuals engaged in the central route carefully evaluate information by weighing its merits and drawbacks. In contrast, those following the peripheral route require less cognitive effort and rely instead on superficial cues, such as the attractiveness or credibility of the endorser (Lee 2009).

One of the key concepts contributing to the success of live streaming e-commerce is para-social interaction (PSI)—a pseudo-relationship between the audience and the streamer. PSI can enhance consumers' emotional attachment to the streamer, which may positively influence their purchase intention (Yen et al. 2024). In green products, such emotional engagement can serve as an effective medium for educating and convincing consumers about the benefits of environmentally friendly products, thereby encouraging green purchase intention (Long et al. 2024).

Information quality refers to users' perception of the quality of online content (e.g., textual information) (McKinney, Yoon, and Zahedi 2002). However, in live streaming environments, product information quality extends beyond text to include the usefulness, clarity, and trustworthiness of content delivered via video. The quality of product-related information plays a critical role in live commerce. For consumers, accurate and relevant information enables informed decision-making and increases confidence in their purchases (Liu, Zhang, and Chen 2022). Detailed explanations about product features, benefits, and demonstrations by the streamer can also build greater trust toward the seller. According to Zhu et al. (Zhu, Mou, and Benyoucef 2019), consumer interest engagement positively correlates with cognitive participation. This is evident when consumers perceive that an influencer’s recommendation aligns with their interests or understanding of a product, increasing the likelihood of purchasing. The higher the perceived quality of information by viewers, the stronger their subjective product knowledge. Streamers can leverage live video to offer comprehensive, real-time product information, thus enhancing product familiarity and trust (Sun et al. 2019).

This study adopts the Elaboration Likelihood Model (ELM) to explain how consumers process information during live-streaming e-commerce interactions and how such processing influences green product purchase intention. ELM proposes two distinct routes of persuasion: the central route and the peripheral route. Consumers with high motivation and more profound understanding are more likely to engage through the central route, relying on the quality of information presented by the streamer. In contrast, consumers with lower motivation or stronger emotional engagement tend to follow the peripheral route, being more influenced by para-social interaction with the streamer. This research examines how Information Quality and Para-Social Interaction influence green product purchase intention, with Subjective Product Knowledge as a mediating variable. By understanding these mechanisms, businesses can optimize their live-streaming strategies to enhance the effectiveness of green product marketing.

Although numerous studies on e-commerce and green products have been conducted, few have explored how para-social interaction (PSI) and Information Quality in live-streaming e-commerce influence green product purchase intention in Indonesia using the Elaboration Likelihood Model (ELM). Most previous research has focused more on factors such as price, product quality, and the effectiveness of conventional marketing strategies in influencing consumers' purchasing decisions regarding green products (Nguyen et al. 2017; Prananta, Wijaya, and Febriatmoko 2024). However, limited attention has been given to virtual social interactions formed through live streaming in enhancing purchase intention for environmentally friendly products.

The novelty of this study lies in its focus on para-social interaction and Information Quality as factors that can influence green product purchase intention within the context of live streaming e-commerce in Indonesia, using the Elaboration Likelihood Model (ELM). This research offers a new perspective on how virtual relationships between streamers and audiences can shape consumers' purchasing decisions toward sustainable products. Moreover, this study provides valuable insights for e-commerce businesses in optimizing live streaming strategies to boost the sales of eco-friendly products.

Hypotheses Development

The Elaboration Likelihood Model (ELM) offers a framework for understanding how people process persuasive information and decide based on it (Petty 1986). ELM posits two primary persuasion routes: the central and the peripheral. The central route is employed by consumers motivated to process information deeply, evaluating the merits of arguments and evidence presented to them. In contrast, the peripheral route involves minimal cognitive effort, with consumers relying on superficial cues such as the source's credibility or emotional appeal (Lee 2009). In live streaming e-commerce, consumers may engage with green product information via either route, depending on their motivation and emotional engagement. The ELM is particularly useful in understanding how various marketing strategies, such as influencer endorsements or detailed product information, can influence consumer attitudes and purchase intentions for green products. Through this model, we can explore how Information Quality and Para-Social Interaction (PSI) impact green product purchase intention by stimulating either the central or peripheral processing routes.

Green Product Purchase Intention

Green product purchase intention refers to the consumer's willingness to buy environmentally friendly products with minimal adverse environmental impacts (Nguyen et al. 2017). As awareness of global environmental issues grows, more consumers actively seek products that contribute to sustainability, such as those made from recyclable materials, reduced packaging, or produced through environmentally friendly processes. Green product purchase intention is influenced by various factors, including consumer attitudes toward environmental issues, perceived product quality, and the effectiveness of marketing efforts aimed at highlighting the ecological benefits of products (Serrano-Arcos et al. 2021). However, motivating consumers to purchase green products remains challenging despite increased awareness. While environmental concerns have risen, traditional barriers, such as perceived higher costs or doubts about product quality, still deter consumers (Nguyen et al. 2017). Therefore, understanding the psychological and contextual factors influencing green product purchase intention is crucial for businesses looking to boost sustainable consumption behavior.

Information Quality and Green Product Purchase Intention

Information quality is a key factor influencing consumer decision-making, particularly in an online environment where consumers cannot physically interact with products. Information quality in live streaming e-commerce includes the clarity and accuracy of product details and the trustworthiness, depth, and relevance of the content shared by the streamer (Sun et al. 2019). Studies have shown that high-quality information is directly correlated with greater consumer confidence and decision-

making satisfaction (Shen et al. 2019; Sun et al. 2019). For green products, accurate and comprehensive information is critical, as consumers are often concerned with the long-term environmental impact of their purchases. Well-presented information helps reduce uncertainty about the ecological benefits of green products, thereby encouraging purchase intentions (Zhu et al. 2019).

H1: Information Quality has a positive effect on Green Product Purchase Intention

Information Quality and Subjective Product Knowledge

Subjective Product Knowledge is an individual's perceived understanding or familiarity with a product (Zhu et al. 2019). Live-streaming content rich in useful and trustworthy information contributes to viewers' perception of being knowledgeable, even without direct experience. A positive relationship is expected since high-quality information enhances perceived knowledge, particularly in complex product categories like environmentally friendly products. High-quality information enhances consumer understanding, particularly in live-streaming settings where information is conveyed in real-time. Detailed explanations of product features, sustainability attributes, and the benefits of environmentally friendly products improve consumer knowledge and confidence in purchasing decisions (Sulhaini, Sagir, and Sulaimiah 2024). Accurate and trustworthy information enhances consumers' perception of product value and ecological impact, making them more likely to purchase green products. The clarity and relevance of information presented during live streaming can boost consumer trust and influence their purchase intentions.

H2: Information Quality has a positive effect on Subjective Product Knowledge

Para-Social Interaction and Green Product Purchase Intention

Para-social interaction refers to the perceived emotional closeness and pseudo-relationship that viewers develop with media figures or influencers (Schramm and Wirth 2010). In live streaming e-commerce, Para-social interaction is especially significant because viewers create a sense of emotional attachment and trust toward streamers despite mediated interactions through digital platforms (Djafarova and Rushworth 2017). This bond can profoundly impact consumer behavior, particularly for products that require ethical or value-based decision-making, such as green products. Streamers often act as trusted figures who guide their audiences' purchasing decisions, and PSI can increase consumer loyalty and engagement, thereby boosting purchase intention (Yen et al. 2024).

H3: Para-Social Interaction has a positive effect on Green Product Purchase Intention

Para-Social Interaction and Subjective Product Knowledge

A strong Para-Social Interaction increases consumer engagement with the product information shared by the streamer. As consumers feel emotionally connected to the streamer, their understanding and perceived knowledge of the products being marketed—especially green products—are enhanced. When consumers develop emotional bonds with the streamer, their likelihood of purchasing the products endorsed by the influencer increases. This emotional connection can be particularly influential in green products, where ethical values and environmental concerns are key purchase drivers. When consumers trust and relate to the streamer, they are more likely to internalize and accept the delivered information (Yen et al. 2024). This can increase the viewer's perceived familiarity and understanding of green products, thus enhancing Subjective Product Knowledge (Djafarova and Rushworth 2017; Yen et al. 2024).

H4: Para-Social Interaction has a positive effect on Subjective Product Knowledge

Subjective Product Knowledge and Green Product Purchase Intention

Subjective Product Knowledge (SPK) refers to consumers' self-assessment of their knowledge about a product, which influences their decision-making process (Zhu et al. 2019). In live streaming e-commerce, both Information Quality and PSI play a role in shaping subjective knowledge. High-quality product information and a strong emotional bond with the streamer enhance consumers' understanding and perceived expertise about the product. This, in turn, boosts confidence in making purchase decisions, especially when it comes to products that require more cognitive processing, such as green products. Consumers with higher subjective product knowledge feel more confident about making informed decisions, which increases their likelihood of purchasing green products. Knowledgeable consumers are more likely to trust the product's environmental claims, thus aligning with sustainable consumption behavior.

H5: Subjective Product Knowledge has a positive effect on Green Product Purchase Intention

Mediation Effects of Subjective Product Knowledge

In digital commerce environments, particularly live-streaming e-commerce, Information Quality plays a pivotal role in

shaping consumer perception and decision-making. High-quality information is typically characterized by its accuracy, clarity, relevance, completeness, and credibility (McKinney et al. 2002; Shen et al. 2019). When consumers are presented with high-quality product information—such as detailed descriptions, usage explanations, and sustainability claims—they are more likely to perceive the content as trustworthy and informative. However, the influence of information quality does not always manifest in immediate behavioral intentions. Especially in the context of green products, where consumers may require additional cognitive effort to evaluate environmental attributes, the impact of information often depends on whether it successfully enhances consumers' internalized understanding of the product (Sun et al., 2019). This perceived understanding is captured in the construct of Subjective Product Knowledge—a consumer's self-assessed familiarity, expertise, and ability to evaluate a product (Zhu et al. 2019).

According to the central route of the Elaboration Likelihood Model (Petty 1986), consumers motivated to process information will rely heavily on argument quality. High information quality is likely to improve subjective knowledge, increase confidence, and reduce the perceived risk associated with green product purchases. As a result, consumers who perceive themselves as knowledgeable are more inclined to translate their understanding into actual purchase intentions. Therefore, the effect of information quality on green product purchase intention is expected to be mediated by subjective product knowledge. This mediating role highlights a two-stage persuasion process, where cognitive elaboration strengthens internal confidence before it leads to behavioral outcomes.

H6: Subjective Product Knowledge mediates the relationship between Information Quality and Green Product Purchase Intention.

In the context of live-streaming e-commerce, Para-Social Interaction plays a vital role in shaping consumer attitudes and behaviors. PSI refers to the perceived one-sided emotional bonds that viewers form with streamers or influencers, often resulting in a sense of trust, familiarity, and companionship (Djafarova and Rushworth 2017; Schramm and Wirth 2010). These emotional attachments foster engagement and influence how audiences interpret and internalize product-related information shared during live sessions. While Para-Social Interaction has been found to influence purchase intention through emotional resonance directly (Yen et al. 2024), its effect may also operate indirectly through cognitive mechanisms. When a viewer perceives the streamer as credible, knowledgeable, or relatable, they may be more inclined to accept and process the information presented, even without critical scrutiny. This process can enhance the viewer's Subjective Product Knowledge—their self-assessed understanding and familiarity with the product (Zhu et al. 2019).

This enhanced subjective knowledge increases the consumer's confidence in evaluating the product and reduces uncertainty regarding environmentally friendly claims, thereby strengthening their Green Product Purchase Intention. As such, Subjective Product Knowledge serves as a cognitive bridge that connects the affective influence of PSI with the behavioral outcome of purchase intention. This aligns with the dual-processing perspective of the Elaboration Likelihood Model (Petty 1986), where peripheral cues such as Para-Social Interaction can trigger central processing when they lead to increased message involvement or perceived comprehension. Therefore, the mediating role of subjective knowledge helps explain how emotional influence is converted into meaningful, action-oriented consumer responses.

H7: Subjective Product Knowledge mediates the relationship between Para-Social Interaction and Green Product Purchase Intention.

This section will explain in general terms the framework and hypothesis development. The following is a picture of the framework of thought in this research,

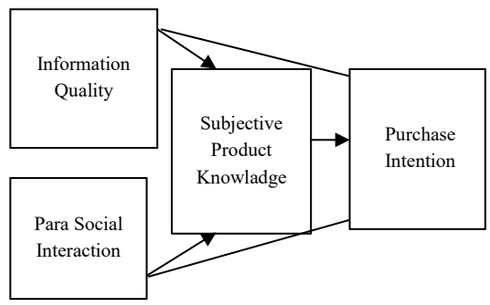

Figure 1. Conceptual Framework

METHOD

Sampling and Data Collection

In the context of research, a population can be defined as a group possessing specific characteristics or traits that are the focus of the study. The target population in this study is the community of Semarang City. The sampling technique employed in this research is purposive sampling. This technique involves selecting samples based on specific criteria, wherein each respondent must meet the following inclusion criteria: young individuals aged between 17 and 37 years, the ability to make independent decisions in online shopping, and frequent participation in live streaming sessions within the past month (Sarkar and Sarkar 2016). The sample size is determined based on the recommendation

by Hair et al. (2010), which suggests a range of 5 to 10 times the number of indicators in the study. With 20 indicators and a multiplier of 7, the sample size for this research is set at 140 respondents.

Analysis Technique

Partial Least Squares Structural Equation Modeling (PLS-SEM) is a multivariate statistical method that analyzes relationships among variables within a conceptual model. This method is particularly useful when the data are multivariate, complex, and do not meet the assumption of normal distribution. As examined in this study, PLS-SEM can analyze the relationships among multiple latent variables simultaneously, such as Para-Social Interaction, Information Quality, Purchase Intention, and Subjective Product Knowledge. The data will be analyzed using SmartPLS 3 due to its ease of use, ability to handle complex models, and its popularity in business and marketing research.

Measurement Scale

The following presents a table regarding the measurement scale of variables adopted from various similar research sources.

Table 1. Measurement Scale

Construct	Scale Reference	Adapted Scale
Purchase Intention	(Lao, 2014; Long et al., 2024)	I am willing to gather more information and learn more about this product. I am willing to recommend this product to my friends and acquaintances. I am willing to introduce and recommend this product to my family. I will purchase this product if necessary.
Subjective product Knowledge	(Sulhaini et al., 2024)	I am pretty knowledgeable about green products. I know how to assess the quality of a green product. Among my friends, I am considered one of the experts on green products. I have heard of most green products. I can judge whether a green product is worth its price or not.
Para Social Interaction	(Long et al., 2024; Schramm & Wirth, 2010)	The streamer effectively introduces product-related knowledge. The streamer focuses on introducing the product. The streamer acts as an expert. The streamer is highly experienced with the product. The streamer successfully engaged me. The streamer focuses on sharing experiences. The streamer acts as a companion. The streamer is highly experienced in interaction.
Information quality	(Shen et al., 2019; Sun et al., 2019)	In my opinion, the content provided by the streamer is reliable (such as information about the product, brand, and usage experience). During the live streaming, I believe the content delivered by the streamer is truthful. During the live streaming, I believe the content provided by the streamer is comprehensive.

RESULT AND DISCUSSION

Analysis Full Model

Based on the application's structural equation modeling test of the Full model. The analysis testing model findings utilizing the Smart PLS Version 3.3.2 application are displayed in the following,

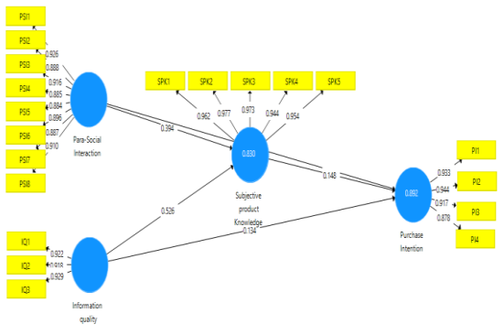

Figure 2. Smart PLS Full Model

Validity and Reliability Test

After collecting the questionnaire data from respondents, a validity test was conducted using the gathered data. Validity indicates how well and accurately a measurement tool performs the intended measurement task. To test validity, the relationship between each questionnaire item and the overall score being measured was analyzed. Based on Table 2, it can be seen that the value of each indicator or outer loading exceeds 0.7. Therefore, all indicators are considered valid as they meet the criteria for convergent validity, and further analysis can be carried out.

Table 2. Source of Variable and Validity

Kode	Information Quality	Para Social Interaction	Purchase Intention	Subjective Product Knowledge	Noted
IQ1	0.922				Valid
IQ2	0.918				Valid
IQ3	0.929				Valid
PI1			0.933		Valid
PI2			0.944		Valid
PI3			0.917		Valid
PI4			0.878		Valid
PSI1		0.926			Valid
PSI2		0.888			Valid
PSI3		0.916			Valid
PSI4		0.885			Valid
PSI5		0.884			Valid
PSI6		0.896			Valid
PSI7		0.887			Valid
PSI8		0.910			Valid
SPK1				0.962	Valid
SPK2				0.977	Valid
SPK3				0.973	Valid
SPK4				0.944	Valid
SPK5				0.954	Valid

Meanwhile, the reliability test was used to evaluate the measurement instrument's consistency and determine whether it can be trusted for future use. Both the independent and dependent variables are original constructs. As shown in Table 3, all questionnaire items have values greater than 0.700. Therefore, the questionnaire used in this study is reliable, as all items employed to measure the variables demonstrate strong reliability.

Table 3. Reliability Test

Variable	Cronbach's Alpha	Composite Reliability	Noted
Information quality	0.913	0.945	Reliable
Para Social Interaction	0.966	0.971	Reliable
Purchase Intention	0.938	0.956	Reliable
Subjective product Knowledge	0.980	0.984	Reliable

Coefficient Determination

The multiple correlation coefficient (R) is used to describe the strength of the relationship among variables. In contrast, the coefficient of determination (R^2) indicates the proportion of variance in the dependent variable (Y) that can be explained by the independent variables (X) based on the derived equation. The coefficient of determination findings are presented in the table below. It shows that the independent variables can explain the dependent (purchase intention) variable, as the R^2 value obtained is 0.888 or 88.8%. This indicates that 88.8% of the factors influencing or contributing to purchase intention are Information Quality, Para-Social Interaction, and Subjective Product Knowledge.

Table 4. Coefficient Determination

	R Square	R Square Adjusted
Purchase Intention	0.891	0.888
Subjective Product Knowledge	0.830	0.826

Hypothesis test

The hypothesis testing in this study aims to determine how the independent variables influence the dependent variable. Regression The results of the weight test are shown in the table below:

Table 5. Hypothesis Test

Variable	Origin Sample	T Statistics	P-Value	Explanation
IQ → PI	0.134	0.843	0.399	Positive no Significant
IQ → SPK	0.526	4.960	0.000	Positive Significant
PSI → PI	0.679	3.641	0.003	Positive Significant
PSI → SPK	0.394	2.627	0.008	Positive Significant
SPK → PI	0.256	2.099	0.036	Positive Significant
IQ → SPK → PI	0.425	2.517	0.012	Positive Significant
PSI → SPK→ PI	0.099	2.615	0.005	Positive Significant

The findings of this study offer valuable insights into how consumers process information and form emotional attachments in the context of live-streaming e-commerce, particularly concerning their intention to purchase green products. The Elaboration Likelihood Model (ELM) served as the guiding framework for examining how central (cognitive) and peripheral (emotional) routes influence purchase intention through the variables of Information Quality (IQ), Para-Social Interaction (PSI), and Subjective Product Knowledge (SPK).

Contrary to expectations, Hypothesis 1 (H1), which posited a direct positive effect of information quality on green product purchase intention, was not supported. This suggests that high-quality information alone cannot significantly impact consumers' purchase intention in live-streaming contexts. These results diverge from prior research (Shen et al. 2019; Sun et al. 2019), emphasizing the importance of reliable and comprehensive product information. However, in this study, the influence of information quality appears to operate indirectly—through cognitive elaboration rather than immediate behavioral intent.

Supporting this notion, Hypothesis 2 (H2) was confirmed, showing that information quality positively and significantly affects subjective product knowledge.This aligns with studies by

McKinney et al. (2002) and Zhu et al. (2019), which argue that detailed, credible content enhances consumers' perceived understanding of products. This process reflects the central route of persuasion proposed by ELM, in which individuals actively engage with information and develop internalized knowledge that forms the basis of decision-making.

In contrast, Hypotheses 3 (H3) and 4 (H4) confirmed that para-social interaction exerts a significant positive effect both on green product purchase intention and subjective product knowledge. These findings validate the peripheral route of persuasion, wherein emotional bonds and trust formed with streamers lead to favorable consumer responses. Prior studies (Djafarova and Rushworth 2017; Yen et al. 2024) also emphasize that consumers often regard streamers as credible sources, and their emotional attachment significantly drives purchase behavior, particularly for ethically and environmentally oriented products.

Hypothesis 5 (H5) was also supported, suggesting that consumers' subjective knowledge plays a pivotal role in influencing their intention to buy green products. When consumers perceive themselves as knowledgeable, they are more likely to feel confident in their decisions and trust the environmental claims associated with green products (Zhu et al. 2019). This further highlights the importance of perceived expertise in shaping pro-environmental behavior.

Crucially, Hypotheses 6 (H6) and 7 (H7) confirmed the mediating role of subjective product knowledge in the relationship between both information quality and para-social interaction with purchase intention. These results underscore the psychological mechanism through which cognitive and affective stimuli contribute to behavioral intentions. Regardless of whether the consumer is persuaded via the central or peripheral route, the development of internalized knowledge remains a necessary step toward activating green product purchase behavior (Gao et al. 2021).

In summary, this study demonstrates that green product purchase intention is not merely the product of factual information or emotional appeal but rather the result of a complex interplay between the two—mediated by consumers' subjective understanding. For practitioners, this implies that live-streaming strategies must focus on delivering high-quality information and foster emotional engagement through relatable and trustworthy streamers. The dual impact of information and para-social interaction can significantly enhance consumers' confidence and willingness to purchase environmentally friendly products.

CONCLUSION AND RECOMMENDATION

This study examined how Information Quality and Para-Social Interaction influence Green Product Purchase Intention in live-streaming e-commerce using the Elaboration Likelihood Model (ELM). Results show that Information Quality does not directly affect purchase intention but strengthens Subjective Product Knowledge, which then increases purchase intention. In contrast, Para-Social Interaction has both direct and indirect effects, stressing the role of emotional engagement in sustainable consumer behavior.

These findings confirm the dual-route persuasion in ELM, where both cognitive elaboration (central route) and emotional influence (peripheral route) shape behavior. Practically, marketers should use streamers who build strong emotional ties and balance informative content with engaging delivery.

The study's limitations include a geographically narrow sample (young consumers in Semarang), no distinction between platforms or product categories, and a cross-sectional design that prevents causal inference. Future research should broaden demographics and geography, compare platforms and product types, adopt longitudinal/experimental methods, and add variables like environmental concern, trust, or perceived value.

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