SERVICE ENCOUNTERS AND TECHNOLOGY: THE ROLE OF ATTACHMENT STYLES IN TECHNOLOGY READINESS AND TECHNOLOGY ACCEPTANCE

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" There isn't enough room in your mind for both worry and faith. You must decide which one will live there" Anonymous.

First I want to thank my parents Delphia Ridley and James Nash for giving me the support and encouragement to keep the faith to accomplish this goal. To my grandparents Dessie and Chester York even though you are no longer with us, the lessons you taught me about motivation and personal accomplishment continued to inspire me during those late nights and long days. I will do what is in my power to continue to carry your legacy to the next generation of never giving in or giving up.

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Abstract: Amid ongoing innovation of technology and technological devices, service firms are continuously searching for alternative ways to deliver services to their customers. Service firms can struggle trying to strike a balance between self-service technology and the human interaction of the service encounter. This study examined the role of attachment theory in the relationship between technology readiness and technology acceptance. The objective of the research was to gain a better understanding through attachment theory of how consumers' cognitive processes will affect their perceptions of technology as a delivery mechanism of the service encounter. The study was conducted by surveying current clients of a financial services firm to determine their technology readiness, technology acceptance, and attachment style. The results showed that technology readiness is a key driver to technology acceptance; however, attachment styles showed a limited moderation effect on the relationship between technology readiness and technology acceptance.

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CHAPTER I

INTRODUCTION

New technologies are changing the way service firms interact with their customers. The increasing use of information and communication technologies in the service industry has resulted in an evolution in the collaboration between service providers and their customers (Gelderman, Ghijsen, & van Diemen, 2011). Service companies are requiring active participation by customers in the service delivery process with technology tools as the conduit (Reinders, Dabholkar, & Frambach, 2008). As the intensity of competition increases, more companies are offering technology-based products and services to satisfy and exceed the ever-changing expectations of the customers (Demirci & Ersoy, 2008). It is now critical for service firms to understand how to use technology as a delivery and a customer interaction mechanism for their service encounters.

To improve efficiencies and build stronger relationships with their customers, service firms have begun to implement various types of technologies to deliver services (Mincu & Gruber, 2013). Advances in technology have presented service providers with an increasing number of alternatives to human interaction, the historically accepted method of service delivery (Curran, Meuter, & Surprenant, 2003). Self-service as a delivery model breaks that traditional mold human interaction. In many industries, such as finance and education, self-services have become a common way of offering and providing services (Schumann, Wünderlich, &

Wangenheim, 2012). Technology plays an important role, but the key is trying to gain a depth of understanding regarding what makes customers accept technology and find greater value in the self-service advanced technologies facilitate.

In response to the technology movement, customers have begun to show favorable attitudes towards technology, but the research about the effects technology and technology usage have on the customer-firm relationship is scarce (Froehle, 2006). Growing numbers of customers interact with technology, instead of interacting entirely with a service firm employees, to create service outcomes (Meuter, Ostrom, Roundtree, & Bitner, 2000). Therefore, understanding the role of technology in customer interactions and how it is delivered in a service firm has become important. The introduction of a service delivered via technology does not always lead to positive customer attitudes or customer usage of the services (Elliott, Meng, & Hall, 2008). Without perceived benefits, some customers will likely refuse to use the technology-delivered service or postpone using it until forced to (Liljander, Gillberg, Gummerus, & van Riel, 2006). Thus, gaining an in-depth understanding of what drives or inhibits consumers' technology acceptance (adoption and usage) is an important research priority (Lam, Chiang, & Parasuraman, 2008).

Relative to product-oriented firms, service firms typically deliver some degree or variation of service to its customers, and so client interaction is a focal point for service firms. The goal is to have the customer do business with the firm. Therefore, the question for leaders of those service firms is how to facilitate customer interaction with the technology as a means of doing business with the organization. Another important consideration is to explore whether the technological interaction will enhance or detract from building a relationship with the client. Traditionally, service firms have depended on customer behavior research to develop marketing campaigns to focus on the human interactions. However, the growing demand for technology and the innovation of various technology devices to deliver service leaves firms with a desire to understand how customers will interact with technology as opposed to human interactions. As technology becomes more ubiquitous in society,

researchers begin to study the role of technology in service encounters. Currently customers enjoy an unprecedented variety of technology products. Since most technology demonstrates some level of satisfactory functionality and usability, service firms must use this technology as a delivery mechanism to distinguish themselves from their competitors to foster favorable emotions by consumers towards those firms (Liu & Karahanna, 2007). Deliveries of services in typically high-touch firms traditionally have been conducted with some type of human interaction. In that self-services are highly standardized service processes, individual customer technology readiness is a core acceptance driver or barrier to technology acceptance (Schumann et al., 2012).

Two key steps must be taken to understand the role technology plays. The first is to determine whether the customer is technology ready. Although new technology is proliferating, people may not easily accept it (Demirci & Ersoy, 2008). The next step is to determine whether the technology-ready customer will accept, and then use, the technology as a delivery and an interaction method. Previous research on technology acceptance suggests that individual differences, including personality traits, may affect technology acceptance (Lam et al., 2008). For example, an enduring insecure feeling about technology may influence a person's acceptance of a variety of technology-based services (Lam et al., 2008). Given technology's expanding role in service delivery, it is necessary to understand customers' readiness to use technology-based systems (Burke, 2002; Parasuraman, 2000). Conversely, if individuals feel confident about the technology, then they are more likely to use it for service interactions. Individuals' attitudes towards technology in general will range from strongly positive to strongly negative (Westjohn, Arnold, Magnusson, Zdravkovic, & Zhou, 2009). Technology readiness is an attitudinal construct referring to an individual's predisposition to use new technologies for accomplishing goals in life. Determining whether a customer is ready to use technology is critical because if customers are not technology ready, then they may not use the service. With the growth of new technologies, it is important to explore the ability and willingness of customers to use these new technologies (Meuter, Ostrom, Bitner, &

Roundtree, 2003). As technology advances, researchers have increasing opportunities to explore what role it plays in how customers want to interact with service providers.

Relationship building is a key component for service providers. Most service providers want to establish a relationship with their customers; the depth and breath of that relationship depends on the type of service. Researchers have recognized that successful service providers must be able to blend technology with the personal aspects of service delivery (Berry, 1999). Research by Schmelkin (2005), Swart (2001), and Lang and Colgate (2003) suggests that technology has an impact on relationships in an organization and that using technology for communication and relationship management is of high importance. Service firms are now focusing on consumers outside of the organization in relation to how they react to technology. Understanding how and what type of relationships customers want can impact how customers will respond to technology. Forcing technology on a customer who is not ready or willing to accept technology and instead prefers human interaction is important to recognize and avoid: If the customer is not ready or willing to accept technology, that hesitation can affect the long-term customer-firm relationship.

Theoretical Framework

Research regarding the role of technology in firms aids understanding of what might happen outside of firms, but that understanding is incomplete. A key to help complete the understanding is the psychological concept of attachment style, which can have an impact the customer-firm relationship. Given that services firms are moving away from human interaction to deliver technology-enabled services, understanding customers' psychological behavior is important. Developed from psychological, evolutionary, and ethological theories, attachment theory was first proposed by British psychologist John Bowlby (1969/1982,1973,1980,1988) as a descriptive and explanatory framework for interpersonal relationships. Bowlby (1969/1982) argued that the attachment system is activated when individuals are faced with conflict, anxiety, discomfort, or

uncertainty and that individuals use different coping strategies to seek protection and support from a "significant other" or attachment figure. Delivering a service via technology can trigger emotions that can generate insecurity in a relationship or enhance a relationship because it is attractive to a secure customer.

Attachment theory describes individuals' cognitive models, emotional responses, and physical actions. The different behavioral strategies employed by an individual are called his or her attachment styles. Attachment styles are "adaptive responses" to regulate proximity to an attachment figure that provides support, protection, and care in times of stress, anxiety, and danger. The individual's behavior is shaped and formed by her or his perceptions of the attachment figure's availability, consistency of responses, and support (Mikulincer & Shaver, 2010). Since attachment theory concerns humans' tendency to form, maintain, and dissolve affectionate ties, it seems as an appropriate theoretical foundation to be used to investigate consumers affectionate ties towards service firms technological service delivery mechanisms (Thomson & Johnson, 2006). Given the vast body of research that documents the impact of attachment for relationships in general and the growing body of work that indicates the important role attachment style in traditional face-to-face contacts, it is critical to examine whether attachment style impacts these new relationships as delivered through a technology device (Buote, Wood, & Pratt, 2009). Formation of relationships can be explored through two primary types of attachment styles. The first is *secure*, which is characterized by a positive working model regarding oneself and others (Geller & Bamberger, 2009). The second is *insecure*, which consist of two dimensions: anxiety and avoidant. The insecure anxious attachment style is characterized as resulting in a lack of confidence regarding others reactions to oneself (Geller & Bamberger, 2009). The insecure avoidant attachment style is characterized by self-reliance and detachment in day-to-day interpersonal relations. The dimensional approach characterizes an individual's attachment along this continuum.

Recent marketing research supports the application of attachment theory in marketing

(Thomson & Johnson, 2006). Many research efforts in the marketing literature have investigated whether and how individuals form close relationships with possessions, goods and service brands, and human brands. These studies suggest that attachments can extend beyond person-to person relationship contexts (Vlachos & Vrechopoulos, 2012). For example, Kleine and Baker's (2004) research has indicated that people's bonds with material possessions (e.g., a baby blanket, a stuffed animal, a motorcycle, etc.) demonstrate attachment as an important mechanism consumers use to valuate goods. Attachments are a type of strong relationship that people first experience with their parents; later in life, these attachments develop into other targets as well (Thomson & Johnson, 2006). It seems consumers develop attachments to gifts, collectibles, places, tangible goods brands, human brands, service brands, stores, and favorite objects (Fournier, 1998; Park, MacInnis, & Priester, 2006).

Very little academic research has attempted to determine the relationships between individuals and what motivates or demotivates their use of technology in the service encounter. The focus of this research is twofold. First, I examined what drives customers to be technology ready and, subsequently, whether those prepared customers accept and use the technology. Second, I aimed to gain better understanding of customers' cognitive processes and behaviors by considering them from perspectives informed by attachment theory. This approach may be useful in developing a service delivery program that will incorporate both the human interaction and the technology that creates and maintains long-term, customer-firm relationships, which are critical for a firm's success.

CHAPTER II

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Technology Readiness

The technology readiness construct can be viewed as an overall state of mind resulting from mental states that together can determine a person's predisposition to use new technologies (Lin, Shih, & Sher, 2007). The technology readiness index (TRI) is a framework that relates to technology in general. Traits differ among people and their beliefs about different aspects of technology (Walczuch, Lemmink, & Streukens, 2007). Research by Rogers (2010) revealed differences in peoples' dispositions towards using technology. The relative strength of each trait indicates a person's openness to technology. Therefore, the TRI reflects a set beliefs about technology but is not an indicator of a person's competence with using it (Walczuch et al., 2007). As technology is integrated into areas of work, including products and services, technology-based service interactions are becoming increasingly prevalent (Lam et al., 2008). Technology has become prominent in the customer-firm relationship, dramatically changing how services are conceived and delivered (Massey, Khatri, & Montoya-Weiss, 2007). However, to ensure customers' willingness to accept technology, the first step for researchers and service developers is to understand the level of a person's technology readiness. To measure technology readiness, Parasuraman (2000) introduced the technology readiness construct that consists of four dimensions: optimism, innovativeness, discomfort, and insecurity. Optimism

reflects people's belief that technology allows them more control and efficiency in their lives. Innovativeness reflects one's inclination to be an early adopter of technology. Discomfort reflects one's feeling of lack of control over technology. Insecurity reflects one's skepticism that technology will work properly. The use of technologies is likely to be influenced by technology readiness.

Because of technology's expanding role in service delivery, it is necessary to understand customer's readiness to use technology-based systems, services, and devices (Massey et al., 2007). Technology readiness refers to people's propensity to embrace and use new technologies for accomplishing goals in home life and at work (Parasuraman & Grewal, 2000). Parasuraman (2000) wrote that "technology readiness is a state of mind resulting from 'mental enablers and inhibitors that collectivity determine a person's predisposition to use new technologies'" (p. 308). Technology can evoke feelings of anxiety (Viswanath, 2000) as well as of excitement (Agarwal & Prasad, 1999). Research has shown that customers who are ready to use technology are more likely to try it (Elliott, Meng, & Hall, 2008). Parasuraman (2000) further explained it is possible for the customer to have both positive and negative feelings about technology, especially high technology products and services. Figure 1 depicts the role technology readiness will maintain in the current research.

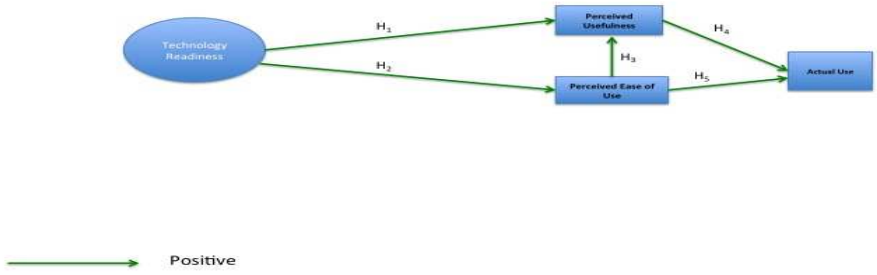

Figure 1. Role of technology readiness in present study's hypotheses

Technology Readiness Index

The technology readiness index (TRI) was developed to evaluate a person's technology readiness or willingness. TRI is multifaceted and defines four groups users separated by their prevailing personality trait, with two factors indicating motivators of new technology use and the other two indicating inhibitors. The stronger the trait, the better the persons fits into one of the groups and the more significantly the person is influenced in the use of technology products and services (Walczuch et al., 2007). The key contribution of this index is to identify a consumer's propensity to adopt and use new technologies and to determine the consumer's level of readiness to adopt the new technology (Demirci & Ersoy, 2008). The technology readiness index identifies four dimensions of technology belief that impacts an individual's level of technology readiness (Elliott et al., 2008). Parasuraman (2000) found strong evidence for the TRI to predict usage of technology-based services. The subdimensions considered contributors to technology readiness are optimism and innovativeness; discomfort and insecurity are considered inhibitors to technology readiness (Lin et al., 2007).

Optimism is a positive view of technology and the belief that technology offers increased control, flexibility, and efficiency. It is important for customers to know they are in control of the technology (Liljander et al., 2006). Optimists use more active coping strategies, and these strategies are more effective in achieving positive outcomes(Walczuch et al., 2007). Moreover, optimists are less likely to focus on negative events and thus confront technology more openly. They are more likely to accept their situations and less likely to be escapists. Accordingly, optimists are more willing to use new technologies (Scheier & Carver, 1987). Innovativeness is a tendency to be a technology pioneer and thought leader. It reflects the extent to which an individual believes she or he is at the leading edge of trying new technology-based products or

services (Massey et al., 2007). Innovativeness marks the willingness of an individual to try out any new information technology (Flynn & Goldsmith, 1993; Midgley & Dowling, 1978). It is considered to be a trait—that is, a relatively stable descriptor of an individual and invariant across situations (uninfluenced by environmental or internal variables (Agarwal & Prasad, 1998). Karahanna, Straub, and Chervany (1999) showed that more innovative individuals, the early adopters, have less complex belief sets about new technology. Optimism and innovativeness are drivers of technology readiness. A high score on these dimensions will increase overall technology readiness (Godoe & Johansen, 2012).

Discomfort is the perception of lack of control over technology and feeling overwhelmed. Individuals who display discomfort believe technology is not designed for use by ordinary people and is too complicated (Massey et al., 2007). This perspective might root in the skepticism people have to new technologies. In addition, people who score high on the discomfort trait perceive technology as more complex and thus less easy to use. Insecurity is the distrust of technology and skepticism about its ability to work properly (Lin et al., 2007). The insecurity dimension focuses on specific aspects of technology- based transactions, rather than a lack of control over new technology. Customers with a sense of insecurity are skeptical about new technologies and feel uncomfortable with them (Son & Han, 2011). Discomfort and insecurity are inhibitors of technology readiness. A high score on these dimension will reduce overall technology readiness (Parasuraman, 2000). The correlation between people's technology readiness and their propensity to employ technology has been empirically confirmed by Parasuraman (2000). Results show that the four dimensions are fairly independent, each of them making a unique contribution to an individual's technology readiness (Parasuraman & Colby, 2001).

The technology readiness construct has been found to be a determinant of perceived usefulness, which subsequently influences consumers intentions to use technology (Elliott, Meng, & Hall, 2012). Walczuch et al. (2007) provided additional evidence that technology readiness has

influence on perceived usefulness of technology. Those researchers found that the four dimensions of the TRI all significantly impact an individual's perceived usefulness of technology. Lin, Shih, and Sher (2007) argued that technology readiness has a direct and positive impact on perceived use of technology. In addition, Walczuch et al. (2007) provided similar evidence that technology readiness can influence the perceived ease of use of technology. Given the previous research finding related to technology readiness and perceived usefulness and perceived ease of use, the following hypotheses were used in this study:

H_1: Technology readiness positively impacts perceived usefulness.

H_2: Technology readiness positively impacts perceived ease of use.

Technology Acceptance Model

Technology is radically changing how services are delivered, and it enables customers to experience better, more efficient, customized services (Bitner, 2001). As technology is becoming more integrated into services, marketing and firms must evaluate why, how, and to what extent their customers accept technology. According to Porter and Donthu (2006), two research paradigms have emerged to explain technology acceptance. One paradigm is system-specific and focuses on how attributes of a specific technology affect an individual's perception of that technology. This perception, in turn, affects the usage of the specific technology. The other paradigm focuses on latent personality dimensions to explain the use and acceptance of new technologies. In other words, an individual's personality influences the potential acceptance of technology in general (Porter & Donthu, 2006).

Technology may change the ways companies interact with and serve their customers (Bitner, 2001). A way to evaluate whether people will use technology is the technology acceptance model. The technology acceptance model (TAM) was designed to explain computer

usage behavior (Godoe & Johansen, 2012). In addition, TAM has been used to predict people's technology-adopting behavior in work environments (Lin et al., 2007). The TAM's predictive value has led to refinements (Venkatesh & Davis, 2000) in business contexts that reengineered the original as a broadly comprehensive model by adding numerous explanatory antecedents, mostly related to business use (Stern, Royne, Stafford, & Bienstock, 2008). Due to the necessary high involvement of customers to coproduce the service with technology, the TAM applied in marketing settings may not sufficiently explain consumers' technology behaviors (Lin et al., 2007). Prior studies have validated the technology acceptance model as a robust and parsimonious framework, however, for understanding users' adoption of technology in a variety of contexts including banking, mobile commerce, and e-mail (Ha & Stoel, 2009).

Research has shown that in the technology acceptance model the customer must perceive some type of useful need for technology. TAM theorizes that user acceptance of a new system is determined by the users' intentions to use the system, which is influenced by the users' beliefs about the systems' *perceived usefulness* and *perceived ease of use*. According to TAM, a person's intention to use a specific technology is jointly determined by his or her attitude toward using the system and its perceived usefulness. This joint determination implies that the easier the system is to use, the greater the user's perceived usefulness (Saadé & Kira, 2009). Both constructs perceived usefulness and perceived ease of use were reported to correlate with self-reported usage and predicts future usage of a technology system (Saadé & Kira, 2009). So, understanding other factors that affect consumers' acceptance of technology is important because these factors can be targeted to help move a customer to use the technology in a service encounter.

In the original formulation of the model (Davis, 1989; Davis et al., 1989), TAM included attitude; however, research and analysis conducted in volitional environments demonstrated that the explanatory power of the model is equally good, and the model is more parsimonious without

the mediating attitude construct (Davis & Venkatesh, 1996; Venkatesh & Davis, 2000). Attitude was omitted from the final TAM because the perceived usefulness and behavioral intentions link seemed more significant (Davis, 1989). This linkage can be explained in that if a technology device is perceived to be useful, people may have a high behavioral intention, even though they do not have a positive attitude toward the device (Davis, 1989). The basic TAM describes a system of variables by which users demonstrate behavioral intentions to use technology. Behavioral intentions are mediated by both perceived usefulness and perceived ease of use (Stern et al., 2008). Thus, it has become the norm to exclude the attitude construct from TAM. TAM assumes that given sufficient time and knowledge about a particular behavioral activity, an individual's stated preference to perform the activity behavioral intention closely resembles the way they do behave (Han, 2003). Further, while a central tenet of technology acceptance research is that perceived usefulness is a key driver of behavioral intention, Venkatesh (1999) suggested that intrinsic motivation is a key factor in elevating the importance of ease of use in explaining behavioral intention.

Perceived Ease of Use

The technology acceptance model consists of the two constructs perceived usefulness and perceived ease of use. Perceived usefulness refers to an individual's expectation for improved job performance, effectiveness, and productivity from using a particular type of information technology (Li, Chu, & Lou, 2005). In other words, it refers to customers' perceptions regarding the process leading to the final outcome (Monsuwé, Dellaert, & De Ruyter, 2004). Perceived ease of use thus deals with user motivation based on the assessment of the intrinsic aspect of using the technology, such as its interface and the process involved in using it (Gefen & Straub, 2000). A large body of literature has reported the significant positive association between perceived usefulness and adoption of technology (Davis, 1989; Venkatesh & Davis, 2000). According to TAM, ease of use has a dual effect, direct as well as indirect, on consumers' intention to use

technology (Venkatesh, 2000). In addition, ease of use is of particular influence in the early stages of the user's experience with technology or a system (Davis, 1989, 1993). The TAM has suggested that users formulate a positive attitude toward the technology when they perceive it to be easy to use (Hossain & de Silva, 2009).

Perceived Usefulness

In terms of technology acceptance, perceived usefulness has been found a good indicator of how a product or service relates to a buyer's context (Eriksson & Nilsson, 2007). Studies showed that some consumers enjoy technology-based service encounters because they perceived this option as more convenient and enjoyable ("The powerful push for self-service," 1989), efficient, and easy to use (Meuter et al., 2000). As defined by Davis (1999), perceived usefulness is the "the extent to which a person perceives increased benefits from using the self-service technology" (p. 48). This definition emphasizes the user's focus on perceived benefits to them, regardless of the properties of the self-service technology. In other words, the self-service technology may be considered excellent, but users will not perceive it as useful if it does not provide a benefit to them (Eriksson & Nilsson, 2007). Chang and Wildt (1994) and Meuter et al. (2000) have argued that customers' interactions with innovative technological interfaces affect their evaluations and behaviors. Some researchers have suggested that factors such as the performance of the technology, the convenience derived from the technology, the perception of being in control of the outcome from using the technology, and the added efficiency from using the technology all would positively influence the adoption of technology (Yen & Gwinner, 2003). Moreover, research using the TAM has demonstrated that the usefulness of technology, which underlies the efficiency that consumers achieve, is the most important predictor of an individual's behavior intentions toward technology for both trial and continuance (Johnson, 2008). Empowering customers by providing them with the option of using technology-based service delivery systems may therefore be a relatively inexpensive way to maintain customer

relationships (Joseph & Stone, 2003).

TAM incorporates a causal relationship between ease of use and perceived usefulness (Chiu, Lin, Sun, & Hsu, 2009). Perceived ease of use is hypothesized to influence perceived usefulness (Godoe & Johansen, 2012) in that improvements in ease of use contribute to increased usefulness to save effort or increased efficiency (Davis, 1989). The variables measure the extent to which utility and usability influence technology acceptance, with utility referring to the user's evaluation of the technology's usefulness as distinct from usability, referring to the user's evaluation of the ease of applying the technology (Stern et al., 2008). Previous research has shown that perceived ease of use is positively correlated with perceived usefulness (Amoako-Gyampah & Salam, 2004). Over the past few decades, scholars have given more attention to investigating the associations between ease of use and the degree to which the user perceived usefulness of the technology (Verhagen, Feldberg, van den Hooff, Meents, & Merikivi, 2012). Through the ease of use, users are more likely to believe that they have mastery over using the system and find it more useful (Verhagen et al., 2012). Therefore, in designing this study, I hypothesized the following

H_3: Perceived Ease of Use is positively related to perceived usefulness.

Actual Use

Both constructs perceived usefulness and perceived ease of use were reported to correlate with self-reported usage and self-predicted future usage, although perceived usefulness tends to have a great effect on usage behavior than perceived ease of use when users have had access to the system for a longer time (Saade, 2007). Thus, the more positive the perceived ease of use and perceived usefulness of the system, the higher the probability of actually using the system (Henderson & Divett, 2003). According to Delone and McLean (1992), system use as the dependent variable is acceptable if consumers' use of the system is not compulsory. According to

Davis (1989), the main contributor to actual use of a new technology is its perceived usefulness. People primarily adopt new technologies based on their functions rather than based on how easy it to perform the functions. For example, people are willing to adopt a difficult system if it captures a critical function. The technology acceptance model posits that perceived usefulness and perceived ease of use are the primary determinants of system use. The model hypothesizes that system use is directly determined by the behavioral intention to use, which in turn is influenced by perceived usefulness and perceive ease of use. Therefore, understanding the impact of this relationship of perceived usefulness and the ease of use, I hypothesized the following for this study:

H_4: Perceived Usefulness is positively related to actual use of technology.

H_5: Perceived Ease of Use is positively related to actual use of technology.

Attachment Theory

Attachment theory concerns relationships and explains facets and happenings of close relationships from various views, including cognitive, behavioral, physiological, and emotional (Schentke, 2009). Social researchers have known for many years that attachment style developed earlier in life is a fairly strong and consistent predictor of attachment styles and close relationship quality later in life (Schentke, 2009). Rholes and Simpson (2006) claimed that, according to attachment theory, a "sense of security contributes to self-construction and effect regulation by allowing a person to benefit from the protection, support, comfort and relief provided by attachment figures during periods of stress or distress" (p.159-160). Attachment theory has been commonly used to investigate individual differences in attachment styles (Lee & Thompson, 2011). Developments in attachment research have taken a social-cognitive approach, viewing attachments as dynamic relational-schemas based on specific episodes in past relationships (Baldwin, 1992).

Attachment theorists have examined the attachment concept in diverse relationship contexts (Park et al., 2006). However, research in marketing (Belk, 1988; Mehta & Belk, 1991; Schultz, Kleine III, & Kernan, 1989) has suggested that attachments can extend beyond the person-person relationship context. That research shows that consumers can develop attachments to gifts (Mick & DeMoss, 1990), collectibles (Slater, 2001), places of residence (Hill & Stamey, 1990), brands (Schouten & McAlexander, 1995), other types of special or favorite objects (Ball & Tasaki, 1992; Richins, 1994; Wallendorf & Arnould, 1988), celebrities (O'Guinn, 1991), and sports teams (Babad, 1987). Although attachment to a person may differ from attachment to an object in several ways, the fundamental conceptual properties and behavioral effects of attachment are assumed to be quite similar. Attachment theory has been widely studied in past literature and assumes that all individuals are born with behavioral control systems that aid survival (Buote et al., 2009). Past research sought to understand what variables are most likely to influence the level of attachment a person will have with an area and what influence place attachment will have on other managerially important variables (Wickham, 2000), such as fee and spending preferences (Kyle, Absher, & Graefe, 2003), return intentions (Brocato, 2006), and pro-environmental behavior (Halpenny, 2006)). By definition, "attachment behavior is the result of the activity of behavioral systems that have a continuing set goal, that of maintaining a specified relationship [with the defined object]" (Bowlby, 1969, p.140). The main proposition of Bowlby's (Brennan, Clark, & Shaver, 1998) attachment theory states that the quality of interactions with close relationship partners, so-called attachment figures (e.g., mother, father, teacher, partner, etc.), determines "internal working models" of relationships that guide expectations and perceptions in close relationships (Paulssen, 2009). Therefore customers' attachment styles can be a factor in their willingness to accept technology. Figure 2 shows the role of attachment styles in the technology readiness and technology acceptance model.

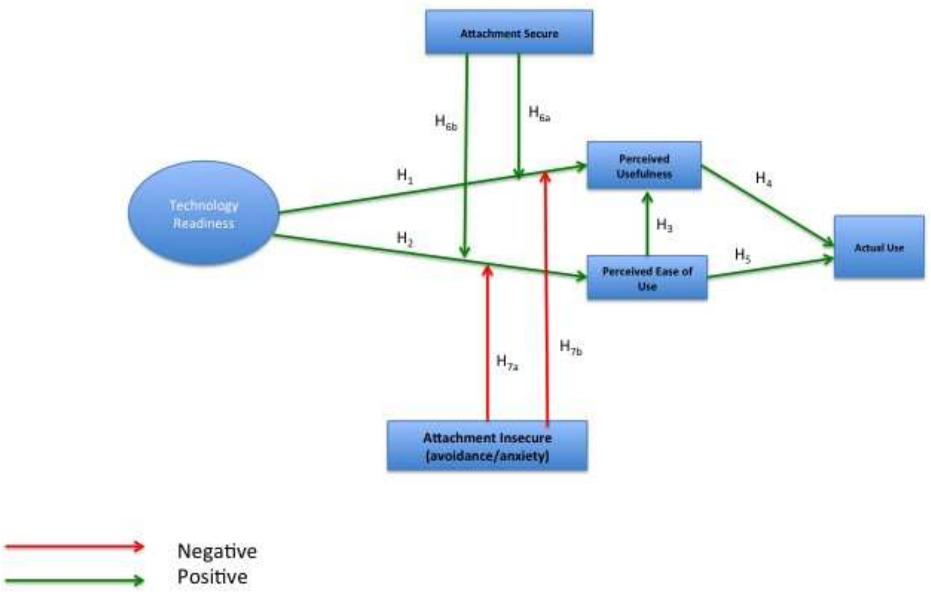

Figure 2. Role of attachment styles in TAM

Attachment Styles

Regarding attachment styles as a means for human functioning, consistent, positive, protective, and stable interactions with other humans in social relationships are valued (Schentke, 2009). Individuals have different ways or styles of attaching themselves to their significant others (Schentke, 2009). It is theoretically possible according to extensive research to classify people into three attachment categories: secure, avoidant, and anxious. It is generally accepted that a secure attachment style relates to relationships of greater quality and intimacy versus an insecure attachment style, which is characterized by anxiety and/or avoidance and relates to relationships of poorer quality and intimacy (Schentke, 2009). For this reason, attachment style is typically considered in oppositional terms: Either one is securely attached to someone or something, or one is insecurely attached (anxious/and/or avoidant) to someone or something (Schentke, 2009). Regardless of whether someone has an avoidant or an anxious style, both are characterized by a poor quality relationship with significant others and, therefore, result in one's

being insecurely attached compared to an individual who is securely attached. Secure behavior is characterized by explorative and positive behavior. If one has had positive experiences in personal social relationships, that person most likely has acquired a secure attachment style (Schentke, 2009). Avoidant behavior is characterized by detachment behavior and avoidance of the significant other. Anxious behavior is characterized by anger and ambivalent behavior (Schentke, 2009). If one was insecurely attached to a significant other due to inconsistent and negative experiences in the relationship, that person would theoretically adopt alternatives to satisfy her or his needs for safety, security, and comfort in some other way (Schentke, 2009). Customer traits such as attachment style position technology readiness as a possible antecedent to the acceptance of technology (Weisskirch & Delevi, 2013).

People with secure attachment styles are characterized by a high sense of self-worth with positive beliefs about the social world (Collins & Read, 1990). In addition they view others as trustworthy and are, in turn, able to depend on others (Collins, 1996). This security tends to lead to relationships described as positive and happy, with greater levels of trust, satisfaction, and willingness to try new things (Fricker & Moore, 2006). The commonality among those with secure attachment styles is their positivity. With this attitude, it can be assumed that those who display a secure attachment style will perceive technology as being more useful and worry less about the negative outcomes (Walczuch et al., 2007). Furthermore, people who display secure attachment in situations of adversity and stress seek out others for support and relief, either by moving in closer proximity to them or by using internalized representations (Schentke, 2009).

Research in psychology has determined that insecure attachment styles are best conceptualized and measured along two continuous dimensions called attachment anxiety and attachment avoidance (Brennan et al., 1998). Attachment anxiety is the extent to which a person worries the relationship partners might not be available in times of need, has excessive need of approval, and fears rejection and abandonment (Mende & Bolton, 2011). This anxiety behavior

heightens efforts to demand and maintain closeness to relationship partners (Frías, Shaver, & Díaz-Loving, 2014). Attachment avoidance is the extent to which a person has an excessive need for self-reliance, fears depending on others, distrusts relationship partners' goodwill, and strives for emotional and cognitive distance from partners (Mende & Bolton, 2011). This avoidant behavior heightens efforts to maintain a safe degree of independence and self-reliance (Frías et al., 2014). Each attachment insecurity dimension, anxiety or avoidance, is related to a particular way of coping with stress (Frías et al., 2014). Hyper activation is characteristic of people who score high on measures of attachment anxiety and intensifies negative emotional reactions to threats (Shaver, Mikulincer, & Chun, 2008). Deactivation, the characteristic of avoidant individuals, includes the inhibition of negative emotional responses because when expressed they can be interpreted as signs of weakness or vulnerability, therefore contradicting the avoidant person's sense of strength and self-reliance (Cassidy, 1994).

Attachment anxiety is the degree to which individuals worry and ruminate about being rejected or abandoned by their partners (Vlachos & Vrechopoulos, 2012). Evidence has indicated that customers with higher scores on anxiety in purely personal relationships may look to other relationship types to make up for negative emotions experienced in purely interpersonal relationships (Vlachos & Vrechopoulos, 2012). Anxiously attached individuals are highly motivated to establish social bonds but do so ineffectively (Norris, Lambert, DeWall, & Fincham, 2012). When attachment security is threatened, one strategy is attachment to nonhuman targets (Keefer, Landau, Rothschild, & Sullivan, 2012). People who display attachment anxiety are concerned that close others will not be available in times of need. Consumers who are anxious appear to keep away from unpredictable relationships and may explicitly seek out only relationships likely to be highly consistent (Thomson, Whelan, & Johnson, 2012). Forcing technology on an anxious person may create apprehensiveness. Apprehensiveness, as described by Kwon and Chidambaram (2000) results in individuals' avoiding the use of computers due to

their innate fear of technology. Therefore, anxious consumers may have a high personal insecurity with the technology, therefore lowering their technology readiness.

People with high attachment avoidance tend to report low levels of relationship satisfaction (Cobb, Davila, & Bradbury, 2001). The avoidance dimension of attachment captures the individual's view of others: Avoidant style individuals have a negative view of others. They are characterized by a high degree of self-reliance and desire for autonomy (Mikulincer & Shaver, 2003). Individuals with avoidant attachment styles are concerned with others' becoming too close to them. Avoidant individuals simply turn off the attachment system (Norris et al., 2012), thus their beliefs, goals, and strategies are constructed to avoid closeness in a relationship (Feeney & Noller, 1996). Avoidant individuals are reluctant to rely on others, and so they tend to maintain a greater degree of emotional distance in their interpersonal relationships (Tuan, Tat, Shamsuddin, Rasli, & Jusoh, 2012). People with high levels of attachment avoidance strive to deactivate their need for relationship building (Mende & Bolton, 2011). In such a relationship, people with avoidant attachment styles may foresee not having to engage in intimate social or emotional exchanges that are at odds with their comfort levels in close relationships (Mick & DeMoss, 1990). Avoidant individuals may be reluctant to use technology because they do not want to depend on another person if the technology fails. This dependence may create discomfort and insecurity with technology, therefore lowering their technology readiness. Understanding the activation of the attachment system and attachment behaviors is important because that activation can signal how customers will respond to accepting technology. Therefore in designing this study, I hypothesized the following:

> H_6: A personal style of secure attachment positively moderates the relationship between (a) technology readiness and perceived usefulness and (b) technology readiness and perceived ease of use such that increasing levels of attachment security increases the actual use of technology.
>
> H_7: A personal style of insecure attachment negatively moderates the relationship (a)

technology readiness and perceived usefulness and (b) technology readiness and perceived ease of use such that increasing levels of attachment insecurity decreases the actual use of technology.

CHAPTER III

RESEARCH DESIGN & METHODS

Participants and Procedures

All participants were current customers of a financial services company and were requested to participate in the survey via an e-mail link distributed through a Qualtrics survey. The target population was individuals who had a relationship with the institution for at least 6 months. Each participant was requested to identify the type of relationship that they had with the service provider (i.e., investment management, trust, credit and banking) and whether they could conduct business with this service provider either online and/or with a mobile device or with associate interaction. The 36-item technology readiness inventory was administered to participants in the study. The next set of questions concerned technology acceptance in relation to the technology device they used to conduct business with the firm or any other service provider and the final set about attachment styles (see Appendix A for all survey items). To measure actual use, participants were asked to login to their financial accounts or create a user ID and password. Verification of this action was done by matching the IP address to the user ID. For security reasons, a firewall was implemented to prevent any other information from being recorded.

I sent 3000 surveys and received 277 submissions. Of these, 24 were eliminated because fewer than 6 of the 73 questions were answered. In nine surveys I used the mean averages to substitute for the missing data. Therefore, a total of 253 surveys were used for the research analysis.

Measurements

All measurement items were adopted from previous research and were modified and reworded to fit the context of this research. Measures of technology readiness were adopted from Parasuraman (2000). The 10-items focused on optimism include examples such as, "You prefer to use the most advanced technology available" and "You like computer programs that allow you to tailor things to fit your own needs." The seven items focused on the innovativeness dimension consisted of items such as, "Other people come to you for advice on new technologies" and "You are always open to learning about new and different technologies." The 10-items focused on the discomfort dimension contained examples like, "New technology is often too complicated to be useful" and "Technology always seems to fail at the worst possible time." The nine items focused on insecurity contained examples such as, "You don't feel confident doing business with a place that can only be reached online" and "The human touch is very important when doing business with a company."

Measures of technology acceptance were adopted from Davis (1999). The 11-items focused on "ease of use," including examples "Learning to use technology was easy" and "Becoming skillful at using the technology was easy," while the 10-items of "perceived usefulness" included, "Using technology enhances my effectiveness at home and work" and "Using technology saves me time." Measures of insecure attachment styles were adopted from Mende and Bolton (2011). Four items focused on attachment anxiety; an example item is "I worry about being abandoned by the company as a customer." Four items focused on attachment avoidance, which will be reverse scored; an example item is "It is a comfortable feeling to depend

on the company." Measures of secure attachment style were adopted from a five-item scale developed by Collin and Read (1990), with an example item including, "I am comfortable depending on others." Actual usage was measured using the indicator of entering an email address and clicking on the financial firm's website and logging on or creating a logon ID. Four items measures were adopted from Turner, Kitchenham, Brereton, Charters, and Budgen (2010), including the example item, "I intend to use my device to access the website frequently in the next 6 months." A complete list of measurement items can be found in Appendix A.

CHAPTER IV

FINDINGS

Sample Descriptive

Tables 1 and 2 present gender and racial demographics of the sample. These demographics are representative of the clients of the firm. Table 3 presents the age range of the survey participants. A majority of the participants were 26-32 years old. I expected to see more participants between the ages of 39-45 and 46-53. However after a review of the account types held by participants in the 26-32 age range, I found most of these participants had investment management accounts, which fit the profile of this age group.

Table 1

Participants' Demographics: Gender

Gender	**Number**	**Percent**
Male	146	59.8%
Female	98	40.2%

Table 2

Participants' Demographics: Race

Race	Number	Percent
White	130	53.5%
African American	16	6.6%
Hispanic	6	2.5%
Asian	86	35.4%
Native American	1	.4%
Other	4	1.6%

Table 3

Participants' Demographics: Age Ranges

Age Range	Number	Percent
19-25	50	20%
26-32	101	40%
33-38	36	14%
39-45	20	7.9%
46-53	16	6.3%
54-60	7	2.7%
61&older	23	9.1%

Table 4 shows the distribution of the types of devices used. In this context, I expected to see more smartphone or tablets users, given the age range of most of the study's participants. After reviewing the firm's website, I found the site to be cumbersome to access while using a mobile device; this issue could be related to the low usage of the mobile devices found in this study. Table 5 shows the distribution of device usage by gender, with males showing a higher percentage of desktop use than females. Tables 6 and 7 show, respectively, the distribution of participants who had an online user name and password and the distribution of participants who were willing to access their accounts online. Table 8 shows the distribution of frequency of participants calling to speak to someone about their accounts.

Table 4

Distribution of Devices Used by Participants

Device Type	Number	Percent
Laptop	134	53.8%
Smartphone	19	7.6%
Tablet	12	4.8%
Desktop	84	33.7%

Table 5

Distribution of Device Usage by Participants' Gender

Gender	Laptop	Smartphone	Tablet	Desktop
Male	29.2%	4.6%	3.3%	22.9%
Female	24.6%	2.1%	1.3%	12.1%

Table 6

Distribution of Participants With Online User Name and Password (by Gender)

Gender	Yes	No
Male	58.2%	.4%
Female	39.8%	.4%

Table 7

Distribution of Participants Willing to Access Their Accounts Online (by Gender)

Gender	Yes	No
Male	57.4%	.4%
Female	38.5%	.4%

Table 8

Distribution of Frequency of Participants' Calling to Speak to Someone About Their Accounts

Gender	Never	Less than once a month	Once a month	2-3 times a month	Once a week	2-3 times a week	Daily
Male	16.4%	25.8%	5.7%	4.5%	3.7%	2.9%	0.8%
Female	10.2%	23.0%	3.7%	0.8%	1.2%	0.8%	0.4%

Reliability & Validity Tests

Before starting the empirical analysis, a thorough examination of the data was conducted, which included reviewing both data for outlines and missing data. Nine surveys had missing data, for which the means of the items' responses were substituted. All measurement items of the four constructs of technology readiness (optimism, innovativeness, discomfort, & security) and the two constructs of the technology acceptance model (perceived usefulness and perceived ease of use) were evaluated using various tests to validate consistency and discriminate validity. All means standard deviations and correlations are shown in Table 9.

Table 9

Means, Standard Deviations, and Correlations

	Mean	**SD**	**1**	**2**	**3**	**4**	**5**
TR	19.31	2.45	1				
PU	6.03	.714	.151*	1			
EOU	4.53	.674	.616**	.023	1		
Attachment Insecure	4.22	1.14	.717**	-.126*	.422**	1	
Attachment Secure	4.83	1.12	.273**	.242**	.263**	.060	1
Actual Use	6.27	.806	.068	.662**	-.101	-.100	.258**

Note. * Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed); *N*=253; Technology readiness=TR; Perceived usefulness = PU; Ease of Use =EOU

A reliability analysis was performed to ensure the internal consistency of the indicators that make up each construct. Internal consistency was measured by using Cronbach's alpha. Most of the coefficients of the Cronbach's alpha were higher than .70, indicating acceptable reliability of the constructs, except for perceived ease of use, which was .667. An additional step was taken to confirm internal consistency for the perceived ease of use measure: Split half analysis was conducted with SPSS, and the results indicated a higher alpha coefficient of .693. However, according to Sekaran (2000), Cronbach's alpha's with a range between .60 and .70 is acceptable. Table 10 presents the reliability analysis results.

Table 10

Reliability Analysis Results

Construct	Cronbach's Alpha	Standard Deviation	Mean
Technology Readiness	.860	2.45	19.31
Perceived Ease of Use	.667	.674	4.53
Perceived Usefulness	.879	.714	6.03
Attachment Insecure	.778	1.13	4.22
Attachment Secure	.787	1.12	4.83
Actual Use	.854	.806	6.27

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) is a statistic that indicates the proportion of variance in variables that might be caused by underlying factors (Dziuban & Shirkey, 1974). High values close to 1.0 generally indicate that a factor analysis may be useful (Dziuban & Shirkey, 1974). The KMO measure of sampling was conducted, and the measure was .908, indicating the sample is adequate to consider that the data were normally distributed. The Bartlett's Test of Sphericity, the hypothesis states the correlation matrix is an

identity matrix that indicates the variables are unrelated and suitable for structure detection (Dziuban & Shirkey, 1974). This test was conducted to test the null hypothesis that no item- to-item correlation exists and to ensure that the correlation matrix is an identity matrix. The hypothesis was tested through chi-square that was 3064, which was greater than 0% level of significance. Therefore, the null hypothesis is rejected, showing that the item-to-item correlation matrix is not an identity matrix, and so it suitable for factor analysis.

To test the validity of the scales, Exploratory Factor Analysis (EFA) was run using an oblimin (Direct Oblique) rotation with the maximum likelihood extraction to optimize the loading factor of each item. The majority of the items shown had high reliability, with factor loading above .40. However several items in the technology readiness construct had low factor loading: discomfort Items 6-10, innovation Items 1 and 3, and insecurity Items 6-8; those items were dropped from the final analysis. The technology acceptance model had poor loading in Item 7 from the perceived usefulness construct, and so that item was also dropped. The factor loadings are shown in Table 11. The factors identified through the EFA are used as the inputs for testing the measurement model.

Table 11

Factor Loadings

	EOU	PU	TR	USE	Insecure	Secure
Discomfort 1			-.423			
Discomfort 2			-.434			
Discomfort 3			-.473			
Discomfort 4			-.488			
Discomfort 5			-.463			
EOU 1	.682					
EOU 10	.746					
EOU 11	.701					
EOU 2	.785					
EOU 3	.725					
EOU 4	-.732					
EOU 5	-.780					
EOU 6	-.691					
EOU 7	-.700					
EOU 8	-.676					
EOU 9	.721					
Innovation 2			-.488			
Innovation 4			-.609			
Innovation 5			.549			
Innovation 6			.588			
Innovation 7			.595			
Insecurity 1			-.429			
Insecurity 3			-.448			
Insecurity 4			-.421			
Optimism 10			.652			
Optimism 2			.640			
Optimism 3			.727			
Optimism 4			.664			
Optimism 5			.600			
PU 1		.846				
PU 2		.835				
PU 3		.807				
PU 4		.822				
PU 5		.793				
PU 6		.680				
PU 8		.714				
PU 9		.777				
USE 1				.867		
USE 2				.863		
USE 3				.862		
USE 4				.734		

Optimism 1	.651		
AAnx 1		.888	
AAnx 2		.879	
AAnx 3		.920	
AAnx 4		.845	
AAviod 5		.705	
AAviod 6		.777	
AAviod 7		.828	
AAviod 8		.674	
ASecure			.751
ASecure			.822
ASecure			.766
ASecure			.745

The relationship between the technology readiness constructs and the technology acceptance model constructs were analyzed by using Partial Least Squares (PLS) path modeling algorithm. This test also assesses the psychometric properties of the measurement model and estimates the parameters of the structural model. The PLS algorithm estimates path models using latent variables, incorporates multiple dependent constructs, and explicitly recognizes measurement error (Fornell & Cha, 1994). Specifically, the smart PLS was used for this research as it allows for estimating both the measurement model and the structural model simultaneously (Ringle, Wende, & Will, 2005). PLS was chosen to analyze the data because of two advantages it has over other methods. First, PLS has been shown to be suitable for theory building and to emphasize the predictive power of the model (Chin & Newsted, 1999). Second, PLS allows the identification of relationships between the structural model and the measurement model (Gefen & Straub, 2005).

Measurement Model

The measurement model was tested through an evaluation of validity and reliability. Convergent validity is the degree of agreement in two or more measures of the same construct (Carmines & Zeller, 1979). According to Fornell and Larcker (1981), convergent validity is established if the average variance extracted exceeds 0.50. Average variance extracted is a

statistic that states how much variance is captured by the latent variable in a structural equation model is shared among other variables (AVE). The AVE for each construct exceeded .50, except for technology readiness. Therefore, the chi-square difference test (Anderson & Gerbing, 1988) was conducted, and the model with the correlation fixed to technology readiness and fit significantly worse than the unrestrained correlation. Therefore, the weight of the evidence from the two separate tests supports the discriminate validity between the model constructs.

Discriminate validity was evaluated using the square of the Squared Average Variance Extracted (AVE) for each factor by comparing the AVE with the squared interconstruct correlations (Hair, Anderson, Tatham, & William, 1998). Discriminate validity refers to measures that should not be related are not really related. Discriminate validity is proven if the latent variable AVE is larger that common variances of any other of the model constructs (Götz, Liehr-Gobbers, & Krafft, 2010). Table 12 and Table13 show the AVE and discriminate validity of each construct, respectively.

Table 12

Average Variance Extracted by Construct

Construct	**AVE**
EOU	0.522
PU	0.639
TR	0.331
USE	0.707

Table 13

Discriminate Validity by Construct

	PEOU	**PU**	**TR**	**USE**
Perceived Ease of Use	.723			
Perceived Usefulness	.680	.799		
Technology Readiness	.771	.665	.576	

Actual Use	.555	.694	.507	.841

Structural Model and Hypotheses Testing

Calculating the path coefficients tested the structural model and the hypothesis. Since PLS does not require normally distributed data, the model can be evaluated with R-squared calculation for the dependent latent variables (Cohen, 1992). The R^2 measures a construct's percent variation that is explained by the model (Wixom & Watson, 2001). The structural model in this research explains that a large amount of variance of factors lead to actual usage of a technology device. Perceived ease of use shows an adjusted R^2 = .589, perceived usefulness adjusted $R^{2=}$. 507, and adjusted actual use R^2= .491; results are shown in Table 14. According to Chin (1998), a bootstrapping procedure using 1000 sub samples was conducted to evaluate the statistical significance of each path coefficient. Table 15 shows the hypothesized path coefficients along with their bootstrap *T*-values; Figure 3 shows the path coefficients. PLS path modeling does not report any kind of fit indices such as RMSEA or CFI because PLS makes no distributional assumptions for parameter estimations. Therefore, the evaluation of the PLS model is based on prediction-orientated measures that are nonparametric (Chin, 1998).

As predicted, technology readiness is positively related to perceived usefulness (β=. 340, p<0.05), and the path is statistically significant (T= 4.05, p>1.96) for perceived ease of use (β=. 768, p<0.05) and the path is also statistically significant (T=24.9, p>1.96); therefore, Hypotheses 1 and 2 are supported. Hypothesis 3 concerned the relationship between perceived ease of use and perceived usefulness: Testing determined a significant direct effect (β=. 420, p<0.05), and the path is statistically significant (T=5.22, p>1.96), which supports Hypothesis 3. There is a significant direct effect between perceived usefulness and actual usage (β=.589, p<0.05) and a significant path (T= 8.54, p>1.96), which would support Hypothesis 4. The relationship between perceived ease of use and actual use shows a moderate effect (β=. 15, p<0.05) and a significant

path (*T*=2.30 *p*> 1.96); however, the results support Hypothesis 5. A summary of the results is presented in Table 15.

Table 14

R^2 *Results*

	***R* Square Adjusted**
EOU	0.589
PU	0.507
USE	0.491

Table 15

Path Coefficients and T-Statistics

Hypothesis		**β**	***SE***	***T* Statistics**
H_1	TR -> PU	.420	.054	4.049
H_2	TR -> EOU	.768	.031	24.856
H_3	EOU -> PU	.420	.080	5.225
H_4	PU -> USE	.589	.069	8.543
H_5	EOU -> USE	.154	.068	2.301

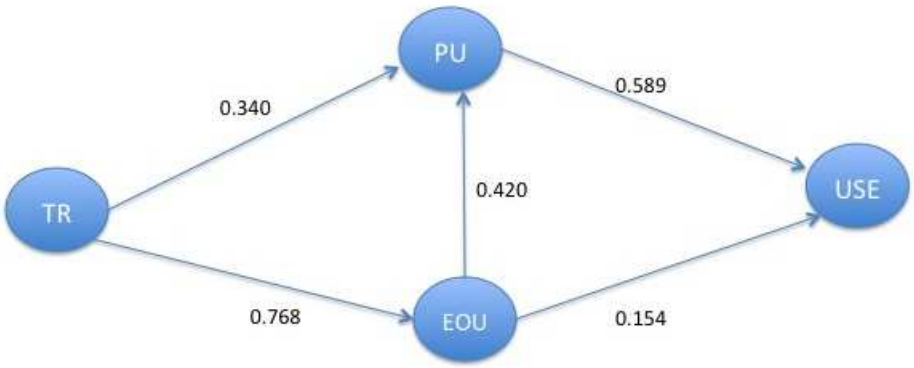

Figure 3. Path coefficients

To determine whether a particular attachment style moderated the relationship between technology readiness and the constructs of the technology acceptance model, the hypotheses were tested using the bootstrapping method developed by Preacher, Rucker, and Hayes (2007).The bootstrapping method uses a confidence interval for the size of the path generated. If the values between the upper and lower confidence intervals do not include zero, then the values indicate a statistically significant moderation effect. With bootstrapping, there are no assumptions made about the shape of the sampling distributions, and a particular formula for the standard error is required (Preacher et al., 2007). Using moderated mediation gives the researcher insight to the contingent nature of the relationships.

This approach uses OLS regression to represent the relationship among variables as path models. The current model represents a second stage and direct effects moderated mediation model with attachment security and attachment insecurity (avoidant/anxiety) to moderate the direct effect of the two constructs of the technology acceptance model's perceived usefulness and ease of use to determine whether the moderation effect increases or decreases the positive relationship between technology readiness and technology acceptance model. Moderation analysis seeks to determine where size or sign of the effect of some putative causal variable on outcome depends in one way or another or interacts with a moderator variable or variables (Hayes, 2012). The goal is to empirically quantify and test hypotheses about the contingent nature of the mechanisms by which X exerts its influence on Y (Hayes, 2012). Thus Hypothesis 6a (CI= -.0740-. -.0155 $p<.05$) is marginally supported, meaning that a secure attachment style does slightly moderate the relationship between technology readiness and perceived usefulness. Hypothesis 6b (CI=-.0015 .0424 $p>.05$) is not supported; therefore, a secure attachment style does not moderate the relationship between technology readiness and perceived ease of use. Hypothesis 7a, which tested the moderation effect of insecure attachment style on the relationship

between technology readiness and perceived usefulness, is not supported (CI= -.007 .0082, p>.05). Hypothesis 7b tested the moderation effect of insecure attachment style on the relationship between technology readiness and perceived ease of use (CI=.0046 .0112, p<.05), and therefore Hypothesis 7b is supported. The hypothesized relationships and respective results are summarized in Table 16.

Table 16

Hypotheses Results

Hypotheses	**Interaction**	***SE***	**95% Lower Bound CI**	**95% Upper Bound CI**	***P*-value**	**Supported**
H_{6a}	Attachment Secure TR□□□	.0149	-.0740	-.0155	.0029	Yes
H_{6b}	Attachment Secure TR□EOU	.0111	-.0015	.0424	.0674	No
H_{7a}	Attachment Insecure TR□PU	.0022	-.0007	.0082	.0957	No
H_{7b}	Attachment Insecure TR□EOU	.0017	.0046	.0112	.0000	Yes

CHAPTER V

CONCLUSION

Discussion

The analysis conducted for this study has yielded a number of key findings. First, the model explains 49% of the variance of actual use without the moderation of attachment styles. When using PLS to bootstrap, this large amount of variance explanation has been confirmed with other studies, including the study by Lam et al. (2008), who found technology readiness constructs predict acceptance of any specific technology. This detail is an indication that technology readiness is an appropriate antecedent to technology acceptance. In addition, it indicates that people must be ready for technology before they will accept it. Next, when the moderation effects of attachment styles are added to the model, those moderation effects made no impact on the R^2 of the model. However, it did increase the adjusted R^2 of perceived ease of use to .738 and perceived usefulness to .686. Moreover, the research also confirms the direct effect of perceived ease of use on perceived usefulness. Other research has found that perceived usefulness tends to have a greater effect on usage than perceived ease of use (Saadé & Kira, 2009).

Second, the strong direct effect that technology readiness had on perceived ease of use was surprising, given the weaker direct effect ease of use showed on actual usage. However, this finding is consistent with previous research of Davis (1989): The perceived ease of use affects

only indirectly through perceived usefulness. Since the original technology acceptance model originated from a work environment, perceived usefulness is regarded as the strongest antecedent to attitude and behavioral intention to use technology (Moon & Kim, 2001). Perceived usefulness matters in this regard because it is believed the longer people use technology or a technology device, the more likely they are to perceive it as being useful (Verhagen et al., 2012). Most of the findings from this research are consistent with the previous findings of the traditional technology acceptance model. Perceived ease of use influences perceived usefulness; perceived usefulness has more influence on actual usage than perceived ease of use; and perceived usefulness has direct influence on actual use.

Even though attachment styles are grounded in early proximity seeking and bonding experiences with primary caregivers, attachment styles exert a small but significant influence on technology acceptance behaviors through perceived usefulness and perceived ease of use. It has been shown that there is a moderating effect of attachment styles on the relationship between technology readiness and the technology acceptance model (Liu & Karahanna, 2007). When attachment styles (secure/insecure) are added as a moderator to the model, the interaction effect results in some interesting findings. The structural model shows a strong path between technology readiness and perceived ease of use β=.768, and given the strength of this relationship, I would assume that the moderation effect of secure attachment style would increase this effect. The data, however, indicated a different result.

Hypothesis 6b was not supported, meaning that an increasing secure attachment style does not increase or strengthen the positive the relationship between technology readiness and perceived ease of use. Therefore, if a person's attachment security increases, it does not mean that her or his use of technology will increase. This result was not predicted, but it is in line with pervious theories that perceived ease of use is not the strongest predictor of actual use. Based on previous research by Mende and Bolton (2011), who found that customer attachment styles influence how customers perceived service firms and employees, I assumed that attachment styles

could be applied as moderators to the technology acceptance model constructs, both of which are based on perceptions. Hypothesis 7b, the interaction of insecure attachment, as predicted does negatively moderate the positive relationship between technology readiness and perceived ease of use. In other words, it weakens the relationship between technology acceptance and perceived ease of use. Therefore, as a person becomes increasing insecure, it will decrease his or her willingness to use technology. This finding is interesting because an insecure attachment style does moderate the relationship, but a secure attachment style does not. This finding warrants more research in the future.

The results reveal marginal support of Hypothesis 6a, an indication that as secure attachment style increases, it will strengthen the relationship between technology readiness and perceived usefulness, but that increase may or may not have much influence on the overall usage of technology. Hypothesis 7a, as the results indicate, was not supported: As a person's insecure attachment style increases, it does not decrease the positive relationship between technology readiness and perceived usefulness. This result was surprising given the previous research on insecure attachment styles, which found that people who display this style have shown discomfort and insecurity with technology because they do not want to depend on another person if the technology fails.

The most interesting results of the research show how insecure and secure attachment styles interact differently on the constructs of the technology acceptance model. Insecure attachment moderates the relationship between technology readiness and perceived ease of use, and secure attachment moderates the relationship between technology readiness and perceived usefulness. However, the results support the theory that attachment styles influence the relationship between technology readiness and technology acceptance.

Some additional factors may have had an impact on Hypotheses 6b and 7a, which were not supported in this study. First, the lack of separating the dimensions of the insecure attachment personality type could have affected the findings. Insecure attachment has two

dimensions, with behavior moving along a continuum between avoidance and anxiety. Even though insecure attachment has a negative connotation, a person can move between each of the dimensions. Next because Hypotheses 6a and 7b were not supported, they could have cancelled out the moderation effect of the other two hypotheses, because each had a moderation effect on the different constructs of the TAM model. Finally, the methodology used to evaluate the data may have created issues that caused the lack of support for the hypotheses. Regression is used for the predictive power, but it lacks the fit statistics found in SEM. The main purpose of this research was to determine what additional factors may influence the actual usage of technology. Therefore, PLS was chosen as the evaluation software because of its predictive power. However, there may be a need to evaluate the error variance among the constructs to understand the model fit. While there may be some response error or systematic error, it may be necessary to understand the construct variance by using structural equation modeling.

The goal of this study was to understand the role of attachment theory in the relationship between technology readiness and technology acceptance to determine whether attachment styles increased or decreased a person's willingness to actually use a technology device. Customers must exhibit some type of customer readiness in order to accept technology. The first step of the research was to investigate the drivers of customer readiness. In that technology is becoming unavoidable, firms must be aware of the potential consequences if their technology is forced onto their customers. The next step was to understand the relationship between technology readiness and the technology acceptance model and to determine whether these constructs lead to actual usage. The results showed that both of theses constructs are extremely important to customers' actually using technology. The final step was to determine whether there attachment styles had a moderation effect on the relationship between technology readiness and the technology acceptance model. Individuals who exhibit the secure attachment style have a very positive outlook and a tendency to focus on what makes them more efficient; accordingly, they will ask for if help needed and are not fearful of relationships. Insecure individuals exhibit negative

emotions and reactions, and they display this behavior in various ways, from expressions of anger and detachment to fear of rejection and abandonment. Understanding customer behavior is key to creating the best service encounter for customers, and this research creates another framework to understand that behavior.

Theoretical Implications

This study provides a contribution to technology readiness and the technology acceptance model by adding and understanding the psychological concept of attachment styles. Attachment theory is a multifaceted concept rooted early in caregiver experiences (Beck & Clark, 2009). Understanding triggers of the two dimensions of the insecure attachment style can extend the theory of attachment styles in the customer-behavior research in the marketing discipline. Understanding (a) how a personality trait can affect how people view technology and (b) two concepts with roots in personality can extend the technology readiness index and the technology acceptance model in the marketing research context. This unique contribution to the personality dimensions of the technology readiness index and how the moderation effects and influences the relationship with the technology acceptance model can provide additional insight to how firms can develop relationships with customers through technology. Palmatier (2008) has encouraged researchers to look for more than the established marketing constructs to develop other insights of what drives customers relational orientation, and attachment styles is one of the potential constructs that can help researchers explore that additional insight.

Managerial Implications

The implication of these findings for managers is the understanding of how attachment styles, which are personality traits, influences customers willing to use a technology device to conduct business with a firm. Managers need to be aware of how this will affect relationships, given growth in the technology arena for so many businesses. Firm leaders must understand they can no longer force technology upon their customers; instead, they must understand what drives those customers to want to use technology and in what circumstances they want to use it in.

Consumer behavior can change from day to day, and understanding attachment styles is one way to help firms adapt to those continual changes in behavior.

Although consumer behavior can change over time, attachment styles are something people are born with, and so those styles are hard to change (Bowlby, 1980). Using attachment styles as a moderator, as demonstrated in this study, can be one way to understand the connection between technology readiness and technology acceptance. As shown in the research, regarding the moderating effect of an attachment style and how it influences the relationship between technology readiness and the perceived usefulness construct of technology acceptance model, an organization can refer to attachment styles when determining which customers to reach to via technology. Understanding attachment styles can be helpful in understanding relationship orientations (Mende & Bolton, 2011), because those styles gives an organization another view of customer's behavior. Furthermore, understanding attachment styles will help companies customize relationship-building activities, and managers can decide how to deliver services whether via technology or face to face.

Limitations and Future Research

The fist limitation is that sample consisted only of the current customers of a financial services firm. In future studies, the survey could be distributed to customers of other types of service businesses; this would help validate the results of this research. The next limitation is the current research. Simply asking the clients if they have a log on id and then asking them to use it to log on to the system is not an indication that the customer will actually conduct business with a firm with the technology device. A third limitation is there are two dimensions of an insecure attachment style, but for the purposes of this project, they were combined into one construct, insecure attachment, and this approach may have generated some of the surprise findings. A future study could separate and test the moderation effects individually to determine whether that separation might change the results. This approach will help a firm gain a clearer understanding

of attachment styles' effects on the customer's preferred way of conducting business and whether they do that according to their self-reported attachment style.

Future research could include doing a study to examine attachment styles based on age and gender to determine whether there is a significant difference among the groups based on that information and whether the results change significantly from what was found in this study. Additional future research could be include conducting a longitudinal study to determine which customers actually interact with the firm via technology based on the self-reported attachment styles. For example, researchers could determine how many times the customer logged on to conduct business with firm and whether the usage changes over time when controlling for age.

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APPENDICES

Appendix A: Technology and Attachment Survey

Please answer each of the survey questions by choosing the best response of the seven possible responses on each question. Please know there is no right or wrong answers so feel free to provide honest responses.

Please indicate the space below please identify a technology device that you are mostly likely to use with conducting online business with your service firm. (i.e. Laptop; tablet, PC, smart phone)

_____

Optimism	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
Technology gives people more control over their daily lives.	1	2	3	4	5	6	7
Products and services that use the newest technologies are much more convenient to me.	1	2	3	4	5	6	7
You like the idea of doing business via computers because you are not limited to regular business hours.	1	2	3	4	5	6	7
You prefer to use the most advanced technology available.	1	2	3	4	5	6	7
You like computer programs that allow you to tailor things to fit your own needs.	1	2	3	4	5	6	7

Technology makes you more efficient in your occupation.	1	2	3	4	5	6	7
You find new technologies to be mentally stimulating.	1	2	3	4	5	6	7
Technology gives you more freedom of mobility.	1	2	3	4	5	6	7
Learning about technology can be as rewarding as the technology itself.	1	2	3	4	5	6	7
You feel confident that machines will follow through with what you instructed.	1	2	3	4	5	6	7

Innovativeness	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
Other people come to you for advice on new technologies.	1	2	3	4	5	6	7
It seems your friends are learning more about the newest technologies than you are	1	2	3	4	5	6	7
In general, you are among the first in your circle of friends to acquire new technology when it appears.	1	2	3	4	5	6	7
You can usually figure out new high-tech products and services without help from others.	1	2	3	4	5	6	7
You keep up with the latest technological developments in your areas of interest.	1	2	3	4	5	6	7

You enjoy the challenge of figuring out high-tech gadgets.	1	2	3	4	5	6	7
You find you have fewer problems than other people in making technology work for you.	1	2	3	4	5	6	7

Discomfort	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
Technical support lines are not helpful because they do not explain things in terms you understand.	1	2	3	4	5	6	7
Sometimes, you think that ordinary people does not design technology systems for use.	1	2	3	4	5	6	7
There is no such thing as a manual for a high-tech product or service that is written in plain language.	1	2	3	4	5	6	7
When you get technical support from a provider of a high-tech product or service, you sometimes feel as if you are being taken advantage of by someone who knows more than you do.	1	2	3	4	5	6	7

If you buy a high-tech product or service, you prefer to have the basic model over the one with a lot of extra features.	1	2	3	4	5	6	7
It is embarrassing when you have trouble with a high-tech gadget while people are watching.	1	2	3	4	5	6	7
There should be caution in replacing important people-tasks with technology because new technology can breakdown or get disconnected.	1	2	3	4	5	6	7
Many new technologies have health or safety risks that are not discovered until after people have used them.	1	2	3	4	5	6	7
New technology makes it too easy for governments and companies to spy on people.	1	2	3	4	5	6	7
Technology always seems to fail at the worst possible time.	1	2	3	4	5	6	7

Insecurity	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
You do not consider it safe giving out a credit card number over a computer.	1	2	3	4	5	6	7
You do not consider it safe to do any kind of financial business online.	1	2	3	4	5	6	7
You worry that information you send over the Internet will be seen by other people.	1	2	3	4	5	6	7
You do not feel confident doing business with a place that can only be reached online.	1	2	3	4	5	6	7
Any business transaction you do electronically should be confirmed later with something in writing.	1	2	3	4	5	6	7
Whenever something gets automated, you need to check carefully that the machine or computer is not making mistakes.	1	2	3	4	5	6	7
The human touch is very important when doing business with a company.	1	2	3	4	5	6	7
When you call a business, you prefer to talk to a person rather than a machine.	1	2	3	4	5	6	7
If you provide information to a machine or over the Internet, you can never be sure it really gets to	1	2	3	4	5	6	7

Ease of Use	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
Getting the information I want from the device is easy.	1	2	3	4	5	6	7
Learning to use the device was easy.	1	2	3	4	5	6	7
Becoming skillful at using the device was easy.	1	2	3	4	5	6	7
I often become confused when I use my device.	1	2	3	4	5	6	7
Interacting with the device is often frustrating.	1	2	3	4	5	6	7
I need to consult the user manual often when using my device.	1	2	3	4	5	6	7
The device often behaves in unexpected ways.	1	2	3	4	5	6	7
I find it cumbersome to use my device.	1	2	3	4	5	6	7
It is easy for me to remember how to perform task using my device.	1	2	3	4	5	6	7
I find it easy to get the device to do what I want it to do.	1	2	3	4	5	6	7
Overall, I find the device easy to use.	1	2	3	4	5	6	7
right place.							

Perceived Usefulness	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
Using this device enhances my effectiveness at home and work.	1	2	3	4	5	6	7
Using this device increases my productivity at home and work.	1	2	3	4	5	6	7
Using this device saves me time.	1	2	3	4	5	6	7
Using this device enables me to accomplish tasks more quickly.	1	2	3	4	5	6	7
Using this device gives me greater control over my	1	2	3	4	5	6	7

work and life.							
The device supports critical aspect of my life and my job.	1	2	3	4	5	6	7
Using my device reduces the time I spend on unproductive activities.	1	2	3	4	5	6	7
Using this device makes it easier to do my job.	1	2	3	4	5	6	7
Overall I find the device useful in my life.	1	2	3	4	5	6	7

Attachment Style Anxiety	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
I worry about being abandoned by the company as a customer.	1	2	3	4	5	6	7
The Company changes how it treats me for no apparent reason.	1	2	3	4	5	6	7
I worry that the company doesn't really like me as a customer.	1	2	3	4	5	6	7
I worry that the Company doesn't care about me as much as I care about the Company.	1	2	3	4	5	6	7
Attachment Style Avoidant (Reverse Scored)							
It is a comfortable feeling to depend on the company.	1	2	3	4	5	6	7
I am comfortable having a close relationship with the company.	1	2	3	4	5	6	7
It is easy for me to feel warm and friendly toward the firm.	1	2	3	4	5	6	7
It helps to turn to the company in times of need.	1	2	3	4	5	6	7

Attachment Style Secure	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
I am comfortable depending on others.	1	2	3	4	5	6	7
I know that others will be there when I need them.	1	2	3	4	5	6	7
I don't often worry about being abandoned by the company.	1	2	3	4	5	6	7
I find it relatively easy to get close to others.	1	2	3	4	5	6	7
I am comfortable having others depend on me.	1	2	3	4	5	6	7

Actual Use	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
I intend to continue using my device in the next 6 months	1	2	3	4	5	6	7
I will continue using my device to review my account in the next 6 months	1	2	3	4	5	6	7
I intend to use my device to access the website frequently in the next 6 months.	1	2	3	4	5	6	7
I will continue to use my device to communicate with my client team in the next 6 months.	1	2	3	4	5	6	7

The questions below are for classification purposes only.

Gender: Male / Female

Race: White or Caucasian / African American / Hispanic / Asian / Native American / Other

Please write your age: _____

I check my account activity via the website using my computer (laptop or desk top)

Yes____ No___

I check my account activity via the website using my mobile device (tablet or smart phone)
Yes___ No____

I call in to speak to someone about my account

Never____ Less than Once a month____ Once a month _____

2-3 Times a Month _____ Once a week _____ 2-3 Times a Week _____

Daily _____

Thank you for taking the time to complete this survey.

VITA

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