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Motivating Factors of User Intention toward Social Television Use: Conceptual Model Development

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Abstract

Despite social TV is still a new research concept, modest advances have been made though mostly in Western contexts with little attention being given to motivating factors of multiscreen social TV system use intentions. This article aims to close this literature void though not by focusing on the development of non-Western literature mainly but by focusing on augmenting the body of existing literature in multiscreen social TV system use intentions. To achieve this objective, past and existing literature both in Western and non-Western contexts was critically reviewed. A three-dimension (independent variable, mediating variable, and dependent variable) conceptual model was designed, based on the reviewed literature, with six constructs as independent variables namely: usability, sociability, social presence, multi-modality, user-generated content, and hedonism) theorised to be mediated by 'attitude' and behavioural intention is theorised as the dependent variable. The article concludes that the motivating factors of multiscreening social TV system use intention have not been exhaustively identified yet and multiscreening is a complex social phenomenon that requires holistic research to understand deeper. Therefore, further empirical research is needed to provide further evidence-based understanding of the factors that motivate people to intend to go multiscreening while watching TV.

Keywords: multiscreen TV, smart devices, social media, social TV, television, behavioural intention, attitude, motivating factors, conceptual model.

1. Introduction

We are in 21st century – the information and communication technology age – that is characterised with ease in interactive communication. Due to the advancements in mobile and screen technologies, multiscreen video consumption has gained increasing popularity among digital consumers worldwide. The literature demonstrates that the multiscreen video viewing environment, in which people, contents, and screens are all mobile, is now a substitution for the traditional one-way broadcasting TV viewing experience at fixed places (Kim et al., 2019a). Although watching TV, with fading appeal to audiences, remains the favourite entertainment pastime, the salient trend of watching videos on multiple screens such as smartphone and tablet has been growing rapidly with the increase of video viewing time (Kim et al., 2019b; Lin, 2018; Nielsen, 2015; Nielsen, 2013; Phalen, Ducey, 2012).

As Nielsen Research (Nielsen Research, 2019, Nielsen Research, 2018a; Nielsen Research, 2018b; Nielsen Research, 2018c; Nielsen Research, 2013), and T.T.C. Lin and Y. Chiang (Lin,

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Chiang, 2017) noted, while watching videos, many multitasking viewers utilise dual screens to engage in social media activities or search for information related to video content. The convergence of social media discussions during video viewing results in social TV, which enhances user engagement and improve TV rating (Kramer et al., 2015; Phalen, Ducey, 2012; Song et al., 2019). For example, as evidence of the growing research interests in social TV, social TV was chosen as the most important emerging technologies by *MIT Technology Review* in 2010. Consequently, many researchers (e.g., Cesar, Geerts, 2011; Phalen, Ducey, 2012; Steiner, Xu, 2018; Zwaaneveld, 2009) studied the development of integrated social TV systems as well as explored patterns of social TV user behaviours (Ericsson Consumerlab, 2017; Lin, 2018).

The social characteristics of social TV play an important role to adoption intention as they positively influence user attitudes (Jago et al., 2011; Shin, 2013). Scholarly studies in social TV systems use are scarce especially in the Nigerian context. In a systematic review conducted by J.R. Bautista et al. (Bautista et al., 2016), there has been only 10 exploratory studies about users of social TV systems and the majority were done in European and North American countries. As Africa is gradually having advanced mobile, screen, and audio-visual technologies with one of the largest mobile phone markets globally and high smartphone ownership (Adeleke, 2020; Akpoja, 2021; Forenbacher et al., 2019; Winter et al., 2018), it is crucial to conduct user studies to understand Nigerian consumers' attitudes toward a multiscreen social TV system (Lin, 2018; Oтуру, Takuro, 2020).

Social TV use studies that are related to the evaluation of user experiences are complex because multiple technological components are involved in the system (Bernhaupt, Pirker, 2013); thus, a critical review and conceptual model can help simplify it and provide integrated understanding for user experiences. Complemented by a web survey, this research primarily takes a critical review of existing and past literature to derive concepts and design a theoretical conceptual model that will ease the understanding of user behaviours regarding the use of multi-screen social TV systems. This can further provide in-depth user insights for developing the multiscreen social TV system which mostly involves young users' and their perceptions, attitudes, and responses to key features such as multi-screen, sociability and their presence and content creation of a social TV prototype especially for a Nigerian context (Lin, 2018; Nee, Barker, 2019). Only a few studies in the past examined small sizes of social TV system users and among them, most were conducted in laboratory settings with a Western focus (e.g., Bautista et al., 2016). In addition, only few studies exist on multiscreen social TV system use intention (e.g., Lin, 2018). This underscores the importance of the multiscreen social TV system user review of literature.

Literature Review – Previous Research in Social TV: Social TV refers to the convergence of TV and social media (Shin, 2013). An increasing number of global users are utilising separate devices to engage in social media activities while watching videos, which is regarded as a type of social TV behaviour (De Meulenaere et al., 2015). Dual screening emphasises the organic nature of using screens for video viewing activities without a fixed primary screen (Lin, Chiang, 2017).

M. Ko et al. (Ko et al., 2016) identified the key motives inspiring social TV viewing, including sharing feelings/thoughts, sharing information, entertainment, and sense of community. The early effort of social TV studies concentrated on the investigation of features of integrated social TV systems (Zwaaneveld, 2009). These social TV studies derived from interactive TV research (Abreu et al., 2002; 2016; 2017; McCreery et al., 2021; Metcalf et al., 2008).

Social factors (shared usage and co-experience) are key factors affecting interactive TV users' perceived value of using such systems (Bernhaupt, Pirker, 2013). According to D. Geerts et al. (Geerts et al., 2008), modality and social presence are the significant key features of social TV systems. Social TV systems provide various communicative modalities (text, audio and video) for users to coordinate social interactions (e.g., exchanging messages) with synchronous or asynchronous video viewing (Gross et al., 2008; Nathan et al., 2008; Nielsen Research, 2019). Mediated social TV systems provide shared activities and communicative modalities to enhance users' social presence that positively influence attitudes and intention to use (Khoshrouzadeh, 2018; Shin, 2013).

After the use of social media like Facebook and Twitter became prevalent, research interests have shifted to identify key factors to develop user-friendly interfaces and design in integrated social TV systems in order to facilitate social interactions during video viewing (Nielsen Research, 2018a,b,c; Schatz t al., 2010; Zhang et al., 2014). Some recent studies examined impacts of usability (Han, Lee, 2014) and sociability (e.g., Shin, 2013) on user attitude and use intention

(Khoshrouzadeh, 2018), whereas others investigated predictors affecting social TV users' engagement (Guo, Chan-Olmsted, 2015; Pynta et al., 2014) and social interaction activities (Nagy, Midha, 2014). Based on the systematic review by J.R. Bautista et al. (Bautista et al., 2016), only 10 exploratory user studies of social TV systems examined a very small number of users, which was conducted primarily in labs. According to R. Bernhaupt and M. Pirker (Bernhaupt, Pirker, 2013), the evaluation of user experience for interactive TV system is complex as it consists of multiple components (e.g., TV screen, remote controls, hardware devices connecting TV, and IP network). To our best knowledge, the present research is the pioneering one to use a survey method approach to investigate a larger number of early adopters' preferences and attitudes toward a multiscreen social TV system.

The Concepts of Sociability and Social Presence: Sociability and social presence are found as crucial factors affecting users' attitudes and intention to use social TV (Han, Lee, 2014; Khoshrouzadeh, 2018; Kramer et al., 2015; Shin, 2013). Sociability is defined as a characteristic of an online community system that support members' social interaction for the attainment of community shared purposes (Kim et al., 2020; Kim, Merrill 2021; Maloney-Krichmar et al., 2005). Through virtual interactions via sociable mediated technologies, people may create feelings of being 'physically' close or 'socially present' (Baillie et al., 2007; Shin, 2013). It is significant for online system designers to enhance such social pleasure to share information, carry out activities or interact with other members (Theng et al., 2010). Although social presence is initially regarded as feelings of joint involvement in communicative interactions (Short et al., 1976; Winter et al., 2018), many social TV studies have shown that user experiences can be enhanced by feelings of social presence (Brown-Devlin et al., 2021; Hassoun, 2014; Hutchins, 2011; Lim et al., 2015).

Y. Hwang and J.S. Lim (Hwang, Lim, 2015) found a positive relationship between users' perceived social presence of social TV and commitment. According to T.T.C. Lin et al. (Lin et al., 2016a, b), perceived sociability and social presence of social TV are positively related to bridging social capital that increases loyalty.

The Concept of Multi-Modality: Interactive TV viewers chat for social and hedonic purposes (fun and entertainment, commenting, answering/questioning, and emotional responses) (Bernhaupt, Pirker, 2013). Many social TV studies emphasise examining users' responses to interactions via multiple communication modes (e.g., texting, audio, and video chats) during viewing videos (Colaco et al., 2011; Coppens et al., 2004), which facilitate social presence feelings (Metcalf et al., 2008). Although some people engage in text chatting while watching videos and feel positively about their interactions (Wadley, Gibbs, Benda, 2005), several experiments found that natural and intuitive voice chats were easy to use during video viewing (Geerts et al., 2008; Steiner, Xu, 2018) with drawbacks of distraction (Wadley et al., 2005; Winter et al., 2018).

User Video Consumption Patterns: Watching videos via multiple screen devices has become a global trend due to technological advancements in screen technologies, network quality, system interoperability, and cloud content. In addition to interoperable platform compatibility, it is crucial to create cloud videos to flow fluidly across platforms for multiscreen TV businesses. In multiscreen media environment, optimal user experiences rely on hyper-mobility and seamless social connectivity. Companies that offered adaptive screen transcoding solutions showed impressive revenue growth in recent years. For example, QR (Quick Response Code) provides the easy transferral of videos and relevant information between screen devices (Davidovitz, 2010; Lin, 2013; Microsoft Advertising, 2011). Many countries including Nigeria have developed convergent regulatory frameworks to oversee and facilitate the growth of digital pay TV services and its related platforms such as multiscreen TV services (Elebeke, 2020; Emwinromwankhoe, 2020; Ezech et al., 2012; Lin, Oranop, 2016; Nielsen Research, 2019; Nielsen Research, 2018a; Nielsen Research, 2018b; Nielsen Research, 2018c). It is also important for industry players to understand the way consumers consume videos and multitasked with activities on various screen devices (Hritzuk, Jones, 2014; Lin, 2018). According to Google research (Google, 2012), people used multiscreen technologies to fill fragmented time, or time filler, seek video-related complementary information, or provide interactivity.

Many consumers used one screen to watch videos and another to seek related information or interact with other viewers; yet dual screening can be utilised for irrelevant tasks that diverted users' attention away from videos, especially during commercials (De Meulenaere et al., 2015; Hasebrink et al., 2015). Hence, consumers' levels of interest and engagement in videos determine how they use two screens and the activities on them. Multiscreen usage tends to increase users'

cognitive loading (Google, 2012; Lin, 2018). According to Millward Brown's digital media prediction, Americans' multiscreen preferences are highly related to audience's generation, and task load is related to the degrees of time spent and concentration. It introduces "meshing," a type of multiscreen behaviour, which refers to the simultaneous viewing of related content across devices. The report also points out that smartphones are often used for low-touch and high frequency matters among young viewers, while the older generation prefers to use smartphone and laptop together for complex brand messages (Brown, 2015). Some Nigerian surveys show that young people tend to use smartphones and computers more often (Ojomo, Olomjobi, 2021; Uzuegbunam, 2019) and as such, they are arguably more predisposed to smartphones and computers as second screening for video viewing (see Guo, 2019; Lin, 2018; Lin et al., 2016a).

Understanding users' multiscreen preferences and usage patterns are important for developing popular social TV or multi-screen content and services. Six kinds of multiscreen usage patterns are identified, including "mirroring, shifting, complementary, coherence, partition, and aggregation" (Lin, 2018: 2; Nielsen Research, 2018a,b,c; Stoll, 2011). Mirroring refers to synchronised content on all devices simultaneously; shifting allows users to actively move content or continue media consumption from one device to another; complementary means using separate devices to complement each other for certain content/services; coherence provides features to optimise multi-screen content or activities in response to device characteristics and usage scenarios. Partition allows users to divide media content or information from one device to multiple screens, while aggregation means the opposite. According to T.T.C. Lin et al. (Lin et al., 2016b) and T.T.C. Lin (Lin et al., 2018: 2), people with higher "polychronicity" and richer media repertoire are likely to spend a long time on passive multiscreen video viewing and engage in active second screening frequently.

User-Enabled Video Content Creation: Creating user-generated videos represents the participatory culture in the digital convergent media age. The user-generated videos sites facilitate the asynchronous and active viewing of unlimited videos with self-filtering and socialisation, which increases empowered users' creativity and interactivity as well as generates business opportunities to leverage the latent demand for niche videos. The user-generated videos sites are fundamentally different from traditional video on demand services because the former has two distinctive consumption patterns: some extremely popular sites reach a myriad of viewers with a gigantic number of videos, while others only focus on serving niche audiences with specialised content. User-generated videos platforms provide a digital space for empowered users to share their videos, create personal channels, and have control over the online viewing environment (Cha et al., 2009; Lin, 2018; Nee, Barker, 2019). In addition, a study revealed that 48 % of netizens trust the words, pictures, and videos created by other users. When trust increases, consumers' usage and loyalty will eventually improve (Forrester, 2014; Winter et al., 2018). If the social TV systems allow prosumers to create personal or customised channels for their preferences, their usage and loyalty are likely to grow as their hedonic purposes (e.g., entertainment) and sense of community are fulfilled. To fill the gap of the multiscreen social TV user research in Nigeria, this survey study will examine social responses to multi-screen video viewing, multi-modalities of social interactions, and user-generated videos content creation/aggregation (Forrester, 2014; Lin, 2018; Steiner, Xu, 2018).

The findings of a study conducted in a Singaporean context by T.T.C. Lin (Lin, 2018) showed a high adoption rate of multiscreen behaviours among young participants. It revealed that most multiscreen participants frequently use shifting and complementary patterns: the former migrates' the same content across screens for mobility or viewing preferences; the latter offers convenience to conduct video complementary activities on separate screens during video viewing. The capability to shift videos across screens not only allows users to save time and effort, but also fits their multitasking habits in media consumption, and, furthermore, the selection of a second screen was highly related to the content or tasks on the first screen. Ease of use and convenience are participants' common impression with social TV (Brown-Devlin et al., 2021; Viswanathan et al., 2018; Xu, Tayyab, 2021).

2. Materials and methods

Desktop reviews of existing and past literature were adopted as method of data collection. All secondary data were obtained through careful selection of relevant materials (journal articles and books/book chapters) from globally famous online databases such as *Google Scholar*, *Scopus* (ScienceDirect), *Taylor & Francis*, *Sage Publications*, *Springer Nature*, and *Emerald*. Because this

review was not meant to be a systematic review of literature, rigorous scientific methods of data gathering, and analysis were not adopted. However, valid methods of data collection that is commensurate with the research design of this review was employed. Only relevant literature was reviewed. Key points, empirical findings, and conclusions were critically reviewed and analysed. Because of the dearth of literature in social TV system research, no strict limitations were placed on the date of publications reviewed. However, a fair representation of both past and existing (more current) literature is ensured. The data were analysed based on thematic analysis (e.g., [Maguire, Delahunt, 2017](#)). That was achieved with careful coding of critical points and stressed concepts ([Peterson, 2017](#)).

3. Discussion

To design the conceptual model, the critical motivating factors driving the intention to use multiscreen social TV platforms must be identified (derived). To achieve this, critical reviews of literature were performed, and six factors were derived (identified). The factors are usability, sociability, social presence, multi-modality, user-generated content, and hedonism (hedonic motivation) as shown in the graphical model in Figure 1, below. The motivating factors are operationalised as follows.

1. **Usability:** This refers to user-friendliness and the ease associated with the use of the system, including the ease associated with sharing feelings/thoughts, sharing information, entertainment, and sense of community. This variable was derived from the reviewed literature (e.g., [Ajzen, Fishbein, 2000](#); [Colaco et al., 2011](#); [Coppens et al., 2004](#); [Lin, 2018](#); [Lin, et al., 2016](#); [Han, Lee, 2014](#); [Kim et al., 2020](#); [Ko et al., 2016](#); [Maloney-Krichmar, Preece, 2005](#); [Nielsen Research, 2019](#), [Nielsen Research, 2018a](#); [Nielsen Research, 2018b](#); [Nielsen Research, 2018c](#); [Shin, Kim, 2015](#); [Steiner, Xu, 2018](#)).

2. **Sociability:** This refers to the characteristics of an online community system that support members' social interaction for the attainment of community shared purposes. This variable was derived from the reviewed literature (e.g., [Colaco et al., 2011](#); [Coppens et al., 2004](#); [Lin, 2018](#); [Lin, et al., 2016](#); [Maloney-Krichmar, Preece, 2005](#); [Nielsen Research, 2019](#), [Nielsen Research, 2018a](#); , [Nielsen Research, 2018b](#); [Nielsen Research, 2018c](#); [Shin, 2013](#); [Winter et al., 2018](#)).

3. **Social presence:** This refers to the feelings of joint involvement in communicative interactions. This variable was derived from the reviewed literature (e.g., [Brown-Devlin et al., 2021](#); [Colaco et al., 2011](#); [Coppens et al., 2004](#); [Hassoun, 2014](#); [Hutchins, 2011](#); [Kim et al., 2021, 2020, 2019a,b, 2018](#); [Kim, Merrill 2021](#); [Lim et al., 2015](#); [Lin, 2018](#); [Lin et al., 2016b](#); [Metcalf et al., 2008](#); [Short et al., 1976](#); [Song et al., 2019](#)).

4. **Multi-modality:** This refers to users' ability to respond to interactions via multiple communication modes. This variable was derived from the reviewed literature (e.g., texting, audio, and video chats) during viewing videos ([Brown-Devlin et al., 2021](#); [Colaco et al., 2011](#); [Coppens et al., 2004](#); [Geerts et al., 2008](#); [Guo, 2019](#); [Lin, 2018](#); [Nee, Barker, 2019](#); [McCreery et al., 2021](#); [Nielsen Research, 2019, 2018a,b,c](#); [Shin, 2013](#); [Xu, Tayyab, 2021](#)).

5. **User-generated content.** This refers to the function and/features of multiscreen social TV system that provides the user with the ability to create, share and reshare video content with friends and other netizens. This variable was derived from the reviewed literature (e.g., [Cha et al., 2009](#); [Colaco et al., 2011](#); [Coppens et al., 2004](#); [Forrester, 2014](#); [Lin, 2018](#); [Nielsen Research, 2019, 2018a,b,c](#); [Viswanathan et al., 2018](#)).

6. **Hedonic Motivation, or hedonism:** This refers to the experience of fun and entertainment while using the system. This variable was derived from the reviewed literature (e.g., [Bernhaupt, Pirker, 2013](#); [Colaco et al., 2011](#); [Coppens et al., 2004](#); [Lin, 2018](#); [Nielsen Research, 2019](#); [Nielsen Research, 2018a](#); [Nielsen Research, 2018b](#); [Nielsen Research, 2018c](#); [Venkatesh et al., 2012](#); [Wadley et al., 2005](#)).

Attitude (e.g., [Bandura, 2002](#); [Han, Lee, 2014](#); [Kramer et al., 2015](#); [Lin, 2018](#); [Shin, 2013](#)) and intention (behavioural intention) (e.g., [Bandura, 2002](#); [Khoshrouzadeh, 2018](#); [Han, Lee, 2014](#); [Kramer et al., 2015](#); [Lin, 2018](#); [Shin, 2013](#)) toward the use of multiscreen social TV are theorised as mediating and dependent variables with the aforementioned six motivating factors as independent variables. While attitude is defined as "the positive or negative feelings or evaluations generated when an individual uses new technologies" ([Chuang et al., 2016: 4](#); [Davis, 1986](#)), intention or behavioural intention refers to "a person's perceived probability or subjective probability that he or she will become involved in a particular behaviour ([Prieto et al., 2015](#)). Intention is also defined as

“the subjective probability of a person that he or she will perform the behaviour in question” (Fishbein, Ajzen 1985: 288). Research has consistently shown that attitude predicts intention (Ajzen, Fishbein, 2000, 1985; Bagozzi, 2007; Bandura, 2002; Morris et al., 2002; Prieto et al., 2015), and ultimately, intention predicts usage (e.g., Venkatesh et al., 2003; 2012).

Furthermore, despite literature on multiscreen social TV system use in Nigerian context is scarce, eight important variables have been identified as playing various roles (six constructs as independent variables, one mediating variable, and one dependent variable) as nuanced in derived conceptual model shown in Figure 1. Because research on social TV systems is still ongoing, by no means does this article claim to have exhausted identifying the critical motivating factors of multiscreening. Social interactivity in an online community gives users the feelings of ease and comfort in order to engage in interpersonal communication in the technology-enabled space (Brown-Devlin et al., 2021; McCreery et al., 2021; Nee, Barker, 2019; Nielsen Research, 2018a,b). Past studies found that using social media while watching TV could enhance viewers’ feelings of sociability and social presence (e.g., Lin, 2018; Kim et al., 2021; Kim et al., 2020; Kim et al., 2019a; Kim et al., 2019b; Kim et al., 2018; Kim, Merrill, 2021; Shin, 2013; Shin, Kim, 2015).

4. Results

The Derived Conceptual Model: From the foregoing review of literature, the following six motivating factors of attitude and intention (behavioural intention) toward the use of multiscreen social TV were derived and then modelled (see Figure 1) as a conceptual model. The motivating factors are usability, sociability, social presence, multi-modality, user-generated content, and hedonism (hedonic motivation).

The following hypothetical prepositions were derived to guide toward the development of the conceptual model.

1. Mediated by attitude, usability affordance of multiscreen social TV platforms predicts use intention.
2. Mediated by attitude, sociability affordance of multiscreen social TV platforms predicts use intention.
3. Mediated by attitude, social-presence affordance of multiscreen social TV platforms predicts use intention.
4. Mediated by attitude, multi-modality affordance of multiscreen social TV platforms predicts use intention.
5. Mediated by attitude, user-generated video content affordance of multiscreen social TV platforms predicts use intention.
6. Mediated by attitude, hedonism affordance of multiscreen social TV platforms predicts use intention.

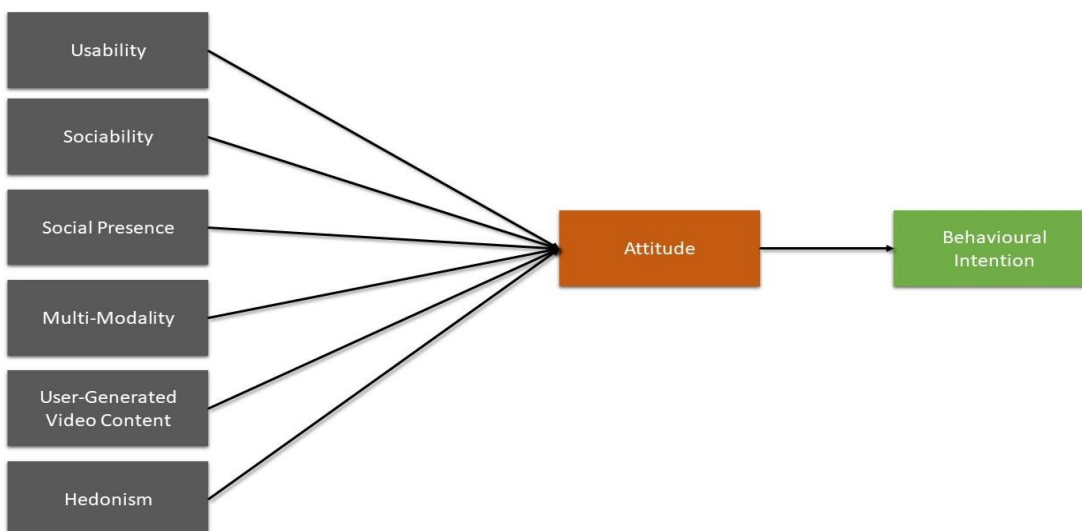


Fig. 1. The conceptual model derived from reviews of existing and past literature

5. Conclusion

This review research has yielded an eight-factor conceptual model designed on a three-dimension theoretical structure. With the scarcity of the literature on multiscreen social TV system use intention, eight important variables have been identified as playing various roles (six dependent variable, one mediating variable, and one dependent variable) as nuanced in derived conceptual model shown in Figure 1. Because research on social TV systems is still ongoing, by no means does this article claims to have exhausted identifying the critical motivating factors of multiscreening.

Social interactivity in an online community gives users the feelings of ease and comfort in order to engage in interpersonal communication in the technology-enabled space. Past studies found that using social media while watching TV could enhance viewers' feelings of sociability and social presence. Yet, the fact that relatively fewer studies to test social TV features in the fields with potential adopters, limited the understanding of social TV users' responses and attitudes/intentions (e.g., [Brown-Devlin et al., 2021](#); [Lin, 2018](#); [Shin, 2013](#); [Shin, Kim, 2015](#)).

This article provides multiscreen social TV consumer insights for TV industry players and researchers. Arguably, users' foremost priority of social TV is instant, seamless video viewing experiences across screens, despite of mobility and disruption. Although interactions via social TV's built-in multi-modality communication could enhance users' perceived sociability and social presence, switch costs could be too high when potential users are accustomed to utilising existing social media platforms such as Facebook, Twitter, and Instagram to interact with friends or like-minded strangers during video viewing. Similar to the diffusion of Google+, which is no longer available since April 2019 ([Google, 2019 January](#)), it is difficult to attract people to adopt a new social media platform when their friends are not there yet ([Kim et al., 2020](#); [Lin, 2018](#)). Therefore, diffusing multiscreen social TV system can take some time to appeal to specific interest groups or communities.

Finally, the review sheds light about user preferences in multiscreen patterns and social features that will help improve the user-centric design of multiscreen social TV systems for stakeholders in the social television industry. Future research can improve the design of a standardised conceptual model. In the future, a survey of potential adopters can improve result generalisability because conducting lab-based experiments is only able to test a causal relationship between variables like age and preferences of multiscreen patterns, or social features of social TV. Future research should also investigate how social TV systems' communication modalities such as text messaging, audio, and video chatting can increase users' perceived sociability and social presence during video viewing and the impact on users' attitudes and use intention.

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