



Examining the factors that influence early adopters' smartphone adoption: The case of college students



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ABSTRACT

The influence of early adopters on potential adopters' decisions of whether or not to adopt a product is known to be critical. In this paper, we examine the factors that influence the adoption behavior of smartphone early adopters by looking at smartphone adoption behavior of college students, because a large portion of the early adopters of smartphones are college students. Our focus is on the effect of normative peer influence on a college student's smartphone adoption. We also examine the influence of other factors such as self-innovativeness, self-efficacy, the decision maker's attitudes towards a product, financial burden of using the product, familial influence, and other demographic factors (e.g., age and gender). College students' adoption behavior is studied using logit and probit choice models developed based on random utility theory. The discrete choice models are empirically estimated using survey data. We find important influence of friends, financial burden, and other family members on the smartphone adoption of college students who adopted smartphones earlier than other students.

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1. Introduction

The influence of early adopters on potential adopters' decisions about whether or not to adopt a product is critical (Rogers, 2003). Early adopters are known to have the highest degree of opinion leadership and help trigger a critical mass (Rogers, 2003). Due to the critical influence of early adopters on a product's adoption in a community, it is important to understand what factors influence early adopters' decisions about the adoption of a new product.

When it comes to electronic devices such as smartphones, tablet PCs, and video game consoles, college students tend to adopt those sorts of electronic devices earlier than do other demographic groups. Especially with respect to smartphones,¹ market data show that college students are early adopters. According to a report by Pew Internet (Smith, 2011), 35% of adults in the U.S. owned a smartphone in 2011 and smartphone adoption rates vary depending on age. The report found that younger people tend to adopt a smartphone earlier than older people. For example, 52% of 18–29 year olds owned a smartphone in 2011 while only 24% of 50–64 year olds owned a smartphone in the same year. Furthermore, a report from eMarketer (2012) shows that 61% of college students owned a smartphone in 2011. This higher smartphone adoption rate among college students than among people in other age groups indicates that a large portion of the early adopters of smartphones are college students.

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¹ In the present study, a smartphone is defined as a mobile phone that offers advanced capabilities, often with PC-like functionality, and that is no longer limited to making voice calls. iPhone, Android phones, Blackberry phones, Palm Pre phones are examples of a smartphone.

In addition to the fact that college students tend to adopt smartphones earlier than other demographic groups, the fact that the factors that influence college students' smartphone adoption are likely to influence their adoption behavior of other electronic devices (e.g., tablet PCs and video game consoles) in a similar way also makes it important to study college students' smartphone adoption behavior.

Despite the importance of studying college students' smartphone adoption behavior, to the best of our knowledge, no studies have examined such behavior. In this study, we examine the factors that influence smartphone adoption behavior of the college students who adopted a smartphone earlier than other college students. For this, we analyze smartphone adoption behavior of the college students who adopted smartphones in 2010. According to a report by Nielsen (2010), only 28% of mobile subscribers in the U.S. had smartphones in 2010 and many of these were college students. Thus, the college students who adopted smartphones in 2010 can be regarded as early adopters of smartphones.

In this study, we examine the influence of the factors that have been identified as important by prior studies in consumers' product adoption behavior on college students' smartphone adoption. Those factors include normative peer influence (Ajzen, 1991; Bearden et al., 1989; Ford and Ellis, 1980; Moschis, 1976), self-innovativeness (Hirschman, 1980), self-efficacy (Eastin and LaRose, 2000), decision maker's attitudes towards a product (Ajzen, 1991), the financial burden for using a product, and other demographic factors (e.g., age and gender). In addition to these factors, we also look at familial influence, because it has been found that familial influence is an important factor in college students' consumption behavior (Childers and Rao, 1992).

Among those factors, we specifically focus on the effect of normative peer influence on a student's smartphone adoption, because students' consumption behavior is well known to be easily and significantly influenced by their friends (Garnier and Stein, 2002; Maxwell, 2002; Thornberry and Krohn, 1997; Barry and Wentzel, 2006).

In order to measure the normative influence of friends who have smartphones on a college student's smartphone adoption decision more accurately, we consider two different factors. The first factor is the number of close friends who have smartphones; the second is a student's susceptibility to normative peer influence. We then create a new measure of normative peer influence on smartphone adoption by multiplying the first factor with the second factor.

In addition to normative peer influence, we also consider the influence of a college student's financial affordability on the student's smartphone adoption decision as another main explanatory variable. The influence of a college student's financial affordability on her consumption behavior can be important, mainly because many college students are financially dependent on their parents. As financial factors, we include a student's income (or the amount of money that a student has at her disposal in a month), whether the price of the smartphone is paid by the parents or the student, and whether the smartphone usage costs are paid by the parents or the student.

We study college students' adoption behavior using logit and probit choice models. To construct the discrete choice models, random utility theory is used. The discrete choice models are empirically tested with survey data.

This paper is organized as follows. Section 2 reviews prior studies of the topic and hypotheses are developed. In Section 3, the discrete choice model is developed. Section 4 explains how data were collected. Section 5 provides the results. Section 6 discusses the results.

2. Literature review and hypotheses

2.1. Studies about normative interpersonal influence on choice behavior

In this subsection, we first review the studies about the effects of normative interpersonal influence on an individual's behavior, because the variable is of our main interest. Then, related hypotheses are developed.

There have been a variety of studies that emphasize the importance of interpersonal influence (also called peer influence, in the present study, both terms are used interchangeably) on an individual's behavior. One of the theories frequently used when studying interpersonal influence on an individual's behavior is the theory of planned behavior (Ajzen, 1991). Among the three explanatory variables of the theory (i.e., attitudes, subjective norms, and perceived behavior control), the 'subjective norms' variable is related to normative interpersonal influence. According to the theory, 'subjective norms' refers to the perceived social pressure to perform or not to perform the behavior in question.

In addition to the theory of planned behavior, other scholars (e.g., Bearden et al., 1989; Ford and Ellis, 1980; Moschis, 1976) also stressed the importance of interpersonal influence in consumers' purchasing behavior.

Burnkrant and Cousineau (1975) defined normative influence as influence that affects a person's tendency to conform to the expectations of others. Moreover, normative influence is divided into value-expressive influence and utilitarian influence (Bearden and Etzel, 1982). Value-expressive influence occurs when a person has a desire to enhance his or her self-image via an identification process with others. On the other hand, utilitarian influence occurs when a person tries to comply with the expectations of others to obtain rewards or avoid punishments.

According to Bearden and Etzel (1982), the level of others' influence on a person's consumption behavior varies depending on whether a good is publicly consumed or it is privately consumed. That is, a consumer is more influenced by others when she uses a good publicly. A mobile phone is a publicly-used good. Hence it is likely that people are influenced by others when they buy a mobile phone and use it.

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