

Escaping the free zone

What makes users pay for freemium online content?

Graduate School

Master Programme in Marketing and Consumption

Master Degree Thesis

Authors:

Palin Wisarutnart & Konstantinos Tseperis

Supervisor:

John Armbrecht

Escaping the free zone:

What makes users pay for freemium online content?

Palin Wisarutnart & Konstantinos Tseperis School of Business, Economics and Law, University of Gothenburg, Sweden

Abstract

Purpose: Ensuring long-term revenue by turning free users to premium users and sustaining premium users are main challenges for all freemium service providers. This study investigates factors contributing to purchase intentions of free and paid consumers in the context related to freemium online media content (OMC) services.

Originality/Value: The research contributes to existing literature by exploring the applicability of theory of planned behavior (TPB) and the technology-acceptance model (TAM) to predict purchase intentions towards Freemium OMC and extend the model by introducing five additional latent constructs, including, Added Value, Enjoyment, Brand Trust, Social Trust, and Free Mentality. To fill the gap in e-commerce research, this study examines purchase intention of 'free' and 'paid' users in the Freemium revenue model by exploring both groups of users in the analysis.

Design/Methodology/Approach: The online survey was completed by 214 young adult Freemium OMC service users in Sweden. Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) were performed to test the model.

Findings: The results indicate that attitude, subjective norm, and free mentality predict purchase intentions. Perceived behavioral control was found to be an insignificant construct. Among free users, subjective norm is the only significant driver of purchase intention. Regarding premium users, attitudes positively affect purchase intention, while subjective norm and free mentality have a direct negative influence.

Implications: Our work suggests business practitioners focus on managing peer influence to improve the conversion rate among free users. Then, putting a primary focus on making the platform easy and enjoyable to use will create a positive attitude for premium users and maintain them in paying for the service.

Keywords: Freemium, Purchase Intention, Behavioural Intention, Online Media Content, Subscription, Theory of Planned Behaviour, Technology Acceptance Model

1. Introduction

The internet is a primary source for creating, distributing, and consuming content. In 2018, more than half of the Swedish population paid either for online movies or music

(svenskarnaochinternet.se, 2019). The growth is not as clear for online news; however, it is evident that the digital channel is increasing in popularity as compared to physical newspapers.

One of the success factors for media content platforms is their use of the freemium business model, which has become the prevalent business model in e-commerce (Kumar, 2014). Freemium is a business model consisting of free and paid property within a single product. The free property serves a dual purpose (Pujol, 2010). First, access to the free offer in the freemium service allows the brand to reach many consumers and raises brand awareness by building a large user base. Companies can utilize the free offer as an advertisement for the premium offering. Second, the growing familiarity with the service increases the potential to turn free users into paid users. The revenue stemming from the paid property compensates for the advertising revenue that cannot cover the increasing costs related to the creation and distribution of content such as the cost for creating high-quality content (Picard, 2000; Gallaugher, Auger, & Barnir, 2001).

The freemium revenue model has been applied industries across many (e.g., Skype (messaging application), Dropbox (storage platform), Tinder (dating application), LinkedIn (social media platform), Eventbrite (event organizer platform). Regarding the online media content (OMC) services, there are many cases where the Freemium model has been adopted (e.g., Spotify, Netflix, Scribd, etc.). However, the Freemium model is challenging to utilize effectively because the users who become used to the free content develop a negative attitude towards the paid offer (Wagner, Benlian, & Hess, 2013; Laudon & Traver, 2016). At the same time, retaining the premium users subscribed to the service is essential to provide the needed commercial revenue. Optimizing both the free and paid offers in Freemium is, therefore, a process which needs to be balanced and requires an understanding of what lies behind consumer's intention to convert/remain to a premium user.

Purchase intention refers to the likelihood of buying products within a period (Brown, Pope, & Voges, 2003). Previous literature (e.g., Wang, Ye, Zhang & Nguyen, 2005; Taylor & Todd, 1995; Dutta, 2012) focusing on examining consumption behavior of online media has used purchase intention as a primary predictor for actual consumer behavior. These studies utilized the Theory of Planned Behaviour (TPB) model to examine the three main predictors for purchase intention, namely, attitude, subjective norm, perceived behavior control. Other studies (Lin, 2007; Kwong & Park, 2008; Lee, 2009) utilized a combination of the TPB and the Technology-Acceptance Model (TAM) since the latter introduced two additional operative constructs namely, usefulness and ease of use, as the predictors of attitude. Despite the wide adoption of the Freemium model, how companies generate revenue effectively from this business model remains ambiguous (Kumar, 2014). Likewise, while previous studies (Wang et al., 2005; Taylor & Todd, 1995; Dutta, 2012, Lin, 2007; Kwong & Park, 2008; Lee, 2009) focused on examining consumption behavior of online media, there is still little knowledge about how consumers purchase intention varies on whether they are free or premium users of freemium OMC services.

The purpose of this study, therefore, is to answer the following research question; "What are the key determinants for purchase intentions of free and paid users?". Specifically, this study focuses on the determinants that affect the purchase intention of the free and paid users in Sweden of the OMC services by utilizing the combination of the TPB and the TAM model.

This study contributes to the e-commerce literature by exploring and explaining the significant drivers for free and premium users purchase intentions for freemium OMC Furthermore, this services. study contributes to the combined TPB and TAM model by introducing five latent constructs; Added Value, Enjoyment, Brand Trust, Social Trust, and Free Mentality. These constructs can be the key determinants for driving consumers towards positive purchase intentions.

1.1 Background and Definition of Freemium

In the context of e-commerce, the Freemium model was initially defined by venture capitalist Wilson (2006) as a combination of the words Free and Premium. The Freemium works by providing the service for free, either supported by advertising revenue or not at all, accumulating a significant number customers through word-of-mouth and referral networks, and providing premium offerings to established customer base. already Anderson (2009) posited that the common variations of the freemium model are based on feature-limited or time-limited properties. In the same light, Pujol (2010) identified distinct types of freemium. The first type concerns the quantity differentiation, which refers to the free offer using samples that represent the commercial version, in other words, the premium offering. These samples can be limited either in terms of volume or in terms of time. In the context of web services, trial versions with a limited period of use are often given as a form of sampling. The second type the feature differentiation, distinguishes the free and premium offerings by making the free offer accessible, but limited in functionality, and including the advanced features in the premium offer.

Li, Nan, and Li (2018) argueed that one platform can generate revenue effectively by applying two types of strategy: Advertising strategy (AS) and Freemium Strategy (FS). The former is implemented by providing services at zero price to consumers while generating the revenue from the advertisers. The latter focuses on providing a basic free service to consumers who prefer to not pay for premium and makes the actual monetary value from those who look for the full premium service. However, in real business settings, Freemium can adopt a mix of AS and FS. This is according to the fact that implementing AS solely, ones' platform needs to compromise their revenue (pricing) with the advertiser demand and the number of consumers. In other words, too high price imposed on advertisers impacts on the volume of demand while too low price means more revenue but at a tradeoff with a negative attitude on consumers as too many ads result in the low perceived service quality (Ibid).

This paper argues that having a mix of AS and FS in a freemium platform can balance the demand from both sides as it allows the business to extract the consumers demand further at the different level of service offers by offering free and paid alternatives. Aligned with Pujol's (2010) proposition, our study, therefore, defines the freemium model as the product or service model that provides simultaneously zero-price and paid alternatives to the consumers. The zero-price option offers an experience to the consumer under limitations in term of volume, time, or feature (i.e., lower quality, no multi-platform, no ad-free functionality) while the paid alternative offers a superior experience

concerning the absence or less of such limitations.

Although the freemium has been extremely popular across startups in the online content industry, this business model is still not widely understood (Kumar. 2014). Inadequate implementations of the freemium's prerequisites, e.g., too much free content, a vague premium offer, lack of incentives for referral, etc., can be detrimental to the success of the model. Based on Anderson (2009), the entire model relies mainly on the revenue stemming from premium users, who represent a minority; about 5% of total users. Therefore, there is not only academic interest but also practical significance to explore the drivers of consumer behavior that lead to purchase intentions of freemium services.

2. Literature Review and Hypothesis Development

2.1 The theoretical model of purchase intention

Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) was developed from the Theory of Reasoned Action (TRA) (Ajzen, 1985). Proposed by Fishbein and Ajzen (1975), TRA suggests intention behavioral as an immediate determinant of an individual's deliberate behavior; in other words, an individual's intention to voluntarily perform a particular action directly influences on whether or not one will perform such behavior. Providing the connection from the state of belief to the actual behavior, two main predictors for behavioral intention - Attitude (ATT) and Subjective Norm (SN) - are proposed in the TRA (Ibid). Attitude represents the behavioral beliefs, which are the beliefs about the plausible

consequences of the behavior. Subjective Norm regards the normative beliefs, which are the beliefs about the extent to which other people who are essential to the individual think one should perform a particular behavior. Although a wide variety of research indicated both predictors yield high reliability and validity of the distinction (e.g., Trafimow & Fishbein, 1994; Trafimow, 1998), the TRA model does not include the circumstance of whether an individual would have access to specific skills, resources, or conditions to enable the performance of a particular action (Eagly & Chaiken, 1993; Pinder, 2008). To fulfill this gap, TPB extends TRA by introducing the third predictor Perceived Behaviour Control (PBC) in the model (Ajzen, 1985). The term perceived behavior control reflects the control beliefs, referring to the concept of self-efficacy, the individual's conviction that he or she can successfully execute a particular behavior required to produce the outcome. All three predictors deem high importance to behavioral intention and behavior in a wide variety of research settings, including IT acceptance research and studies in the e-commerce field (e.g., Davis, Bagozzi, & Warshaw, 1989; Taylor & Todd, 1995; Lin, Hsu & Chen, 2013). The application of TPB, therefore, has not been limited within the field of psychology.

Technology Acceptance Model (TAM)

Although TRA and TPB models can be applied to the broad range of behavior research, they have a limitation from being a general model; they do not provide specific operative drivers for any particular belief structure (Davis et al., 1989). The emergence of information technology and the internet has advanced IT adoption and online activities, imposing a challenge understanding consumer on behavior in the context related to technology

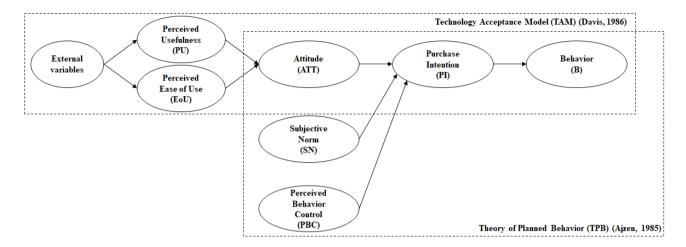


Figure 1: The combined TPB and TAM model

acceptance. Many studies have further explored attitudinal, normative, and control factors with an attempt to explain behavior in an online setting (Davis et al., 1989; Taylor & Todd, 1995; Hsiao & Tang 2014). Technology Acceptance Model (TAM) has been one of the most recognized models in the information research field for explaining the determinants of IT acceptance (Taylor & Todd, 1995).

The application of TAM is designed to be more direct to the IT field than TPB as the operative drivers relating to technology-usage settings are included in the model (Taylor & Todd, 1995; Lee, 2009). While TPB focuses on identifying the drivers of behavioral attention, TAM extends the first driver (Attitude) in TPB model by further exploring two external factors that have an impact on internal beliefs (Davis, 1989). Davis (1989) suggests Perceived Usefulness (PU) and Perceived Ease of Use (EoU) are the primary relevance driving IT behavior. Therefore, acceptance provides further knowledge to underline attitude's drivers.

2.2 The research model and hypotheses

Purchase Intention

Purchase intention represents the behavioral disposition as developed by Fishbein and Ajzen (1975) and refers to the tendency of an individual to perform an action relating to the purchase. In consumer research, purchase intention has been applied and deemed a predictor of behavior (Brown et al., 2003; Lim, Osman, Salahuddin, Romle, & Abdullah, 2016). Following this disposition, both TPB and TAM have attained recognition in predicting purchase intention of online consumers, partly because online purchase is viewed as voluntary behavior (Taylor & Todd, 1995). Equally important, to complete such intent, consumers need to actively engage in the extensive use of the service by interacting with the service platforms (Ibid).

This paper combines TAM and TPB (see *figure 1*) to explain behavioral intention for e-commerce and subscription-based online media content (Taylor & Todd, 1995; Lin, 2007; Kwong & Park, 2008; Dutta, 2012; Lin et al., 2013; Chun-Hua & Kai-Yu, 2014). Kwong and Park (2008) applied the model to explain purchase intention for digital music subscriptions among college students. The

study found that Attitude and Subjective Norm has a significant impact on purchase intention. Subjective norm deems the highest direct effect on purchase intention among all three primary constructs while PBC is revealed insignificant. When focusing on the TAM's extension in the same study, usefulness has a significant impact on attitude while ease of use is irrelevant. Similar to Kwong and Park's (2008), Dutta (2012) applied the TPB model to conducted a study determining contributing to consumers' purchase intention for online content in the United States and found self-efficacy is a significant predictor for PBC, but PBC has an insignificant result towards purchase intention. However, a more recent study by Himma-Kadakas and Kõuts (2015) showed that the technical issues are a deterrent for leaping from free to fee in paying for the online news, which implies the impact of PBC on the consumer purchase decision. In the same light, Lin et al. (2013) found all three constructs yield significant results on purchase intention for online music. Despite a few studies applying the model, the combined model has not been directly used to examine in the context of free and premium users of freemium OMC. Such different groups of user are argued to driven by various determinants as they have different attitude and level of experience about the service (Taylor & Todd, 1995; Wagner, Benlian, & Hess, 2014). This issue, therefore, is chosen as one of the focuses in this study and discussed further in our analysis.

In addition to existing application of the combined model, the review of previous studies shows that *enjoyment* (Chu & Lu, 2007), *added value* features (Filo and Wang 2011; Lin et al., 2013), *brand trust* (Filo and Wang 2011), *social trust* (Wang, Ngamsiriudom, & Hsieh, 2015), and *free*

mentality (Filo and Wang 2011; Lin et al., 2013) drive a consumer's purchase decision of online media content. Chu and Lu (2007) found enjoyment to be factor predicting consumer's purchase intention for online music. Filo and Wang (2011) found that the free mentality towards online information content and the existence of numerous alternatives, especially those that are free, were some of the most relevant factors for the negative attitude towards paying for online news. The same study found other factors, including trust in the brand, usefulness of the content, value-added services, trust in the security system, and user-friendly, quality platform were also confirmed as crucial drivers contributing to paying for online news. Wang, Ngamsiriudom, and Hsieh (2015) posited that without physical proximity in an e-commerce setting, trust plays a vital role in reducing perceived risk and improve faith in humanity to adopt the online commerce service. They argue the higher tendency of an individual to trust others, the more likely she/he will trust purchase an online service. This disposition of trust, however, does not refer to the trust towards a specific inferent but is instead formed by an individual's lifelong social experience, thus, defined as social trust in this study.

This paper adopts purchase intentions as a dependent variable of the model as they are considered as an appropriate agent of actual behavior when it is not possible to measure such outcome directly. Apart from existing constructs drawn in the combined TPB and TAM model, the impact of added value, enjoyment, brand trust, social trust, and free mentality - are further explored in our study. 15 hypotheses are developed in our research model and illustrated in the *Figure 2*.

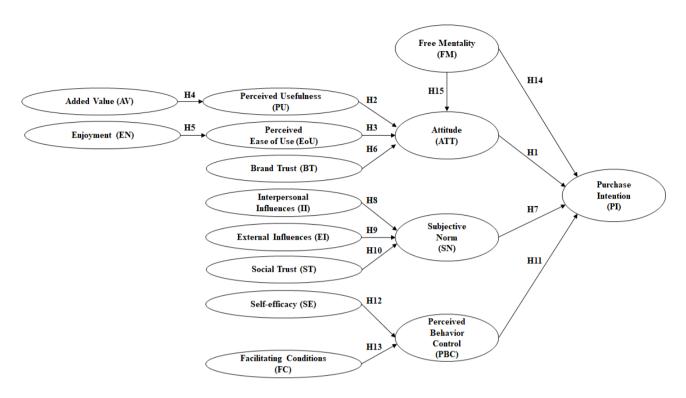


Figure 2: The research model

Attitude (ATT)

Zimbardo, Boyd, and Diener (1999) defined attitude as a positive or negative evaluation of the performance of a particular object, subject, or activity. Attitudes are transformed from personal judgments towards the object. They respond to a certain stimulus or a specific characteristic repeatedly and steadily reflect in the form of behavior (Bain, 1929; Lumley, 1935). Several studies concluded that attitude has a direct relationship to behavioral intention (e.g., Ajzen, 1985; Davis, 1989; Taylor & Todd, 1995), that is, that positive attitude will lead to positive behavioral intention and vice versa. In many studies, attitude is also considered as a determinant for online purchase interest (e.g., Doolin, Thompson, & Corner, 2005; Ha & Stoel, 2009; Al-Nasser, Yusoff, Islam, & ALNasser, 2014) leading to our first hypothesis:

H1: Attitude positively affects the consumer's purchase intention on Freemium OMC.

Perceived Usefulness (PU) and Perceived Ease-of-Use (EoU)

Davis (1989), while researching potential constructs that predicted an individual's use of systems, defined perceived usefulness as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p.320). Moreover, he defined perceived ease of use as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p.320). In his study, the two theorized constructs, perceived usefulness (PU) and perceived ease of use (EoU), had a significant correlation to reports of individuals' system use, with PU being a more significant factor than EoU. Chen, Gillenson, and Sherrell (2002) further applied this theoretical model to predict the consumer's acceptance of virtual

stores and confirmed that PU and EoU, being significant, are the main elements of consumer attitude toward virtual stores. Additionally, Lin (2007) also found significant results when applying the TAM model to predict consumer intentions to online shopping. Therefore, based on the existing theoretical background, the following hypotheses are formed:

H2: Perceived usefulness positively affects the consumer's attitude towards Freemium OMC.

H3: Perceived ease-of-use positively affects the consumer's attitude towards Freemium OMC.

Added Value (AV)

Consumers are willing to pay for online content as long as the content is perceived as of high-quality or satisfies innate emotional or passionate needs (Elkin, 2002). Added value is especially relevant in e-commerce, most notably due to the large amount of free content that exists online, leading to the consumers demanding the existence of surplus value to justify their paying a premium price (Wang et al., 2005). Moreover, added value is one of the factors that is of great importance to freemium services since the content provided must be identified by the consumer as high-valueadded content to indicate the differentiation and exclusivity of the premium offer that cannot be copied from competitors (Laudon & Traver, 2016).

In the context of freemium services, added value can be perceived in the form of surplus services. Access to specialized content positively affects the consumer's purchase intention for online news (Jere & Borain, 2018). Similar to the print industry, the entertainment industries also employ value-added services to entice consumers about their superior offer. Spotify and Deezer, except for

providing access to on-demand music, also value-added services. offer e.g., recommendation background engine, information on artists, the creation of personal playlists, etc. (Laudon & Traver, 2016). Exploring the effect of these value-added services, Lin et al. (2013) found that added value, being a predictor of a consumer's perceived benefits from a service, positively affects the consumer's attitude toward paying for online music. The existence of value-added services can be an indicator for the consumer to evaluate whether the service will be useful and will correspond to their utilitarian needs. Hence, the following hypothesis is formed:

H4: Added value positively affects the consumer's Perceived Usefulness towards Freemium OMC.

Enjoyment (EN)

One of the criticisms towards the TAM model is on its sole focus on utilitarian value approach (Moon & Kim, 2001). Childers, Carr, Peck, and Carson (2001) argue that completing an eshopping task requires both intrinsic drivers (hedonic value) and extrinsic drivers (utilitarian value). Such hedonic value refers to a sense of pleasure and excitement (Ibid).

Several studies in the e-commerce area, suggest to extend the TAM model by adding enjoyment to cover the component of positive feelings stimulated spontaneously from system interaction (e.g., Childers et al., 2001; Moon & Kim, 2001; Hackbarth, Grover, & Yi, 2003). On the one hand, enjoyment has posited to directly influence attitude (Hackbarth et al., 2003; Nabi & Krcmar, 2004; Hansen, 2006; Yang, Liu, & Zhou, 2012). Song and Han (2009) find that perceived enjoyment is a determinant of perceived performance (which reflects one's attitude) in their study of IT

adoption. Nabi and Krcmar (2004) illustrated this perspective in the context related to media exposure that "If the attitude object triggers the accessibility of related attitudes (e.g., I usually enjoy situation comedies), this attitude may influence both interpretations of the situation (e.g., this show looks good) and subsequent action (e.g., put down the remote and attend to the program). This more automatic influence of attitudes on behaviors offers some idea of how enjoyment, though perhaps not actively or consciously considered, might impact media exposure in the moment of decision making." (Nabi & Krcmar, 2004, p.299). These reflect the chain reaction of enjoyment-attitudebehavior. On the other hand, Davis, Bagozzi, & Warshaw (1992) found that a user's perception towards ease-of-use of the IT system in the workplace is mediating the influence of playfulness on attitude. In this view, enjoyment is argued to take part in lessening a cognitive burden to complete a certain task, improving an individual attitude towards system efficacy, and reducing the perceived complexity of the system (Agarwal & Karahanna, 2000; Çelik, 2011).

In this study, enjoyment is defined as the customer's pleasure, joy, creativity, and excitement from having a direct experience with a particular Freemium OMC (Davis et al., 1992). A hypothesis is proposed to verify the influence of enjoyment:

H5: Enjoyment positively affects perceived ease-of-use of the Freemium OMC.

Brand Trust (BT)

Trust is one's positive expectation towards others' behavior, which, in return, reduces their perception of uncertainty or vulnerability (Becerra & Korgaonkar, 2011). Trust in the context of e-commerce is defined as a

psychological state in which consumers believe in the integrity of service providers that they will complete their obligations in an exchange of the monetary transaction (Zhu, Lee, O'Neal, & Chen, 2011). The in-depth interview reflection in the study by Giantari, Zain, Rahayu and Solimun (2013) refers to the fact that consumers prefer online purchasing to the traditional alternative because they can compare price, quality, and service of any items without having to visit the shop. However, if the site or service is prone to fraud, they are unlikely to purchase the service through that specific site because it will be challenging to make the claim later on. This implies that service/brand trust is considered as an essential element and has an influence on consumer's commitment to complete the online transaction because the complex, diverse, and uncertain nature of the online environment may leave room for the malevolent party to perform unexpected or ungenuine behaviors (Ibid).

Regarding the consumer's perspective, an approach to determine the level of trust is to assess brand trust (Jarvenpaa, Tractinsky, & Vitale, 2000; Tan & Sutherland, 2004; McCole, Ramsey & Williams, 2010). Several studies exploring the contribution of trust in epurchasing behavior find trust has a significant positive impact on attitude (e.g., Bianchi & Andrews, 2012; Terenggana, Supit, & Utami, 2013) and purchase intention (e.g., Becerra & Korgaonkar, 2011; Bianchi & Andrews, 2012) while others propose the relationship between trust and attitude is mediated by perceived risk (e.g., Cheung & Lee, 2000; Van Der Heijden, Verhagen, & Creemers, 2003). However, the more recent meta-analysis study conducted by Mou, Shin, and Cohen (2017) compare the previous models that have been focused on the impact of trust and perceived risk on attitude and behavior. The results agree high-trust and low-risk perceptions have a positive effect on behavioral intention commercial e-services. Nonetheless, the study indicates trust is only partially mediated by the perceived risk, leading to the hypothesis:

H6: Brand trust positively affects the consumer's attitude towards Freemium OMC.

Subjective Norm (SN)

Subjective norm is an individual belief about how the significant referents view a particular behavior and whether they desire individual to perform that specific behavior (Ajzen, 1985). Such normative belief is driven by a social pressure to commit or not to commit in a behavior (Ibid). From this perspective, the purchase intention is determined by how much an individual is likely to behave consistently with the view of significant referents. Regarding the online purchase, subjective norms refer to an individual belief towards the use of e-commerce platform by the opinions of the referent group (Lin, 2007). Sylvester and Rand (2014) found that the opinion of referents imposes a strong impact on user's conversion in the freemium business model, especially when the opinions are passed through from the premium users. In the light of online Freemium platform adoption, the previous researches confirmed that the more positive subjective norms an individual hold, the stronger the intention they have, therefore, implying a positive relationship to purchase intention (Taylor & Todd, 1995; Lin, 2007). The following hypothesis is formed:

H7: Subjective norm positively affects the consumer's purchase intention on Freemium OMC.

Interpersonal Influences (II) and External Influences (EI)

Furthermore, past researches further classified the determinant of subjective norms into two types of influence - Interpersonal Influence and External Influence representing a different group of referents and how they induce such influence (Bhattacherjee, 2000; Lin. 2007: **Taylor** Todd. 1995). & Interpersonal influence refers to the normative influence by significant others, such as friends, family, or colleagues, while the external influence comes in the form of informational influence, such as media and other nonpersonal information that an individual takes into his or her consideration when performing a behavior (Lin, 2007). This is also the case for freemium online media services, in which users frequently follow friends' recommendations or the opinions of the public. Therefore, both types of influence should be considered as the operative drivers of the subjective norm. Two hypotheses are formed as followings:

H8: Interpersonal influences positively affect the subjective norm of Freemium OMC.

H9: External influences positively affect the subjective norm of Freemium OMC

Social Trust (ST)

Apart from the brand trust, the level of trust has been determined by the disposition to trust and the cultural environment of trust with online purchasing (Tan & Sutherland, 2004; Becerra & Korgaonkar, 2011; Bianchi & Andrews, 2012; Wang et al., 2015). Cheung and Lee (2001) posited that different cultural background and past experience have an impact on personality trait on how they trust other citizens. In the social context, trust is considered as a factor in the relational dimension of social capital, which concerns the relationship between people (Chow & Chan,

2008). This level of trust developed between individuals during interactions raises awareness of actors toward their collective goals (Ibid) and therefore, is argued to have an impact on the social norms and individual's decision making. Based on this social perspective, the following hypothesis is proposed.

H10: Social trust positively affects the subjective norm of Freemium OMC.

Perceived Behavior Control (PBC)

Perceived behavioral control (PBC) represents an individual's belief about the possible difficulties that could happen when performing a behavior (Ajzen, 1985). On the one hand, it is known to relate directly to the concept of self-efficacy (SE), which is the self-assessment of their ability to perform a behavior successfully (Compeau & Higgins, 1995). Regarding the subscription-based services, this implies one's judgment towards their capability to purchase the online service. An individual with a higher ability to adopt the online platform will have a stronger willingness to buy the online service than those who have less or no tech skill. On the other hand, alongside with one's capability, the possible difficulties are also about the external resource constraints, such as time, money, and technology compatibility (Taylor & Todd, 2007). Such Facilitating 1995b: Lin. "...the Conditions (FC) concerns about availability of resources needed to perform particular behaviors" (Lin, 2007, p.435). The purchase intention for the service is expected to be weakened as the purchase processes consume more time, require higher cost, or as the compatibility with the devices decrease. All in all, perceived behavioral control determines a level of purchase intention in connection with the individual's beliefs about the availability of knowledge, resources, and opportunities necessary for purchasing the Freemium OMC. Three hypotheses are formed as followings:

H11: Perceived behavior control positively affects the consumer's purchase intention on Freemium OMC.

H12: Self-efficacy positively affects the perceived behavior control towards Freemium OMC.

H13: Facilitating conditions positively affect the perceived behavior control towards Freemium OMC.

Free Mentality (FM)

One significant factor that acts as impediment for the efforts to monetize online content is the free mentality that is deeply rooted into the mindset of consumers regarding the internet (Lin et al., 2013). The term free mentality refers to the common belief that content on the internet should be provided for free due to the revenue stemming from advertising acting as the primary source of monetization (Dou, 2004). Dou (2004) was the researcher that established the importance of the free mentality construct. The study found that the free mentality mindset negatively affects the consumers' purchase intention for online content. Still, one of the limitations that the author recognized was the generalization of the results, considering that the study included one specific type of content, clip art. Further exploring this construct, Lin et al. (2013) analyzed the effects of free mentality on behavioral intentions through another type of online content, music. Using a variation of the TPB model, they found a significant negative impact of free mentality to attitude towards paying. Furthermore, the prevalence of free mentality across users on the internet is

undermining the conversion rate in subscription-based online services. In the case of the freemium model, while the free version is supposed to act as an advertisement for the premium version, the adverse effect is achieved; users who enjoy the free version develop a negative attitude towards the paid version (Wagner et al., 2013). Therefore, based on theory, the following hypotheses are formed:

H14: Free Mentality negatively affects the consumer's purchase intention on Freemium OMC.

H15: Free Mentality negatively affects the consumer's attitude towards Freemium OMC.

3. Research Methodology

Design and Measures

The online survey was selected as the method of data collection. The online survey is divided into three main sections. The first section was designed to introduce the respondents to the definition of 'Freemium' online media content services, to filter out those who do not subscribe to the service, and to measure their attitude, subjective norms, perceived behavior control, and free mentality. The second section asked the respondents to choose one specific type of freemium service they are currently using from a selection of 3 main types of freemium online media content, including (1) news, magazine, e-book, online articles, (2) movies, documentary, series, and (3) music, podcast. To ensure that the evaluation of purchase intention and operative drivers will be based on their actual usage, the respondents were also asked to think about a specific brand they are using and define whether they are free, trial, or paid (premium) users on that specific brand. Then, the respondents were asked to

evaluate statements representing purchase intention, perceived usefulness, perceived ease of use, added value, enjoyment, trust, interpersonal influences, external influences, self-efficacy, and facilitating conditions. The questions in the final section aim to collect the demographic data such as age, gender and highest level of education.

Seven-point Likert scales were used to measure all the variables. All scales measuring the latent constructs were drawn from existing literature and adapted to fit the context of this research when necessary (see Table 1). The scales measuring purchase intention (3 items), attitude (3 items), subjective norms (4 items), and perceived behavioral control (3 items) were retrieved from Dutta (2012), who based his scales on previously established measures for the TPB model (Ajzen & Fishbein, 1980; Ajzen, 1985; Ajzen, 1991). The items measuring interpersonal influences (3 items), external influences (3 items), self-efficacy (2 items), and facilitating conditions (3 items) were modified from Taylor and Todd (1995) and Lin (2007). The items for perceived usefulness (3 items) and perceived ease of use (5 items) were taken from Davis (1989), Chau, Au, & Tam (2000), Van der Heijden (2003), and Lin (2007). In addition, the items representing added value (5 items), retrieved from Lin et al. (2013), enjoyment (5 items), retrieved from Mathwick, Malhotra, and Rigdon (2001), social trust (2 items), retrieved from Cheung and Lee (2001), brand trust (4 items), retrieved from Cheung and Lee (2001) and Corbitt, Thanasankit, & Yi (2003), and free mentality (3 items), retrieved from Dou (2004), are chosen for this study. All applied items have reported a Cronbach alpha measure over 0.7 in the previous studies.

Construct	Item	Statement	Previous research	Added Value	AV1	Accessing this freemium platform, I can find the latest released content.	Lin et al. (2013)	
Purchase Intention	PI1* PI2 PI3	I intend to find out more about this service provider. I intend to pay for this service provider within the next three months. I do not intend to pay for this	Ajzen and Fishbein, 1980; Ajzen, 1985; Ajzen, 1991; Dutta, 2012		AV2 AV3 AV4*	Accessing this freemium platform, I can learn about the latest released content. Accessing this freemium platform, I can customize my personal content. I don't have to keep and organize		
Attitude		service provider at all. (R) I like the idea of using freemium services.	Ajzen and Fishbein,		AV5*	content in the physical format (i.e. books, CDs, DVDs, etc.). In general, I feel that subscribing to the paid version is beneficial.		
		I think paying for freemium services is a good idea. I think using freemium services is a bad idea. (R)	1980; Ajzen, 1985; Ajzen, 1991; Dutta, 2012	Enjoyment	EN1*	I enjoy using this freemium platform for its own sake, not just to consume content.	Mathwick, Malhotra, and Rigdon (2001)	
Subjective Norm	SN1*	Most people who are important to me would think that I should pay for freemium services.	Ajzen and Fishbein, 1980; Ajzen,		EN2 EN3*	I use this freemium platform for the pure enjoyment of it. When browsing on this freemium	Celik (2008);	
	SN2*	The people who influence my decisions would think that I should use freemium services.	1980; AJzen, 1985; Ajzen, 1991; Dutta, 2012		EN4	platform, I do not realize time is passing. I enjoy using this freemium platform.	Celik (2011)	
	SN3	Generally speaking, I want to do what people who are important to me think I should do.			EN5*	Using this freemium platform makes me want to explore more.		
	SN4	Generally speaking, I want to do what people who influence my decisions think I should do.		Brand Trust	T4*	This service provider is unreliable. (R) In general, I cannot rely on online media service providers to keep the	Cheung and Lee (2000)	
Perceived Behavioural Control		1 I have the resources, knowledge, Ajzen and and ability to obtain freemium Fishbein, services. 1980; Ajzen,			T5*	promises they make. (R) The chance of having a technical failure in this service provider is	Corbitt, Thanasankit,	
	PBC2	I will be able to access freemium services. I understand what freemium services consist of.	1985; Ajzen, 1991; Dutta, 2012		T6	quite small. I believe this service provider will perform to the utmost of customers' benefit.	& Yi (2003)	
Free Mentality	FM1 FM2	The internet should be free so I would never pay for content. Providing free content fits the original purpose of the internet to	Dou (2004)	Interpersonal Influences		My peers/colleagues/friends thought that I should use this service provider for consuming online content.	Bhattacherjee 2000; Lin, 2007; Taylor and Todd,	
	FM3	provide information. Advertisers, instead of users, should be paying for online content.			II2	People I knew thought that using this service provider was a good idea.	1995	
Perceived Usefulness	PU1 PU2	This service provider makes it easy to access online media content. This service provider provides	Davis, 1989; Chau et al. (2000); Van		II3	People I knew influenced me to try out this service provider for consuming online content.		
	PU3	access to useful online media content. This service provider saves me the	der Heijden (2003); Lin (2007)	External Influences	EI1	I have read/seen that this service provider provides a good way of exploring the media content.	Bhattacherjee, 2000; Lin, 2007; Taylor	
Perceived	EoU1	time when looking for online media content. Learning to use this freemium	Davis, 1989;		EI2	The popular press adopts a positive view towards using this service provider. Mass media reports influenced me	and Todd, 1995	
Ease of Use	EoU2	platform is easy. It is easy to manage this freemium platform.	Chau et al. (2000); Van der Heijden	Social Trust	EI3*	to try this service provider to It is easy for me to trust a	Cheung and	
	EoU3	The interactions with this freemium platform are clear and understandable.	(2003)		T2	person/thing. My tendency to trust a person/thing is high.	Lee (2000)	
		This freemium platform is flexible to interact with. This freemium platform is easy to		Self-efficacy	SE1	I feel comfortable using this freemium platform on my own.	O'Cass and Fenech	
		use.			SE2	I can use this freemium platform even if no one is around to help me.	(2003); Dutta (2012)	

Facilitating	FC1	I have the equipment (hardware,	Lin, 2007;			
Conditions		software, application, etc.) required	Taylor and			
		to use this freemium platform.	Todd, 1995			
	FC2*	I have the time to use this freemium				
		platform.				
	FC3	I have enough money to use this				
		freemium. platform.				
Note:	* Item o	dropped in Confirmatory Factor Analysis (CFA	A)			
	(R) Sca	le reversion performed on the penative stateme	ant			

Table 1: List of constructs and items

Sample and Procedure

The target population is young adults who live in Sweden. The young adult (18-35 years old) group was revealed to yield the highest daily consumption rate of online media content (Consumer Barometer, 2019) and freemium online media content platforms in Sweden (Digital News Report, 2018; Sanchez, 2017), making them the most important target group for the online content industry. The online channels were chosen for survey distribution as to fit the main scope of the study regarding online media consumption. To reach the target respondents, the survey was distributed in three phases. First, the survey was sent in the form of an email to all students at the University of Gothenburg. Then, the survey was sent to various local and expat online Facebook groups. Last, the survey was distributed across Facebook designated for students, in the 6 major cities in Sweden, including Stockholm, Gothenburg, Malmö, Uppsala, Linköping, and Lund. A raffle for two movie vouchers was added as incentives to ensure the eligible respondents would be willing to complete the survey.

In our online survey, 252 responses were completed. 36 respondents neither consume online media nor use any freemium platforms, therefore, they were unable to rate the items and were excluded from further data analysis. The data cleaning process returned no missing data, as the survey items were made compulsory to complete, thus, no problematic

outliers were found. However, 2 respondents were dropped out after a logic check was done the raw data. Consequently, respondents were eligible for the further analysis, out of which 113 (52.8%) were female, 98 (45.8%) were male, and 3 (1.4%) identified themselves as other. As mentioned above, the sample's age represented that of young adults, whose age varies from 18-35 years. Being primarily students and expats, a large majority (89.7%) has completed tertiary education, with 73 (34.1%) of the respondents having a bachelor degree, 115 (53.7%) a master degree, and 4 (1.9%) achieving Phd or higher education.

Data Analysis

Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) were applied to perform data analysis. SEM can test a series of dependence relationships across multiple variables at the same time (Hair, Black, Babin, & Anderson, 2010), making this method suitable for this study. SPSS AMOS version 25 was employed to perform data analysis. Following procedure suggested by Hair et al. (2010), our study first examined the measurement model to assess convergent and discriminant validity. Then, we tested the structural model to analyse the relationships among the theoretical latent variables.

4. Results And Analysis

Analysis of the measurement model

CFA was performed to explore the measurement model. The *convergent validity* was examined to assess three indicators suggested by Hair et al. (2010): (1) factor loadings (>0.5) (2) construct reliability (>0.7), and (3) average variance extracted (>0.5). The results of factor loadings, C.R., and AVE are

shown in Table 2. 13 items returned factor loading smaller than 0.5, which are PI1, ATT2, SN1, SN2, AV4, AV5, EN1, EN3, EN5, T4, T5, EI3, FC2. These 13 items were removed from the construct. All remaining factor loadings exceeded 0.5, therefore, indicating the internal consistency and the strong relationship of each item to the underlying latent construct. The C.R. scores ranged from 0.52 to 0.92 and the AVE scores ranged from 0.36 to 0.85. Only four constructs, including free mentality, enjoyment, brand trust, and facilitating conditions did not meet the requirements for convergent validity. These latent constructs returned C.R. and AVE scores below the recommended threshold but were kept for further analysis as being the reliable measures in previous studies.

The discriminant validity was further assessed the extent to which a latent construct and its items are unrelated. According to Hair et al. (2010), square root of each construct's AVE should have a greater value than the correlations between any two latent constructs. The results in *Table 3* show all diagonal values (the square root of average variance shared between a latent construct and its items) were greater than the correlations between the construct and other constructs in the research model, confirming the conditions for discriminant validity were met in this study.

Contruct Validity	Factor Loadings	C.R.	AVE
Purchase Intention		0.83	0.73
PI2			
PI3 (R)	0.777		
Attitude		0.72	0.58
ATT1	0.676		
ATT3 (R)	0.838		
Subjective Norm		0.92	0.85
SN3			
SN4	0.981		
Perceived Behavioural		0.81	0.58
Control			
PBC1			
PBC2			
PBC3	0.712	0.60	0.44
Free Mentality		0.69	0.44
FM1			
FM2			
FM3	0.629		
Perceived Usefulness		0.72	0.50
PU1			
PU2			
PU3	0.555		0.54
Perceived Ease of Use		0.85	0.54
EoU1			
EoU2			
EoU3			
EoU4			
EoU5	0.781	0.55	0.50
Added Value	0.020	0.77	0.58
AV1			
AV2			
AV3	0.560	0.60	0.44
Enjoyment	0.500	0.60	0.44
EN2			
EN4	0.739	0.00	0.70
Social Trust	0.007	0.89	0.79
T1			
Brand Trust	0.886	0.66	0.50
	0.504	0.66	0.52
T3 (R)			
T6	0.823	0.70	0.50
Interpersonal Influences	0.020	0.79	0.58
II2			
Entre al Inflance	0.710	0.76	0.61
External Influences	0.740	0.76	0.61
EI1			
EI2	0.824	0.00	0.67
Self-efficacy	0.016	0.80	0.67
SE1			
SE2	0.826	0.50	0.26
Facilitating Conditions	0.610	0.52	0.36
FC1			
FC3	0.576		

Table 2: Convergent Validity

	N Mari		(CD)		Correlation*													
	N.	Mean	SD	PI	ATT	SN	PBC	FM	PU	EoU	AV	EN	вт	ST	II	EI	SE	FC
PI	214	5.23	1.92	0.85														
ATT	214	5.57	1.13	0.14	0.76													
SN	214	3.18	1.62	0.13	0.07	0.92												
PBC	214	5.44	1.23	0.14	0.46	0.19	0.76											
FM	214	4.30	1.37	-0.18	0.26	0.16	0.23	0.67										
PU	214	5.63	1.02	0.36	0.29	0.04	0.24	0.07	0.70									
EoU	214	5.86	0.95	0.33	0.39	0.08	0.35	0.18	0.64	0.73								
AV	214	5.52	1.19	0.29	0.26	0.04	0.34	0.08	0.62	0.61	0.76							
EN	214	5.76	1.18	0.35	0.30	0.10	0.21	0.14	0.60	0.64	0.59	0.67						
BT	214	5.41	1.10	0.43	0.31	0.21	0.18	0.10	0.53	0.51	0.52	0.51	0.72					
ST	214	4.47	1.43	0.21	0.12	0.29	0.12	0.05	0.19	0.15	0.13	0.18	0.28	0.89				
II	214	4.67	1.35	0.21	0.16	0.37	0.18	0.09	0.37	0.31	0.34	0.34	0.45	0.31	0.76			
EI	214	5.36	1.16	0.22	0.19	0.14	0.21	0.08	0.40	0.42	0.41	0.29	0.44	0.25	0.49	0.78		
SE	214	6.33	0.98	0.24	0.28	-0.05	0.36	0.05	0.49	0.59	0.47	0.52	0.16	0.07	0.21	0.36	0.82	
FC	214	6.06	1.11	0.44	0.33	0.08	0.38	-0.05	0.53	0.60	0.43	0.49	0.31	0.19	0.18	0.26	0.62	0.60

^{*}Note: The correlation between constructs are presented in the table. The figures in the diagonal position are the square root of construct's AVE.

Table 3: Discriminant Validity

assumption of multicollinearity is checked. The correlation between the variables should not exceed 0.7 since it is an indicator of multicollinearity (Hair et al., 2010). According to Table 3, the correlations between each of the independent variables is not high, therefore, there are no indications for multicollinearity. IBM SPSS was also employed to perform multicollinearity diagnostics in the context of the multiple regression analysis. Two values are of interest: Tolerance and the Variance Inflation Factor (VIF). According to Hair et al. (2010), a Tolerance value of less than 0.1 and a VIF value over 10 would be an indicator of multicollinearity. However, all the variables in the model reported Tolerance values above 0.1 and VIF values below 10, further providing proof against the presence of multicollinearity.

Analysis of the structural Model

The SEM model (in Figure 3) yields a good fit to the data. The results for the proposed model report a ratio of chi-square to the degrees of freedom (CMIN/DF) of 2.429. Regarding the model fit indices, CFI is 0.768, TLI is 0.746,

and the RMSEA is 0.082. In general, a CMIN/FD <0.3, a CFI >0.90, a TLI close to 1, and a RMSEA>0.05 indicate a good fit (Hair et al., 2010). Although CFI is not within the recommended threshold proposed by Hair et al. (2010), overall indices support this model to be accepted for further analysis. This is according to the fact that the conceptual model being complex and encompassing a larger sample should not be evaluated with the strict standards (Hair et al., 2010). The detailed summary of models is shown in the *Table 4*.

Model Summary	
Chi-Square	1561.8
Defree of Freedom	643
Probability Level	0.000
Model Fit Index	
CMIN/DF	2.429
CFI	0.768
TLI	0.746
RMSEA	0.082

Table 4: Model Summary

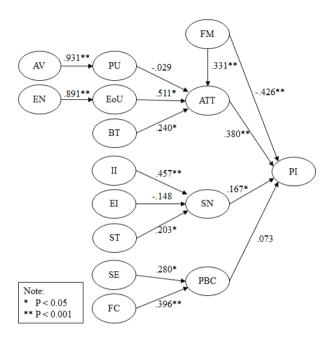


Figure 3: The Current SEM Model

The model is described graphically in *Figure 3*. The path coefficients for the structural model provide support for 11 of the initial 15 hypotheses. Purchase intention is found to be predicted by attitude (β =0.380, standardized path coefficient, p<0.001), subjective norm (β =0.167, p<0.05), and free mentality (β =0.426, p<0.001). Together, these variables explain 25.2% of variance of the purchase intention (R²=0.252). As a result, hypotheses 1, 7, and 15 are supported. Perceived behavior control (β =0.073, p>0.05) does not have a significant effect on purchase intention; therefore, hypothesis 11 is rejected.

Attitude is predicted by perceived ease-of-use $(\beta=0.511, p<0.05)$, brand trust $(\beta=0.240,$ p < 0.05), and free mentality (β =0.331, p<0.001);hence, hypotheses 3, 6, and 11 are supported. These three variables together explain 40.6% of variance of attitude (R²=0.406). However, perceived usefulness $(\beta=-0.029, p>0.05)$ is found to not significantly affect attitude; thus, hypothesis 2 is rejected. Added value $(\beta=0.931,$ p<0.001) and enjoyment $(\beta=0.891,$ p < 0.001) both

significantly influence perceived usefulness and perceived ease-of-use while explaining 86.7% and 79.5% of the total variance in PU and EoU respectively. Subsequently, hypotheses 4 and 5 both are supported.

Subjective norm is predicted by interpersonal influences (β =0.457, p<0.001) and social trust (β =0.280, p<0.001), where both variables explain 24.2 percent of variance of subjective norm (R²=0.242). As a result, hypotheses 8 and 10 are both supported. External influences (β =-0.148, p>0.05) do not significantly affect subjective norm. As a result, hypothesis 9 is rejected.

Perceived behavior control is predicted by self-efficacy (β =0.280, p<0.05) and facilitating conditions (β =0.396, p<0.001), and both variables explain 23.5% of variance of perceived behavior control (R²=0.235). Consequently, hypotheses 13 and 14 are both supported. The hypotheses results are summarized and shown in *Table 4*.

				Total Sample				
	Нуро	thesis	3	β	P-Value	Results		
H1	PI	<	ATT	0.380	0.000	Supported		
H2	ATT	<	PU	-0.029	0.869	Rejected		
НЗ	ATT	<	EoU	0.511	0.007	Supported		
Н4	PU	<	AV	0.931	0.000	Supported		
Н5	EoU	<	EN	0.891	0.000	Supported		
Н6	ATT	<	ВТ	0.240	0.033	Supported		
H7	PI	<	SN	0.167	0.018	Supported		
Н8	SN	<	П	0.457	0.000	Supported		
Н9	SN	<	EI	-0.148	0.134	Rejected		
H10	SN	<	ST	0.203	0.009	Supported		
H11	PI	<	PBC	0.073	0.339	Rejected		
H12	PBC	<	SE	0.280	0.001	Supported		
H13	PBC	<	FC	0.396	0.000	Supported		
H14	PI	<	FM	-0.426	0.000	Supported		
H15	ATT	<	FM	0.331	0.000	Supported		

Table 4: Results from hypothesis testing

Subgroup analysis of free and paid users

After the initial test of the model, a subgroup analysis of free and paid users was conducted to observe any significant differences among the two groups. The results indicate that perceived behavior control is an insignificant factor for both free users (β =-0.056, p>0.05) and paid users (β =0.009, p>0.05), aligning to the findings for the total sample.

The *free users*' purchase intention is predicted solely by subjective norm (β =0.452, p<0.001). Attitude $(\beta = -0.084,$ p>0.05), perceived behavior control (β =-0.056, p>0.05), and free mentality $(\beta=0.140,$ p > 0.05) do not significantly affect purchase intention of the free users. The interpersonal influences $(\beta=0.572, p<0.05)$ is the only significant predictor of subjective norm.

In contrast to the free users, the paid users' purchase intention is significantly driven by attitude (β =0.745, p<0.001), subjective norm $(\beta=-0.256, p<0.001)$, and free mentality $(\beta=-0.256, p<0.001)$ 0.385, p<0.05). For paid users, perceived easeof-use (β =0.852, p<0.05), free mentality $(\beta=0.220, p<0.05)$, and brand trust $(\beta=0.380, p<0.05)$ significantly p < 0.05) affect attitude. Enjoyment (β =0.904, p<0.001) is a significant predictor of ease-of-use. The interpersonal influences (β =0.395, p<0.05) and social trust $(\beta=0.187, p<0.05)$ are the significant predictors of the subjective norm for paid users.

5. Discussion

The focus of the study was on consumers' behavior regarding their intentions to purchase the premium service in freemium OMC platforms. The results are expected to shed light on how young adults behave when consuming media content on freemium

services. The young adults, aged 18-35, represent a generation of avid internet users. In Sweden, almost everyone (99%) in this age group has the ability to access and browse the internet, while a vast majority consumes media content, e.g., music, videos, news, etc., online (Svenskarnaochinternet.se, 2019). A high number of OMC providers use the freemium model in the online setting (Laudon & Traver, 2016), and behavioral intentions have been used in previous studies to explore whether consumers are willing to pay for OMC (e.g., Kwong & Park, 2008; Dutta, 2012). The Theory of Planned Behavior and Technology Acceptance Model were used as the basis of the framework in this study. Five additional factors, namely, added value, enjoyment, brand trust, social trust, and free mentality, were integrated into the model due to their relevance in e-commerce and the context of online media.

Attitude

In previous literature, consumer attitudes have been found to influence positive purchase intentions in the context of e-commerce (e.g. Doolin, Dillon, Thompson, & Corner, 2005; Ha & Stoel, 2009; Al-Nasser et al., 2014), and in the online content industry (e.g. Dutta, 2012; Lin et al., 2013). This study follows on the same notion since the findings for the total sample support the positive connection between consumer attitudes and intentions. Hence, the results align with the original premise of the TPB model (Ajzen, 1985; Taylor & Todd, 1995). A further breakdown result on subgroups suggests this one-way relationship between attitudes and behavioral intentions was supported only for premium users, while the same link did not apply to the free users.

In the current research model, perceived usefulness, ease-of-use, and brand trust are proposed as the predictors of attitude. The previous studies of Davis (1989) and Lin (2007) found that consumer attitudes are driven by the consumers' perceptions of usefulness and ease-of-use. Both studies also found usefulness has a stronger impact on attitude in comparison to ease-of-use. Further extended from the combined TPB-TAM model, added value was incorporated in this study as a predictor of perceived usefulness. Lin et al. (2013) elaborated on the existence of surplus value influencing the consumer's perception of the benefits of the service. The analysis of the model in this study indicated that added value predicts the consumer's perceived usefulness of the service, aligning with previous theory. However, the results in this study found perceived usefulness to be an insignificant driver of consumer attitude, despite added value being a significant factor of usefulness. On the contrary to perceived usefulness, perceived ease-of-use is not only a significant factor but also the most impactful predictor of attitude. These findings align to the criticisms towards the TAM model about its exclusive focus on functional aspects (e.g., Moon & Kim, 2001) and further support the argument by proving a relationship between enjoyment and ease-of-use. As enjoyment was added to the research model, the results suggest that it is a significant predictor of ease-of-use, which supports the notion that consumers seek hedonic benefits when operating the OMC service platforms. Enjoyment has been found to reduce the complexity of managing IT systems (Agarwal & Karahanna, 2000; Çelik, 2011). Therefore, this study confirms that enjoyment positively influences perceived ease-of-use and indirectly drives attitudes. This information indicates that a user-friendly service platform, encompassed with elements

that trigger enjoyment, would create positive attitudes and keep premium users engaged in the service.

Furthermore, the expectations that the service providers will fulfill their promises without taking advantage of their consumers has been discussed in the context of e-commerce (Zhu et al., 2011). In an environment that can be characterized by uncertainty and complexity, the consumer needs to ensure that the service provider will not engage in fraudulent actions. These expectations are conceptualized within the current model through the construct of brand trust, and the findings support a direct relationship between brand trust and attitude. This implies that the higher trust the consumer puts in the brand of the OMC service provider, the more positive attitude they develop towards the service. This result is consistent with the findings of previous studies that explored the impact of trust on attitudes (Bianchi & Andrews, 2012; Terenggana, Supit, & Utami, 2013). Brand trust was found to be a significant factor for paid users but not for free users. Therefore, it is indicated that when OMC service providers need to keep their paid users engaged to the premium offer, building trust improves the prediction for future purchase intentions.

Subjective Norm

The results of the total sample and free users group indicate that subjective norm has a positive relationship to purchase intention. However, an unexpected finding is found among paid users; subjective norm negatively influences purchase intention, implying that the pressure from significant inferents can overturn purchase intent of the paid users. What may have caused this unexpected outcome is not within the scope of this study and, thus, requires further investigation.

In the same light with previous studies (Taylor & Todd, 1995; Bhattacherjee, 2000; Lin, 2007; Dutta, 2012), the level of subjective norm is strongly driven by peer influence. These results are consistent among free and paid users, suggesting that in both cases, the social norm is mostly shaped by interpersonal influence. The same previous e-commerce literature also suggests media and non-personal influences impose a positive impact on purchase intention through subjective norm. However, such external influences were found to be not significantly related to the norm for Freemium OMC in this study.

Apart from the interpersonal and external influences, the current research model further explores the impact of social trust on the subjective norm. The concept of social trust is introduced as the extent to which a person believes other citizens determine how likely they will be influenced by others' opinion (Chow & Chan, 2008). Our study finds this proposition of social trust is valid for paid users in the context of purchase intention towards Freemium OMC, but no significant influence is exhibited among the free users.

Combined with the significant findings on interpersonal influence, the current study suggests subjective norm is firmly influenced by factors referring to the interpersonal relationship including peer opinion and individual's proposition of trust towards other individuals, and does not encompass nonpersonal influences in this context. However, the impacts of norm on purchase intention are diverse as the freemium OMC compounds of free and paid users. The free users are likely to follow positive words from their close circles, relatives, or colleagues (Kwong and Park, 2008), especially when words are echoed by those who hold a paid status (Sylvester & Rand, 2014), implying words shared by

experienced users have a strong influence on free users' conversion. An implication is drawn for the service providers and marketing practitioners as they can consider to come up with a referral marketing campaign to improve the conversion rate among free users.

Perceived Behavior Control

In the previous literature, Lin (2007) found consumers' intention to purchase product/service online partly relies on their perception of ability to carry on activities on the platform. The more recent literature (Kwong & Park, 2008; Dutta, 2012) indicated such concerns do not influence behavioral intention in their studies. The current study is consistent with the recent TPB literature. This research found that while self-efficacy and facilitating conditions are the significant predictors for perceived behavior control, the relationship between perceived behavior control and purchase intention is insignificant. Accordingly, either being a less or more technically savvy or having less or more experience with Freemium OMC, ones are indifferently likely or unlikely to purchase the service. This finding expands the perspective for service providers as this implies the present market for monetizing is not necessarily limited to the group of tech veterans but also those who start to adopt the online platform.

Free Mentality

The findings of this study reveal that free mentality has a negative impact on purchase intention, implying that consumers are still driven under the notion that the internet should be primarily a platform for distribution of free content. These results support the previous studies that explored the effect of free mentality on purchase intentions (Dou, 2004; Lin et al., 2013). This negative relationship

between free mentality and purchase intention was found significant for the paid users, while the same connection was found insignificant for free users. It is interesting that premium users, who have already paid about an OMC freemium service in the past three months, are still characterized by a free mentality that negatively affects their purchase intentions. This finding shows that consumers are still resistant to paying for freemium services due to their free mentality, but this barrier can be overcome should a freemium service exceed their expectations and satisfies their needs.

On the contrary to the negative effect on purchase intention, free mentality positively influences consumer's attitude towards the Freemium service, contradicting Lin et al. (2013), who found free mentality to have a significant negative effect towards attitude. This positive direction is observed with significant results among both free and paid users in our study. An interpretation is that free mentality has a unique effect on freemiums; consumers are attracted by the free content that the freemium offers, which satisfies their innate philosophy on how the internet should be. This explanation also supports the negative relationship between free mentality purchase intention. The consumers therefore, enticed by the free offer of the freemium but simultaneously develop negative intentions towards paying for the premium offer. This argument is supported by the study by Wagner et al. (2013), which found that users who enjoy the free version of a freemium develop a negative attitude towards the paid version. Therefore, the findings of this study indicate that freemium service providers should carefully design and promote both their free and premium offer so that one does not cannibalize on the purpose of the other.

6. Conclusion and Implications

This study aimed to explore and pinpoint the determinants for purchase intention of free and paid users in the context of Freemium OMC services. To this end, a combination of the extended TPB model and the TAM model, along with five additional operative constructs - added value, enjoyment, brand trust, social trust, and free mentality - were used to analyze the responses of 214 freemium OMC users. The CFA and subsequent SEM analysis that was conducted provided valid and reliable results. Therefore, the authors consider the purpose of the study to be fulfilled. For the total sample, 12 out of 15 of the initial hypotheses were confirmed. The results indicate that the conceptual model has good explanatory power, which shows its ability to predict consumers' purchase intentions.

There are academic implications to be considered in this study. First, the PBC construct was found to be insignificant, following the recent results of researchers. An interpretation of this finding would be that in an era where consumers, especially young adults, are becoming more experienced with managing technology, the current breakdown of the PBC construct may be outdated and, hence, could be further explored and refined. Second, the difference between paid and free users of freemium OMC services is established. Attitudes, and the factors that drive attitudes, mostly affect purchase intentions for paid users, while subjective norms, and interpersonal influences, mainly influence purchase intentions for free users. Last, a dual role of free mentality in the context of freemium services is found. Free mentality can positively influence attitudes towards the freemium service, but negatively affects purchase intention toward the premium offer. The positive effect of free mentality on attitudes comes in contrast to previous studies which found only negative influence.

Furthermore, there are also managerial implications that can be extracted from this study. Knowing the various factors that drive consumers towards paying for the premium offer is vital information for the businesses that employ the freemium model. The results of this study pinpointed that users of freemium OMC services behave differently depending on whether they are free or paid users. For users that have already paid for the service in the past, attitudes and ease-of-use of the platform are the most impactful drivers of future intentions. This implies purchase practitioners should target this group by incorporating additional functions in the premium offer that make the service platform easier and more enjoyable to use. In contrast, free users are not influenced by the technical aspects of the service, instead, they would pay for the service if they are influenced by people whom they trust. In this case, providing incentives to paid users to recommend the service to a friend would be an effective strategy for the free users who are stuck in the free zone.

7. Limitations and Future Research

Similar to any research, some limitations should be mentioned and taken when generalizing the findings from this study. First, the online survey was conducted and distributed using web-based formats. The nonrandom convenience sampling was employed as collecting a large sample using random sampling would be costly. The online survey is suitable for filtering and collecting data from respondents who are involved in the online service and allows the study to be conducted without the location constraint. The future research could improve the generalizability by applying a more distributed random sampling in the method.

Second, as the study was conducted among a group of young adults who work or study in Sweden, it is essential to aware of the cultural and age limitation of the findings. Recalled Lin et al. (2015)'s study, the results indicate differently that PBC is a significant construct when determining what drives users' pay intent in Taiwan. In addition, the study conducted by Chyi (2005) found consumers in different age groups react differently to how they are willing to pay for the online news. It is reasonable to argue that in various cultural, environmental, and age settings, consumers' adoption of Freemium OMC could be influenced by different determinants due to the differences in attitude, norm, and ability to access to resources. These conditions call for further validation when applying to other conditions. To further enhance the generalization of the findings, a worthwhile focus for future research could be a comparative study of different cultural or age groups.

Finally, this study put a specific focus towards the online media industry and cover an overview reflected from the main types of the media industry, including, music, movies, and the print media. It is reasonable to assume that users might act differently some determinants when adopting different types of Freemium OMC. For example, those who subscribe to the Freemium news platform might have diverse factors driving attitude as potentially concern more functionality more than hedonic aspect. Given a limited number of studies have explored the Freemium online news platform (Chyi, 2005; Filo & Wang, 2011), applying the research model to examine further the specific types of would improve Freemium **OMC** understanding of researchers and practitioners how to turn the free users to paid users.

References

- Agarwal, R. and Karahanna, E. (2000), "Time flies when you're having fun: cognitive absorption and beliefs about information technology usage", *MIS Quarterly*, Vol. 24 No. 4, pp. 665-94.
- Ajzen, I. (1985). "From Intentions to Actions: A Theory of Planned Behavior". In Kuhl, Julius; Beckmann, Jürgen. *Action Control: From Cognition to Behavior*. Springer. pp. 11–39. ISBN 978-3-642-69748-7.
- Ajzen, I. (1991). The theory of planned behavior. Organizational behavior and human decision processes, 50(2), 179-211.
- Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behaviour.
- Al-Nasser, M., Yusoff, R.Z., Islam, R., & ALNasser, A. (2014). Effects of consumers' trust and attitude toward online shopping. *American Journal of Economics and Business Administration*, 6(2), 58-71.
- Anderson, C. (2009). Free: The future of a radical price. London: Random House Business.
- Bain, R. (1929). The Validity of Life Histories and Diaries. *The Journal of Educational Sociology*, *3*(3), 150-164.
- Becerra, E., & Korgaonkar, P. (2011). Effects of trust beliefs on consumers' online intentions. European Journal of Marketing, 45(6), 936-962.
- Bhattacherjee, A. (2000). Acceptance of ecommerce services: The case of electronic brokerages. *IEEE Transactions on Systems*,

- Man, and Cybernetics Part A: Systems and Humans, 30(4), 411-420.
- Bianchi, C., & Andrews, L. (2012). Risk, trust, and consumer online purchasing behaviour: A Chilean perspective. International Marketing Review, 29(3), 253-275.
- Brown, M., Pope, N., & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention. *European Journal of Marketing*, *37*(11/12), 1666-1684.
- Çelik, H. (2011). Influence of social norms, perceived playfulness and online shopping anxiety on customers' adoption of online retail shopping. *International Journal of Retail & Distribution Management*, 39(6), 390-413.
- Chau, P. Y., Au, G., & Tam, K. Y. (2000). Impact of information presentation modes on online shopping: an empirical evaluation of a broadband interactive shopping service. Journal of Organizational computing and electronic commerce.
- Chen, L., Gillenson, L., & Sherrell, L. (2002). Enticing online consumers: an extended technology acceptance perspective, 39 (8), 709–719. doi: 10.1016. S0378-7206 (01), 00127-6.
- Cheung, C. and Lee, M.K. (2000) "Trust in Internet Shopping: A Proposed Model and Measurement Instrument," in the Proceedings of the 6th Americas Conference on Information Systems, H.M. Chung (ed.), August 10-13, 2000, Long Beach, CA, pp.681-689.
- Cheung, C. M., & Lee, M. K. (2001). Trust in internet shopping: instrument development

- and validation through classical and modern approaches. Journal of Global Information Management (JGIM), 9(3), 23-35.
- Childers, T.L., Carr, C.L., Peck, J. and Carson, S. (2001), "Hedonic and utilitarian motivations for online retail shopping behavior", *Journal of Retailing*, Vol. 77 No. 1, pp. 511-35.
- Chow, W.S., & Chan. L.S. (2008). Social network, social trust and shared goals in organizational knowledge sharing. *Information & Management*, 45(7), 458-465.
- Chu, C., & Lu, H. (2007). Factors influencing online music purchase intention in Taiwan. *Internet Research*, *17*(2), 139-155.
- Chun-Hua H., Kai-Yu T., (2014) "Explaining undergraduates' behavior intention of etextbook adoption: Empirical assessment of five theoretical models", Library Hi Tech, Vol. 32 Issue: 1, pp.139-163
- Chyi, H. (2005). Willingness to Pay for Online News: An Empirical Study on the Viability of the Subscription Model. *Journal of Media Economics*, 18(2), 131-142.
- Compeau, D., & Higgins, C. (1995). Computer Self-Efficacy: Development of a Measure and Initial Test. MIS Quarterly, 19(2), 189-211.
- Consumer Barometer. (2019). Consumer

 Barometer from Google The Online &

 Multiscreen World (SE). [online] Available
 at:
 https://www.consumerbarometer.com/en/in
 sights/?countryCode=SE [Accessed 24
 Apr. 2019].
- Corbitt, B.J., Thanasankit, T. & Yi, H. (2003). Trust and e-commerce: A study of

- consumer perceptions. *Electronic Commerce Research and Applications*, 2(3), 203-215.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS quarterly, 319-340.
- Davis, F., Bagozzi, R., & Warshaw, P. (1989). User Acceptance Of Computer Technology: A Comparison Of Two. *Management Science*, 35(8), 982.
- Davis, F., Bagozzi, R. and Warshaw, P. (1992) Extrinsic and Intrinsic Motivation to Use Computers in the Workplace. *Journal of Applied Social Psychology*, 22, 1111-1132.
- Digital News Report. (2018). *Interactive Paying for digital news* (2018). [online] Available at: http://www.digitalnewsreport.org/interactive/[Accessed 24 Apr. 2019].
- Doolin, B., Dillon, S., Thompson, F. and Corner, J.L. (2005), "Perceived risk, the internet shopping experience and online purchase behaviour: a New Zealand perspective", *Journal of Global Information Management*, 13(2), pp. 66-88.
- Dou, W. (2004). Will internet users pay for online content?. *Journal of Advertising Research*, 44(4), 349-359.
- Dutta, S. (2012). Analyzing consumer intention to pay for online content: A systematic approach. Journal of Theoretical and Applied Information Technology, 31(1), 89-102.
- Eagly, A. H., & Chaiken, S. (1993). The psychology of attitudes. Orlando, FL, US: Harcourt Brace Jovanovich College Publishers.

- Elkin, T. "Seeking Payoff on the Web," Advertising Age (Midwest region edition), Vol. 73, No. 40:4-5, 2002.
- Filo, K., & Wang, Y. (2011). Will Consumers
 Pay for News Content Online: The
 Implications for Tourism. In *CAUTHE*2011: National Conference: Tourism:
 Creating a Brilliant Blend (p. 217).
 University of South Australia. School of
 Management.
- Fishbein, M., & Ajzen, I. (1975). Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Reading, MA: Addison-Wesley.
- Gallaugher, J. M., Auger, P., & BarNir, A. (2001). Revenue streams and digital content providers: an empirical investigation. *Information & Management*, 38(7), 473-485.
- Giantari, G.A., Zain, D., Rahayu, M., & Solimun (2013). The role of perceived behavioral control and trust as mediator of experience on online purchasing intentions relationship a study on youths in denpasar city (Indonesia) I.
- Günzel-Jensen, S. and Stoel, L. (2009), "Consumer e-shopping acceptance: antecedents in a technology acceptance model", *Journal of Business Research*, 62(5), 565-71.
- Hackbarth, G., Grover, V. and Yi, M.Y. (2003), "Computer playfulness and anxiety: positive and negative mediators of the system experience effect on perceived ease of use", *Information & Management*, 40, 221-32.
- Hair, Jr. F.J., Black, C.W., Babin, J.B., & Anderson, E.R. (2010). *Multivariate Data*

- *Analysis A Global Perspective.* 7th edition. New Jersey: Pearson Education.
- Hansen, T. (2006), "Determinants of consumers' repeat online buying of groceries", *International Review of Retail Distribution and Consumer Research*, 16(1), 93-114.
- Himma-Kadakas, M., & Kõuts, R. (2015). Who is willing to pay for online journalistic content?. *Media and communication*, *3*(4), 106-115.
- Hsiao, C.H. & Tang, K.Y. (2014). Explaining undergraduates' behavior intention of etextbook adoption: Empirical assessment of five theoretical models. *Library Hi Tech*, 32(1), 139-163.
- Jarvenpaa, S., Tractinsky, L., & Vitale, N. (2000). Consumer trust in an Internet store. Information Technology and Management, 1(1), 45-71.
- Jere, M., & Borain, R. (2018). Willing seller, unwilling buyer: Factors influencing intention to pay for online news in South Africa. In The 2018 Annual Conference of the Emerging Markets Conference Board (p. 97). Wits Business School.
- Kumar, V. (2014). Making" freemium" work. Harvard business review, 92(5), 27-29.
- Kwong, S. W., & Park, J. (2008). Digital music services: consumer intention and adoption. *The service industries journal*, 28(10), 1463-1481.
- Laudon, K. C., & Traver, C. G. (2016). *E-commerce: business, technology, society.*
- Lee, M. (2009). Factors influencing the adoption of Internet banking: An integration of TAM and TPB with

- perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, 8(1), 130-141.
- Li, Z., & Cheng, Yan. (2014). From free to fee exploring the antecedents of consumer intention to switch to paid online content. *Journal of Electronic Commerce Research*: *JECR*, 15(4), 281-299.
- Li, Z., Nan, G. & Li, M., 2018. Advertising or Freemium: The Impacts of Social Effects and Service Quality on Competing Platforms. *IEEE Transactions on Engineering Management*, PP(99), pp.1–14
- Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors Influencing Online Shopping Behavior: The Mediating Role of Purchase Intention. *Procedia Economics and Finance*, 35(C), 401-410.
- Lin, H. (2007). Predicting consumer intentions to shop online: An empirical test of competing theories. *Electronic Commerce Research and Applications*, 6(4), 433-442.
- Lin, T. C., Hsu, J. S. C., & Chen, H. C. (2013). Customer willingness to pay for online music the role of free mentality. *Journal of Electronic Commerce Research*, 14(4).
- Lumley, F. (1935). Principles of Sociology. Journal of Educational Sociology, 9(1), 62.
- Mathwick, C., Malhotra, N., & Rigdon, E. (2001), Experiential Value: Conceptualization, Measurement, and Application in the Catalog and Internet Shopping Environment, *Journal of Retailing*, 77(Spring), 39–56.
- McCole, P., Ramsey, E., & Williams, J. (2010). Trust considerations on attitudes towards online purchasing: The moderating

- effect of privacy and security concerns. Journal of Business Research, 63(9-10), 1018-1024.
- Moon, J.W. and Kim, Y.G. (2001), "Extending the TAM for a world-wide-web context", *Information & Management*, Vol. 38 No. 4, pp. 217-34.
- Mou, J., Shin, D., & Cohen, J. (2017). Trust and risk in consumer acceptance of eservices. Electronic Commerce Research, 17(2), 255-288.
- Nabi, R., & Krcmar, M. (2004). Conceptualizing Media Enjoyment as Attitude: Implications for Mass Media Effects Research. *Communication Theory*, 14(4), 288-310.
- Picard, R. G. (2000). Changing business models of online content services: Their implications for multimedia and other content producers. *International journal on media management*, 2(2), 60-68.
- Pinder, Craig C. (2008) Work Motivation In Organizational Behavior. *Psychology Press.* pp. 253 266.
- Pujol, N. (2010). Freemium: Attributes of an emerging business model. *Available at SSRN:*http://papers.ssrn.com/sol3/papers.cf m?abstract_id=1718663.
- Sanchez, D. (2017). 48% of the Entire Swedish+Norwegian Population Is Paying for Streaming. [online] Digital Music News. Available at: https://www.digitalmusicnews.com/2017/08/14/spotify-youtube-sweden-norway-streaming/ [Accessed 24 Apr. 2019].
- Song, Y. & Han, J. (2009). Is Enjoyment Important? An Empirical Research on the Impact of Perceive Enjoyment on Adoption

- of New Technology. 2009 International Conference on Information Management, Innovation Management and Industrial Engineering, 4, 511-514.
- Svenskarnaochinternet.se. (2019). Super-connected and rarely connected online divide in 2018. [online] Available at: https://2018.svenskarnaochinternet.se/the-swedes-and-the-internet-2018-summary/ [Accessed 17 May 2019].
- Sylvester, J. & Rand, W. (2014). Keeping Up with the (Pre-Teen) Joneses: The Effect of Friendship on Freemium Conversion. Paper presented at the Winter Conference on Business Intelligence, Snowbird, Utah.
- Tan, F. B., & Sutherland, P. (2004). Online consumer trust: a multi-dimensional model. Journal of Electronic Commerce in Organizations (JECO), 2(3), 40-58.
- Taylor, S., & Todd, P. (1995). Assessing IT usage: The role of prior experience. (information technology). *MIS Quarterly*, 19(4), 561.
- Taylor, S., & Todd, P. (1995b). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*, 6(2), 144-176.
- Terenggana, C.A., Supit, H., & Utami, C.W. (2013). Effect Of Value, Consumer Trust And Attitudes Towards Intention Buy Environmentally Friendly Air Conditioners Product In South Sumatera. *Academic Research International*, 4(3), 323-335.
- Trafimow, D. (1998). Attitudinal and normative processes in health behavior. *Psychology and Health*, 13, 307-317.
- Trafimow, D., & Fishbein, M. (1994). The moderating effect of behavior type on the

- subjective norm-behavior relationship. *The Journal of Social psychology*, 134, 755-763.
- Van der Heijden, H. (2003). Factors influencing the usage of websites: the case of a generic portal in The Netherlands. Information & management, 40(6), 541-549.
- Van Der Heijden, H., Verhagen, T., & Creemers, M. (2003). Understanding online purchase intentions: Contributions from technology and trust perspectives. European Journal of Information Systems, 12(1), 41-48.
- Wagner, T. M., Benlian, A., & Hess, T. (2013). The Advertising Effect of Free-Do Free Basic Versions Promote Premium Versions within the Freemium Business Model of Music Services?. In 2013 46th Hawaii International Conference on System Sciences (pp. 2928-2937). IEEE.
- Wagner, T. M., Benlian, A., and Hess, T. (2014), Converting Freemium Customers from Free to Premium-the Role of the Perceived Premium Fit in the Case of Music as a Service, *Electronic Markets* 24(4), pp. 259-268.
- Wang, C.L., Ye, L.R., Zhang, Y., and Nguyen, D.D (2005). Subscription to Fee-based Online Services, What Makes Consumer Pay for Online Content, *Journal of Electronic Commerce Research*, 6(4), 304-311
- Wang, S., Ngamsiriudom, W., & Hsieh, C. (2015). Trust disposition, trust antecedents, trust, and behavioral intention. *The Service Industries Journal*, *35*(10), 555-572.
- Wilson, F. (2006). The freemium business model. A VC Blog, March, 23, 201.

- Yang, H.C., Liu, H., & Zhou, L. (2012). Predicting young Chinese consumers' mobile viral attitudes, intents and behavior. *Asia Pacific Journal of Marketing and Logistics*, 24(1), 59-77.
- Zhu, D., Lee, Z., O'Neal, G., & Chen, Y. (2011). Mr. Risk! Please Trust Me: Trust Antecedents that Increase Online Consumer
- Purchase Intention. Journal of Internet Banking and Commerce, 16(3), 1-23.
- Zimbardo, P., Boyd, J., & Diener, Ed. (1999).

 Putting Time in Perspective: A Valid,
 Reliable Individual-Differences Metric.

 Journal of Personality and Social
 Psychology, 77(6), 1271-1288