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Interpersonal influence on online game choices

Sang Yup Lee *

Michigan State University, Telecommunications, Information Studies, and Media, Quello Center for Telecommunication Management and Law, 404 Wilson Rd., Room 406, Communication Arts & Sciences Building, East Lansing, MI 48824-1212, United States

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ABSTRACT

Several theories stress the importance of interpersonal influence on an individual's adoption of a product or service. However, there has been little research that empirically examined how online friends influence an individual's online product choices. This study examines the effect of a game player's online friends who adopted a game earlier than the player on the likelihood that the player adopts the game. Two main factors considered in this study are: (1) the number of online friends who adopted a game earlier and (2) the strength of ties between the player and the player's online friends who adopted the game earlier. Using a hazard model with data on 1,668 game players' gaming activities and relational connections, we find (1) the likelihood that a player adopts a particular game increases the more her online friends adopted the game earlier, and (2) the influence of the prior adopter friends on the likelihood that a player adopts the game varies with the strength of ties between the player and her prior adopter friends. But the *p*-values of the coefficients for the corresponding independent variables are larger than the conventional cutoff point, 0.05. Possible causes for this statistical insignificance are discussed in the text.

1. Introduction

Several theories stress the importance of interpersonal influence on a person's adoption of a product. Examples include diffusion of innovations theory (Rogers, 2003), theory of planned behavior (Ajzen, 1991), two-step flow theory (Katz, 1957; Lazarsfeld, Berelson, & Gaudet, 1944), and peer influence theory (Deutsch & Gerard, 1955).

A large number of studies have empirically examined interpersonal influence on adoption behavior and found an important role for interpersonal influence. For example, Childers and Rao (1992) found that the influence of family and friends on a consumer's product choice was significant and the extent to which a consumer's product choice was influenced by others varied with the person's susceptibility to interpersonal influence. Mangleburg, Doney, and Bristol (2004) found that an adolescent's shopping behavior and attitude toward a brand was influenced by friends shopping with her, because an adolescent tried to create images favorable to her friends by buying what they liked. Lu, Yao, and Yu (2005) found an important role for interpersonal influence in a person's adoption of new mobile Internet services. Harrison, Mykytyn, and Riemenschneider (1997) examined small business executives' decisions to adopt information technology using the theory of planned behavior. They found that the expectations of others close to an executive had a statistically significant influence on the executive's decision on information technology adoption.

Even though there are many studies of interpersonal influence on product adoption, most of them have examined the topic in offline settings. The Internet has become a popular place where people go to buy products and consume media services. Furthermore, many of the Internet sites where people purchase products and consume media services provide their users with social features that enable them to connect with other users and share information about their activities. Examples include Facebook.com, YouTube.com, eBay.com, IMDb.com, SecondLife.com, and Kongregate.com. These sites have their own social features that enable a user to interact with other users on their sites. In addition to these sites, there are many other sites offering social features through social network sites such as Facebook and Twitter so that their users can share information about their activities on the sites with their friends. Examples of those sites are Hulu.com, NYTimes.com, ABC.com, and Amazon.com.

The existence of these information sharing behaviors and interactions with other online friends, who are defined as people with whom the individual interacts on the Web whether the individual interacts with them offline as well, on websites with social features suggests that an individual's online product choices may be influ-

* Tel.: +1 517 285 5999.
E-mail address: leesan61@msu.edu

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enced by her online friends. First, an individual using a website with social features may become aware of what her online friends have purchased or have consumed on the site through information they share about their consumption activities. According to the diffusion of innovations theory (Rogers, 2003), becoming aware of a product is a necessary first step in the process of product adoption. Thus, an individual's online product adoptions can be influenced by the person's online friends if the person can observe information about her online friends' consumption activities. Second, the theory of planned behavior and peer influence theory suggest that an individual is likely to behave similarly to others close to her in order to create a favorable image with them. If these theories apply to online friends, a person's online product choices are likely to be influenced by them. However, there is little research that has examined how online friends influence an individual's online product choices.

Many studies have examined other people's online influences on an individual's product choices and the ways that an individual consumes products and media services. But most of those studies have looked at the impact of online word-of-mouth information, such as product recommendations and product reviews (e.g., Chevalier & Mayzlin, 2006; Duan, Gu, & Whinston, 2008; Huang & Chen, 2006; Senecal & Nantel, 2004; Steffes & Burgee, 2009). The foci of these studies were on product reviews or comments generated by other consumers with no direct connections to the consumer making a product choice and none of those studies asked how online friends affect a person's choices among online services.

On the other hand, there are several studies that have examined information diffusion processes within social networks in online settings. Even though those studies did not focus on interpersonal influence on an individual's online product choices, they deserve to be reviewed in this study because information spread is important in an individual's product adoption. For example, Bakshy, Karrer, and Adamic (2009) studied information spread among users of Second Life and found that an individual's social networks on Second Life play an important role in spreading information among individuals on Second Life. Bakshy, Rosenn, Marlow, and Adamic (2012) examined information diffusion among users of Twitter and found that interpersonal interactions are an important route through which information spreads among Twitter users. Ugander, Backstrom, Marlow, and Kleinberg (2012) examined how the probability of an individual joining Facebook after receiving invitations from her friends who were already Facebook users to join Facebook varies with the number of Facebook friends who invited the person to join Facebook and the structural diversity of her personal social network consisting of those friends, which was measured as the number of connected clusters within the social network in that study. They found that the probability of an individual joining Facebook was influenced more by the number of connected clusters among Facebook users who invited the person than the number of friends. Although these studies did not examine interpersonal influence on an individual's online product choices and were implemented in specific contexts, the strong influence of interpersonal interactions on information diffusion within online settings suggests that an individual's online product choices may also be influenced by her online friends.

As an attempt to fill gaps in the literature identified above, this paper examines effects of online friends on product choices in the context of online casual games. That is, this paper studies how players with whom an online casual game player interacts online affect the player's game choices.

There is no established definition of an online causal game, yet online casual games usually refer to online video games developed for mass consumption even for those who would not normally regard themselves as a 'gamer' (International Game Developers Association (IGDA), 2009). Online casual games possess certain characteristics in common: they are easy to learn; they require a small amount of time to be played; and online casual game players play casual games mainly for fun and relaxation (IGDA, 2009). Online casual games are offered to game players through several different types of platforms such as web browsers on PCs (e.g., via online casual games portal sites and social networking sites), consoles, smartphones, and tablet PCs. This study focuses on online casual games portal sites because (1) online casual game portal sites provide a suitable context in which online friends' influence on game choices can be well examined, (2) they constitute one of the most commonly used platforms for accessing online casual games (Liew, 2013), and (3) it is easier to collect the data required for this study from online casual games portal sites than from other platforms that host online casual games.

A typical online casual game portal site has several social features. On an online casual games portal site, game players can be friends with other players. In this study, a game player's friends on a game portal site are defined as other players whom the player is directly connected to on the portal site. Game players are motivated to become friends with other game players and interact with them, because there are many games that encourage collaboration among game players and competing (or playing) with others can be more fun, and becoming friends with other players makes it easy for a player to collaborate and interact with them. Once a game player has become friends with another player, the player can have chats with the friend via a dedicated communication channel between them. Furthermore, the player can observe what her friends have done and are doing on the site. Thus, it is possible that a player's gaming behavior is influenced by her friends on an online casual games portal site.

These social features of online casual games portal sites and the accessibility on these portal sites of critical data on game players' relationships and interactions with others, their game choices, and their gaming behaviors make it possible to examine the influence of interpersonal interaction on players' game choices.

On the other hand, we should note the context that online casual games provide is somewhat different from the offline contexts to which existing theories of interpersonal influence on product choices (e.g., diffusion of innovations, theory of planned behavior, and peer influence) have been applied. Thus, it is not sure how well the existing theories can be applied to online casual games. First, for example, influence of offline friends on a person's product choices might be different from that of online friends on a person's online product choices. This might be because an individual might interact with online friends more (or less) frequently than with offline friends or online friends might exert less (or more) normative influence on an individual's product adoption than do offline friends. Second, in general online game player possess unique characteristics distinguished from other types of game players. That is, they play games for a short amount of time and play mainly for fun and relaxation. These characteristics of casual game players might affect the extent to which a causal game player's game choices are influenced by other players with whom the player interacts. Thus, by examining interpersonal influence on an online casual game player's game choices, we can extend our understanding on how well the existing theories of interpersonal influence on product choices can be applied to online settings. It also should be noted, however, that the results found in this study can hardly be generalized to other online settings that have different characteristics from those of online casual games.

In addition to constituting a suitable context for examining the influence of personal relationships and interpersonal interactions