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Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the Internet and mobile banking

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ABSTRACT

This study posits that all innovations meet consumer resistance, and overcoming this opposition must occur prior to product adoption. Factors driving service innovation resistance remain unclear. To better understand this behavior, the present study examines how five theory-driven adoption barriers—usage, value, risk, tradition, and image – as well as three consumer demographics—gender, age, and income—influence consumer adoption versus rejection decisions in Internet and mobile banking. Data from two large nationwide surveys conducted in Finland (n = 1736 consumers) test hypotheses using binary logit models comparing mobile banking adopters versus non-adopters, mobile banking postponers versus rejecters, and Internet banking postponers versus rejecters. Study results find that the value barrier is the strongest inhibitor of Internet and mobile banking adoption. In addition, the image barrier slows mobile banking adoption, and the tradition barrier explains the rejection of Internet banking. Gender and age significantly predict adoption and rejection decisions. The results demonstrate notable differences between these seemingly similar service innovations.

1. Introduction

Developing Internet and mobile technologies provide innumerable service innovations for consumers. These diversifying services are increasingly important for companies trying to create a competitive advantage in the market, retain their customer base, and cut costs. However, most innovations face resistance from the market, delaying or even preventing adoption. Nevertheless, the innovation literature largely demonstrates a pro-change bias—innovations are always good, improvements over existing products or services, and consumers always want to adopt the newest products and services (Ram, 1987; Sheth, 1981). Consequently, the innovation literature predominately restricts inquiry to adoption and diffusion perspectives (Gatignon & Robertson, 1985, 1989; Ram, 1987; Talke & Heidenreich, 2014). Research investigating customer resistance to innovations remains surprisingly scarce (Kleijnen, Lee, & Wetzels, 2009). To date, little research examines the factors inhibiting the adoption process or causing rejection behavior. Consequently, the barriers consumers feel towards innovations require further study (Antioco & Kleijnen, 2010).

While "innovation" means a product or service that a consumer perceives as new, "innovation resistance" refers to "resistance offered by consumers to changes imposed by innovations" (Ram, 1987, p. 208). Understanding resistance to innovations is important because many businesses face a high production failure rates that stem from consumer resistance (Ram & Sheth, 1989). Firms therefore need to understand the different consumer resistance drivers to reduce product failure (Ram, 1989) and to develop measures to boost adoption rates (Talke & Heidenreich, 2014).

Current literature relating to innovations arguably falls short in at least four other research areas. First, the mainstream research into technology adoption and acceptance involves technology implementation and use in the workplace (Davis, Bagozzi, & Warshaw, 1989; Rogers, 1983; Venkatesh, Morris, Davis, & Davis, 2003), and the consumer's view receives less attention (Ferreira, da Rocha, & da Silva, 2014). Second, prior innovation research appears to overlook service innovations and focusing on tangible products (Bitner & Brown, 2008). Advancing understanding of service innovations is vital, as services represent a large share of current academic activity and growth potential in most countries (O'Cass, Song, & Yuan, 2013). Indeed, Lusch and Vargo (2006) suggest that service embeddedness makes a case for further investigation into service innovation. Third, the literature disregards demographics' role in consumer decisions relating to service innovation and thus calls for more attention to these adopter-specific factors (Choi, Kim, & Kim, 2011; Lee, Park, Chung, & Blakeney, 2012). Fourth, prior studies argue that the service type offered plays an important role in consumers' adoption decisions (Nysveen, Pedersen, & Thorbjørnsen, 2005). While Teo and Pok (2003) suggest that studying seemingly similar innovations are still rare.

To address these research gaps, the present study answers the call for empirical research to test innovation-specific and adopter-specific

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factors affecting consumer adoption and rejection behavior (e.g., Talke & Heidenreich, 2014). The study focuses on Internet and mobile banking service innovations that offer consumers unlimited remote access. While these service innovations appear seemingly similar, historically their adoption patterns are radically different. For example, Finland – a leading country in Internet banking adoption – has an 86% adoption rate for individual online bank usage (Eurostat, 2014), but the overall mobile banking usage rate is around 11% (TNS Gallup, 2012). However, mobile banking trends predict great potential for the service because around 30% of individuals express interest in adopting the service in the future (TNS Gallup, 2012). This evidence suggests that significant growth opportunities remain (see Shaikh & Karjaluoto, 2015).

The following section reviews the relevant literature and discusses the context of the study. Section 3 presents the research model and suggests hypotheses for the empirical study. Section 4 discusses the method and presents the study's data. Section 5 presents the results. Finally, Section 6 provides discussion, and Section 7 draws theoretical implications and proposals for management practices.

2. Theoretical background

2.1. Adoption, postponement, and rejection

The innovation diffusion literature recognizes two research streams. The first stream focuses on innovation adoption and originates with Rogers's (1983) seminal work and innovation acceptance (Ajzen, 1991; Davis et al., 1989). The other stream calls attention to consumer resistance to innovations (Ram, 1987, 1989; Ram & Sheth, 1989; Sheth, 1981). Although understanding adoption behavior is important, identifying adoption barriers arguably represent a greater opportunity for practitioners. Few new products and services become commercially successful, superior innovations (Woodside, 1996) and a main cause for failure is consumer resistance (Ram & Sheth, 1989).

Surprisingly, few studies focus on non-adopters' resistance behavior. Szmigin and Foxall (1998) identify *postponers*, who may find the product acceptable, but they postpone the adoption, and *rejecters*, who do not intend to adopt the innovation. While adoption postponement suggests future intention, rejection terminates the innovation decision process. The consumer behavior literature identifies actual system usage and behavioral intention as the two most essential dependent variables (Wu & Du, 2012); however, research focuses primarily on intention (Straub & Burton-Jones, 2007). Consequently, Wu and Du (2012) argue that usage is certain and behavioral intention is not a good substitute. Surprisingly, few scholarly articles focus on both behavioral intention and actual usage behavior. The current study's contribution includes focusing on actual adopters versus non-adopters, as well as on non-adopters who postpone their final adoption decision, versus those who reject the innovation.

Rejection only represents a consumption decision at a given time and should not be viewed as a derogatory characteristic of an individual. This distinction is important, as marketers can influence future behavior by understanding and reacting to the rejection drivers (Ram, 1989). Regarding postponers, adoption only begins after consumers overcome their initial resistance (Ram, 1987). The literature exploring individuals' interactions with new technologies posits that consumers simultaneously express both favorable and unfavorable views about the innovations (Ferreira et al., 2014); resistance and adoption can coexist over the innovation's lifetime (Ram, 1987, 1989). This behavior relates to Rogers's (1983) post-adoption phase when individuals or other decision-making units discontinue using an innovation after the adoption decision. This phenomenon refers to the literature on post-adoption behavior and the continuance/discontinuance decision (Choi et al., 2011; Huh & Kim, 2008). These findings imply that innovation resistance is a normal consumer response towards innovations.

The recent literature distinguishes between active and passive innovation resistance (Heidenreich & Spieth, 2013; Talke & Heidenreich, 2014). The present study focuses on active innovation-specific consumer resistance. Initially, scholars explain this phenomenon through two constructs: habit or satisfaction with an existing behavior, and perceived risks associating with innovation adoption (Sheth, 1981). Ram and Sheth (1989) further divide consumer resistance into five distinct barriers: usage, value, risk, tradition, and image.

2.2. Adoption barriers

Usage, value, and risk are functional barriers. Ram and Sheth (1989) propose that the *usage barrier* occurs when an innovation is incongruent with existing workflows, practices, or habits. The usage barrier could relate to the service's usability and necessary changes from the consumers' perspective (Laukkanen, Sinkkonen, Kivijärvi, & Laukkanen, 2007). This behavior relates to the concept of ease-of-use in the Technology Acceptance Model (TAM) (Davis et al., 1989). Furthermore, perceived ease-of-use closely parallels the concept of complexity (Teo & Pok, 2003), which Rogers (1983) defines as the degree to which people perceive an innovation as being difficult to understand and use. This cognitive effort required to adopt an innovation generates resistance (Ram, 1989).

The *value barrier* derives from an innovation's performance and monetary value compared to alternatives (Ram & Sheth, 1989), relates to TAM's perceived usefulness and Rogers's (1983) relative advantage, and suggests that an innovation must be superior to replace an existing product (Ferreira et al., 2014). Ram and Sheth (1989) argue an innovation must offer superior performance-to-price to the alternatives for consumers to change their current behavior.

The *risk barrier* refers to the degree of risk inherent in an innovation (Ram & Sheth, 1989). Consumers often experience doubts relating to innovation adoption in the form of different risk types. Scholars initially relate perceived risks to fraud or product quality, but with today's increasing online activity, perceived risk largely relates to the financial, psychological, physical, or social risks of online transactions (Forsythe & Shi, 2003).

Tradition and image represent psychological barriers. The *tradition barrier* comes into play when an innovation is incompatible with an individual's existing values and past experience, as well as social norms (Ram & Sheth, 1989). Consumers have routines and habits, which may be very important to them, arising from frequent use of a product or service over a long period of time (Kleijnen et al., 2009). Consumers also have social and family values and follow social norms. Behavior contrary to these values and norms invokes the tradition barrier. The tradition barrier mainly implies the disruption an innovation creates to daily routines. Conceptually, the tradition barrier relates to the concept of compatibility (Rogers, 1983).

Finally, innovations attain a certain identity from their origins, such as the product category to which they belong, their country of origin, or their brand. In the innovation resistance literature, image serves as an "extrinsic cue" which consumers base their adoption/rejection decisions (Kleijnen et al., 2009, p. 346). If consumers dislike these associations, they develop a negative image of the innovation (Ram & Sheth, 1989), creating the *image barrier*. This reasoning links to various forms of fear of computers (Kay, 1993) or towards the technology (Meuter, Ostrom, Bitner, & Roundtree, 2003). The image barrier further relates to technology readiness (Parasuraman, 2000), referring to an individual's overall mental state regarding technology in general (Ferreira et al., 2014).

3. Research model and hypotheses

3.1. Usage, value, risk, tradition, and image barriers

Combining Rogers (1983) innovation diffusion model with the view of Szmigin and Foxall (1998) suggests that individuals encountering innovations must decide to adopt, postpone, or reject them. Consumers

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