What drives live-stream usage intention? The perspectives of flow, entertainment, social interaction, and endorsement

Chia-Chen Chen*, Yi-Chen Lin

Department of Management Information Systems, National Chung Hsing University, Taiwan No. 250, Kuo Kuang Rd., Taichung City 402, Taiwan, ROC

A R T I C L E   I N F O

A B S T R A C T

Live-stream is the real-time audio and video transmission of an event over the Internet. Since a live-stream can also be interactive, it has some of the characteristics of a small community. People often become addicted to television, movies, or video blogs for the sake of entertainment. They can also become blind and obsessive about worshiping popular idols. Moreover, their willingness to use media is affected by their own perception of the media or their expectation of the benefits. This study therefore proposes four key factors: flow, entertainment, social interaction, and endorsement. We use path analysis to test their relationships with attitude, perceived value and watching intention to understand the influential factors and channels that induce audiences to watch live-streaming events.

Analysis of 313 valid responses to a survey questionnaire indicate that approximately 65% of Taiwanese people watch live-streams via social network sites. In general, they watched live-streams simply because they liked to do so. The main reason behind their favorable impression of live-streaming was that live-streams made people happy and relieved stress. Secondly, people were attracted by the charm of the streamers, but the attraction differs slightly by gender. Females developed a more favorable impression of a live-stream when they admired the streamer. Males, on the other hand, developed a more favorable impression of a live-stream when they interacted with the streamer or other audience members. Young people tended to like live-streaming because it gave them a sense of flow, while older people were not affected by flow. This study contributes to the development of live-stream services and future studies on live-streaming.

1. Introduction

Live-streaming is a medium that records and broadcasts in real-time. Transmission is accomplished using one or more kinds of communication technology that allow images and sound to be immediately sent from one location to another, enabling audiences to feel like they are present at the event. Since its establishment in 2011, Twitch has become the world's largest live game platform. As of 2016, Facebook and YouTube have also successfully provided live-stream services. The applications of live-streaming have become more diverse over time. In addition to such common applications as live videogame play, live sporting events, and other live events, live-streams on hot topics, product experiences, talent shows, life sharing, and erotic arousal have been broadcast by ordinary people (i.e., the general public). There are even more unexpected applications waiting to be explored. According to InsightXplorer (2016), 93.8% of Taiwanese people were aware of live-stream services, and 41.3% of them had watched a live-stream. In 2016, the TWNIC

(Taiwan Network Information Center) also pointed out that 21.9% of Taiwanese people who use the mobile internet also used a video live-stream platform. The Ericsson Mobility Report (Ericsson ConsumerLab, 2016) found that, in the U.S., 65% of heavy users of mobile apps also used a live-stream app; and that this same usage ratio was also very close South Korea.

The rapid development of live-stream services has changed people's viewing behaviors. Chinaidr.com (2017) pointed out that live-streaming is likely to become part of the audio and video mainstream as well as the social mainstream in the future. Most past studies on live-streaming have focused on Twitch (Sjöblom and Hamari, 2017; Vosmeer et al., 2016; Nascimento et al., 2014) and have put less emphasis on other live-streams. Over the years, developments in technology and the internet have ensured that low levels of usefulness and ease of use are no longer obstacles to users' willingness to use live-streaming; therefore, there is no need to further explore those aspects. The content of live-streaming is also no longer limited to live videogame play: a wider variety of live-streams has been developed. As new applications of live-streaming have appeared, audiences' viewing behaviors are likely to have changed. Correspondingly, the current affecting factors may be different from those that have been explored in past studies. This study addresses the following research questions:

- What factors influence audiences to watch live-streams? How do these factors correlate, if at all?
- Do audiences watch live-streams because they like the activity or because the sense of benefits derived from live-streaming triggers audiences' willingness to watch?

2. Derivation of theory and hypotheses

2.1. Flow theory

Flow is a state of mind in which people find themselves extremely devoted to their current activity. Flow theory was first proposed by Csikszentmihalyi (1975) to explain how complete engagement in an activity induces a special mental state in which the level of concentration allows the participant to filter out other unrelated perceptions. Ghani and Deshpande (1994) believed that the state of flow is characterized by concentration and enjoyment. That is, a state of flow exists when people maintain concentration and perceive psychological enjoyment while engaging in an activity. Wu (2009) studied the motivations of social platform users and noted that while platform developers should design for ease of use and usefulness, they should also enhance users' ability to reach a mental state of flow, inducing users to form a positive attitude so they will continue to use the platform.

This study defines flow as the condition in which the people watching a live-stream is so focused on the content of that live-stream that they are not easily disturbed by the outside world; they forget the time and even forget things they ought to do. Past studies on social platforms (Hung et al., 2016), instant messaging (Lu et al., 2009), and websites (Van Noort et al., 2012) have pointed out that flow affects attitude, thereby impacting the intention to use the particular system or function. Furthermore, scholars (Hung et al., 2010) have noted that flow affects the perceived value of a website, thereby affecting customer loyalty, patronage intension, and donations. Therefore, this study proposes the following two hypotheses:

H1a. "Flow" positively impacts audiences' "attitude" toward a live-stream.

H2b. "Flow" positively impacts audiences' "perceived value" of a live-stream.

2.2. Entertainment

Entertainment is a kind of activity that causes the audience to maintain concentration and interest. Its purpose is to make the audience feel happy or interested, or to relieve pressure by offering a temporary escape from reality and allowing them to put their worries behind them. Bosshart and Macconi (1998) defined the experience of entertainment as pleasure, thrill, relaxation and diversion. A live-stream is, by nature, a type of audio and video medium, and, thus, is characteristically entertaining. Related studies on usage and satisfaction theory have noted that audiences hope to use media for entertainment and to relieve stress (McQuail, 2010).

Past studies have found that entertainment positively impacts attitude, thereby impacting the willingness to recommend and the intention to use a given social platform (Curras-Perez et al., 2014). Kim et al. (2013) noted that hedonic motivation (fun, enjoyment, and pleasure) impacts perceived value, thereby impacting smartphone addiction. Studies regarding websites have found that entertainment impacts perceived value, thereby impacting loyalty to a given website (Kim and Niehm, 2009). The interestingness of the website impacts flow, which in turn impacts customer satisfaction and purchase intention (Hsu et al., 2012). Therefore, this study proposes the following three hypotheses:

H2a. "Entertainment" positively impacts audiences' "attitude" toward watching a live-stream.

H2b. "Entertainment" positively impacts audiences' "perceived value" of watching a live-stream.

H2c. "Entertainment" positively impacts audiences' "flow" when watching a live-stream.

2.3. Social interaction

Social interaction refers to a process in which people communicate and work or play together in society. Jaegher et al. (2010)