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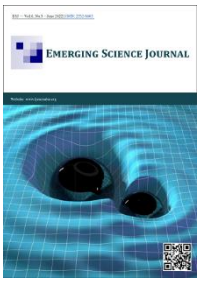

# Understanding Consumers' Purchase Intention and Gift-Giving in Live Streaming Commerce: Findings from SEM and fsQCA

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**Abstract**

Live streaming commerce has experienced tremendous growth over the past few years. Although research has increasingly investigated the phenomenon of live streaming as e-commerce, it is arguably essential to determine why consumers make purchases through live streaming and send paid gifts to streamers. This study aims to understand users' social commerce purchase intentions and gift-giving according to the uses and gratification perspective, and engagement, and extends the literature by identifying five uses and gratifications for social media live streaming and how the viewers' engagement affects purchase intentions and gift-giving. We tested the hypothesis among 525 Indonesians who watch live streaming through Structural Equation Modeling (SEM) and fuzzy set Qualitative Comparative Analysis (fsQCA). The results of SEM confirm the importance of pass-times and habits to consumer engagement in live streaming. In this sequence, the role of engagement (emotional, social presence, and immersion) was confirmed to significantly influence purchase intention and gift-giving intention. The results of fsQCA provide theoretical insight and practical suggestions for increasing our understanding of the complex interconnectivity among uses, gratification factors, engagement in social commerce purchase intentions, and gift-giving intentions. Finally, this study also highlighted the configurational conditions for understanding consumer behaviors in live streaming commerce.

**Keywords:**
Live Streaming;
Social Commerce;
Gift-Giving;
Uses and Gratification;
Engagement.

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## 1- Introduction

Live-streaming commerce has become one of the most popular sales channels in Indonesia. The rapid evolution of online shopping and e-commerce platforms has resulted in businesses employing live streaming activities to boost sales through social media, which is the most effective form of social commerce for contemporary marketers. Moreover, marketers have advantages due to the tendencies of internet users in Indonesia, where 98.5% have watched videos on the internet, including live streaming [1], which facilitates businesses to extend their sales channels via live streaming commerce. Live streaming shopping is regarded as "*shoppertainment*", where consumers conduct mobile shopping while watching video content on the internet. Due to its integration of entertainment and shopping within one platform, it is considered more appealing to consumers; for example, various activities, such as playing games and chatting, are carried out through live streaming [2, 3] which can also be broadcast through video-based social media [4, 5]. In addition, according to an Indonesian digital report (2021) [6], 93% of Indonesian social media users are likely to use YouTube, Instagram, Facebook, and Tik-Tok, which enables live-streaming shopping and has become essential for implementing

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a social commerce purchase and sales channel for marketers. Furthermore, marketers position themselves in the market and engage their brands or products in live streaming to reach a larger audience and increase sales.

For various reasons, live streaming commerce is becoming more attractive for marketers as sales channels. (1) Streamers can use social media to broadcast live activities, such as gaming, cooking, and talking [7-9]. Initially, when streamers start broadcasting, users notice them through social media and become followers, then, they are notified to click the notification button to watch the live stream. During live streaming, streamers organize various activities, such as games, cooking, and talking, while simultaneously offering products for sale [10], meaning the viewers can simultaneously perceive the live stream as entertaining and informative enough to make a purchase. (2) The live chat feature allows viewers to interact with streamers in real-time [11]. Unlike pre-recorded videos posted on social media (i.e., Facebook, Tik-Tok, and Instagram), live streaming broadcasts through social media allow viewers to directly interact with the streamers [12], thus, (3) viewers can directly make an order or purchase the products promoted by streamers. The feature of live streaming facilitates e-commerce activities as it makes it more desirable for marketers to attract consumers. Therefore, a previous study has identified the success of live streaming as caused by the perfect catering of information to the consumers, interaction, and involvement [11].

Scholars have increasingly attempted to investigate the significance of live streaming in the fields of marketing and consumer behaviors and explored various aspects of explaining live streaming commerce, including IT affordance, shopping engagement [13-15], uncertainty reduction perspective [16], and elaboration likelihood model [17]. However, in addition to the infancy of live streaming commerce, there is also a lack of studies explaining the phenomenon in Indonesia. As the social commerce market in Southeast Asian countries, including Indonesia, has just emerged, it should be captured as a potential market to explore more factors that affect consumers' purchase intentions through the live streaming commerce environment. Consequently, discovering the relevant factors that explain the significance of live streaming in the social commerce environment in Indonesia would provide insight for both scholars and marketers into marketing and consumer behavior issues, as examined in this study. In addition, the emerging issues of live streaming are captured as essential to comprehend online consumer behavior, specifically on live streaming platforms through social media. This study examined live streaming through social media (i.e., Facebook and Tik-Tok) due to its popularity in Indonesia.

Viewers watching live streaming content have different motivations to fulfill their individual psychological needs [8]. Social media platforms, such as Facebook and Tik-Tok, enable live streamers to conduct streaming, and users can randomly view streamers that appear on their homepage. Depending on the content, such as gaming and shopping, live streams usually last a few hours; therefore, users who wish to pass time can watch live streaming on social media [18]. It has also been found that users watch live streaming to seek entertainment [19-21]. Chen and Chang (2019) [18] suggested that live streaming can enhance the entertainment experience for its users. In addition, live streaming is a medium based on two-way communication [22, 23], which allows social interaction between streamers and the audience, as well as interactions between the audience members in a virtual environment. This study explains the psychological motivation towards live streaming through the perspectives of use and gratification (U & G). While extensive research has explored the uses and gratification applications of live streaming [24, 25], this work focuses on live streaming from social media platforms, such as Facebook and Tik-Tok, which is clearly different from previous studies of other social media platforms, such as Twitch [8], YouTube [26], and Instagram [27]. Therefore, this study explores the uses and satisfaction of social media users watching live streaming as an important theoretical contribution.

Live streaming has been extensively studied by scholars as an extension of e-commerce platforms and is referred to as "live streaming commerce" [15, 23, 28, 29], where streamers can broadcast in real-time to the viewers and conduct sales during streams [10]. Several studies have shown that the key success factor of live streaming commerce lies in the viewers' perceived engagement [3, 10, 13], and researchers have identified several factors that increase audience engagement in live streaming (see [13, 27]). This study investigated the importance of engagement on live streaming platforms and identified more factors that affect social commerce purchases and gift-giving intentions. Accordingly, this study linked users' motivation to fulfill their psychological needs through engagement, which influences their buying behavior in live streaming social commerce and sending gifts to streamers, and investigated how streamers receive economic value from consumer purchases and gifts (virtual money). As a result, the importance of the theoretical development of live streaming commerce has been achieved through the application of the U&G theory and engagement in this research.

Current research recommends a framework that incorporates the uses and gratification theory, engagement, social commerce purchase intention, and gift-giving intention into live streaming commerce to address consumers' motivation and fill the gap in existing research. The implications of the use and gratification perspectives in the research model allow us to explore consumers' motivations to fulfill psychological needs [30] by watching live streaming on Facebook and Tik-Tok. This study determined the factors of use and gratification in watching live streaming based on social interaction, pass-time, entertainment, perceived utility, and habit. Furthermore, we investigated how consumers' uses and gratification in watching live streaming influence engagement [8]. The perceived role of consumer engagement

within live streaming, such as emotional, social presence, and immersion, is considered to have a significant impact on the expected outcome behavior being investigated in this study, meaning the purchase of products and gifts sent to the streamers. Thus, when consumers acquire their purchases and send gifts to the streamers [3, 31], it indicates that higher economic value has been achieved and provides guidelines for marketers to perform sales through live streaming. Furthermore, this study examined a combination of analysis techniques, such as structural equation modeling (SEM) and fuzzy set qualitative comparative analysis (fsQCA), in order to determine how marketers form a marketing strategy that attracts consumers within live streaming, as based on asymmetrical solutions and path direction. This study contributes to both theoretical development and practical implications by providing different causal conditions for social commerce purchase intentions and gift-giving intentions using fsQCA configurational analysis. Consequently, as it emphasizes the robustness of QCA methods in understanding consumer behavior in the live streaming environment, this study is significant.

This paper is structured, as follows. First, we reviewed the theoretical background related to uses, gratification, live streaming engagement, social commerce purchase, and gift-giving intention. Second, we reviewed the empirical literature to support the hypothesis and research model. Third, we identified the measurement, data collection, sample profile, and analysis techniques. Fourth, we discussed the research findings and present the analysis results. Finally, we identified the limitations that will help guide future research.

## 2- Theoretical Background

### *2-1- Uses and Gratification in Live Streaming*

The concept of the use and gratification theory (U&G) encompasses individuals that feel compelled to use specific media or technology to satisfy their psychological needs [30]. While the U&G theory was initially applied to mass media communication research, modern technology, such as social media, has enabled the implementation of the U&G theory as an emerging issue in marketing research and consumer behaviors. Furthermore, by using technology, Katz, Haas, and Gurevitch (1973) [30] classified particular needs into cognitive and affective based needs, and actively selected and used media types based on psychological needs, in order to capture emerging issues that imply consumer behavior studies within media. In addition, numerous modern technologies provide features that allow multiple objectives. Several studies have employed U&G to investigate users' behavior in particular media, such as social media [32], gaming [33], and mobile applications [34]. Numerous studies have examined live streaming through particular social media [5, 35, 36] and determined specific antecedents and behavioral outcomes, while this study applied the U&G theory to investigate users' driving psychological needs when watching live streaming through social media.

Video-based social media platforms (i.e., Facebook, Instagram, Tik-Tok, YouTube) have enabled live streaming of user generated content (UGT), which is recorded and broadcast in real-time, and watched by numerous audiences. According to Lu and Chen (2021) [16], live streaming is a type of user-generated content that involves the broadcaster uploading their real-time video content and interacting with the audience in particular ways, where users can interact with broadcasters and other viewers through the live chat feature, which is acknowledged as social interaction within live streaming [8, 37-39]. In addition, viewers who seek entertainment will perceive enjoyment, as the audio and video medium is aesthetically entertaining [22], and viewers can release tension by watching live streaming [40], while information-seeking users can satisfy their need for information [8]. According to Ma (2021) [11], live streaming also provides particular functions for users' specific purposes, such as shopping and effectively obtaining high-quality information regarding product details, while Rubin (1983) [41] considered habit a motivation for viewing particular media. Therefore, this study investigated viewers' uses and perceived gratitude for watching live streaming according to social interaction, pass-time, entertainment, perceived utility, and habit. Consequently, the antecedents of uses and gratification used in the study will direct users' engagement.

### *2-2- Live Streaming Engagement*

Live streaming through social media generates more robust engagement. Social media, which is used as a platform for live streaming, allows viewers to be interactively engaged in content with streamers and other viewers in real-time [3]. When this increased engagement is perceived by the audience, it becomes stronger motivation to continue engaging [42]. This study included several motives of viewers to meet their psychological needs [3, 8] through the use and gratification of live streaming, which are considered sources of motivation. Higgins (2006) [43] emphasized that strong engagement occurs when individuals concentrate on being absorbed or engrossed in particular objects/events, and when viewers generate a positive experience while viewing live streaming, it will increase engagement. Therefore, the core concept of engagement is designated as a state of sustained attention and is defined as being involved, occupied, fully absorbed, or engrossed in something [42, 43].

Since live streaming provides online broadcasting in real-time through social media [44], viewers can interact by sending messages to other viewers or streamers via live chat [45]. Meanwhile, streamers who read and respond to live chat messages during live streaming can increase and develop the emotional engagement perceived by their viewers

[46]. According to Singh et al. (2021) [47], the emotional value of live streaming perceived by viewers is important because it indicates the level of enjoyment regarding the content broadcast by the streamers. Thus, researchers have discovered that emotion is a critical determinant of live streaming engagement [8, 15, 46, 48]. In addition, as the interaction becomes a notion of live streaming, it transmits the sense of the user being within a social environment [49]. Viewers perceive live streaming as communicating each other's presence affectively, which affects the psychological well-being of viewers. When viewers perceive other people through live streaming, they feel their social presence [50] and streamers can respond to comments [51]; for example, users are actively involved in reacting and responding to the reactions in live chat. Such experiences of social interaction can be explained by engagement [52]. Therefore, as investigated by previous studies [49, 53], social presence, as perceived by viewers, is essential within live streaming.

During live streaming broadcasts, viewers feel that they are there, which results in perceived immersion through a digital lens [54]. Due to a psychological state, the viewers engaged in live streaming will perceive their ability to respond and react to the live chat environment, meaning there is an awareness of others' presence [46], as live streaming instantaneously transmits combined images and sounds [38]. Live streaming content is diverse, and streamers can combine commerce and entertainment activities with viewers through gaming [33], shopping [10, 11], tutorials [55], and other activities during live streaming on social media. Thus, products, games [12], fashion [56], make-up, and household goods [57], can be broadcast on live streaming for commerce purposes. Moreover, when purchasing opportunities are not offered in the streaming content [58], viewers can still send paid and free gifts to streamers while watching. During live streaming, when detailed product information is displayed, it requires viewers to focus on the information, which is considered a sense of immersion [46]. Therefore, such an experience could be explained as immersion, meaning when the viewers are perceived as being absorbed in, involved with, and engrossed within the live streaming content broadcast [59]. Thus, this study associated emotion, social presence, and immersion as the components that describe live streaming engagement.

### *2-3- Live Streaming and Social Commerce*

Live streaming is becoming popular as a commerce platform due to the high user interaction and engagement [10]. A platform that provides interactivity as a characteristic of live streaming drives viewers' attitudes and behaviors in communication and conducting transactions [15, 58]. Therefore, viewers' behavior and experience are further identified and converted into purchase behaviors during live streaming [13]. We believe that live streaming is in its infancy as a social commerce platform, and the number of purchases conducted through live streaming is growing significantly [60]; however, few research works have investigated this topic, especially marketing and consumer behavior fields. Numerous studies on live streaming as social commerce have revealed that live streaming commerce integrates social commerce attributes into real-time interactions to generate purchases [15, 38, 61]. Therefore, as streamers conduct sales activities with viewers via real-time interactions through live streaming on social media, we conceptualized live streaming as a social commerce platform.

According to Chen et al. (2021) [44], live-streaming broadcasts provide different types of content, such as games, talks, eating/cooking, life, and entertainment, thus, all products related to the content can be provided in real-time to viewers [62]. For example, streamers exhibit content tutorials through live streaming or provide detailed product information to viewers [63], and interested viewers can directly interact with streamers through live chat [10]. Consumers can continue advanced interaction in real-time with streamers and generate purchases. In addition, we believe there are many antecedents affecting consumers' purchase intention through live streaming as social commerce. As a result, this study investigated the significance of use and gratification, as well as how participation in live streaming affects social commerce purchase intention.

### *2-4- Gift-Giving Behavior*

The gift-giving behavior has been extensively discussed from various perspectives, such as anthropology, psychology, and media communication [64-67]. Belk (1993) [66] revealed that the gift-giving behavior is based on an exchange paradigm, where giving gifts is driven by a desire to develop and maintain social relationships with recipients [68]. Therefore, the studies of Belk (1979) [69] classified the four functions of giving gifts: communication, social exchange, economic exchange, and socialization. According to Belk (1979) [69] and Sherry (1983) [64], gifts are a good/service voluntarily provided to another person whether tangible and intangible, and are transformed into a gift. Due to users ability to send virtual gifts to one another [70, 71], research on the gift-giving behavior has developed along with changes in human interactions on social media, and scholars have investigated the provision of gifts to maintain relationships with recipients in both physical and virtual environments [70, 72].

Studies on the gift-giving behavior on social networking sites (SNSs) are receiving greater attention due to high interactivity, entertainment, instant feedback, and telepresence, which are considered live streaming characteristics [72]. Virtual gifting is essential for interactive behavior in live streaming [33]. Through live streaming, viewers can simultaneously send gifts and share comments in real-time in the online environment [37]. Furthermore, when viewers

send gifts to streamers, they will be seen publicly, which creates a signal for other viewers to send gifts and interact on live streaming [33]. In addition, viewers' sending gifts becomes a benefit of live streaming services for the recipients, as paid gifts create the economic scale for streamers [58]. This study investigated the gifting behavior of viewers through social media, i.e., Facebook and Tik-Tok. Several studies [73, 74] have applied the use and gratification theory (U&G) and found that viewers can use live streaming content to satisfy their needs. This research focuses on viewers' behavior on live streaming; buying the products broadcasted on live streaming, and sending virtual gifts to streamers, which are considered as providing good economy of scale for streamers, while viewers benefit from social interaction [75, 76], communication [73], status [3], and engagement during live streaming. Although various studies have investigated the gifting behavior, they focused on live streaming games [9, 33, 58]. Meanwhile, this research focused on the gifting behavior in live streaming through social media, i.e., Facebook, Tik-Tok, and investigated the purchase behavior during live streaming as social commerce.

## 3- Hypothesis Development

### *3-1- From Uses and Gratification on Live Streaming Engagement*

Numerous studies have investigated uses and gratifications on social media and live streaming with several contents (i.e., games, tutorials) [8, 74, 77, 78]. However, few studies have investigated how live streaming through social media (i.e., Facebook, Tik-Tok) affects viewers' behavioral engagement and outcome regarding social commerce purchases and sending gifts to the streamers within one integrative framework. Thus, this study investigated live streaming engagement within social media (i.e., Facebook and Tik-Tok) according to uses and gratification perspectives in Indonesia. Departing from the dimensions that previous researchers have developed, this study focused on uses and gratifications when using live streaming on Facebook and Tik-Tok according to social interaction, pass-time, entertainment, perceived utility, and habit [11, 33, 38, 79].

***Hypothesis 1 (H1a – o):*** *Viewers watching live streaming (a. social interaction, b. pass-time, c. entertainment, d. perceived utility, d. habit) will significantly influence their engagement (a. emotional, b. social presence, c. immersion).*

### *3-2- Live Streaming Engagement on Purchase and Gift-Giving Intention*

Engagement is an essential component of online consumer behaviors. In particular, Shahbaznezhad et al. (2021) [80] stated that engagement is influenced by the context of the content, one of which is live streaming video content on social media. Live streaming is user-generated content conducted through social media (i.e., Facebook, Tik-Tok), which transmits videos in real-time, and allows viewers and streamers to interact simultaneously through a live chat communication feature. Previous studies indicated that engagement within live streaming is established through interactions between viewers and streamers, thus, interaction during live streaming is important to increase engagement. This study investigated whether viewers who watch live streaming content will experience emotional, social presence, or immersion in the broadcast. However, perceived engagement within live streaming directs viewers to send gifts and purchase products. The following literature reveals that viewer engagement affects the social commerce purchase intention [13, 81, 82] and gift-giving intention [3, 73]. The difference is that these studies were conducted to assess the social commerce purchase intentions and gift-giving intentions of live streamers on social media.

***Hypothesis 2 (H2a – f):*** *Viewers perceived live streaming engagement (a. emotional, b. social presence, c. immersion) significantly influences (a) social commerce purchase and (b) gift-giving intention.*

## 4- Research Methods

### *4-1- Measurement Items*

This study employed previous measurement items that have been developed according to the uses and gratification theory, live streaming engagement, social commerce purchase intention, and gift-giving behavior (see Figure 1). The uses and gratification theory has five sub-variables, social interaction (3 items), pass time (2 items), entertainment (3 items), perceived utility (5 items), and habit (3 items), for a total of sixteen measurement items adapted from [11, 38, 79, 83]. Meanwhile, the live streaming engagement is composed of three sub-variables, emotional engagement (3 items), social presence (4 items), and immersion (3 items), for a total of ten measurement items adapted from [59, 73, 84]; social commerce purchase intention has three items adapted from [16], and the gift-giving behavior consists of four items adapted from [73]. Furthermore, content validity is conducted to ensure that the items are within the research context and adequately measured. Therefore, the items were sent to several experts, specifically live streaming users (consumers), streamers (broadcasters), and scholars, in order to ensure the content is representative and fits the use of practical and theoretical research objectives. The questionnaire was established according to the expert results and each item was measured using a 7-point Likert scale.

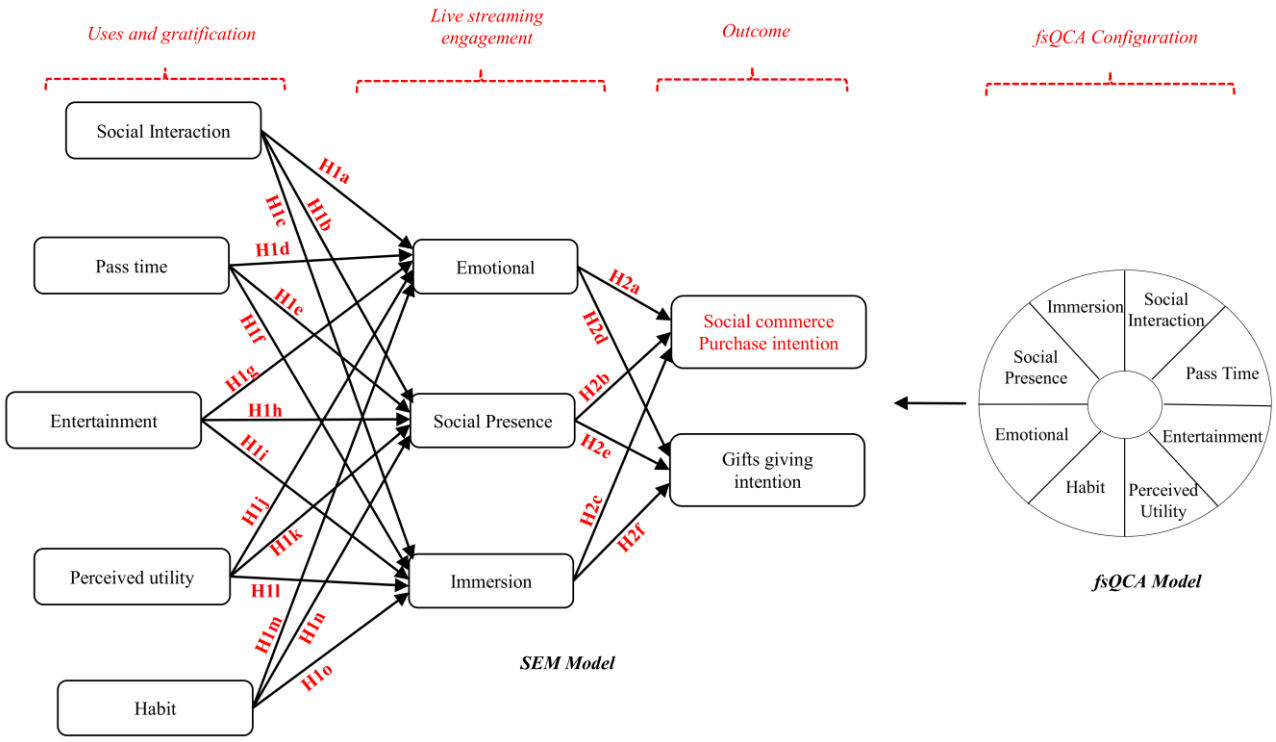


**Figure 1. Proposed Research framework**

### *4-2- Data Collection Procedure*

This study was conducted among social media users who watched live streaming on Facebook and Tik-Tok. Notably, this study was not conducted on specific products because live streaming on social media includes various content (games, fashion, tutorials, and foods), and the products related to the content are commercialized within the live streams. Thus, the primary consideration in this study was the phenomenon of the purchase behavior within social commerce and gift giving in live streaming on online platforms. The participants who did not meet the requirements were removed, and a total of 525 participants were qualified.

### *4-3- Sampling Technique and Profile*

The study was conducted among social media users who watched live streaming on Facebook and Tik-Tok. Notably, the study was not conducted on specific products because live streaming on social media includes various content (games, fashion, tutorials, foods, etc.) that the products related to the content are commercialized within live streaming. Thus, the primary consideration in this study is purchase behavior within social commerce and gift-giving in live streaming as a phenomenon of consumer behavior on online platforms. Aforementioned, participants who do not meet the requirements are eliminated and a total of 525 participants were qualified.

This study shows the demographic characteristics in chart form in order to provide better descriptions. The respondents were categorized by gender, age, education level, and income. Regarding gender (Figure 2), 55% (288) are males and 45% (237) are females. Regarding age (Figure 3) 38% (197) are 20–24 years old, 20% (105) are 25–29 years old, 12% (62) are 19 or below, 12% (63) are 40 or above, and 7% (39) are 35–39 years old. Regarding education level (Figure 4), 35% (183) have a bachelor degree, 31% (165) have a diploma (I-IV), 22% (115) graduated high school, 11% (56) have a master degree, and 1% (6) has a doctorate degree. Regarding income, (Figure 5) 43% (233) earn IDR 3.000.000 – 4.999.999, 33% (169) earn IDR 1.000.000 – 2.999.999, 10% (55) earn IDR 5.000.000 – 6.999.999, 6% (34) earn IDR 999.999 and below and IDR 7.000.000 and above, respectively. The study also analyzed the characteristics of the respondents based on their purchasing experiences on live streaming platforms, the sending of gifts, and the platforms they use to watch live streaming. The number of respondents with live streaming purchase experience (Figure 6) was 46% (240) at 1-2 times per month, 40% (210) at 3-4 times per month, 12% (66) at 5-6 times per month, and 2% (9) at 7 times or more per month. The number of respondents who experienced sending paid gifts during live streaming (Figure 7) was 43% (223) once or twice, 26% (138) 1-2 times, 19% (101) 3-4 times, 8% (41) 5-6 times, and 4% (22) more than 7 times. We also categorized respondents based on the social media platforms they used to watch live streaming, and the results revealed that 43% (225) watched on Facebook and 57% (300) on Tik-Tok (Figure 8).

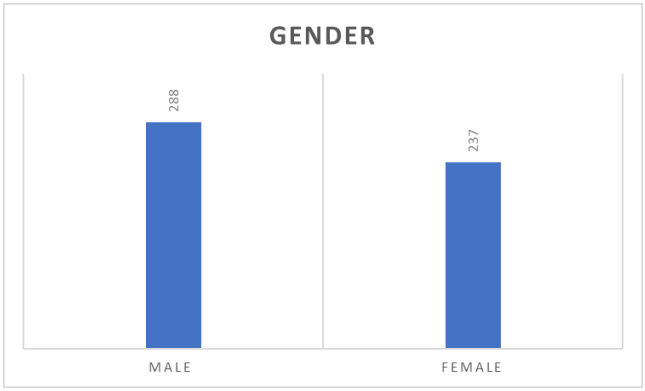


**Figure 2.** Demographics of respondents by gender

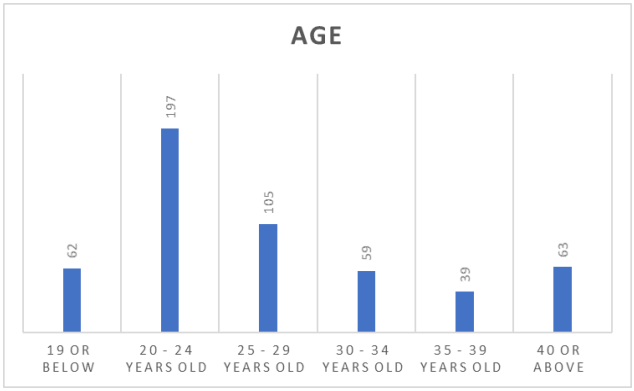


**Figure 3.** Demographics of respondents by age

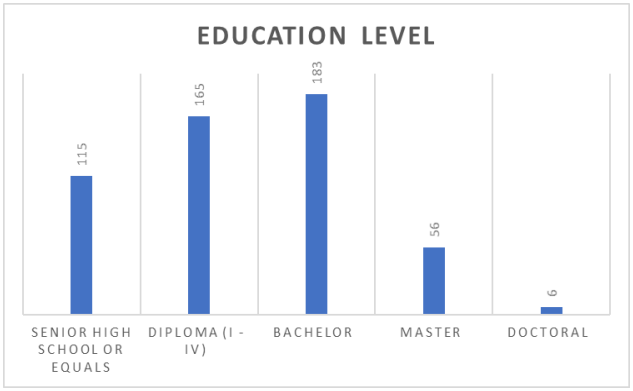


**Figure 4.** Demographics of respondents by education level

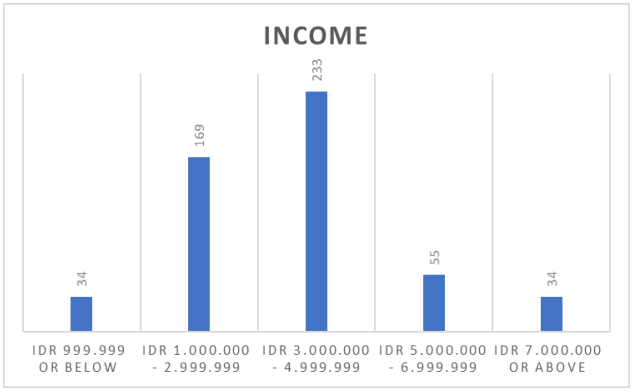


**Figure 5.** Demographics of respondents by Income

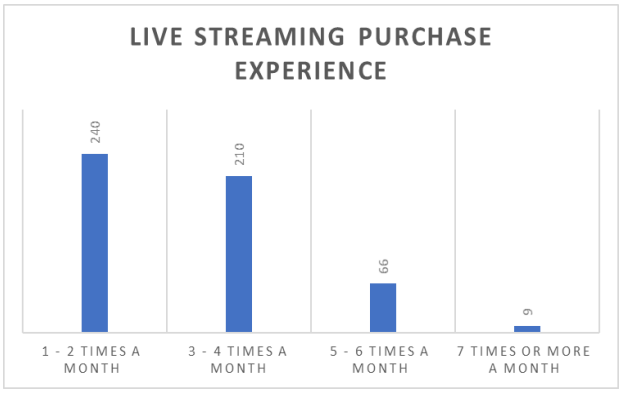


**Figure 6.** Demographics of respondents by live streaming purchase experience

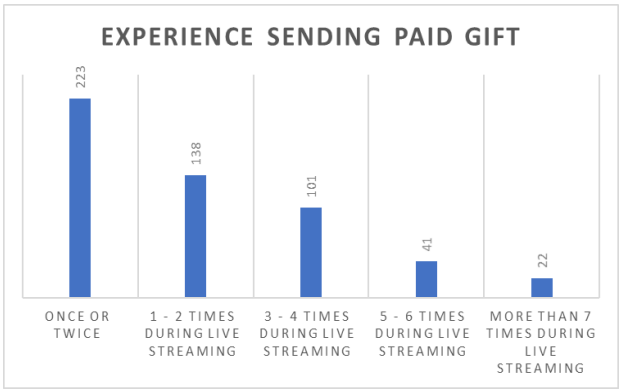


**Figure 7.** Demographics of respondents by experience sending paid gift

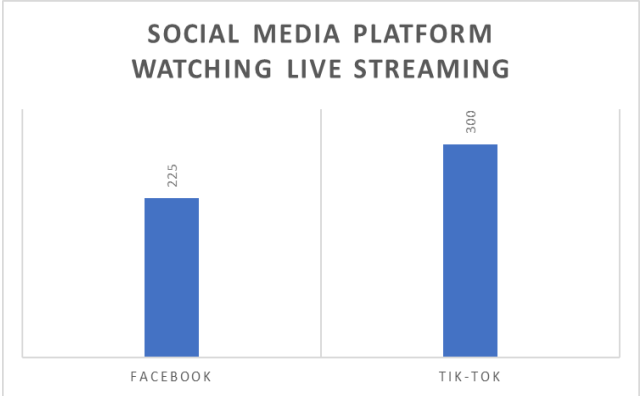


**Figure 8.** Demographics of respondents by social media platform watching live streaming

### *4-4- Analysis Technique*

The study employed structural equation modeling for data analysis using Smart-PLS 3.0. First, we evaluated the measurement model by conducting convergent and discriminant validity. Convergent validity is estimated by the values of the average variance extracted (AVE), composite reliability (CR), and Cronbach's alpha for internal consistency, while discriminant validity is evaluated by the Fornell-Larcker criterion and the Heteroit-Monotrait ratio, and the results show that validity and reliability are satisfactory. Model fit was performed by employing two methods. First, we evaluated the value of the R2 percentage as the variance of an endogenous variable, as determined by the exogenous variable, to measure the strength of model performance [85, 86]. Secondly, the model fit was evaluated based on the fit indices, such as SRMR, d_ULS, d_G, and NFI criteria [87]. Then, hypothesis testing was conducted after the model fit criteria for structural equation modeling were fulfilled.

This study employed fuzzy set qualitative comparative analysis (fsQCA) to generate the theoretical and practical contributions, based on the condition that explains the solutions to the dependent variable. The fsQCA analysis was initialized with calibration selection to determine the position of the membership data used for data analysis, which were transformed into values between 0 and 1. The study employed calibration thresholds 6, 4, 2, as suggested by Papas and Woodside (2021) [88], to calibrate a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) for fsQCA analysis. Then, this study performed data analysis to obtain a solution for the dependent variable, based on the independent variable's conditions (present, absent). Predictive validity was performed to evaluate the fsQCA results according to the subsamples and hold samples using the XY axis in fsQCA.

## 5- Results

### *5-1- Structural Equation Modelling*

#### *5-1-1- Measurement Model*

In order to assess the validity and reliability of the questionnaire, we conducted convergent validity using factor loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). In general, the convergent validity thresholds in this study were satisfactory. The factor loading values were greater than 0.70, ranging between 0.777 and 0.952, which indicates construct validity. Internal consistency was assessed by Cronbach's alpha (CA), and the values greater than 0.70 were found for all constructs, ranging between 0.783 and 0.961. Composite reliability (CR) determines the validity of a questionnaire. Based on the results, the CR values ranged between 0.873 and 0.961, which were satisfactory. Finally, the AVE values ranged between 0.679 and 0.892, which indicates that convergent validity was satisfactory. The results of construct validity and reliability are presented in Table 1.

**Table 1. Convergent Validity**

| Constructs | Factor Loadings | Cronbach's Alpha | CR | AVE |
|---|---|---|---|---|
| Social Interaction | 0.918 - 0.940 | 0.921 | 0.950 | 0.863 |
| Pass-Time | 0.913 - 0.934 | 0.829 | 0.921 | 0.854 |
| Entertainment | 0.823 - 0.873 | 0.797 | 0.881 | 0.711 |
| Perceived Utility | 0.847 - 0.896 | 0.894 | 0.926 | 0.758 |
| Habit | 0.777 - 0.874 | 0.783 | 0.873 | 0.696 |
| Emotional | 0.940 - 0.952 | 0.939 | 0.961 | 0.892 |
| Social Presence | 0.784 - 0.892 | 0.848 | 0.894 | 0.679 |
| Immersion | 0.860 - 0.869 | 0.831 | 0.899 | 0.747 |
| Social Commerce Purchase Intention | 0.828 - 0.877 | 0.815 | 0.890 | 0.730 |
| Gift-Giving Intention | 0.840 - 0.902 | 0.903 | 0.932 | 0.775 |

Note: CR, Composite Reliability; AVE, Average Variance Extracted

This study performed discriminant validity testing after convergent validity was met. First, we evaluated the Fornell-Larcker Criterion by comparing the square root value of AVE with the correlation between all the constructs. According to the results of discriminant testing, as based on the Fornell-Larcker criterion, the square root AVE value was higher than the correlation between constructs (below the diagonal bolded value), ranging between 0.187 and 0.661. These findings indicate satisfactory discriminant validity according to the Fornell-Larcker criterion. Secondly, we conducted discriminant validity using the Heterotrait-Monotrait Ratio (HTMT), which is recognized as a new criterion for assessing discriminant validity with a strict threshold of 0.85, as proposed by [89]. The research results show that the HTMT values ranged between 0.214 and 0.735, which are under 0.85 and satisfactory. Thus, this study well achieved the measurement model assessment and continued to structural modeling analysis. The results for discriminant validity are shown in Tables 2 and 3.

**Table 2. Fornell-Larcker Criterion**

| Constructs | SI | PT | ENT | PU | HB | EM | SP | IM | SCPI | GGI |
|---|---|---|---|---|---|---|---|---|---|---|
| Social Interaction (SI) | **0.929** | | | | | | | | | |
| Pass-Time (PT) | 0.335 | **0.924** | | | | | | | | |
| Entertainment (ENT) | 0.236 | 0.465 | **0.843** | | | | | | | |
| Perceived Utility (PU) | 0.273 | 0.313 | 0.292 | **0.871** | | | | | | |
| Habit (HB) | 0.378 | 0.599 | 0.528 | 0.356 | **0.834** | | | | | |
| Emotional (EM) | 0.294 | 0.472 | 0.341 | 0.259 | 0.671 | **0.944** | | | | |
| Social Presence (SP) | 0.234 | 0.443 | 0.374 | 0.254 | 0.463 | 0.360 | **0.824** | | | |
| Immersion (IM) | 0.187 | 0.480 | 0.535 | 0.300 | 0.466 | 0.319 | 0.488 | **0.864** | | |
| Social Commerce Purchase Intention (SCPI) | 0.305 | 0.557 | 0.590 | 0.307 | 0.537 | 0.445 | 0.469 | 0.630 | **0.855** | |
| Gift-Giving Intention (GGI) | 0.253 | 0.401 | 0.330 | 0.245 | 0.379 | 0.339 | 0.376 | 0.414 | 0.514 | **0.880** |

Note: Diagonal bolded numbers indicate value for the square root of AVE, and all the rest are correlations between constructs.

**Table 3. Heterotrait Monotrait Ratio**

| Constructs | SI | PT | ENT | PU | HB | EM | SP | IM | SCPI | GGI |
|---|---|---|---|---|---|---|---|---|---|---|
| Social Interaction (SI) | - | | | | | | | | | |
| Pass-Time (PT) | 0.382 | - | | | | | | | | |
| Entertainment (ENT) | 0.278 | 0.569 | - | | | | | | | |
| Perceived Utility (PU) | 0.300 | 0.364 | 0.342 | - | | | | | | |
| Habit (HB) | 0.437 | 0.735 | 0.674 | 0.421 | - | | | | | |
| Emotional (EM) | 0.315 | 0.533 | 0.395 | 0.281 | 0.743 | - | | | | |
| Social Presence (SP) | 0.251 | 0.497 | 0.420 | 0.287 | 0.533 | 0.392 | - | | | |
| Immersion (IM) | 0.214 | 0.574 | 0.652 | 0.346 | 0.588 | 0.360 | 0.547 | - | | |
| Social Commerce Purchase Intention (SCPI) | 0.353 | 0.674 | 0.732 | 0.362 | 0.671 | 0.508 | 0.524 | 0.764 | - | |
| Gift-Giving Intention (GGI) | 0.275 | 0.459 | 0.386 | 0.269 | 0.444 | 0.367 | 0.411 | 0.477 | 0.597 | - |

Note: The threshold for HTMT is ≤ 0.85 as suggested [89].

### *5-1-2- Structural Model*

The study used SEM to test the causal path in the proposed structural model using Smart-PLS 3.0, and the results are exhibited in Table 4 and Figure 9. First, the results of hypothesis one (H1) regarding uses and gratification in live streaming engagement can be specified into several sub-hypotheses. The sub-variables of use and gratification (social interaction, pass-time, entertainment, perceived utility, habit) were tested against live streaming engagement sub-variables (emotional, social presence, immersion). The results of social interaction on emotion (T = 0.964, P = 0.335) is insignificant, on social presence (T = 0.653, P = 0.514) is insignificant, and on immersion (T = 1.328, P = 0.185) is insignificant, which indicates that hypothesis H1a is unsupported, H1b is unsupported, and H1c is unsupported. The results for pass-time on emotion (T = 2.187, P = 0.029) is significant, on social presence (T = 3.655, P = 0.000) is significant, and on immersion (T = 5.314, P = 0.000) is significant, which indicates that hypothesis H1d is supported, H1e is supported, and H1f is supported. The results for entertainment on emotion (T = 1.232, P = 0.219) is insignificant, on social presence (T = 2.917, P = 0.004) is significant, on immersion (T = 7.809, P = 0.000) is significant, which indicates that hypothesis H1g is unsupported, H1h is supported, and H1i is supported. The results for perceived utility on emotion (T = 0.232, P = 0.817) is insignificant, on social presence (T = 1.375, P = 0.170) is insignificant, and on immersion (T = 2.509, P = 0.012) is significant, which indicates that hypothesis H1j is unsupported, H1k is unsupported, and H1l is supported. Finally, the results for habit on emotion (T = 12.688, P = 0.000) is significant, on social presence (T = 4.082, P = 0.000) is significant, and on immersion (T = 2.478, P = 0.014) is significant, which indicates that hypothesis H1m is supported, H1n is supported, and H1o is supported.

**Table 4. Hypothesis Results**

| Causal Relations | Path Coefficients | T-Value | P-Value | Conclusion |
|---|---|---|---|---|
| ***H1 Uses and Gratification and Live Streaming Engagement*** | | | | |
| H1a. Social Interaction →Emotional | 0.033 | 0.964 | 0.335 | Unsupported |
| H1b. Social Interaction → Social Presence | 0.027 | 0.653 | 0.514 | Unsupported |
| H1c. Social Interaction → Immersion | -0.046 | 1.328 | 0.185 | Unsupported |
| H1d. Pass-Time → Emotional | 0.111 | 2.187 | 0.029 | Supported |
| H1e. Pass-Time → Social Presence | 0.216 | 3.655 | 0.000 | Supported |
| H1f. Pass-Time → Immersion | 0.226 | 5.314 | 0.000 | Supported |
| H1g. Entertainment →Emotional | 0.045 | 1.232 | 0.219 | Unsupported |
| H1h. Entertainment → Social Presence | 0.126 | 2.917 | 0.004 | Supported |
| H1i. Entertainment → Immersion | 0.343 | 7.809 | 0.000 | Supported |
| H1j. Perceived Utility → Emotional | 0.010 | 0.232 | 0.817 | Unsupported |
| H1k. Perceived utility → Social Presence | 0.058 | 1.375 | 0.170 | Unsupported |
| H1l. Perceived Utility → Immersion | 0.094 | 2.509 | 0.012 | Supported |
| H1m. Habit → Emotional | 0.613 | 12.688 | 0.000 | Supported |
| H1n. Habit → Social Presence | 0.236 | 4.082 | 0.000 | Supported |
| H1o. Habit → Immersion | 0.133 | 2.478 | 0.014 | Supported |
| ***H2 Live Streaming Engagement and Social Commerce Purchase Intention*** | | | | |
| H2a. Emotional → Social Commerce Purchase Intention | 0.239 | 6.126 | 0.000 | Supported |
| H2b. Social Presence → Social Commerce Purchase Intention | 0.149 | 3.681 | 0.000 | Supported |
| H2c. Immersion → Social Commerce Purchase Intention | 0.481 | 12.542 | 0.000 | Supported |
| *H2 Live Streaming Engagement and Gift-Giving Intention* | | | | |
| H2d. Emotional → Gift-Giving Intention | 0.190 | 4.249 | 0.000 | Supported |
| H2e. Social Presence → Gift-Giving Intention | 0.178 | 3.482 | 0.001 | Supported |
| H2f. Immersion → Gift-Giving Intention | 0.266 | 5.627 | 0.000 | Supported |

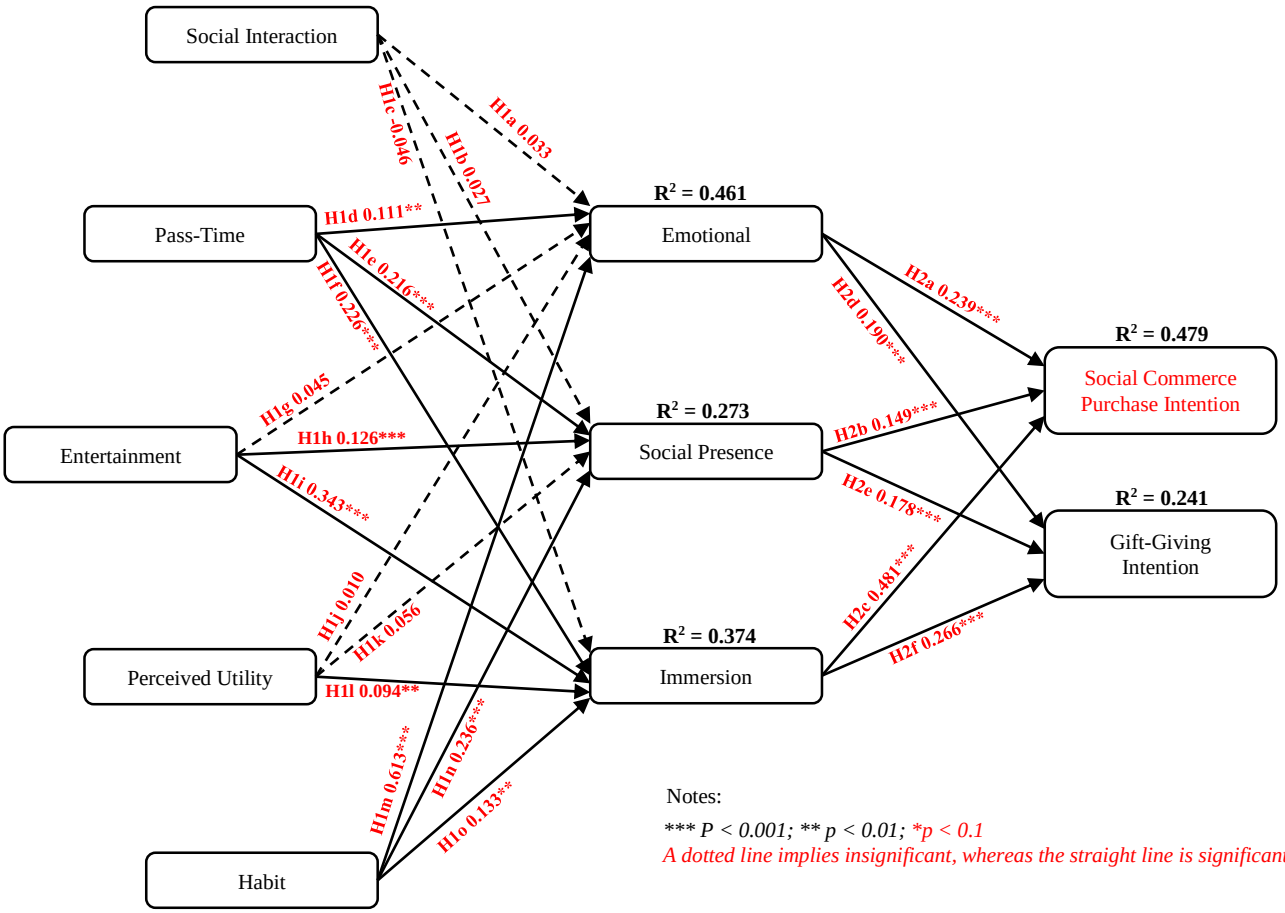


**Figure 2. Structural Model Results**

Secondly, the results for hypothesis two (H2) of live streaming engagement on social commerce purchase intention can be specified into several sub-hypotheses, which specifically analyze the causal relations between emotion, social presence, and immersion towards social commerce purchase intention. The results for emotion (T = 6.126, P = 0.000), social presence (T = 3.681, P = 0.000) and immersion (T = 12.542, P = 0.000) had significant impacts on social commerce purchase intention, which indicates that hypotheses H2a, H2b, and H2c are supported. Finally, the results of the hypothesis of live streaming engagement on gift-giving intention can be specified into several sub-hypotheses, which specifically analyze the causal relations between emotion, social presence, and immersion towards gift-giving intention. The results for emotion (T = 4.249, P = 0.000), social presence (T = 3.482, P = 0.001), and immersion (T = 5.627, P = 0.000) had significant impacts on gift-giving intention, which indicates that hypotheses H2d, H2e, and H2f are supported.

### *5-2- Fuzzy-Sets Qualitative Comparative Analysis (fsQCA)*

#### *5-2-1- Calibration Selection and Truth Table Construction*

This study used eight independent variables: social interaction, pass-time, entertainment, perceived utility, habit, emotion, social presence, and immersion as antecedent conditions, with implementation towards social commerce purchase intention and gift-giving intention as the outcome variables. Initially, all the variables were transformed into fuzzy sets for calibration. This study followed the calibration selection proposed by Ordanini et al. (2014) [90] and Pappas and Woodside (2021) [88], where the 7-point Likert scale was calibrated into three sets: "6" as a full membership, "4" as the intersection or median, and "2" as a full non-membership. Then, following calibration threshold value, fsQCA converted the values into the fuzzy scores of "0", "Low" and "1", "High". Furthermore, these values were analyzed to construct the fsQCA truth table, which determines the sequence for analysis. The truth table for social commerce purchase intention and gift-giving intention is shown in Table 5. Furthermore, the truth table also represents lists of all possible composite conditions reflecting social commerce purchase intention and gift-giving intention in live streaming.

**Table 5. Truth Table for Social Commerce Purchase Intention and Gift Giving Intention**

| Antecedents for Social Commerce Purchase Intention | | | | | | | | Cases | Outcome (SCPI) | Raw Consistency |
|---|---|---|---|---|---|---|---|---|---|---|
| SI | PT | ENT | PU | HB | EMS | PR | IM | | | |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 15 | 1 | 0.998 |
| 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 99 | 1 | 0.996 |
| 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 1 | 0.995 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 6 | 1 | 0.993 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 4 | 1 | 0.993 |
| 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 4 | 1 | 0.989 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 174 | 1 | 0.989 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 1 | 0.985 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 4 | 1 | 0.984 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 6 | 1 | 0.975 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9 | 1 | 0.960 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 0.860 |
| 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0.847 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0.718 |
| **Antecedents for Gift Giving Intention** | | | | | | | | **Cases** | **Outcome (GGI)** | **Raw Consistency** |
| **SI** | **PT** | **ENT** | **PU** | **HB** | **EMS** | **PR** | **IM** | | | |
| 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 1 | 0.992 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 3 | 1 | 0.990 |
| 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 4 | 1 | 0.989 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 6 | 1 | 0.981 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 4 | 1 | 0.971 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 15 | 1 | 0.968 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 4 | 1 | 0.966 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 174 | 1 | 0.953 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 9 | 1 | 0.950 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 6 | 1 | 0.944 |
| 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 0.866 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 0.861 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0.735 |
| 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 99 | 0 | 0.669 |

Note: SI, Social Interaction; PT, Pass-Time; ENT, Entertainment; PU, Perceived Utility; HB, Habit; EMS, Emotional; SP, Social Presence; IM, Immersion; SCPI, Social Commerce Purchase Intention; GGI, Gift-Giving Intention.

There are a total of twelve composite indicators that indicate a high purchase intention with a result of "1". There are also two alternative composite conditions that represent low purchase intentions with a result of "0". In particular, according to the results of forming social commerce purchase intentions, there were 15 cases in the first composite, 99 cases in the second composite, and 174 cases in the seventh composite, while the remaining composite conditions were smaller than the 9 cases. Regarding the outcome of low purchase intentions, there were a total of 11 cases. In contrast with the case of low gift-giving intention, there were 107 cases. Furthermore, the composite conditions varied for high gifting intentions. There were 15 cases in the sixth composite condition, and 174 cases in the eighth composite condition, while the remainder were less than 9 cases for each composite condition in the outcome of high gift-giving intention. The results of this study indicate that the fuzzy sets used to analyse the social commerce purchase intention and gift-giving intention outcomes are diverse and unique. Furthermore, the obtained truth table analysis results can be used in further data analysis.

### *5-2-2- Analysis of Necessary Conditions*

This study also examined whether a condition of a construct is always present or absent when there is high social commerce purchase intention or gift-giving intention. Consistency and coverage values were obtained for each condition (absent or present), based on the results of the fsQCA test for the required conditions. If the consistency score exceeds 0.9 or 0.8, a condition can be considered "essential" or "almost always necessary," respectively [91]. Table 6 presents the fsQCA test results for the necessary condition. First, for high social commerce purchase intention outcomes, almost all constructs with current conditions are necessary conditions, with values greater than 0.80 and 0.90. As its value was below 0.80, this study considered social presence (SP) to be an unnecessary condition. Meanwhile, regarding the outcome of high gift-giving intention, the fsQCA results indicate that all constructs in this study exhibited the necessary conditions with values greater than 0.80 and 0.90.

**Table 6. fsQCA Necessary Conditions**

| Conditions | Outcome (HSCPI) | | Outcome (HGGI) | |
|---|---|---|---|---|
| | Consistency | Coverage | Consistency | Coverage |
| SI | 0.907 | 0.878 | 0.882 | 0.816 |
| ~SI | 0.262 | 0.828 | 0.266 | 0.803 |
| PT | 0.970 | 0.827 | 0.947 | 0.771 |
| ~PT | 0.117 | 0.667 | 0.129 | 0.706 |
| ENT | 0.821 | 0.927 | 0.836 | 0.902 |
| ~ENT | 0.340 | 0.734 | 0.287 | 0.592 |
| PU | 0.945 | 0.814 | 0.925 | 0.761 |
| ~PU | 0.145 | 0.772 | 0.159 | 0.806 |
| HB | 0.899 | 0.853 | 0.849 | 0.770 |
| ~HB | 0.206 | 0.699 | 0.237 | 0.769 |
| EMS | 0.901 | 0.832 | 0.876 | 0.773 |
| ~EMS | 0.188 | 0.710 | 0.206 | 0.714 |
| SP | 0.779 | 0.884 | 0.827 | 0.897 |
| ~SP | 0.313 | 0.668 | 0.257 | 0.525 |
| IM | 0.931 | 0.927 | 0.872 | 0.829 |
| ~IM | 0.267 | 0.775 | 0.286 | 0.793 |

Note: ~ denotes the negation of variable; HSCPI, High Social Commerce Purchase Intention; HGGI, High Gift-Giving Intention

### *5-2-3- fsQCA Findings*

This study employed fsQCA 3.0 for data analysis, and the results are exhibited in Table 7, as generated from the intermediate solutions provided by the fsQCA software. The intermediate solutions include core and peripheral conditions, indicating that six configurations explained high social commerce purchase intention, and seven configurations explained high gift-giving intention.

A consistency value > 0.75 is acceptable, as proposed [91], and the overall consistency for high social commerce purchase intention causal conditions is 0.966 in this study. In addition, the obtained overall solutions raw coverage is

0.873, which indicates that the combination of causal conditions is of high relevance. The consistency values for each causal condition obtained for the outcome of high social commerce purchase intention in live streaming are higher than 0.90, and the suggested value is 0.75 [91]. Moreover, since the consistency for each configuration was higher than 0.90, we considered that the higher coverage might reflect better implementation for high social commerce purchase intention, as advised by [92]. Therefore, regardless of the presence (*) or absence (~) of conditions for each configuration generated, the first configuration of a combination of *SI, *PT, *PU, *HB, *EMS, and *IM is considered high relevance for high social commerce purchase intention (consistency = 0.984, coverage = 0.739). Although the consistency is not the highest compared to the other solutions, the coverage score is higher than the other configurations. The configurations can be described as consumers being involved in live streaming for social interaction, pass-time, perceived utility (uses and gratification), emotions, and immersion (live streaming engagement), and these drive high social commerce purchase intention.

The second configuration indicated that high social commerce purchase intention occurs when the consumers are involved in live streaming with *SI, *PT, *ENT, *PU, *SP, and *IM. The third configuration showed that combining *PT, *ENT, *PU, ~HB, ~EMS, *SP, and *IM drives high social commerce purchase intention. Next, the fourth configuration revealed that the *SI, *PT, *ENT, *PU, *HB, *EMS, and *SP affect high social commerce purchase intentions. The fifth configuration of *SI, *PT, *ENT, *HB, *EMS, *SP, and *IM drives high social commerce purchase intention. Finally, the sixth configuration indicated high social commerce purchase intention was generated with the combination of *PT, *ENT, *PU, *HB, *EMS, *SP, *IM.

**Table 7. fsQCA Results for High Social Commerce Purchase Intention and Gift-Giving Intention**

| Configuration | High Social Commerce Purchase Intention | | | | | | High Gifts Giving Intention | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | C.1 | C.2 | C.3 | C.4 | C.5 | C.6 | C.1 | C.2 | C.3 | C.4 | C.5 | C.6 | C.7 |
| ***Uses and Gratification*** | | | | | | | | | | | | | |
| Social Interaction | ● | ● | | ● | ● | | ● | | ● | ● | ● | ● | |
| Pass-Time | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Entertainment | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | ● |
| Perceived Utility | ● | ● | ● | ● | | ● | ● | ● | ● | ● | | ● | ● |
| Habit | ● | | ⊗ | ● | ● | ● | | ⊗ | ● | ● | ● | ● | ● |
| ***Live Streaming Engagement*** | | | | | | | | | | | | | |
| Emotional | ● | | ⊗ | ● | ● | ● | | ⊗ | ● | ● | ● | ● | ● |
| Social Presence | | ● | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● |
| Immersion | ● | ● | ● | | ● | ● | ● | ● | | ● | ● | ● | ● |
| *Raw Coverage* | 0.739 | 0.603 | 0.101 | 0.573 | 0.563 | 0.592 | 0.608 | 0.105 | 0.579 | 0.615 | 0.569 | 0.571 | 0.595 |
| *Unique Coverage* | 0.179 | 0.038 | 0.004 | 0.022 | 0.012 | 0.040 | 0.037 | 0.004 | 0.022 | 0.051 | 0.012 | 0.014 | 0.038 |
| *Consistency* | 0.984 | 0.984 | 0.985 | 0.979 | 0.987 | 0.987 | 0.949 | 0.990 | 0.944 | 0.951 | 0.952 | 0.946 | 0.948 |
| ***Overall Solution Coverage*** | *0.873* | | | | | | *0.765* | | | | | | |
| ***Overall Solution Consistency*** | *0.966* | | | | | | *0.917* | | | | | | |

Note: Black Circle (●) indicate the presence of condition; Circle with "x" (⊗) indicate its absence of conditions; Blank space indicate "don't care" conditions.

Regarding the outcome of high gift-giving intention, the fsQCA results show that the overall solution consistency of 0.917 is acceptable, as compared to the suggested value of 0.75 proposed [91]. Moreover, the overall solution raw coverage score of 0.765 indicated that combining the causal conditions of high gift-giving intention is highly relevant. However, for the individual configuration, the fourth configuration with a combination *SI, *PT, *ENT, *PU, *HB, *EMS, and *SP is considered as high relevance to high gift-giving intention in live streaming (consistency = 0.951, raw coverage = 0.615). The configuration can be described as, when consumers are involved in live streaming for social interaction, pass-time, entertainment, perceived utility, habit (uses and gratification), emotions, and social presence (live streaming engagement), it leads to high gift-giving intention. The first configuration revealed high gift-giving intention when *SI, *PT, *ENT, *PU, *SP, and *IM were combined. The second configuration indicated that high gift-giving intention occurs when consumers are involved in live streaming with *PT, *ENT, *PU, ~HB, ~EMS, *SP, and *IM. The third configuration showed that combining *SI, *PT, *ENT, *PU, *HB, *EMS, and *SP drives high gift-giving intention. Next, the fifth configuration revealed that the *SI, *PT, *ENT, *PU, *HB, *EMS, and *SP combination affected high social commerce purchase intentions. The fifth configuration of *SI, *PT, *ENT, *HB, *EMS, *SP, and *IM drive high gift-giving intention. The sixth configuration indicated that high gift-giving intention occurs when *SI, *PT, *PU, *HB, *EMS, *SP, and *IM are combined. Finally, the seventh configuration indicated high gift-giving intention generated with the combination of *PT, *ENT, *PU, *HB, *EMS, *SP, and *IM

### *5-2-4- Evidence from Predictive Validity*

This study conducted predictive validity to examine how well the model predicts the dependent variable in additional samples [88, 93]. Predictive validity is considered essential to achieve a good model fit for good predictions [88]. Preliminary data were divided into two subgroups to test predictive validity: subsamples and hold samples. Table 8 presents the solutions generated from the subsamples for both social commerce purchase intention and gift-giving intention, which were analyzed using the hold samples. Figures 10 and 11 indicate that the first model calculated from the subsamples show good predictive validity for social commerce purchase intention (consistency = 0.949, coverage = 0.408) and gift-giving intention (consistency = 0.920, coverage = 0.380). As proposed by Gigerenzer and Brighton (2009) [94] and Papas and Woodside (2021) [88], when the consistency of the XY plot generated from the subsamples and hold samples are sufficient and statistically significant, it indicates that predictive validity is satisfactory.

**Table 8. Solutions from the Subsamples**

| Model from Subsamples | Raw Coverage | Unique Coverage | Consistency |
|---|---|---|---|
| ***Social Commerce Purchase Intention*** | | | |
| *f (*SI, *PT, *PU, *HB, *EMS, *IM)* | | | |
| *PT, *ENT, *PU, *SP, *IM | 0.849 | 0.136 | 0.996 |
| *SI, *PT, *ENT, *HB, *EMS, *SP, *IM | 0.730 | 0.017 | 0.998 |
| *SI, *PT, *PU, *HB, *EMS, *SP, *IM | 0.729 | 0.016 | 0.998 |
| ***Gift-Giving Intention*** | | | |
| *f (*SI, *PT, *ENT, *PU, *HB, *EMS, *SP)* | | | |
| *SI, *PT, *ENT, *PU, *EMS, *PR, *IM | 0.720 | 0.014 | 0.965 |
| *SI, *PT, *ENT, *HB, *EMS, *SP, *IM | 0.723 | 0.017 | 0.965 |
| *SI, *PT, *PU, *HB, *EMS, *SP, *IM | 0.718 | 0.013 | 0.961 |
| *PT, *ENT, *PU, *HB, *EMS, *SP, *IM | 0.768 | 0.063 | 0.958 |
| ~SI, *PT, *ENT, *PU, ~HB, ~EMS, *SP, *IM | 0.073 | 0.012 | 0.988 |

Note: * denotes presence of conditions; ~ denotes its absence condition

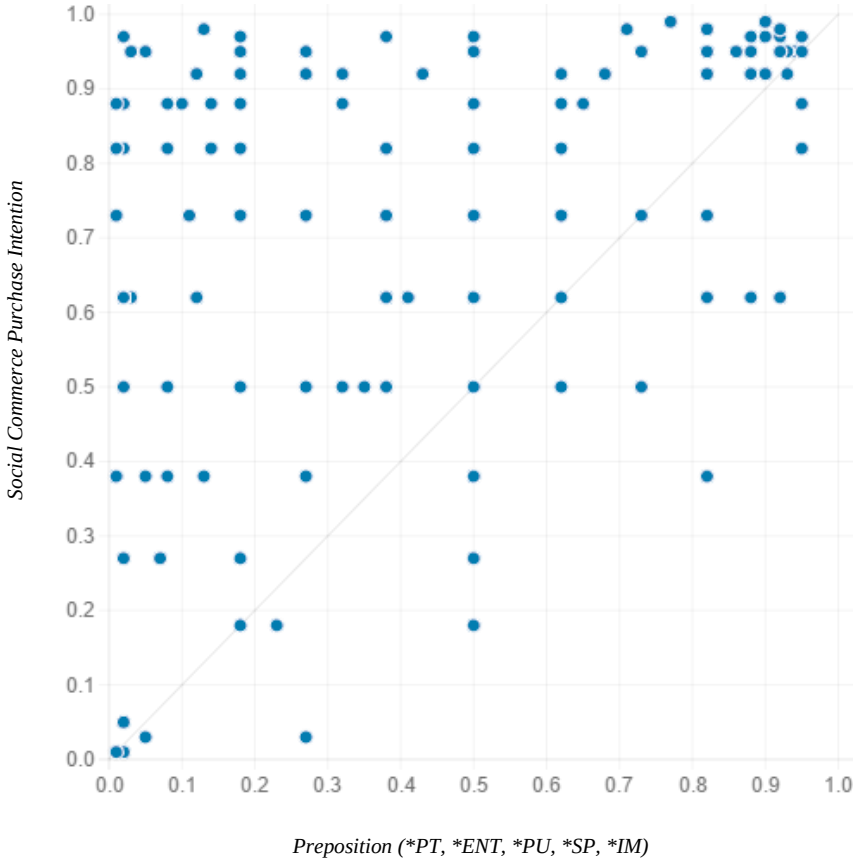


**Figure 3. XY Plot of Model 1 SCPI with Holdout Samples (*PT, *ENT, *PU, *SP, *IM) Consistency = 0.949, Coverage = 0.408**

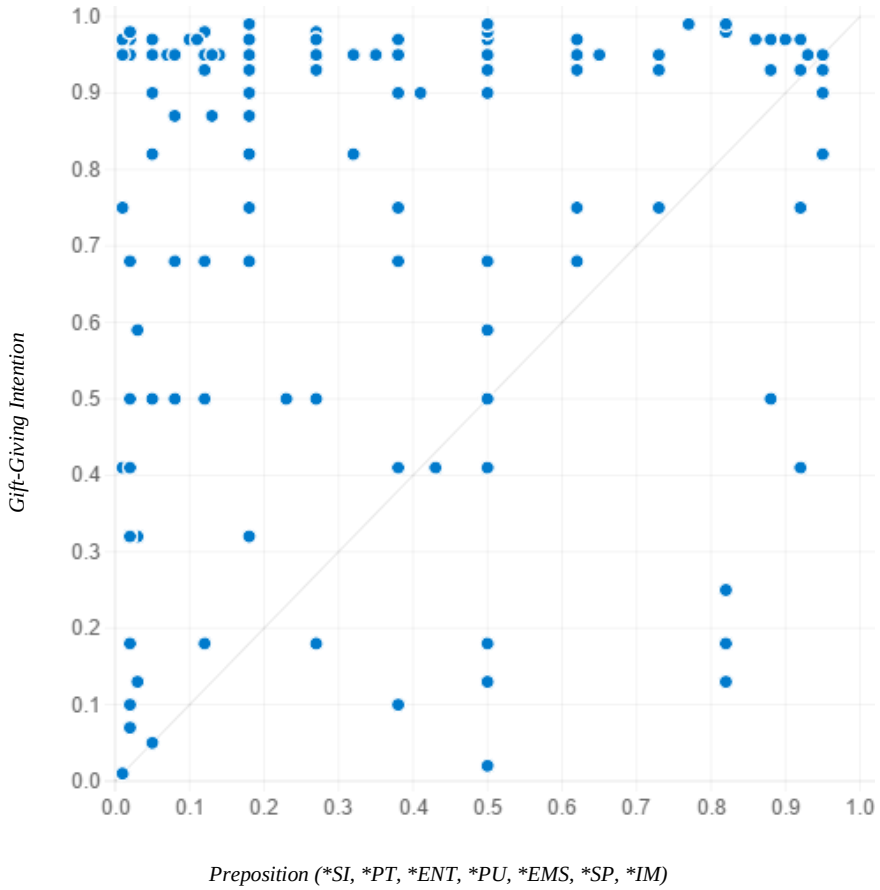


**Figure 4. XY Plot of Model 1 GGI with Holdout Samples (*SI, *PT, *ENT, *PU, *EMS, *SP, *IM) Consistency = 0.920, Coverage = 0.380**

## 6- Conclusions

### *6-1- Key Findings*

The goal of this study was to provide extensive knowledge about the purchase and gift-giving intentions of live streaming as a social commerce platform. Due to its infancy for practitioners and academicians, this study objectively discussed live streaming based on the uses and gratification theory, engagement, social commerce purchase intention, and gift-giving intention to extensively understand the phenomenon. This study is the first to combine use and gratification with live streaming engagement and simultaneously reveals both social commerce purchase intention and gift-giving intention. The empirical results generated from SEM analysis demonstrate that, of the five dimensions of use and gratification towards live streaming, two variables significantly influence engagement, namely pass-time and habit. In addition to the results of this study, previous research has shown that pass-times and habits significantly influence engagement [95, 96]. There are differences in the results of this study compared to those of previous studies, meaning variations in the constructs that are used in causal relationships to engage led to different outcomes. Consequently, our research also shows that there are three uses and gratification perspectives that are not partially significant in engagement, namely entertainment, perceived utility, and social interaction. As a result of the findings of this study, social media users who are motivated to watch live streaming for entertainment have a significant impact on their perceived social presence and immersion. This is also in accordance with the findings of previous studies. Furthermore, this study also shows that the motivation to watch live streaming through perceived utility will significantly affect immersion [95, 97].

The engagement dimensions in this study include emotional, social presence, and immersion. The findings explain that if consumers decide to pass the time and have a habit of watching live streaming, it significantly affects their engagement. Mostly, they will be engaged emotionally, followed by social presence and immersion, which indicates that live streaming should be vested with emotional content, streamers should inquire about viewers through active interaction, and present detailed product information to the viewers, which has been empirically proven to increase concentration on the content broadcast. Furthermore, the results show that the three dimensions of engagement significantly drive social commerce purchase intention and gift-giving intention, which indicates that when consumers are emotionally engaged with the live stream, they will perceive a high social presence and become immersed in the broadcasted content, which drives them to purchase the products/services and send paid gifts to the streamers. The results of this study are also supported by previous research [13, 82]. Specifically, the contribution of this study is the

addition of the social presence and emotional dimensions to our understanding of engagement, which extends previously investigated engagement results based on immersion and presence [13]. In addition, the findings of this study add more extensive relations between the uses and gratification and engagement of previous research [8]. Since live streaming has become a critical channel for marketers to increase sales, this study proves a broader concept to understand consumer behavior based on U&G and engagement.

The results of fsQCA emphasize six solutions to reach high purchase intention in live streaming as social commerce platforms. In addition, each configuration has high consistency and raw coverage, which indicates that the solutions provided represent the conditions necessary for the antecedent variables to implement high social commerce purchase intention. However, regarding individual configuration, it is understood that consumers who seek social interaction, pass-time, perceived utility, and have the habit of using live streaming should be treated emotionally, in order to lead users to become immersed in the content, as explained in the first configuration (coverage = 73.9%). In addition, this study also measured the outcome of the high gift-giving intention in live streaming, and the results show that there are seven configurations generated from the fsQCA analysis. Plus, each configuration generated has high consistency and raw coverage, which represents sufficient implementation to drive consumers' high gift-giving intention. Moreover, this study specifically shows that for individual configurations, the combination of social interaction, pass-time, entertainment, perceived utility, habit, emotion, and immersion prompted viewers to send gifts to the streamers, as based on the solution coverage generated from the fourth configuration (coverage = 61.5%). Finally, this study demonstrated that combining the uses and gratification theory with live streaming engagement into a framework enables us to understand social commerce purchase intentions and gift-giving intentions. In addition, this study provides causal relationships through structural analysis and empirically provides the configuration solutions to achieve high social commerce purchase intention and gift-giving intention.

### *6-2- Theoretical Implication*

This study made an important theoretical contribution, particularly by extending consumer behavior studies to live streaming commerce. First, this research is one of the first to investigate social commerce purchase intentions and gift-giving intentions in live streaming by incorporating the uses and gratification theories and engagement, which extends the findings of previous studies [8, 10, 11] that employed the uses and gratification theory and were aimed at digital shopping. However, this study has empirically proven that consumers can simultaneously execute their purchases and send gifts to the streamers. In addition, this research employed multiple analysis methods that indicated different outcomes. Therefore, the complex conditions of the live streaming environment, as explained by integrating uses and gratification, engagement, social commerce purchase intention, and gift-giving intention, were investigated, and the results present a theoretical pictorial for future studies of live streaming social commerce.

Secondly, this research identified five dimensions of use and gratification for users of live streaming platforms and explored users' motivations for watching live streaming for entertainment, social interaction, passing time, habit, and perceived utility to fulfill their psychological needs. The findings of this study have confirmed that live streaming broadcasts provide entertainment to viewers [38], facilitate social interaction [37], provide value for users who seek specific purposes (considering live streaming as a perceived utility for shopping) [11], and help users pass time and fulfill their habitual activities [33]. The distribution of respondents in this study is dominated by the younger generation that uses social media and live streaming platforms; therefore, the application of these five dimensions may also be carried out on other social media platforms that facilitate live streaming, such as YouTube. In order to provide theoretical insight, the identification of uses and gratification of users towards live streaming considered the content types and platform characteristics.

Third, the theoretical insight of this study confirms that over integrating the five dimensions of use and gratification (social interaction, pass-time, entertainment, perceived utility, and habit) are designated as significant factors for consumer engagement (emotional, social presence, and immersion) within live streaming and simultaneously contributes to the outcome of purchase intention and gift-giving intention. The contribution of this study supplies the theoretical attribution, which extends the literature according to the phenomenon [13, 63]. Furthermore, the findings of structural analysis indicate that the four dimensions of use and gratification, meaning pass-time, entertainment, perceived utility, and habit, show both partial and full significance in engagement (emotional, social presence, immersion), which further explains that consumers within their usage and gratification dimensions of watching live streaming significantly impact engagement. Furthermore, engagement demonstrated its importance in terms of both social commerce purchase intention and gift-giving intention. Significantly, the findings generated from fsQCA indicate a total of eleven configurations for the solution of high social commerce purchase intention and gift-giving intention, which can accommodate theoretical foundations during future research regarding live streaming and social commerce.

### *6-3- Practical Implication*

This study significantly contributes to practical implications, most notably for social commerce businesses that practice live streaming as a sales channel, and confirms that social media, i.e., Facebook and Tik-Tok, facilitate live

streaming, which can be used by marketers to extend the market and attract more customers. Although this study was conducted in Indonesia, Facebook and Tik-Tok are popular social media platforms among users in many countries. Therefore, when marketers drive sales, employing live streaming via Facebook and Tik-Tok is the right decision. In addition, this study provided guidelines for marketers to understand how to implement live streaming commerce to generate sales and paid gifts given by the users. First, this study suggested that marketers conduct live streaming broadcasts that are adjusted to the audiences' uses and gratification, i.e., pass-time, entertainment, perceived utility, and habits, meaning when the audience is emotionally engaged, perceives social presence, and is immersed in the content, it leads to purchases and gift-giving. As the uses and gratification dimensions of pass-time, entertainment, and habit are the most important for engagement, this study suggested marketers create highly entertaining live stream content, where the purpose is to attract audiences that watch live streaming to pass the time or as a habitual activity to encourage robust engagement in watching live streaming.

Second, the results generated from fsQCA extend insight for marketers to increase sales and receive paid gifts during live streaming. Each configuration displays different combinations that lead to high social commerce purchases and high gift-giving intentions. Specifically, this study suggested that combinations with higher coverage should be implemented to attract users to increase sales and generate income from gift giving. Moreover, this study helped marketers understand the users' behavior within live streaming according to the causal conditions of uses, gratification, and engagement. For example, the higher the coverage of social commerce purchase intention performed according to the causal conditions of social interaction, pass-time, perceived utility, habit, emotion, and immersion, the higher the purchase intention and the higher the gift-giving intention, thus, marketers can easily develop their marketing strategy.

### *6-4- Limitation and Future Research*

This study has several limitations. First, this study investigated social commerce purchase intention and gift-giving intention through the use of gratification theory and engagement. However, the live stream broadcast by media figures (i.e., streamers) allows the audience to perceive an illusion of face-to-face relationships. In addition, trust towards streamers is considered an essential factor for the implementation of social commerce shopping. Therefore, future research can evaluate the trustworthiness and parasocial interaction variables integrated into the proposed conceptual framework, in order to mediate and moderate different antecedents regarding consumers' decisions.

Second, this study investigated live streaming on Facebook and Tik-Tok; however, live streaming can be applied to various social media video platforms, such as YouTube and Instagram. Consequently, future research can investigate the impact of live streaming on other social media to reveal the different antecedents of social commerce shopping. Third, although this study employed fsQCA analysis to provide guidelines for theoretical robustness and practical implementation, this study was conducted in a developing country (Indonesia), which behaves differently from people in developed countries. Therefore, future research can evaluate the implementation of fsQCA analysis to provide guidelines to academia and practitioners regarding live streaming shopping in developed countries.

## 7- Declarations

### *7-1- Author Contributions*

Conceptualization, W.K.C. and C.W.C.; methodology, W.K.C. and A.D.K.S.; software, A.D.K.S; validation, A.D.K.S, and W.K.C; formal analysis, A.D.K.S; investigation, W.K.C; resources, W.K.C; data curation, A.D.K.S; writing—original draft preparation, A.D.K.S and W.K.C.; writing—review and editing, W.K.C. and C.W.C.; visualization, W.K.C and C.W.C.; supervision, W.K.C. and C.W.C.; project administration, W.K.C.; funding acquisition, W.K.C. All authors have read and agreed to the published version of the manuscript.

### *7-2- Data Availability Statement*

The data presented in this study are available on request from the corresponding author.

### *7-3- Funding*

The authors received no financial support for the research, authorship, and/or publication of this article.

### *7-4- Informed Consent Statement*

Not Applicable.

### *7-5- Conflicts of Interest*

The author declares that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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