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Why do people purchase virtual goods? A uses and gratification (U&G) theory perspective

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ABSTRACT

Few literature studies have investigated the relationships between different uses and gratifications (U&Gs) of mobile instant messaging (MIM) apps, continuation, and purchase intentions. To address this gap, the researchers aimed to examine the influence of the content, social, process, and technology U&Gs of MIM on continuation intentions toward MIMs, and purchase intentions toward virtual goods available on MIMs. A comprehensive research model was developed based on the U&G theory, which was tested using cross-sectional data from 309 Japanese MIM users. The study considered six different U&Gs of MIM as independent variables and purchase intentions towards stickers and continuation intentions towards MIM as dependent variables. The study results suggest that exposure U&G has a significant positive association with MIM sticker purchase intentions. The entertainment and affection U&G are positively associated with continuation intentions towards MIM use. The study contributes to the literature by investigating U&Gs that motivate MIM users to have both positive purchase intentions toward virtual goods, such as stickers, and continuation intentions toward MIMs. The study has significant theoretical and practical implications for both researchers and practitioners who are interested in virtual goods, the virtual economy, MIM apps, social media, new media, and the service economy.

1. Introduction

The emergence of mobile instant messaging (MIM) apps has changed the entire landscape of communication practices. MIM apps provide new ways of sharing content such as text, audio, voice, photos, and videos, anytime and anywhere with one or more other MIM users. Notably, the number of monthly users using mobile messaging is projected to rise to 2.48 billion in 2021 (Clement, 2019). Another area that has attracted attention in the context of MIMs is the use of virtual goods, such as stickers. Japanese-invented emojis and stickers have become popular across MIMs, so much so that the word “emoji” was recognized as a popular word in 2015 by the Oxford Dictionary (Liu et al., 2019).

WeChat and LINE are two well-known MIM apps that provide stickers to their customers. Notably, LINE MIM app has earned USD...
270 million per year from selling stickers in the recent past (MacDonald, 2016). Similarly, on WeChat, nearly 45 billion messages are sent daily, many including stickers (Marketing, 2019). However, despite the increasing popularity and usage, MIMs are constantly challenged by threats from within as well as from competing platforms (Wu et al., 2017). The key challenges include a saturated market and tough competition from competing MIM apps. In addition, most MIM apps offer similar services, charge no real usage fees from MIM users apart from Internet cost, and lack any unique feature-set (Wu et al., 2017). These challenges pose a significant threat to not only their growth but also their survival. Furthermore, switching cost and asset specificity are low, making retention of users an issue too. This is a problem faced by many other services, including mobile gaming. For instance, Pokémon Go received a tremendous response when it was released in July 2016; however, soon, the users started losing interest, and there was a general lack of customer stickiness (Chen et al., 2018).

The challenges related to user acquisition as well as retention point to the exigency of studying the drivers of adoption behaviors along with continuation intentions of MIM users (Ashraf et al., 2018). An understanding of consumer behavior in relation to these apps can enable service providers to formulate effective strategies (Oghuma et al., 2016). Continuation intentions toward MIMs have been the focus of some studies in the past (e.g., Dhir et al., 2018; Kaur et al., 2019; Oghuma et al., 2016); however, scholars argue that the accumulated body of knowledge is still limited (Ashraf et al., 2018). In addition, virtual goods, such as stickers, represent a source of revenue for MIM operators. Therefore, the investigation of factors that can potentially influence intentions toward and actual purchase of virtual goods, is both timely and essential.

Taking cognizance of the economic importance, emerging research interest, and calls for a more in-depth investigation of MIM apps, this study involved an examination of the factors influencing MIM continuation intentions as well as sticker purchase intentions. The uses and gratifications theory (UGT), a popular theoretical framework from the communication and psychology literature, was utilized (Katz et al., 1973; Quan-Haase and Young, 2010). The current research considered six different U&Gs of the MIM apps, namely content (i.e., information seeking and exposure), process (i.e., entertainment and escape), social (i.e., social sharing), and technology U&G (i.e., affection) aspects. This line of inquiry is consistent with the suggestions of recent literature that has recommended new initiatives to understand the purchasing intentions and actual purchasing behaviors in the context of virtual goods (Bleize and Antheunis, 2019). The following research questions (RQs) are addressed by the study: RQ1: What is the relationship between different MIM U&Gs and intentions to purchase MIM stickers? RQ2: What is the relationship between the MIM U&Gs and intentions to continue using MIMs?

To achieve the objectives of the study, a cross-sectional survey with young adult MIM users (aged 20–24 years) from Japan was conducted. The choice of Japan as the geographic area of research is in response to the calls for studying consumer behavior toward MIMs in Asian countries (Schmitt, 2015). Young adults were chosen as the target segment because existing research argues that this age group represents critical consumers of online social media platforms (SMPs) (e.g., Smith and Anderson, 2018).

The study results suggest that the entertainment and affection U&Gs have significant positive association with continuation intentions, while exposure U&G is positively associated with MIM sticker purchase intentions. The novelty of the present research is that it develops and tests a model that concurrently investigates both the virtual goods purchase intention on MIM and the continuance intention toward MIM itself. Furthermore, the selection of the Japanese sample addresses the increasing interest of scholars in studying consumer behavior with reference to Asian economies.

The remainder of the article is structured as follows. Section 2 provides the theoretical background of the study and discusses relevant prior literature on UGT, continuation, and purchase intention. Section 3 illustrates the research model and hypotheses, Section 4 discusses the research methodology, and Section 5 presents the results. Section 6 presents the discussion and study implications followed by study limitations and future work in Section 7.

2. Background of the study

2.1. Uses & Gratification Theory (UGT)

The UGT is a well-utilized theoretical framework for explaining the different motives and reasons behind the use of any given medium (Gan, 2017). The UGT assumes that consumers are active, selective, and motivated to use a given medium (Quan-Haase and Young, 2010). Scholars have utilized the theory to understand the different U&Gs that are sought from the use of a specific medium (Dhir, 2016; Dhir et al., 2017). Moreover, UGT is applied to explain why people tend to use a specific medium to satisfy their needs (Katz et al., 1974). Media scholars have reasoned that the UGT provides a user-centered viewpoint on the different social and psychological motives sought from a given medium (Leung and Wei, 2000). Despite being a theory that originated in the pre-digital boom era, scholars recently invoked UGT in studies related to the Internet and SMP adoption (Dhir, 2015; Dhir et al., 2015; Dhir and Tsai, 2017). Furthermore, scholars have utilized it to study the motives behind the use of most recent forms of media use (e.g., photo-tagging, photo-sharing, specific features of new media, and instant messaging) (Dhir, 2016; Dhir et al., 2017; Gan and Li, 2018; Malik et al., 2015). Prior research shows that the U&Gs of SMPs have a significant influence on continuation intentions (e.g., Yen et al., 2018), purchase intentions (e.g., Aluri et al., 2016), use intentions, and actual use behavior (e.g., Gan, 2017).

Prior UGT literature is classified into three broader categories. The first includes studies examining the motivations behind the use of traditional media (e.g., television, newspaper) (Elliott and Rosenberg, 1987). The second group comprises studies related to Internet and SMP use (Dhir, 2015; Dhir et al., 2015; Dhir and Tsai, 2017). The third group consists of studies investigating the U&G of the most recent forms of media (e.g., photo-tagging, photo-sharing, specific features of new media) (Dhir, 2016; Dhir et al., 2017; Malik et al., 2015).

In the context of SMPs, scholars broadly agree on the different U&Gs sought by users based on their use. This includes...
experiencing pleasure, fun, relaxation, socializing and self-status seeking, affection, convenience, social sharing, exposure, information seeking, creating and managing online self-presentation, and even escaping from real-life problems (Dhir, 2016; Dhir et al., 2017; Hicks et al., 2012). In addition, scholars classified these different U&Gs into four broad categories, namely content, process, social, and technology U&G (Li et al., 2015; Sundar and Limperos, 2013).

2.2. UGT & continuation intentions

Prior research shows that the U&G of SMPs have a significant influence on continuation intentions (Ku et al., 2013), use intentions (Luo et al., 2011), purchase intentions (Cheung and Lee, 2009), and use behavior (Cheung et al., 2011). Similarly, prior studies showed a positive relationship of U&Gs with satisfaction (Kim et al., 2010) and loyalty (Kim, 2011).

It remains an uncontested fact that media U&G have a significant influence on use intentions, but it which specific media U&Gs have a significant influence on intentions across the different forms of media remains unknown. For example, prior SMP literature links information seeking, entertainment, social sharing, and affection U&G with continuation intentions (Li et al., 2015; Park et al., 2013) and use intentions (Joo and Sang, 2013). In comparison, Xu et al. (2012) found that only process and content U&G predicted SMP use, while Li et al. (2015) found that process, content, and social U&Gs significantly influenced continuation intentions toward SMP games. In addition, limited prior literature reports inconsistent findings regarding the relationships between media U&G and user intentions. For example, studies have suggested that escape positively influences continuation intentions (e.g., to play online games; Li et al., 2015) and use intentions (Joo and Sang, 2013). In contrast, Xu et al. (2012) and Yang and Lin (2014) found that escape is not a significant predictor of the usage intentions of SMP users. There are two possible reasons for these inconsistencies. First, scholars considered different types of U&Gs; for example, some considered all four classifications of media U&Gs, while others focused only on a subset of various media U&Gs. Second, it is possible that the relationship between media U&G and use intentions is platform-dependent, meaning that the findings change when different forms of SMPs are considered. Consequently, it is important for scholars to investigate the relationships between media U&Gs and use intentions by utilizing a comprehensive number of media U&Gs. Thus, the present research considered six different U&Gs of MIM apps.

2.3. UGT & purchase intentions

Purchase intentions represent the likelihood of the purchase of a given product or service by a consumer (Dodds et al., 1991). Moreover, purchase intentions are the result of the user’s pre-purchase satisfaction (Chen et al., 2010). In the present study, purchase intentions regarding virtual goods (i.e., LINE stickers) were investigated. According to an estimate, the selling and purchasing of goods on SMPs surpassed the $30 billion mark in the US alone (Zhou et al., 2013), and the virtual goods economy surpassed the $15 billion mark in 2016 (Venrock, 2016). The market for virtual goods is relatively new and is growing at a fast pace; however, studies examining the proliferation of the virtual economy are limited. Prior literature has not yet extensively examined the relationship between different U&Gs of SMPs and purchase intentions regarding virtual goods. The limited prior literature shows that the enjoyment and entertainment U&Gs (Aluri et al., 2016) and the social interaction U&G (Aluri et al., 2016) significantly influence purchase intentions. In comparison, the present research investigated the relationship between six different types of MIM U&Gs and intentions to purchase virtual goods (i.e., LINE Stickers).

3. Research methods

3.1. Research model

The researchers utilized the UGT to examine the relationship of different U&Gs of the selected MIM app (i.e., LINE) with the intentions to purchase virtual goods (i.e., LINE stickers), and intentions to continue using MIM. Scholars argue that the examination of individual motivations is important because these motivations relate to actual technology use (Quan-Haase and Young, 2010). Similarly, extensive prior literature utilized the UGT to show a significant influence of different U&Gs on use intentions (Gan, 2017; Luo et al., 2011). Consequently, the UGT can provide a well-grounded and closely fitting theoretical framework for understanding the association of U&Gs with purchase and continuation intentions regarding MIM use.

This research considered a multidimensional structure representing six different U&Gs sought by MIM users, namely information seeking, escape, entertainment, exposure, social sharing, and affection. The different U&Gs of MIM predict the purchase and continuation intentions (see Fig. 1). The six-factor U&G structure for MIM has been developed from prior new media literature (e.g., Dhir et al., 2017), while other measures, namely purchase intentions and continuation intentions, were drawn from prior literature (see Table 1).

The researchers selected LINE to represent MIM apps as it is not only quite popular in countries such as Japan but also had 194 million users worldwide in 2019 (Iqbal, 2019). Many prior studies have also focussed on LINE. For instance, Hou et al. (2019) examined whether cognitive absorption can explain LINE users’ satisfaction during messaging. In comparison, Liu et al. (2019) examined the download willingness and purchase intentions related to LINE stickers. In addition, scholars investigated purchase intentions toward LINE stickers (e.g., Lin et al., 2018; Yang et al., 2017).
3.2. Hypotheses

3.2.1. Information seeking

Information seeking is defined as the purposeful seeking of information in one’s day-to-day routine to solve problems that are not directly linked to one’s occupation or certain performance (Savolainen, 1995). In the context of the present study, MIM users engage in information seeking U&G by using MIM to obtain the required information, to learn how to do certain things, and also to obtain the latest news about their social circles, families, and general happenings. Scholars reason that information seeking is one of the main

Table 1
Factor loadings of measurement and structural model.

<table>
<thead>
<tr>
<th>Study Measures (Refs.)</th>
<th>Measurement items</th>
<th>SM</th>
<th>MM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure (EXP) (Dhir et al., 2017)</td>
<td>EXP1: MIM has broadened my thinking and lifestyle 0.73 0.73</td>
<td>EXP2: One can learn about educational opportunities using MIM 0.81 0.81</td>
<td>EXP3: MIM provides a wider range of exposure (lots of information) 0.87 0.87</td>
</tr>
<tr>
<td>Social Sharing (SS) (Dhir et al., 2017)</td>
<td>SS1: MIM helps me share my own experiences with others 0.87 0.87</td>
<td>SS2: MIM helps me share my own likes with others 0.90 0.90</td>
<td>SS3: MIM helps me to share happy moments with others 0.60 0.60</td>
</tr>
<tr>
<td>Entertainment (ENT) (Dhir et al., 2017)</td>
<td>ENT1: I use MIM because it is entertaining 0.79 0.79</td>
<td>ENT2: I use MIM because it is fun 0.84 0.84</td>
<td>ENT3: I use MIM because I enjoy it 0.88 0.88</td>
</tr>
<tr>
<td>Information Seeking (IS) (Dhir et al., 2017)</td>
<td>IS1: Through MIM, I can get the required information 0.75 0.75</td>
<td>IS2: Through MIM, I can learn how to do certain things 0.86 0.86</td>
<td>IS3: Through MIM, I learn about the latest news 0.67 0.67</td>
</tr>
<tr>
<td>Escape (ESP) (Dhir et al., 2017)</td>
<td>ESP1: I use MIM to play roles different from those played in real life 0.74 0.74</td>
<td>ESP2: I use MIM to put off something I should be doing 0.92 0.92</td>
<td>ESP3: I use MIM to get away/escape from what I am doing 0.71 0.71</td>
</tr>
<tr>
<td>Affection (AFF) (Dhir et al., 2017)</td>
<td>AFF1: MIM is used to show care for others 0.84 0.84</td>
<td>AFF2: MIM is used to show affection for family 0.75 0.75</td>
<td>AFF3: MIM is used to show the friendship bond with others 0.87 0.87</td>
</tr>
<tr>
<td>Purchase Intentions (PI) (Hsu &amp; Lin, 2015)</td>
<td>PI1: I will frequently purchase MIM stickers 0.72 0.72</td>
<td>PI2: I have the intention to buy MIM stickers 0.81 0.81</td>
<td>PI3: I think it is a good idea to buy MIM stickers 0.75 0.75</td>
</tr>
<tr>
<td>Continuation Intentions (CI) (Bhattacherjee, 2001)</td>
<td>CI1: I intend to continue using MIM rather than to discontinue its use 0.92 0.92</td>
<td>CI2: I intend to use MIM rather than other alternatives 0.73 0.73</td>
<td>CI3: I will continue using MIM in the future 0.83 0.83</td>
</tr>
</tbody>
</table>

Note. SM = factor loadings from structural model, MM = factor loadings from measurement model.
reasons for the use of SMPs (Joo and Sang, 2013). Moreover, information seeking is one of the main U&Gs for social commerce (Hicks et al., 2012), employees' usage of enterprise SMP (Liu and Bakici, 2019), and promoting health through MIMs (Zhang and Jung, 2018). The limited prior literature indicates a positive association between information seeking and use intentions (Joo and Sang, 2013) as well as continuation intentions (i.e., indirectly via perceived usefulness; Park et al., 2013). Thus, it is likely that information seeking U&G also drives the purchase and continuation intentions of MIM users. Therefore, we hypothesize:

H1. Information seeking U&G positively influences the intentions to purchase MIM stickers.

H2. Information seeking U&G positively influences the intentions to continue using MIM.

3.2.2. Escape

Escape refers to avoiding the real world to forget the different pressures and worries of one's real life (Xu et al., 2012). It is a crucial U&G sought by SMP users (Hicks et al., 2012). Similarly, escaping is one of the motives of mobile gaming for university and high school students (Bulduklu, 2017). Prior studies show that escape positively influences continuation intentions (e.g., regarding online games; Li et al., 2015), indirectly influences use intentions (Joo and Sang, 2013), and directly influences use behavior (e.g., weekly WeChat use; Pang, 2016). In contrast, some studies report that escape U&G is not a significant predictor of SMP use intentions (Xu et al., 2012). Here, we hypothesize that escape U&G positively influences purchase and continuation intentions.

H3. Escape U&G positively influences the intentions to purchase MIM stickers.

H4. Escape U&G positively influences the intentions to continue using MIM.

3.2.3. Entertainment

Entertainment U&G refers to the perceived entertainment, fun, and enjoyment experienced by the users as a result of their media use (Ducoffe, 1996; Koufaris et al., 2001). Scholars agree that the entertainment U&G is among the most significant predictors of new technology use and social commerce (Hicks et al., 2012) and that it has a positive influence on the different media usage-related dependent variables (Hicks et al., 2012). Research has confirmed that entertainment U&G significantly influences continuation intentions (Li et al., 2015) and indirectly influences use intentions (Joo and Sang, 2013). Similarly, perceived enjoyment, which is related to entertainment U&G, is linked with intentions to purchase virtual goods (Mäntymäki and Salo, 2013). Lim and Kumar (2019) revealed entertainment as a key brand online social networking (BOSN) gratification that predicts BOSN commitment. Consequently, we also hypothesize that entertainment U&G is likely to significantly influence purchase and continuation intentions toward MIMs.

H5. Entertainment U&G positively influences the intentions to purchase MIM stickers.

H6. Entertainment U&G positively influences the intentions to continue using MIM.

3.2.4. Exposure

Exposure refers to broadening one's thinking and obtaining information related to a variety of relevant issues. MIM users seek exposure U&G through MIM use by obtaining a large variety of information, a wide range of exposure and knowing about educational opportunities for the broadening of their thoughts and lifestyles. Exposure U&G is a type of content U&G. Although some prior research shows a significant indirect influence of content U&G (i.e., information seeking) on use intentions (Joo and Sang, 2013; Park et al., 2013), it is not yet known whether a similar relationship (direct or indirect) exists in the case of exposure. In the context of sticker use, it may be intuitively expected that the use of stickers in messages would signal exposure to a certain way of living that is trendy and informed. We draw inspiration from prior findings on content U&G and hypothesize that exposure U&G significantly influences the purchase and continuation intentions of MIM users.

H7. Exposure U&G positively influences the intentions to purchase MIM stickers.

H8. Exposure U&G positively influences the intentions to continue using MIM.

3.2.5. Social sharing

Social sharing refers to the active exchange or sharing of information by the users of a given platform for social reasons, such as posting, sharing, and retweeting information or experiences that could be helpful for others. In the context of the present study, social sharing refers to the use of MIMs for sharing one's own experiences, likes, and happy moments with others. Social sharing significantly influences use intentions (Yang and Lin, 2014) and continuation intentions (Li et al., 2015). Similarly, Su and Chen (2019) revealed that social gratification is a key gratification in TV-smartphone multitasking. However, it is not yet known whether social sharing also influences purchase intentions. It is also not known whether social sharing influences continuation intentions and purchase intentions in the context of MIM apps. Given that MIMs are a tool for social connection, we intuitively anticipate the association of social sharing with purchase and continuation intentions towards MIMs. Thus, we present the following hypotheses:

H9. Social sharing U&G positively influences the intentions to purchase MIM stickers.

H10. Social sharing U&G positively influences the intentions to continue using MIM.
3.2.6. Affection

Affection U&G refers to the use of MIM apps for expressing appreciation and care for others, showing encouragement and concern, and helping others in general (e.g., friends, peers, and family; Leung, 2007). Affection is considered a significant U&G for traditional instant messaging (Grellies and Punyanunt-Carter, 2012) as well as MIM apps, such as WeChat (Pang, 2016). Similarly, Quan-Haase and Young (2010) observed that affection is an important U&G for instant messaging but is less important for SMPs. This could be a possible reason for fewer investigations involving affection U&G in the SMP literature. In the present study context, affection refers to the use of MIMs for showing care for others, affection for family, and showcasing friendship bonds with friends. Prior literature suggests that affection significantly influences behavior (e.g., it significantly predicts weekly WeChat use for each WeChat session; Pang, 2016) and that it indirectly influences continuation intentions (Park et al., 2013). In contrast, scholars have not determined whether affection significantly influences the purchase and continuation intentions of MIM apps. However, given that affection is a form of social expression, we believe that the very nature of MIMs provides a reason to consider such association plausible. Therefore, we present the following hypotheses:

H11. Affection U&G positively influences the intentions to purchase MIM stickers.
H12. Affection U&G positively influences the intentions to continue using MIM.

4. Research methodology

4.1. Study procedure and participants

Data collection was carried out with MIM users from Japan. A total of 309 young adults (aged 20–24 years) participated in this study. The research involved the collection of data from young adults who had the experience of using MIM as well as virtual stickers. Young adults were chosen as the target segment because this group is one of the most prolific users of messaging apps, and scholars have investigated this group in this context (e.g., Harari et al., 2019). Data collection was carried out using an Internet-based survey. Participation was kept anonymous and voluntary. Informed consent was obtained from all the study participants via survey instructions at the beginning of the study. The study participants evaluated the different measures of our research model using a 5-point response scale, where never = one and always = five.

4.2. Data analysis

The data analysis was performed in SPSS 24.0 and AMOS 23.0 using the recommendations of Anderson and Gerbing (1988). The first step involved an examination of the measurement model, while the second included the execution of the structural model. Both these steps have their own specific contributions to the final data analysis and to answering the different research questions and addressing the hypotheses of this study.

5. Results

5.1. Measurement model

We performed a confirmatory factor analysis (CFA) as part of the execution of the measurement model using the robust Maximum Likelihood algorithm (Reinartz et al., 2009). The CFA confirmed that the measurement model possesses a good model fit with \( \chi^2/df \) (Chi-square ratio degrees of freedom) = 2.47, comparative fit index (CFI) = 0.92, Tucker–Lewis Index (TLI) = 0.91, and root mean square error of approximation (RMSEA) = 0.07 (Byrne, 2001).

5.2. Validity and reliability

We established the content validity of the study measures based on the fact that all the items used for measuring different study measures were taken from prior literature. This indicates that the considered study constructs have already been empirically validated in the existing literature by different researchers in various contexts. Furthermore, it also means that these study measures have been examined by expert reviewers and readers during the process of reviewing and including them in their research. This approach of identifying the study measures by drawing them from existing literature ensured that the present research measures had sufficient content validity.

Face validity was achieved by (a) validating the instrument by a panel of four students with skills in designing and conducting questionnaire-based studies and (b) running a pilot study with a representative target population using the initial version of the questionnaire.

The study measures possess sufficient convergent validity also because the factor loadings of all the study measures were well above the recommended threshold value of 0.50 (Anderson and Gerbing, 1988; see Table 1), the composite reliability (CR) values of the study constructs were greater than 0.70 (DeVellis, 2003), and the average variance extracted (AVE) was above 0.50 and less than the corresponding CR values (Fornell and Larcker, 1981; see Table 2).

The study measures also possess sufficient discriminant validity because the intercorrelations among the different study constructs were less than 0.80 (Campbell and Fiske, 1959), the AVE values were greater than the corresponding values of the average shared
The structural model was estimated to establish the validity of the proposed research hypotheses for the study (see Fig. 2). The proposed model returned a good model fit with $\chi^2/df = 2.46$, $CFI = 0.92$, $TLI = 0.91$, and $RMSEA = 0.07$ (Byrne, 2001). Further, the model explained 25.2% of the variance in the purchase intentions and 18% of the variance in the continuation intentions. The hypotheses H6 and H12 were supported because entertainment ($p < 0.001$) and affection ($p < 0.05$) U&Gs were found to have significant positive association with continuation intentions. H7 was supported because exposure U&G ($p < 0.001$) had a significant positive association with the intentions to purchase MIM stickers (see Table 3). The remaining hypotheses were not supported. Notably, the percentage variance explained in the dependent variables is low, but this is not a cause for concern since prior methodological literature suggests that values as low as 10% are also acceptable in the consumer behavior studies (Falk and Miller, 1992). In fact, in such studies, a percentage variance of 20% is considered quite high (Hair et al., 2011).

Table 2

Validity and reliability of study measures.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>CR</th>
<th>AVE</th>
<th>MSV</th>
<th>ASV</th>
<th>CI</th>
<th>IS</th>
<th>ESC</th>
<th>ENT</th>
<th>EXP</th>
<th>SS</th>
<th>AFF</th>
<th>PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI</td>
<td>4.12</td>
<td>0.81</td>
<td>0.87</td>
<td>0.69</td>
<td>0.12</td>
<td>0.05</td>
<td>0.83</td>
<td></td>
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<tr>
<td>IS</td>
<td>3.12</td>
<td>1.06</td>
<td>0.81</td>
<td>0.57</td>
<td>0.42</td>
<td>0.24</td>
<td>0.29</td>
<td>0.77</td>
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<tr>
<td>ESC</td>
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<td>0.92</td>
<td>0.84</td>
<td>0.63</td>
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<td>0.08</td>
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<td>0.80</td>
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<tr>
<td>ENT</td>
<td>2.99</td>
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<td>0.29</td>
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<tr>
<td>EXP</td>
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<td>0.65</td>
<td>0.56</td>
<td>0.34</td>
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<td>SS</td>
<td>3.02</td>
<td>1.12</td>
<td>0.84</td>
<td>0.64</td>
<td>0.54</td>
<td>0.30</td>
<td>0.21</td>
<td>0.58</td>
<td>0.25</td>
<td>0.64</td>
<td>0.71</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFF</td>
<td>2.66</td>
<td>1.12</td>
<td>0.86</td>
<td>0.68</td>
<td>0.56</td>
<td>0.30</td>
<td>0.25</td>
<td>0.54</td>
<td>0.37</td>
<td>0.61</td>
<td>0.75</td>
<td>0.73</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td>2.60</td>
<td>0.98</td>
<td>0.80</td>
<td>0.57</td>
<td>0.22</td>
<td>0.13</td>
<td>0.17</td>
<td>0.37</td>
<td>0.37</td>
<td>0.43</td>
<td>0.47</td>
<td>0.41</td>
<td>0.36</td>
<td>0.76</td>
</tr>
</tbody>
</table>

Note: Standard deviation = SD, Composite reliability = CR, Average variance explained = AVE, MSV = Maximum shared variance, ASV = Average shared variance, Exposure = EXP, Social sharing = SS, Entertainment = ENT, Information seeking = IS, Escape = ESP, Affection = AFF, Purchase intentions = PI, Continuation intentions = CI.

Figure 2 shows the results of structural model testing.
6. Discussion

We utilized the popular theoretical framework of UGT to investigate how the different MIM U&Gs influence the intentions to purchase MIM stickers as well the intentions to continue using MIMs. This line of investigation is consistent with the prior literature that emphasizes the need for new initiatives aimed at a better understanding of the purchasing behavior of virtual goods (Bleize and Antheunis, 2017). The research model based on the UGT was tested with 20- to 24-year-old young adult MIM users from Japan using a web-based cross-sectional study. The measurement and structural models returned good model fit indices, and the study measures possessed sufficient validity and reliability.

RQ1 investigated the relationship between MIM U&Gs and the intention to purchase MIM stickers. The study findings suggest that only exposure U&Gs significantly influence purchase intentions towards stickers. This finding is consistent with prior literature, which suggests that content gratifications influence purchase intentions (Joo and Sang, 2013; Park et al., 2013). The possible reason for this finding could be that MIM stickers enable users to broaden their thinking and lifestyles (e.g., when stickers are actively used in the conversation), and thus users are likely to purchase the stickers for the satisfaction of their exposure U&G. The insignificant role of the remaining MIM U&Gs in influencing purchase intentions toward virtual goods must be further explored before any conclusion can be drawn. There could be potential mediating and moderating variables that influence the association, as revealed by several recent studies in the case of the influence of media U&G on purchase intentions. For example, Mortazavi et al. (2014) found that SMP U&Gs indirectly influence purchase intentions through electronic word-of-mouth. Chen et al. (2016) found that information seeking and escape indirectly affect repurchase intentions via satisfaction. Aluri et al. (2016) found that information seeking indirectly influences purchase intentions via satisfaction.

RQ2 examined the relationship between MIM U&Gs and the intentions to continue using MIMs. The study findings suggest that only the entertainment and affection U&Gs significantly influenced continuation intentions. This finding is consistent with prior literature that has also shown that entertainment U&G drives social commerce (Hicks et al., 2012) and that it is also a significant predictor of use and adoption (Hicks et al., 2012; Li et al., 2015). Similarly, prior literature indicates that affection U&G significantly influences continuation intentions (Park et al., 2013) and use behavior (Pang, 2016). In comparison, the findings of this study suggest that the remaining four U&Gs do not share any significant association with continuation intentions. There are two possible reasons that can explain this inconsistency. First, the contexts of the prior studies that have suggested a significant influence of different U&Gs on use intentions were SMPs and online communities and not MIM, as in the present study. Second, several studies show that different types of U&G indirectly influence use intentions through different mediating variables. Joo and Sang (2013) found that process U&G (e.g., pass the time, escape) and content U&G (e.g., information seeking) have indirect effect on use intentions via perceived usefulness and ease of use. Similarly, other empirical investigations show that the influence of information seeking on use intentions is mediated by attitudes (Hausman and Siekpe, 2009; Lim and Ting, 2012) and flow experience (Hausman and Siekpe, 2009). A recent study also demonstrated that escape and information-seeking indirectly influence intentions to revisit via satisfaction (Chen et al., 2016).

6.1. Theoretical implications

The study findings advance the literature on MIMs in following four ways: First, we utilized a popular media and psychology theory, the UGT, to examine the influence of different types of U&G on the intentions to purchase virtual goods, such as stickers, as well as intentions to continue using MIMs. This enabled a valuable contribution to the emerging literature on the relationship between media U&G, use intentions, and continuation intentions, which has remained underexplored thus far. This investigation is consistent with the recommendation of recent literature that has called for urgent steps to be taken to understand the determinants of purchase intentions (Bleize and Antheunis, 2017).

Second, in the specific context of MIMs, the present study significantly contributes to the limited yet mushrooming literature on MIM apps by utilizing an extensive number of measures of U&Gs (e.g., the six-factor model). The findings provide scholars with new insights into virtual goods purchasing behavior in MIM environment, particularly with regard to MIM stickers.

<table>
<thead>
<tr>
<th>H #</th>
<th>Hypothesis</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>IS U&amp;G positively influences the PI</td>
<td>No</td>
</tr>
<tr>
<td>H2</td>
<td>IS U&amp;G positively influences the CI</td>
<td>No</td>
</tr>
<tr>
<td>H3</td>
<td>Escape U&amp;G positively influences the PI</td>
<td>No</td>
</tr>
<tr>
<td>H4</td>
<td>Escape U&amp;G positively influences the CI</td>
<td>No</td>
</tr>
<tr>
<td>H5</td>
<td>Entertainment U&amp;G positively influences the PI</td>
<td>Yes</td>
</tr>
<tr>
<td>H6</td>
<td>Entertainment U&amp;G positively influences the CI</td>
<td>Yes</td>
</tr>
<tr>
<td>H7</td>
<td>Exposure U&amp;G positively influences the PI</td>
<td>Yes</td>
</tr>
<tr>
<td>H8</td>
<td>Exposure U&amp;G positively influences the CI</td>
<td>No</td>
</tr>
<tr>
<td>H9</td>
<td>Social sharing U&amp;G positively influences the PI</td>
<td>No</td>
</tr>
<tr>
<td>H10</td>
<td>Social sharing U&amp;G positively influences the CI</td>
<td>No</td>
</tr>
<tr>
<td>H11</td>
<td>Affection U&amp;G positively influences the PI</td>
<td>No</td>
</tr>
<tr>
<td>H12</td>
<td>Affection U&amp;G positively influences the CI</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Third, the results show that only exposure U&G significantly influences purchase intentions towards virtual goods, while entertainment and affection U&Gs significantly influence continuation intentions towards MIM. This indicates that future researchers should incorporate these gratifications into the investigation of MIM users’ purchase and continuation intentions.

Lastly, in consonance with the extended literature, the considered U&Gs may have an indirect influence on purchase and continuation intentions, even in MIM environment. This implies that while the present study has captured direct associations between U&G and intentions towards MIMs, potential indirect associations remain unexamined. The study findings for both RQ1 and RQ2 suggest that future research should investigate the different mediating variables between U&Gs, continuation, and purchase intentions. Future scholars can examine the influence of different mediating variables such as attitude, satisfaction, trust, and word-of-mouth, on the association of MIM U&Gs, continuation, and purchase intentions.

6.2. Practical implications

This study has three key practical implications for practitioners and MIM service operators. The study findings could also be of particular relevance to those who are interested in service-oriented business models and those interested in revenue generation from virtual goods. First, the different forms of online SMPs (including MIM apps) are considered instrumental in influencing the choices and decision-making processes of consumers, including use and purchase behaviors (Mangold and Faulds, 2009). Therefore, organizations as well as businesses are actively utilizing online SMPs, including MIM apps, to directly reach their existing and prospective consumers (Kim and Ko, 2012). Our findings suggest that to strengthen customer relationships and to maintain customer satisfaction and loyalty, businesses should focus on motives that may enhance customer engagement in SMP environment.

Second, the present study findings provide considerable new insights to service providers regarding their clients’ continuation intentions toward MIMs. For example, our findings clearly show that entertainment, affection, and exposure U&Gs are powerful variables that significantly influence intentions in an MIM context. This implies that fun, enjoyment, exposure, and affection are key factors in ensuring continued usage. Therefore, service providers should focus on improving the fun features of MIMs and should also ensure that some new entertaining features and updates are made available at regular intervals. This would give users something to look forward to, and they might continue to use a particular app in anticipation.

Finally, the different MIM service operators, such as LINE, are likely to operate in a saturated and fiercely competitive environment. Consequently, MIM service operators should focus on transforming their existing offerings to generate more revenue from the sale of virtual goods (e.g., stronger purchase intentions and an actual high purchase of stickers). Our findings revealed that content U&G, such as exposure, process U&G, such as entertainment, and technology U&G, such as affection, significantly influence use intentions. Therefore, MIM service operators as well as practitioners should focus on providing and supporting the entertainment and exposure needs of their consumers. In this way, their consumers might become more actively engaged with their platforms, in addition to continuing to purchase their goods or services (Kim and Ko, 2012). For instance, service providers can enhance the purchase intentions toward virtual goods by offering stickers that are topical and relevant to contemporary issues so that the exposure U&G of the users is satisfied.

7. Study limitations and future work

The present study has some limitations but these limitations offer new avenues for future research on this topic. First, the study participants were recruited from a single country, namely Japan. Thus, the study findings might have some culture-specific orientations. Consequently, the applicability of the present study results to a broader population of MIM users beyond Japan is unwarranted. Similarly, the applicability of the findings to other age groups might not be possible. In addition, the present study recruited LINE users, and therefore the study findings are specific to LINE use. Therefore, the applicability of the study findings to other MIM app users, such as those of WeChat, WhatsApp, and Snapchat, is not known. Third, the present study was cross-sectional, so causal relationships between the study variables cannot be investigated. However, despite these limitations, the study makes a notable contribution to the existing literature.

Further, we recommend possible future directions for other scholars. First, scholars should undertake similar line of investigation using our research model and study measures but with other MIM apps. This will enable the scholarly community to gauge the generalizability of the present study findings and confirm whether the findings related LINE are also valid in the context of other MIM apps. Second, it would be interesting to investigate whether there are any cultural or age-specific findings in our results. Therefore, in future research, MIM app users from countries other than Japan should be recruited. Finally, scholars should investigate the causal relationships of different U&Gs with purchase and continuation intentions through longitudinal investigations.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.
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