

Research Article

Understanding How Product Reviews on YouTube Affect Consumers' Purchase Behaviors in Indonesia: An Exploration Using the Stimulus-Organism-Response Paradigm

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Product reviews on YouTube have become highly beneficial to consumers' decision-making, as they can help consumers judge and experience products before making purchases. Consequently, scholars and managers must understand consumer behaviors regarding product reviews and identify factors influencing consumers' purchasing decisions. A novel contribution of the study is the introduction of a model based on the stimulus-organism-response paradigm that explains how sensory marketing and information adoption affect parasocial interaction, trust (cognitive and affective), and information usefulness that are correlated with consumers' responses to stickiness, adoption, and purchase intentions. To empirically evaluate the proposed research model, we conducted an online survey of 611 participants who had purchased products based on YouTube product reviews. We performed data analysis using structural equation modelling and Smart-PLS software, and the results indicated that all hypotheses were supported except for parasocial interaction and information usefulness, which were rejected. This study could provide insights into the antecedents and consequences of purchase intentions in light of YouTube product reviews, thus contributing knowledge of online consumer behaviors to help managers understand consumer behaviors regarding social media and formulate marketing strategies.

1. Introduction

YouTube is a popular medium among Indonesian consumers. Of Indonesia's 170 million active social media users, 93.8% use YouTube [1]. As a social media platform based on user-generated content, YouTube allows users (YouTubers) to upload various videos for others to watch. The content generated consists of multiple forms, such as gaming videos, music videos, pranks, and movies. From a marketing perspective, one of the essential components of YouTube content is product reviews. The importance of

product reviews can be explained in several ways, such as highlighting information that is not obvious to generate confidence in purchasing a specific product, easing consumers' ability to judge the quality of a product, and presenting detailed information about a product, i.e., the size, colour, type, and material of a product [2]. YouTubers upload reviews in an audio-visual format that enables consumers to generate sensory and nonsensory experiences of the reviewed product, such as product performance, colour, and type [3]. YouTubers in the videos act as third parties who can convey product information based on

personal experience, and they are considered more reliable sources of information due to being less controlled by brands [4]. As a result, studies have labelled product reviews as “video word of mouth,” which is advantageous for consumers seeking information and is likely to reduce uncertainty in purchase situations [5].

Social media has a prominent role in social commerce markets worldwide. In 2021, YouTube added a new feature whereby video creators (also known as YouTubers) can tag products in their videos. Viewers can click on those tags to view information, related videos, and even purchase the products [6]. This equips marketers with valuable insight into using YouTube to disseminate information to consumers and act as a sales channel, as consumers can purchase products through the tag feature. Moreover, as part of an online review, product reviews on YouTube are considered a trustworthy and reliable source for consumers to make purchases, as previously investigated [7]. Therefore, YouTube is indicated as an important communication channel for firms to reach consumers [8, 9] as well as a social commerce sales channel [10].

Product reviews on YouTube are becoming increasingly popular in Indonesia. One example of a YouTube product review channel in Indonesia is GadgetIn (<https://www.youtube.com/c/GadgetIn>), which had more than nine million subscribers as of 2022. On average, each video uploaded by GadgetIn was watched more than one million times. There are product tags in many video descriptions that allow viewers to make direct purchases, and the comment column contains thousands of comments from consumers. Therefore, consumers have greater access to information and can comment directly on the products reviewed. In this way, YouTube video reviews of products have become a significant factor influencing consumer decisions. Based on statistics on digital shopping behaviors published by Statista in 2022, Indonesian consumers are the most likely to use reviews and ratings when making purchases [11]. Accordingly, it is important to examine YouTube product reviews to understand consumer behaviors and extend the existing literature, including the role of product reviews on YouTube in social commerce.

Numerous studies have attempted to investigate the importance of product reviews on YouTube in the marketing and consumer behavior fields. Previous studies explored various aspects YouTube product reviews, including parasocial interactions [9], YouTubers’ communication styles (i.e., social and task-oriented, product type, and experience) [12], seeking and sharing for electronic word of mouth [5], and sensory aspects [13]. However, there are limited studies focusing on YouTube product reviews as social commerce channels, and there is also a lack of studies explaining this phenomenon in Indonesia. The social commerce market in Southeast Asian countries, including Indonesia, has only recently emerged. Therefore, it should be captured as a potential market, and the factors that affect consumers’ purchase intentions through YouTube product reviews in a social commerce environment should be explored. In addition, the use of tagged product features on YouTube has made its implementation more relevant in social com-

merce markets. Discovering the relevant factors that explain the significance of YouTube product reviews in the social commerce environment in Indonesia could provide insight for both scholars and marketers into the marketing and consumer behavior issues examined in this study.

To address our motivation and fill the existing research gap, this study recommended a framework incorporating sensory marketing, parasocial interactions, trust (cognitive, affective), stickiness, and information adoption models for purchase intentions based on YouTube product reviews in social commerce. In this regard, the current research linked the stimulus-organism-response (SOR) model [14] to better comprehend how YouTube product reviews affect consumers’ cognitive and affective functioning, which manifests as a behavioral response in a social commerce environment. The implications of sensory marketing allowed this study to explore the symbolism provided by YouTubers. Consumer perceptions can be influenced by YouTubers who communicate information about a product and demonstrate its use and wear. The YouTuber justifies the use of sensory marketing based on product review videos on YouTube, as they provide a variety of sensory stimuli [13, 15]. The investigation of the parasocial interactions on YouTube could contribute to understanding the psychological state of the virtual face-to-face illusion relationship that consumers have with YouTubers. Therefore, through parasocial interaction, this study investigated the psychological relationship perceived by consumers toward YouTubers [16]. This study also divided trust into cognitive and affective components to differentiate how consumers respond to YouTuber’s reviews and whether their reactions are cognitive (rational) or affective (emotional) responses, as revealed by the YouTubers. Stickiness was used to explain the repetitive behaviors of customers watching YouTube videos. Stickiness was used to investigate rewatching behaviors of product reviews. Finally, the information adoption model was used to evaluate how consumers respond differently to information [17]. Product reviews on YouTube provide various pieces of information. For example, some consumers focus on the information conveyed by YouTubers (argument quality), whereas other consumers concentrate on information such as comments, ratings, views, and likes (source credibility). Consequently, consumers perceive the information as valuable, which impacts how they adopt the information and arrive at purchase decisions.

This study also described the role of YouTubers as reviewers who provide information to consumers on YouTube through the parasocial interaction theory. By investigating the perceived parasocial interactions of consumers with YouTubers, it was apparent how prominent YouTubers influence consumer trust and therefore influence viewers to make purchases (responses). In addition, the ability of YouTubers to entertain the audience impacts consumers’ stickiness behaviors (response) toward the product reviewers. Thus, the overall process used the SOR model to understand consumer behaviors in social commerce through YouTube product reviews. Therefore, this study investigated consumer decision-making in a social commerce environment.

2. Literature Review and Hypothesis

2.1. Stimulus-Organism-Response Model. The stimulus-organism-response (SOR) model has been extensively used to study consumer behaviors, especially in social commerce [18, 19]. The SOR model was used in this study to explain how individuals react to environmental stimuli [14]. In this study, environmental factors (S) were found to affect individuals' internal states (O), and the internal states of emotion and cognition would subsequently influence consumer responses (R). The SOR model was initially designed for use in environmental psychology [14]. However, several studies have clarified, developed, and applied it in social commerce [20, 21]. This research contributed to the inclusion of the SOR model in a social commerce environment through the focus on YouTube product reviews. Marketers could use this research model as an empirical approach to understand consumer behaviors in the social commerce environment.

In 2021, YouTube released a new feature based on product tags, whereby consumers could directly make purchases on the platform. This has presented an opportunity for marketers to use YouTube as a sales channel for consumers. YouTube product reviews provide consumers with a way to learn more about products before purchasing. Product reviews on YouTube are typically submitted by creators or influencers who receive sponsorships or users with personal experience using specific products. Thus, this study incorporated several theories, such as sensory marketing, parasocial interaction, information adoption models, trust, and stickiness behaviors, into the SOR model. The application of the SOR model in this study shows that YouTubers who review products can communicate the sensory appeal of a product (S), which will affect the parasocial interaction felt by the audience with the YouTuber (O). Furthermore, consumers who think that YouTubers' reviews are trustworthy (e.g., cognitive and affective) (O) will respond more stickily (R) with purchase intentions (R). As a second application, the SOR model was also applied in the context of information adoption, in which consumers assess the likelihood of information of an item of information (S) that affects the information usefulness (O) and parasocial interaction (O), which in turn affects information adoption (R) and purchase intentions (R). As a result of the SOR model, this study described the behaviors of consumers in YouTube product reviews in social commerce environment.

2.2. Social Commerce and YouTube Product Reviews. Social commerce is a form of consumption in which social media users sell products and services via social networking sites [22]. According to Huang and Benyoucef [23], social media users can participate in direct sales to support online decision-making and buying behaviors. In addition, social commerce is becoming increasingly popular among consumers, as they can easily access information such as product ratings, reviews, recommendations, and references that can influence their buying behaviors [24, 25]. One of the social media platforms that consumers can access for product reviews is YouTube, as articulated by YouTube influen-

cers known as "YouTubers." Studies have investigated that online YouTube product reviews are significant for consumer decision-making [26].

Since its launch in 2005 as a platform for user-generated video [27], YouTube has seen substantial growth in content and viewers. Along with the increase of social media users watching YouTube, marketers use YouTube as a channel for selling products to consumers. Therefore, performing sales through YouTube product reviews could be effective for marketing purposes. Past studies have found that product reviews on YouTube are presented either through sponsorship or personal experience [26]. YouTubers who present reviews on their YouTube channels connect to the referrals (i.e., products, brands, and companies) by adding a link in the video description, leading viewers to make external purchases [28]. YouTube has recently introduced a new feature that allows product tagging, which enables content creators to tag the product reviewed in the video [6]. Thus, the prominent role of YouTube product reviews in the social commerce environment was investigated from consumer behaviors to comprehend the consumer decision-making journey in an online environment [26].

2.3. Sensory Marketing in YouTube Product Reviews. The concept of sensory marketing, introduced by Krishna [29] as marketing rooted in consumer senses, influences individuals' perceptions, judgments, and behaviors. Therefore, the sensory experience will be the initial stage for consumers in the decision-making process [30]. Traditionally, consumers obtained sensory inputs about products from their physical surroundings [31]. However, due to consumer preferences for the online environment [32], marketers must improve their ability to incorporate sensory inputs into their online ecosystem. Previous studies have brought up digital sensory marketing as an emerging topic due to technological advancements allowing the consumer experience in online commerce [32]. As a result, research on sensory marketing applied to the digital environment has increased. Krishna et al. [33] investigated the driving effectiveness of digital sensory inputs and revealed that the five senses (vision, taste, touch, smell, and hearing) have different ways of attracting consumer attention. The application of sensory marketing concepts in YouTube product reviews could help form sensory perceptions based on grounded emotion and cognition that impact behaviors, memory, and learning about the product [29].

YouTubers convey large amounts of information through YouTube product reviews. However, this study focused on the visual and auditory cues within product review videos. Previous studies have revealed numerous details regarding the visual and auditory cues in YouTube product reviews, including those related to product appearance, design, colour, YouTuber gestures, background music, and descriptive language [3, 13, 15]. Consequently, through the sensory cues for the products demonstrated by YouTubers, consumers gain experience with the product, which will bring them into evaluation development of the product's virtual sensory experience and convert sensory information into decision-making stages. Sensory experience with a

product is essential for consumers because it allows them to interact with and feel the product before making a purchase decision [34]. Therefore, the prominent role of sensory marketing integrated into YouTube product reviews is to assist consumers in evaluating and judging a particular product for purchase in an online environment.

YouTube product reviews posted by YouTubers are accessed by consumers [35] through auditory and visual inputs [36]. YouTubers display the products and begin their reviews using sensory cues. In the videos, YouTubers use sound effects and background music to draw the viewers' attention, which can be considered auditory cues. Meanwhile, the audience's visual input is derived from various sources, including the product's appearance, the background, the appearance of media figures, and animated images [37]. Adami [36] asserted that those mentioned above become an interactive structure that can be used on YouTube. Furthermore, the concept of parasocial interaction based on the illusory relationship developed through posted videos suggests that sensory inputs (i.e., visual and auditory) impact consumer perceptions, attitudes toward YouTubers, and content. When consumers relate to YouTubers through their communication, demonstration, and use of products, they can develop parasocial interactions. For this reason, this study proposed the following hypothesis:

H1 (a) Visual and (b) auditory cues on the YouTube product reviews influence parasocial interactions with YouTubers.

2.4. Parasocial Interaction. Horton and Wohl [38] defined parasocial interaction as the psychological state wherein an audience perceives an illusory relationship and only receives one-sided communication from media performers. The concept of parasocial interaction was developed based on audience relations mediated by media personalities on television, on the radio, and in the movies [39]. Parasocial interaction implies that, initially, the media persona plays a character that is engaging to the audience. Once the audience is engaged with the media persona, they will pay attention and respond to the media figure's actions as expected. As a result, the audience will be more likely to participate in media programs and respond appropriately [38]. A possible outcome is that parasocial interaction with media personalities could replace actual interpersonal face-to-face relationships [9]. Intimacy, liking, and attractiveness toward media persona are all factors that contribute to this phenomenon [39].

The concept of parasocial interaction has been extensively applied in emerging media technology. Studies have investigated and associated the ideas of parasocial interaction, social media, and audience engagement, which are favourable to the brands and sales of firms [40]. In addition, this study demonstrated the concept of parasocial interaction between YouTubers who conduct reviews of products on YouTube and their audience. Previous research has found that YouTubers may be considered influencers or celebrities [41], which can be applied to parasocial interaction [38]. Accordingly, YouTubers utilize YouTube to generate content such as product reviews and establish a

relationship with the audience. The success of the parasocial interaction is associated with the ability of YouTubers to develop personal connections with the audience [40]. As a result, the more engaged the audience is with a YouTuber, the more likely they will be to purchase a product that a YouTuber has reviewed.

YouTubers attract consumers' attention and provide information about products simultaneously [42]. Furthermore, YouTubers address interactivity and openness in communication as antecedents of establishing parasocial interaction with the audience [43]. In addition, YouTube product reviews increase the personal connections with YouTubers [40], product presence, and product awareness [44], as perceived by the audience, which supports the implication of the parasocial interaction notion. However, in social commerce, trust dimensions (cognitive and affective) are crucial [45]. Parasocial interaction is an adequate predictor of trust in social marketing [10]. This study examined the relationship between parasocial interaction and cognitive and affective trust, as well as how cognitive trust influences affective trust. Consumers may respond differently to YouTubers' product reviews. They may evaluate YouTubers' information rationally based on their credibility, competence, and trustworthiness; however, others may trust YouTubers' opinions based on an emotional reaction. This illustrates how parasocial interactions differ in terms of building consumers' trust. Therefore, this study submitted the following hypotheses:

H2. Parasocial interaction perceived by the audience positively influences (a) cognitive and (b) affective trust.

2.5. Trust in YouTube Product Reviews. YouTube now supports online selling and buying and has become part of the social commerce ecosystem. Therefore, it is essential to comprehend consumers' determinants toward YouTube product reviews in the social commerce environment. Previous studies have revealed that trust is of the utmost importance in social commerce when it is considered a determinant that influences consumers' purchases [46–48]. The subject, therefore, was raised in a YouTube product review which includes several elements such as media personalities (YouTubers), products, and brands that influence the audience's buying behaviors. Thus, this study linked dual trust processing, such as cognitive and affective trust, toward YouTube product reviews. Cognitive trust refers to the importance of trust in online product information and lies in commitment [49], competence, and reliability [50], while affective trust relies on consumers' emotions [51]. Since YouTube launched the product tag feature in 2021, it has expanded the function of social commerce platforms, as consumers often employ YouTube as a reference for product information to make evaluations before purchasing [52]. YouTube also enables consumers to make purchases from the platform [6]. Therefore, each element contained in a YouTube review can affect consumer trust. In product reviews, YouTubers perform their personal experience using the product or act as third parties collaborating with brands [5, 26].

Cognitive trust has been defined as an individual's evaluation of information based on considerations of reliability

and professionalism [53, 54]. Additionally, affective trust refers to individuals' emotional bonds or connections when exchanging information [53, 55]. In line with previous research discussions on cognitive and affective trust, this study examined how consumers evaluate the product information conveyed by YouTubers in their YouTube product reviews and how that affects stickiness behaviors. According to this study, consumer trust was found to affect behaviors related to revisiting YouTube videos or staying to watch them for longer periods. Therefore, relevant to trust, this study examined whether consumers would be likely to revisit YouTubers' reviews based on cognitive trust (competence, reliability) or affective trust (emotional feelings). In this regard, trust could have a different impact on stickiness behaviors. Therefore, this study proposed the following hypotheses:

H3. Cognitive trust influences affective trust.

H 4)Cognitive and (H5) affective trust positively influences stickiness.

Moreover, this study examined how consumers interpret YouTubers' review information cognitively and affectively, which influences their purchase intentions. YouTubers simultaneously entertain viewers and provide product reviews for consumers [56]. In a previous study, consumers rated the credibility, reliability, and professionalism of YouTubers and the information they convey as indicators of cognitive trust [53, 54]. Nevertheless, some people evaluate information based on the relationship between YouTubers and consumers [53, 55]. Research has also indicated that cognitive and affective trust significantly affects purchase intentions [57]. In this regard, the following hypotheses were proposed:

H 6) Cognitive and (H7) affective trust positively influences purchase intentions.

2.6. Stickiness. In the social commerce phenomenon, stickiness plays a significant role in determining user retention and purchases through social networks [58]. The concept of stickiness has been defined across various media platforms (e.g., websites, social media, and games), but they all describe how to retain and prolong behaviors [59]. According to Li et al. [60], user stickiness refers to how well a social media platform can impress and engage users. In this study, we specifically investigated the stickiness of users in YouTube product reviews. Various elements in YouTube product reviews enable user engagement, such as the use of influencers, products, and brands. According to Hu et al. [61], stickiness behaviors are more prominent in online consumer behaviors due to the use of more media personalities. Furthermore, YouTube is well-known as a social media video-sharing platform that allows users to produce content that attracts the audience's attention [62]. A previous study found that stickiness increases when viewers feel a sense of attachment [60] or enjoyment from media characters on YouTube [62]. Lu and Cheng [63] found in their study on YouTube product reviews that perceived social interactions, such as making connections, giving new information, and making people curious, make people stay longer on the site.

In the past, stickiness behaviors were investigated using a variety of antecedents. This study also introduced the concept of stickiness for product reviews on YouTube. In the reviews, YouTubers demonstrate high levels of engagement and presence. YouTubers' ability to retain and prolong the duration of their audience's stay on the site is a measure of stickiness. It has been confirmed that interactive experiences lead to trust and stickiness [64]. Online shoppers can review YouTube product reviews and purchase products based on the product information in the videos. Previous studies have confirmed that stickiness can significantly influence purchase intentions [59, 65]. This study is aimed at investigating the stickiness behaviors of YouTube product reviews on purchase intentions; therefore, the following hypothesis was proposed:

H8.Consumer stickiness toward YouTube product reviews can positively influence purchase intentions.

2.7. Information Adoption Model. By integrating Davis' technology acceptance model [66] and Chaiken's dual-process model of information influence [67], Sussman and Siegal [68] discovered the information adoption model (IAM). The IAM concept describes how different recipients may react differently to the same information. Salehi-Esfahani et al. [17] argued that recipients will respond differently to a dispatch depending on how much attention they pay to the content of the message. The information adoption model uses the concept of central and peripheral routes for information sources, both of which were used to develop the information adoption model. When consumers evaluate a message from an online environment and make decisions, they use the central route when considering the quality of the content and the relevance. In contrast, the peripheral route is used to consider other factors, such as the number of previous users and their popularity [17]. In the original information adoption model, information usefulness served as a mediator of the argument quality and source credibility in information adoption [68].

Researchers have incorporated a variety of information adoption models, some with modifications and extensions, to investigate how online information affects consumer behaviors [69, 70]. This study examined how consumers adopt information about products from YouTubers' product reviews on social media and how these reviews influence their purchases using the information adoption model. According to the original information adoption model, the implementation of central routes to messages demonstrated on YouTube product reviews represents the conditions under which consumers evaluate the quality and relevance of the product information (i.e., product quality) and determine whether to accept or reject it [71, 72]. Additionally, the number of viewers responding to product reviews in the comments section is a reliable indicator of how well the product and review resonate with the YouTube audience, which is considered a peripheral route. According to a previous study, we viewed the central route as a quality argument and the peripheral route as a credible source for the concept of information adoption [73]. After passing through the central and peripheral routes, the next step is information

usefulness, which is the condition where consumers consider the information received to be adopted.

According to Horton and Wohl [38], parasocial interactions are described as “perceived illusory relationships” by audience members with media actors. Parasocial interaction was applied in this study to examine YouTube product reviews. YouTubers act as media personalities to convey detailed information about products. At the same time, they entertain the audience. As a result, viewers feel as if they are conversing with YouTubers in person. Therefore, the audience’s perceived parasocial interactions with the media figures affect the usefulness of the information, as demonstrated in a previous study [74]. The relationship between parasocial interaction and information usefulness was examined in this study to understand how the illusory face-to-face relationships with YouTubers affect consumer justification for the value of the information conveyed in the reviews. Thus, this study presented the following hypothesis:

H9. The audience’s feelings of parasocial interaction positively influence information usefulness.

Sussman and Siegal [68] used a dual-process model of informational influence in the users’ information adoption, namely, central and peripheral routes. The central cue for argument quality is the level of the argument quality, and the peripheral cue for source credibility is trustworthiness [35]. Hussain et al. [75] asserted that argument quality depends on an individual’s perception of a message’s arguments, which must be definite and persuasive. YouTubers review products based on their personal experiences on YouTube. In the context of information adoption, consumers’ perceptions of information relevance, accuracy, comprehensiveness, and timeliness will determine information usefulness to them [35]. Furthermore, research has shown that an argument’s quality can influence the use of the information [74, 76]. The hypothesis was as follows:

H10. The argument quality of YouTube product reviews positively influences information usefulness.

Source credibility refers to the degree to which the recipient believes a source to be trustworthy [67]. Sussman and Siegal [68] defined source credibility as peripheral cues or informational indicators that consumers use in assessing content other than the information itself. YouTubers are the initial source of credibility in social commerce, and their antecedents affect consumer perceptions and the importance of YouTube product reviews [77]. Ismagilova et al. [78] asserted that the credibility of the source of online information influences consumers’ purchase intentions. YouTubers, meanwhile, influence consumers’ trustworthiness and helpfulness toward the audience during purchasing [79]. This study assumed that in the context of YouTube product reviews, source credibility will influence the usefulness of information [80, 81]. Thus, we proposed the following hypothesis:

H11. The source credibility of YouTube product reviews positively influences information usefulness.

Information is valid if the audience perceives it as valuable [82]. In the context of YouTube product reviews as social commerce platforms, information that is valuable to consumers positively impacts purchase intentions [70]. You-

Tubers present their personal experiences with products through YouTube product reviews to become trusted sources of information [5]. Accordingly, when a consumer buys a product based on the content of a review, this action represents how perceived information usefulness affects the adoption of information [35]. Thus, we investigated the information received by consumers in the information on YouTube, which leads to adoption. Therefore, the hypothesis was as follows:

H12. The perceived information usefulness of YouTube product reviews positively influences information adoption.

According to Erkan and Evans [70], social media has enabled users to access product information. When consumers perceive information as valuable, it leads to its usefulness and adoption [80]. As Sussman and Siegal [68] pointed out in the information adoption model, information usefulness influences adoption. While the information provided by YouTubers has high credibility, what matters most is the degree of consumer adaptability and transformation in a purchase [73]. Scholars have proven that information adoption influences purchase intentions [83]. We investigated the influence of information adoption on purchase intentions through YouTube product reviews. This study proposed the following hypothesis:

H13. The information adoption of YouTube product reviews positively influences purchase intentions.

3. Research Model and Construct Definitions

Utilizing the SOR model, we investigated consumer behaviors in the social commerce context of YouTube product reviews. As stimuli (S) for YouTube product review audiences, including sensory cues, argument quality, and source credibility, these stimuli sequentially affect the individual organism (O) through parasocial interaction, cognitive trust, emotional trust, and information usefulness. Consequently, an individual will respond (R) with stickiness, information adoption, and purchase intentions. The conceptual framework and research hypotheses are described in more detail in Figure 1, while Table 1 presents the operational definitions.

4. Research Method

4.1. Measurement Items. This study adapted the measurement items based on previous studies. The items were then modified and appropriately adjusted to match the context and research objectives. The visual and auditory cue items were adapted from [90, 91], and we conducted modifications and developed five items. The parasocial interaction items were adapted from [43, 92], and nine items were developed. The cognitive trust items were modified from [50, 93], and five items were created. The affective trust items were modified from [93, 94], and five items were developed. The stickiness items were modified from [60, 95], and three items were produced. The argument quality items were modified from [87, 96], and we created three items. The source credibility items were adapted from [97, 98], and thirteen items were developed. The information usefulness and information

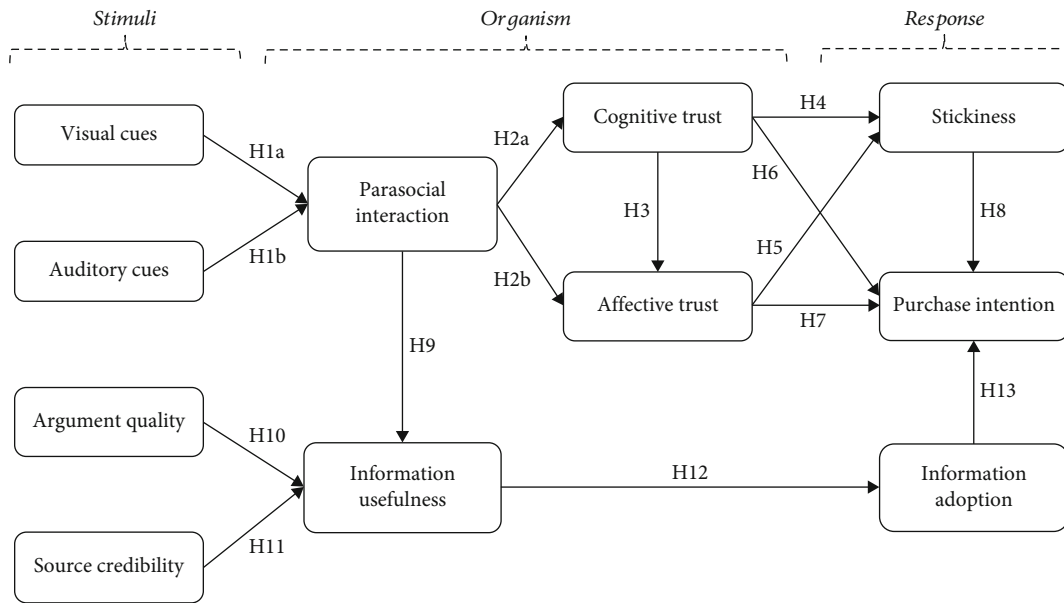


FIGURE 1: Proposed conceptual framework.

TABLE 1: Construct definitions.

Construct	Operational definition	Adapted sources
Visual cues	Visual communication is intended to present objects or people with particular characteristics that might influence judgment, emotions, and behaviors.	Modified from [29]
Auditory cues	A sound message (voice, language) received from any channel influences judgment, emotions, and behaviors.	Modified from [29]
Parasocial interaction	The psychological state wherein an audience perceives an illusory relationship and only receives one-sided communication from media performers.	[38]
Cognitive trust	Consumers' rational expectation is that a trustee will possess the required competence, benevolence, and integrity to be relied upon.	[84]
Affective trust	Emotional ties, concerns, and care between the audience and the YouTubers push the latter to do something for the former because it is perceived as a moral duty.	Modified from [85]
Stickiness	The frequency with which the audience rewatches the media performer lengthens the duration of each watch.	Modified from [59]
Purchase intentions	The degree to which consumers will desire to purchase products in the future.	[86]
Argument quality	The persuasive strength of arguments embedded in an informational message.	[87]
Source credibility	Metainformation about the message (e.g., message source) but not its embedded arguments.	[87]
Information usefulness	Users' assessment of the quality and contribution of a particular information set used to detect deception decision.	[88]
Information adoption	After assessing its validity, the extent to which people accept content they are presented with as meaningful.	[89]

adoption items were adapted from [68], and we produced four and three items, respectively. The purchase intention items were adapted from [99, 100], and three items were developed. The measurement items for each construct are presented in Table 2. The items were then scored on a 7-point Likert scale (7 = strongly agree, 1 = strongly disagree).

The items were initially developed in English and then subsequently translated into Indonesian (Bahasa Indonesia). We performed content validity tests on the items translated into Indonesian to ensure the respondents could understand the content of each item while filling out the questionnaire.

To confirm the validity and reliability of the items, we performed data collection for the pilot study after validating the Indonesian language content. We then distributed the questionnaire to 50 participants who had the experience of purchasing a product based on a YouTube product review. As a result, the validity and reliability assessments of the items were satisfactory, based on a factor loading criterion range of 0.742 to 0.975, which was higher than the suggested value of 0.70 [101], and a Cronbach alpha range of 0.941 to 0.979, which was higher than the recommended value of 0.70 [101].

TABLE 2: Construct measurement items.

Construct	Items
Visual cues	<p>The design of YouTubers' review videos is visually appealing.</p> <p>The YouTubers are physically attractive in the review video.</p> <p>The YouTuber looks beautiful/handsome with the product.</p> <p>The YouTuber seems fit to their content about the products.</p> <p>The YouTuber puts the products into a stylish performance in the review video.</p>
Auditory cues	<p>The YouTuber speaks euphoniously when reviewing the products.</p> <p>The YouTubers' video review influences my attention because it is pleasant sounding.</p> <p>The YouTuber reviews the product using harmonious sound effects in the video.</p> <p>The YouTuber reviews products with a melodic music background.</p> <p>The YouTuber reviews the product with a sonorous voice.</p>
Parasocial interaction	<p>The YouTuber makes me feel comfortable as if I am with a friend.</p> <p>I see the YouTuber as a natural, down-to-earth person.</p> <p>I look forward to watching the YouTuber on their channel.</p> <p>If the YouTuber appeared on another YouTube channel, I would watch that channel.</p> <p>I miss seeing the YouTuber when they are ill or on vacation.</p> <p>I want to meet the YouTuber in person.</p> <p>I feel sorry for the YouTuber when they make a mistake.</p> <p>I like hearing what the YouTuber has to say.</p> <p>I care about what happens to the YouTuber.</p>
Cognitive trust	<p>Given the YouTuber's track record, I have no reason to doubt their competence.</p> <p>I know that information given to me is based on the YouTuber's best judgment.</p> <p>I trust YouTubers because they seem to be dependable.</p> <p>I can count on YouTubers' advice because they are sincere.</p> <p>I confidently depend on YouTubers since they may make my decision easier.</p> <p>The YouTuber is ready to offer my assistance and support in all circumstances.</p>
Affective trust	<p>When giving advice, the YouTuber is concerned about my welfare.</p> <p>In the future, I can count on the YouTubers' reviews to consider how my purchase decisions and actions will affect me.</p> <p>I trust the YouTubers' reviews because they care about the audience.</p> <p>When it comes to things that are important to me, I can depend on the support provided by YouTube reviews.</p>
Stickiness	<p>I will stay for a long time while watching the YouTuber's channel.</p> <p>I usually spend a lot of time watching the YouTuber's channel.</p> <p>I intend to prolong my stay on this YouTuber's channel.</p>
Argument quality	<p>The reviews provided by the YouTubers are informative.</p> <p>The reviews provided by the YouTubers are valuable.</p> <p>The reviews provided by the YouTubers are persuasive.</p>
Source credibility	<p>The YouTuber gives me a good feeling.</p> <p>The YouTuber gives the products an attractive image in the reviews.</p> <p>The YouTuber catches my attention.</p> <p>The YouTuber pleases people.</p> <p>The YouTuber is experienced with the products being reviewed.</p> <p>The YouTuber is a professional.</p> <p>The YouTuber is a capable person.</p> <p>The YouTuber has professional knowledge of the product being reviewed.</p> <p>The YouTuber is skilled with the product being reviewed.</p> <p>The YouTuber knows the product being reviewed very well.</p> <p>The YouTuber knows how to use the product being reviewed.</p> <p>The YouTuber's values match the product being reviewed.</p> <p>The YouTuber is qualified to serve as a product spokesperson.</p>
Information usefulness	<p>In general, I think the YouTuber's reviews are valuable.</p> <p>In general, I think the YouTuber's reviews are informative.</p> <p>In general, I think the YouTuber's reviews are helpful.</p> <p>In general, I think the YouTuber's reviews are instructive.</p>

TABLE 2: Continued.

Construct	Items
Information adoption	I acted closely following the suggestion from the YouTuber's review.
	I am highly motivated to extend the YouTuber's reviews to buy the product.
	I completely agree with the action suggested in the message on the YouTuber's reviews.
Purchase intentions	I will purchase products reviewed by the YouTuber in the future.
	I will encourage people close to me to buy the products reviewed by the YouTuber.
	I desire to buy products that are reviewed by the YouTuber.

4.2. Sampling Technique and Data Collection Procedure. This study utilized a nonprobability sampling technique and a purposive sampling method for selecting the research participants. The participants must have purchased a specific product based on YouTube reviews to participate in the survey. We included two preliminary questions in the questionnaire to ensure the participants had experience purchasing products after watching product reviews on YouTube. During the survey, the participants were asked whether they had purchased a product and the type of product purchased based on YouTube reviews. The participants were eligible to complete the questionnaire if they responded “yes” to the two preliminary questions. The goal was to generate responses consistent with the research objectives, which were to investigate consumer purchase intentions based on sensory marketing, parasocial interaction, trust, stickiness, and information adoption models in a social commerce environment. This study used a questionnaire via Google Forms to collect data. To distribute the questionnaires randomly, we used links generated from Google Forms and sent them via Facebook, Instagram, and WhatsApp. Wright [102] stated online surveys allow researchers to target unique populations and maintain the respondents' privacy. The data collection process took six months, and 627 responses were received. However, following an initial screening of the responses, several incomplete responses had to be eliminated, leaving 611 usable responses. The data collection procedures conducted in the research were also performed in previous studies [103, 104].

4.3. Analysis Technique. In the study, structural equation modelling was used for data analysis via Smart-PLS 3.0. As a fundamental component of the research, several steps needed to be taken to carry out the research. First, we evaluated the measurement model using convergent and discriminant validity tests. The convergence validity of the model was assessed based on the values of the average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha for internal consistency. Additionally, the Fornell-Larcker criterion and the heterotrait-monotrait ratio were used to evaluate the discriminant validity. Once the parameters for validity and reliability were satisfactory, the fit model was evaluated using two methods. First, we assessed the value of the R^2 percentage as the variance of an endogenous variable determined by an exogenous variable, representing the strength of the model [105, 106]. Second, the model fit was evaluated using fit indices such as SRMR, d_{ULS} , d_G , and NFI [101]. Finally, hypothesis testing was conducted once

the model fit criteria for structural equation modelling had been achieved.

5. Results

5.1. Demographic Characteristics. Among the 611 responses that could be analysed, most respondents (51%) were female. According to the age range of the respondents, 89% were aged 19 to 39, and 11% were in the 40 to 50-year-old range. Based on the occupations, 40% of the respondents were students, while 60% were employed in the private sector, government, and entrepreneurship. Over half of the respondents (53%) were single. The monthly income of 62% of respondents was below IDR 4,999,999, while 38% had an income above IDR 5,000,000. More than half of the respondents (62%) spent one to three hours on YouTube each day, and 38% spent three to five hours per day watching YouTube videos. The types of products the respondents had purchased based on product reviews on YouTube were fashion (15%), games and toys (15%), foods (14%), and education (11%). Other products, such as electronic devices, automobiles, sports equipment, computer devices, and household goods, were less than 10% of the total purchases. A description of the demographic characteristics of the respondents is presented in Table 3.

5.2. Validity and Reliability Test. We used partial least squares (PLS) with Smart PLS 3.0 software to test the data. There were two stages of data testing. First, we performed both convergent and discriminant validity testing on the measurement model. Secondly, a structural model was used to evaluate the significance of the hypotheses. After performing the validity testing, we dropped two of the items: “the design of YouTubers' review videos is visually appealing” from visual cues and “the YouTuber reviews the product in a sonorous voice” from auditory cues, due to having factor loadings less than 0.50. The factor loadings for each construct after dropping the two items were higher than the suggested value of 0.70 [101], and the average extracted value (AVE) was higher than the recommended value of 0.5 [101], indicating this study met the convergence validity criteria. We also conducted reliability tests based on Cronbach's alpha and composite reliability criteria. The results of construct validity and reliability are present in Table 4. The results suggested that each construct in this study had a Cronbach alpha value that was higher than the implied value of 0.70 [101], and the composite reliability value was greater than the recommended value of 0.70 [101], meaning this study met the reliability requirement.

TABLE 3: Respondent demographics.

Measure	Items	Frequency	Percentage
Gender	Male	299	49%
	Female	312	51%
Age	19 or below	112	18%
	20-29	315	52%
	30-39	114	19%
	40-49	55	9%
	50 or above	15	2%
	Undergraduate student	203	33%
Occupation	Graduate student	45	7%
	Private employee	124	20%
	State-owned enterprise employees	83	14%
	Government employee	91	15%
	Entrepreneur	65	11%
Marital status	Single	408	67%
	Married	203	33%
Income	IDR 999.999 or below	19	3%
	IDR 1.000.000-2.999.999	206	34%
	IDR 3.000.000-4.999.999	151	25%
	IDR 5.000.000-6.999.999	60	10%
	IDR 7.000.000-8.999.999	141	23%
	IDR 9.000.000 or above	34	6%
	1 hour/day or below	32	5%
Spent time to watch YouTube in a day (hours)	1-2 hours/day	132	22%
	2-3 hours/day	213	35%
	3-4 hours/day	180	29%
	4-5 hours/day	38	6%
	5 hours/day or above	16	3%
Types of products purchased based on product reviews on YouTube	Fashion	93	15%
	Electronic devices	57	9%
	Cosmetics	64	10%
	Foods	85	14%
	Automotive	28	5%
	Sport equipment	27	4%
	Games and toys	91	15%
	Computer devices	54	9%
	Household goods	45	7%
Education	67	11%	

This study evaluated the discriminant validity using two methods. First, we assessed the value of the square roots of the extracted average variance (AVE) in comparison to the correlation between the constructs. Table 5 presents the discriminant validity. The results indicated that the square root of the AVE was more significant than the intercorrelation between constructs, as suggested by [107]. As a result, the Fornell-Larcker criterion of discriminant validity was met. Second, we assessed the discriminant validity using the heterotrait-monotrait (HTMT) criterion. The results indicated that each construct's value was below 0.85 [108], indicating the HTMT criteria had good discriminant validity.

5.3. Structural Model and Hypothesis Testing. We used Smart PLS 3.0 software to validate the goodness of fit for the structural model. Figure 2 and Table 6 present the results of the structural path analysis. To measure the model's overall predictive capability, this study used the R^2 value to calculate the percentage by which the exogenous variables could explain the variation in the endogenous variables. Studies have indicated models with R^2 values greater than 0.10 are considered statistically viable [106]. Figure 2 displays the path coefficient between the constructs and the R^2 coefficients. There was an explained variance of 18.4% for parasocial interaction, 60.5% for cognitive trust, 24% for affective trust, 37.8% for stickiness, 60.1% for purchase intentions, 40.5% for information usefulness, and 29.8% for information adoption, as presented in Figure 2. As a result, all constructs in this study exceeded the suggested R^2 value of 0.10 [106].

As shown in Table 6 and Figure 2, visual and auditory cues were found to significantly affect parasocial interaction. Therefore, H1a and H1b were supported ($\beta = 0.189$ and 0.180 ; $t = 3.998$ and 4.105 , respectively). Parasocial interaction was found to significantly affect cognitive and affective trust, thus supporting H2a and H2b ($\beta = 0.778$ and 0.250 ; $t = 28.812$ and 3.352). Affective trust was found to significantly affect cognitive trust; therefore, H3 was supported ($\beta = 0.370$ and $t = 3.614$). The effects of cognitive and affective trust on stickiness were found to be significant; therefore, H4 and H5 were supported ($\beta = 0.528$ and 0.154 ; $t = 13.059$ and 3.622 , respectively). A significant influence of cognitive and affective trust on purchase intentions was found, indicating H6 and H7 were supported ($\beta = 0.113$ and 0.071 ; $t = 2.530$ and 2.265 , respectively). Stickiness was found to significantly affect purchase intentions, which supported H8 ($\beta = 0.379$ and $t = 7.336$). Parasocial interaction did not significantly influence information usefulness, indicating H9 was unsupported ($\beta = 0.045$ and $t = 0.836$). Argument quality and source credibility were found to significantly affect information usefulness; thus, H10 and H11 were supported ($\beta = 0.273$ and 0.465 ; $t = 6.507$ and 7.478 , respectively). Information usefulness had a significant influence on information adoption, thus supporting H12 ($\beta = 0.546$ and $t = 14.272$). Lastly, information adoption was found to significantly affect purchase intentions, supporting H13 ($\beta = 0.335$ and $t = 6.230$).

TABLE 4: Construct validity and reliability.

Constructs	Factor loadings	CA	CR	AVE
Visual cues (VC)	0.910-0.934	0.941	0.958	0.849
Auditory cues (AC)	0.816-0.908	0.898	0.929	0.767
Parasocial interaction (PSI)	0.792-0.885	0.956	0.930	0.817
Cognitive trust (CT)	0.864-0.928	0.944	0.957	0.816
Affective trust (AT)	0.893-0.916	0.947	0.959	0.824
Stickiness (STK)	0.933-0.960	0.942	0.963	0.896
Purchase intention (PI)	0.890-0.913	0.888	0.930	0.817
Argument quality (AQ)	0.825- 0.893	0.813	0.818	0.728
Source credibility (SC)	0.824-0.890	0.974	0.976	0.760
Information usefulness (IU)	0.898-0.908	0.925	0.947	0.817
Information adoption (IA)	0.889-0.929	0.889	0.931	0.818

TABLE 5: Discriminant validity.

Constructs	VC	AC	PSI	CT	AT	STK	AQ	SC	IU	IA	PI
Visual cues (VC)	<i>0.922</i>	0.261	0.243	0.281	0.302	0.194	0.285	0.283	0.356	0.282	0.239
Auditory cues (AC)	0.239	<i>0.876</i>	0.242	0.285	0.272	0.230	0.277	0.281	0.302	0.296	0.265
Parasocial interaction (PSI)	0.232	0.225	<i>0.859</i>	0.817	0.482	0.638	0.247	0.796	0.489	0.771	0.698
Cognitive trust (CT)	0.266	0.262	0.778	<i>0.903</i>	0.489	0.633	0.239	0.758	0.487	0.716	0.646
Affective trust (AT)	0.289	0.252	0.460	0.464	<i>0.908</i>	0.420	0.422	0.505	0.490	0.480	0.459
Stickiness (STK)	0.184	0.212	0.606	0.599	0.399	<i>0.947</i>	0.238	0.642	0.434	0.756	0.773
Argument quality (AQ)	0.248	0.237	0.220	0.211	0.371	0.210	<i>0.853</i>	0.333	0.482	0.310	0.291
Source credibility (SC)	0.273	0.263	0.768	0.728	0.485	0.615	0.297	<i>0.872</i>	0.610	0.818	0.705
Information usefulness (IU)	0.334	0.276	0.462	0.458	0.462	0.407	0.421	0.580	<i>0.904</i>	0.600	0.499
Information adoption (IA)	0.259	0.264	0.710	0.658	0.442	0.692	0.265	0.761	0.546	<i>0.904</i>	0.791
Purchase intention (PI)	0.219	0.238	0.643	0.594	0.423	0.707	0.247	0.655	0.454	0.703	<i>0.904</i>

Notes: the italic numbers indicate the square root of AVE. the below italic numbers indicate the correlations between constructs (Fornell-Larcker criterion). The above italic numbers indicate the HTMT values.

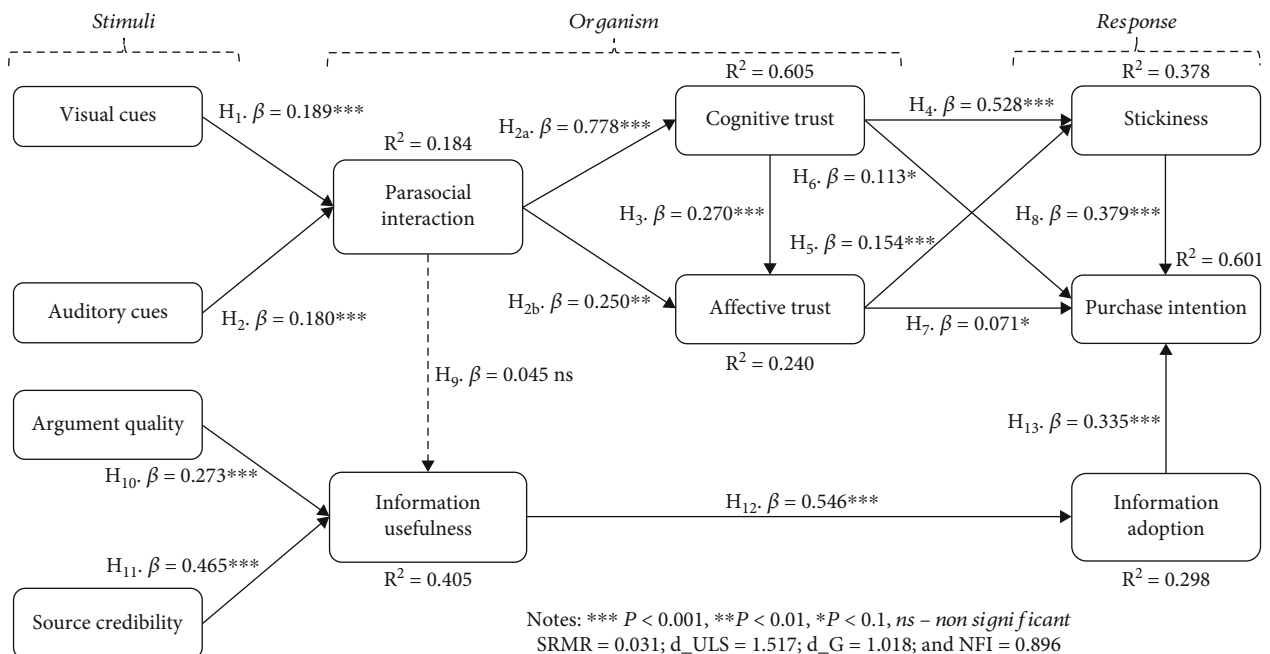


FIGURE 2: Hypothesis testing results.

TABLE 6: Summary of hypothesis testing.

Hypothesis	Path coefficient	T-value	Conclusion
(H1a) Visual cues → parasocial interaction	0.189***	3.998	Supported
(H1b) Auditory cues → parasocial interaction	0.180***	4.105	Supported
(H2a) Parasocial interaction → cognitive trust	0.778***	28.812	Supported
(H2b) Parasocial interaction → affective trust	0.250**	3.452	Supported
(H3) Cognitive trust → affective trust	0.270***	3.614	Supported
(H4) Cognitive trust → stickiness	0.528***	13.059	Supported
(H5) Affective trust → stickiness	0.154***	3.622	Supported
(H6) Cognitive trust → purchase intention	0.113*	2.530	Supported
(H7) Affective trust → purchase intention	0.071*	2.265	Supported
(H8) Stickiness → purchase intention	0.379***	7.336	Supported
(H9) Parasocial interaction → information usefulness	0.045	0.836	Unsupported
(H10) Argument quality → information usefulness	0.273***	6.507	Supported
(H11) Source credibility → information usefulness	0.465***	7.478	Supported
(H12) Information usefulness → information adoption	0.546***	14.272	Supported
(H13) Information adoption → purchase intention	0.335***	6.230	Supported

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

6. Discussion and Conclusion

6.1. Key Findings. This study is aimed at understanding consumer behaviors in a social commerce environment by combining sensory marketing (auditory and visual cues), parasocial interaction, trust (cognitive and affective), stickiness, information adoption models, and purchase intentions. Research related to human behaviors and emerging technologies has progressed and been examined from various perspectives [109]. In particular, the SOR model has been used to explain how the environment of YouTube product reviews affects consumer behaviors. The data was collected from participants who had purchased items based on YouTube product reviews. As a result of our findings, we prompted several discussions.

First of all, this study utilized two elements of sensory marketing, visual and auditory cues. This study found that visual and auditory cues are used as inputs that cause the audience to form perceptions of a product's physical characteristics based on YouTube reviews and the attributes of the YouTuber in the video. The results indicated that both visual cues (H1a) and auditory cues (H1b) significantly affect parasocial interaction; thus, consumers are more likely to perceive parasocial interactions when provided with visual and auditory cues from product reviews on YouTube. For example, YouTube product reviews are often watched by consumers who are drawn to the design, colour, packaging, display, and other visual cues. Additionally, consumers perceive auditory cues from the sounds of the products heard while YouTubers demonstrate reviews. Furthermore, consumers perceive visual cues about the YouTubers (as reviewers), such as their physical appearance, how products are worn, body gestures, expressions, and others. In contrast, auditory cues, such as clear sounds, sound effects, resonant sounds, melodic background music, and others, are per-

ceived by consumers. Studies regarding the relationship between sensory marketing and parasocial interaction are limited. In this study, the authors explained how sensory marketing (visual and auditory cues) affects parasocial interactions. This is the extent previous study that investigated how to cultivate parasocial interaction through product posts on social media by influencers [10, 100].

Second, parasocial interaction was significantly associated with cognitive trust (H2a) and affective trust (H2b). This suggested that perceived parasocial interactions with a YouTuber increase trust. The audience may view the YouTuber as high commitment, competent, and reliable in conveying the information. Moreover, the audience perceives that parasocial interactions also contribute to increased emotional trust. For instance, when viewers make an important decision that affects them, they can rely on YouTubers' reviews. This is due to the YouTuber's concern for the audience's welfare when providing the reviews. This result was consistent with previous studies, which found that parasocial interaction significantly impacts trust [110]. Furthermore, we looked at the relationship between parasocial interaction and information usefulness, and the findings showed that parasocial interaction has no significant effect on information usefulness (H9). These findings demonstrated that the audience perceives parasocial interaction as having a less significant influence on their information usefulness in the context of product reviews. Consequently, the audience will be more likely to focus on the emotional bond and reliability of the YouTuber giving the reviews. YouTubers upload prerecorded reviews of products to their channels. The reviews supply cognitive and emotional stimulation, which affects the extent to which the information conveyed is valuable to the audience. Unlike live streaming, consumers cannot directly communicate with YouTubers, although they have access to extensive information in the comment sections and the

YouTube video reviews. As a result, consumers wishing to ask YouTubers directly about a particular product must do so through the comment section and wait quite a long time for feedback. Consequently, consumers are more likely to form emotional attachments with YouTubers than focus on the information conveyed. The reason for this is that consumers can also view other viewers' comments about the products in the comment section, which may prove helpful in forming opinions about the products. The demographics of the respondents in this study were primarily composed of undergraduate students and young people who pay more attention to the beauty and attractiveness of YouTubers than to the information they provide. There is limited research regarding the relationship between parasocial interaction and information usefulness. The current result contradicted the results of Lee [74], who found that parasocial interaction significantly affects usefulness. This study focused on how customers perceive the parasocial interaction about specific brands when using a mobile application.

Thirdly, this study demonstrated that cognitive trust is significantly associated with affective trust (H3), indicating the audience will be more likely to increase the emotional bond after perceiving the YouTuber as competent, committed, and reliable. The finding is consistent with the previous investigation, which suggested that cognitive trust has a significant impact on effective trust [93]. Fourth, we found that cognitive trust (H4) and affective trust (H5) substantially impact stickiness. Thus, it was found that consumers will be more likely to show stickiness for product reviews on YouTube when they cognitively and emotionally trust the YouTuber. Previous findings have shown that stickiness behaviors on particular online platforms are influenced by user trust [111, 112]. This study demonstrated that two types of trust impact stickiness. Cognitive trust increases stickiness because the audience perceives the YouTuber as trustworthy, whereas affective trust increases stickiness through emotional bonds, which encourages the audience to engage with the YouTuber.

We also confirmed that both cognitive (H6) and affective trust (H7) significantly impact purchase intentions. This indicated that the increase in consumer trust in YouTube product reviews will significantly impact purchase intentions. Additionally, this study suggested that cognitive trust is more critical for purchase intentions than affective trust. Hence, it was obvious that consumers who watch YouTube product reviews are more concerned with the quality, competence, and trustworthiness of the information conveyed by YouTubers compared to developing a sense of emotional bond with them. This study found trust to be a consequence of consumers' perceived parasocial interactions with YouTubers, which affects cognitive trust more significantly than affective trust. Therefore, consumers who initiate a relationship with YouTubers based on cognitive judgments will experience the same purchase outcomes. To increase purchase intentions through YouTube product reviews, it is better to establish cognitive trust among consumers before establishing affective trust. These findings were consistent with previous research suggesting that trust is an essential determinant of purchase intentions in social commerce [113, 114].

The sixth finding of this research revealed that stickiness (H8) significantly influences purchase intentions; thus, consumers who retain and prolong visits to watch product reviews on YouTube will be most likely to purchase the products [75]. Chiang and Hsiao [62] emphasized that the users' stickiness will determine their willingness to return and prolong visits to a particular platform and will lead to loyalty. Therefore, audience stickiness has become an essential factor for YouTube product reviews to influence consumers to conduct purchases on social media.

The conceptual framework of this study was expanded to incorporate the information adoption model in exploring how consumer peripherals (source credibility) and central routes (argument quality) affect the usefulness, adoption, and purchase intentions of YouTube product reviews. Our seventh finding suggested that source credibility (H10) and argument quality (H11) significantly influence information usefulness. These findings were consistent with previous research [76]. Additionally, this study suggested that the significance of the source credibility (peripheral routes) for information usefulness is greater than that of the argument quality (central routes), suggesting consumers who watch product reviews on YouTube are more likely to pay attention to peripheral rather than central routes. Relevant to this study, Zhu et al. [115] suggested that the expertise and attractiveness of the reviewers (YouTubers) contribute to the source of the credibility (peripheral), which influences the usefulness. In light of these findings, if marketers intend to leverage YouTube product reviews as an effective marketing channel, they must consider the YouTubers' expertise and popularity.

Furthermore, the findings of this study suggested information usefulness (H12) has a significant impact on information adoption, indicating consumers will be more likely to adopt information when they perceive it as valuable and helpful. This result was also consistent with previous findings [70, 76]. Lastly, this study demonstrated that information adoption (H13) is a significant factor in purchase intentions. This indicated that consumers who watch YouTube product reviews are more likely to adopt the information and likely to have purchase intentions. This finding was consistent with previous research [70].

6.2. Theoretical Implications. The findings of this study have several academic implications regarding the growing importance of YouTube product reviews in social commerce environments. First, based on the SOR model, we identified three types of stimuli (S), including sensory marketing (visual and auditory cues), argument quality, and source credibility, which influences individual organism processes (O) in terms of parasocial interaction, trust (cognitive and affective trust), and information usefulness, which is directed at the individual response (R) to stickiness, information adoption, and purchase intentions. This study was one of the few to investigate the factors influencing consumer decision-making related to product purchases based on YouTube product reviews. The results could provide a better idea of how consumers act when they watch YouTube product reviews in the context of social commerce.

Second, sensory marketing is an essential component of consumer behavior research, because it can provide insight for scholars to understand consumers' perceptions, judgments, and behaviors [30]. In this study, sensory marketing was used to explore how visual and auditory cues in YouTube product reviews may impact parasocial interactions with YouTubers. Watching product review videos on YouTube can provide consumers with both visual and auditory cues, causing them to experience both product and nonproduct stimuli that affect their perceptions, judgments, and behaviors. Furthermore, in this study, sensory marketing was found to significantly impact the parasocial interactions with the YouTuber. Thus, this study demonstrated that sensory marketing plays a significant role in increasing perceived parasocial interaction.

Third, this study offered a deeper understanding of the relationship between parasocial interaction and trust. According to our findings, consumers are more likely to trust media figures (such as YouTubers) when they perceive parasocial interactions with them. By interacting with YouTubers more frequently, consumers are more likely to perceive parasocial interaction, which results in trust. Additionally, this study classified trust into two types, cognitive and affective, and demonstrated that consumers are more likely to increase their cognitive trust in a product review than affective trust. Fourth, this study incorporated the information adoption model to explore how consumers adopt detailed information revealed in a product review to influence purchase intentions. It was found that source credibility is more important to consumers when judging the usefulness of certain information in a product review context. It was also found that the usefulness of the information is an essential factor in adoption and purchasing intentions.

This study focused on parasocial interactions, which represent the relationship between media figures and consumers. As the relationship between consumers and YouTubers becomes tighter, it is imperative to examine the audience's stickiness toward the product review videos posted by YouTubers. This study found that cognitive trust influences consumers' stickiness more than affective trust. Additionally, consumers' stickiness behaviors toward YouTube product reviews will influence their purchase intentions.

6.3. Managerial Implications. This study synthesized the discussion of YouTube product reviews using sensory marketing, parasocial interactions, trust, stickiness, and information adoption models to understand consumer behaviors in social commerce. The findings of this study could serve as a reference for marketing managers to form an approach to utilize product reviews as marketing tools to boost sales. Therefore, we suggested a number of practical implications for managers contemplating the use of YouTube product reviews as marketing tools in social commerce environments, as shown below.

Firstly, sensory marketing increases consumers' perceptions of parasocial interaction with YouTubers. The sensory aspects explored in this study were visual and auditory. This study showed that when consumers watch review videos, they perceive the YouTubers' physical appearance and

attractiveness, style, harmonious background music, and sonorous voice, which all influence their illusory face-to-face relationship with the YouTubers. When the YouTubers use the products in the review videos, consumers feel they know about them and think of them as friends. Therefore, marketing managers should consider YouTubers according to their attractiveness, physical appearance, and skill as video creators and should feel their style fits the product. For example, when reviewing an apparel product (t-shirt), when the YouTuber wears the t-shirt and has a good sense of style with that t-shirt, it will influence consumers' perceptions of the product.

Second, trust is a critical factor in the success of YouTube product reviews in encouraging consumers to make purchases. In particular, this study concluded that consumers will be more likely to demonstrate cognitive trust than affective trust toward YouTubers. Therefore, consumers who perceive YouTubers as having a good track record, being trustworthy, and providing truthful information about the product will be more likely to purchase it following the review. Thus, marketing managers must consider that having more product reviews from YouTubers who are trustworthy and have a good track record will thereby increase consumers' trust and encourage them to purchase the product through social commerce.

Third, consumers' stickiness toward YouTube product reviews significantly predicts purchase intentions. However, marketing managers must be able to determine how to keep consumers engaged with the review videos. This study suggested consumers' cognitive trust remains more significant in increasing stickiness behaviors than affective trust. Therefore, marketing managers should understand that while reviewing the products, YouTubers should convey the information about the products based on their judgment because the consumers perceive it as being trustworthy and dependable, which influences them to stay for a longer time watching the review. This also emphasizes that, through cognitive trust, marketing managers understand that consumers will have less emotional reactions to YouTube product reviews [116]. Consequently, the findings suggested that stickiness behaviors influence consumers' purchase intentions.

Finally, this study successfully applied the information adoption model to YouTube product reviews. The findings suggested that source credibility (peripheral route) is more significant to information usefulness than argument quality (central route). Therefore, managers of a brand should consider the changes in consumer behaviors based on the comments, likes, and views of particular videos when using product reviews as marketing tools. Managers who pay attention to these changes can observe how consumers interact with each other on YouTube and express their opinions on the products based on reviews provided by YouTube users. In response to consumers who give positive feedback regarding a product, increasing the number of likes and views will influence their perception of its usefulness. Even though the information presented by the YouTubers remains essential, the comments on the video seem to be more significant. Furthermore, consumers' perceptions of usefulness will lead to their adoption and purchase intentions.

6.4. Limitations and Future Research Direction. Based on the research results, several new possibilities were discovered for future exploration. Firstly, sensory marketing in this study was driven by visual and auditory cues that affect consumers' parasocial interactions with YouTubers. Krishna [29] argued that sensory marketing encompasses visual, auditory, olfactory, tactile, and haptic factors, which impact consumers' emotions, cognitions, and behaviors. Further research may be undertaken using the five senses on YouTube or other social media platforms to attract consumers' senses. Sensory marketing is essential for future exploration since the sensory experiences with these products influence consumers' behaviors toward particular objects (people, products). In addition, there are numerous digital platforms where consumers can engage in sensory experiences. Secondly, this study used sensory marketing as an antecedent to parasocial interaction. However, in the context of a product review, it is essential to consider additional psychological factors that may influence how we perceive parasocial interactions in the future, such as channel interactivity and self-disclosure [117]. Finally, as this study was conducted at a certain point in time, the results may differ from those shown over a more extended period. Therefore, a longitudinal study would be most appropriate in the future.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request (s10937910@gm.cyut.edu.tw).

Conflicts of Interest

The authors report that no conflict of interest occurred in this work.

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