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Antecedents and Outcomes of Customer Engagement: Bridging Customer Value Co-Creation Behavior and Customer Psychological State Engagement

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ANTECEDENTS AND OUTCOMES OF CUSTOMER ENGAGEMENT:
BRIDGING CUSTOMER VALUE CO-CREATION BEHAVIOR AND
CUSTOMER PSYCHOLOGICAL STATE ENGAGEMENT

A Dissertation

by

SAMANEH TORKZADEH

Submitted to the Graduate College of
The University of Texas Rio Grande Valley
In partial fulfillment of the requirements for the degree of

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July 2017

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BRIDGING CUSTOMER VALUE CO-CREATION BEHAVIOR AND
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July 2017

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ABSTRACT

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This dissertation draws on service-dominant logic and reviews the engagement literature to explore the antecedents and outcomes of two multi-dimensional customer engagement constructs: psychological state engagement (PSEngagement) and value co-creation behavior. PSEngagement is a precursor to value co-creation behavior, with the latter also known as behavioral engagement in prior research.

The model proposed in this dissertation was tested in two service contexts: higher education, with a sample size of 454, and fitness, with a sample size of 122. To minimize the common method variance typical of survey research (Podsakoff, et al. 2003), the model was tested twice per context, once using self-report data only, and the second time using a combination of self-report and objective data.

This dissertation integrates two research streams by including customer engagement and customer value co-creation behavior, explores the conceptual and operational definitions of each, and models their antecedents and outcomes. This research is important for theoretical as well as practical reasons. Theoretically, it contributes by corroborating the interplay between PSEngagement and value co-creation behavior and by examining that interplay within the broader nomological network of antecedents and outcomes. For practitioners, this research

identifies the positive outcomes of having engaged customers as well as the mechanisms through which firms can engage customers.

DEDICATION

This dissertation work is dedicated to my mother, Tahereh, who has been a constant source of support and encouragement during the challenges of the Ph.D. program and life in general. She has always loved me unconditionally. Her good examples have taught me to work hard for the things that I aspire to achieve. I am truly thankful for having such a wonderful mother.

This work is also dedicated to my brothers, Saman and Sepehr, who have always been there for me throughout the entire Ph.D. program. Both of you have been my best cheerleaders.

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CHAPTER I

INTRODUCTION

Research on customer engagement is marked with a burst of rapid growth and creative energy (Bowden 2009; Kumar 2013; Van Doorn et al. 2010; Vivek, Beatty, and Morgan, 2012), generating a considerable amount of knowledge, but also significant variation in the definitions, concepts, and arguments used to examine the construct. This variation can become problematic since, without definitional precision, operationalization and differentiation from other marketing constructs is impossible, replicating findings is difficult, and contradictory findings are inevitable. Such conditions render theory testing challenging and hinder the development of the conceptual domain (Harmeling, Carlson, and Moffett, 2017).

Scholars have defined customer engagement by focusing on psychological and/or behavioral aspects of the phenomenon. Focusing on the behavioral aspect, Van Doorn et al. (2010, p.253), defined customer engagement as “the customer’s behavioral manifestation toward a brand or firm, beyond purchase.” Focusing on the psychological aspect, Bowden (2009, p. 695) defined customer engagement as “a cognitive and affective commitment to the brand.” This dissertation draws on service-dominant logic base of engagement (Hollebeek, Srivastava, Chen, 2016; Brodie et al. 2011) to arrive at an integrative model of engagement that not only examines the interplay between its psychological and behavioral facets, but also contextualizes that interplay within the broader nomological network of antecedents and outcomes. Customer engagement is defined in

this dissertation as the cognitive and emotional connectedness of the customer with a focal agent/object/task expressed through co-creative behaviors. As implied by this definition, there are two customer engagement constructs including psychological state engagement (PSEngagement) and value co-creation behavior. Customer *PSEngagement* refers to the level of the customer's cognitive and emotional connectedness with a focal agent/object/task. PSEngagement consists of three dimensions: 1) Vigor: the level of energy and mental resilience in interacting with a focal agent/object/task; 2) Dedication: the sense of belonging to a focal agent/object/task; and 3) Absorption: the level of concentration on a focal agent/object/task. Customer *value co-creation behavior* represents the behavioral aspect and is defined as customer direct and indirect contribution of resources that augment and add to the focal agent's/object's offering. Value co-creation behavior encompasses two constructs: 1) Participation behavior: demonstration of initiative behaviors and proactive seeking of opportunities to contribute what is typically expected or required of the customer; and 2) Citizenship behavior: actions that, given a specific frame of reference, go beyond what is typical, usual, and/or ordinarily expected.

Using customer value co-creation behavior to represent the *behavioral* aspect of engagement is warranted since marketing researchers have often operationalized the behavioral aspect of engagement using one or more components of customer value co-creation behaviors (i.e. Van Doorn et al., 2009; Kumar et al., 2010; Jaakkola and Alexander, 2014; Kumar and Pansari, 2016; Pansari and Kumar, 2016). Moreover, in other fields of inquiry such as industrial psychology, behavioral engagement is defined in terms of in-role and extra-role behaviors (Macey and Schneider, 2008). This practice is consistent with the notion of 'value co-creation behavior' in marketing since participation and citizenship behaviors essentially comprise in-role and extra-

role behaviors, respectively (Yi and Gong, 2013). The importance of studying customer engagement is rooted in two major trends that have altered the perspective of marketing.

First, long-term and sustainable competitive advantage is tied to a firm's ability to retain, sustain, and nurture its customer base (Anderson, Fornell, and Mazvancheryl 2004; Gruca and Rego 2005). Sustaining and nurturing the customer base may require the firm to look beyond repurchase behavior alone (Kumar et al., 2010). Second, going beyond product quality and value as drivers of performance, marketing scholars have begun to focus on customer-based metrics for measuring organizational performance (Parasuraman, Berry, and Zeithaml, 1991). Customer-based metrics for measuring organizational performance have evolved over time and include trust and commitment (Bansal, Irving, and Taylor 2004; Garbarino and Johnson 1999; Palmatier et al. 2006; Verhoef 2003), service quality perceptions (Zeithaml, Berry, and Parasuraman 1996), brand experience (Brakus, Schmitt, and Zarantonello 2009), brand-consumer connections (Fournier 1998; Muniz and O'Guinn 2001), consumer identification (Ahearne, Bhattacharya, and Gruen 2005), and customer equity (Rust, Lemon, and Zeithaml 2004).

Recently, Pansari and Kumar (2016) conceptualized customer engagement as a higher order customer-based metric of sustainable competitive advantage. Customer engagement is the primary focus of many firms. A study by Gallup highlights the benefits of engaging customers, noting that customers who are engaged generate an additional 23% premium in share-of-wallet, profitability, revenue, and relationship growth when compared with the average customer. This positive outcome highlights the importance of engagement in the marketplace, and is not restricted to any industry, but can be generalized across industries.

A series of Gallup studies (2013) underscore the positive consequences of customer engagement. In the consumer electronics industry, engaged shoppers make 44% more visits per

year to their preferred retailer than the disengaged shoppers. On average, the engaged consumer spends \$373 per shopping trip, while disengaged customers spend \$289 per trip. In casual restaurants engaged customers make 56% more visits per month than disengaged customers and in fast food restaurants engaged customers make 28% more visits per month than disengaged customers. In the hospitality sector, engaged hotel guests spend 46% more per year than disengaged guests. In the insurance sector, engaged policy owners purchase 22% more types of insurance products than disengaged policy owners do. In the retail banking industry, customers who are engaged bring 37% more annual revenue to their primary bank than customers who are disengaged. B2B companies which their customers are engaged have 63% lower customer attrition, 55% higher share of wallet, and 50% increased productivity.

In a study comprising 438 marketing managers,¹ 63% of marketers defined engagement in terms of sales and repeat sales, 15% defined it as an impact on revenue by customers, and 22% as love for a brand. Although there are differences in the definition, more than 80% of marketers wanted to engage customers (Marketo, 2016). The notion of customer engagement is relatively new. Practitioner interest has developed in the last decade (e.g., Harvey 2005; Haven 2007). The term is being given attention by several consulting companies, including Nielsen Media Research, the Gallup Group, and IAG Research. Additionally, the Advertising Research Foundation, the American Association of Advertising Agencies, the Association of National Advertisers, and Journal of Services Research are working on ways to define and measure customer engagement. Customer engagement is a hot topic for both practitioners and researchers alike. In spite of the significant interest, the academic literature on consumer engagement has some deficiencies. First, there seems deficit of concurrence on what customer engagement is,

¹ <http://www.marketo.com/about/news/majority-of-marketers-believetheir-marketing-needs-to-undergo-dramatic-change/>

with some researchers emphasizing the psychological process (i.e. see Bowden, 2009; Brodie et al 2011) and others focusing on the behavioral aspect (i.e. Van Doorn et al., 2010; Pansari and Kumar, 2016). Second, the current literature is irreconcilable in its analysis of customer engagement dimensionality. Some definitions view customer engagement as a multi-dimensional construct, with behavior being one of the dimensions (i.e. see Patterson et al. 2006) whereas other definitions solely focus on the behavioral aspect of customer engagement. To address these two deficiencies, this dissertation offers insights into the customer engagement definition and its dimensionality by proposing two multidimensional customer engagement constructs: PSEngagement and value co-creation behavior.

Finally, to date, the nomological network of customer engagement and how this construct relates to other customer-focused constructs remain sparse and largely lacking measurement capability and empirical validation (Hollebeek, Glynn, and Brodie, 2014). Also, the limited empirical examinations of customer engagement concern a narrow set of contexts with limited focus (Dessart, Veloutsou, and Morgan-Thomas, 2015 and Brodie et al. 2011). To address this deficiency, I employ the self-determination theory (SDT) to identify the antecedents of customer engagement. According to SDT, PSEngagement² represents the energy available to the self to mobilize focused efforts and persistence on tasks. The level of PSEngagement, therefore, depends on the psychological nutrients that generate and avail energy to the self. Through these explanations, SDT suggests that psychological nutrients support and trigger customer engagement. Hence, we rely on SDT to answer the following questions: How can firms improve customer engagement by focusing on its antecedents? How does customer engagement engender positive outcomes such as goal attainment and satisfaction? Understanding customer engagement

² The term *engagement* is often called *vitality* in other fields. For purposes of clarity and consistency, I use the term *engagement* (Deci and Ryan, 2008)

and its antecedents and outcomes is important for theoretical as well as practical reasons. Theoretically, research is needed to corroborate the interplay between PSEngagement and value co-creation behavior, examine that interplay within the broader nomological network of antecedents and outcomes, and delineate their linkages to other customer-focused constructs. So doing will offer a framework that can aid future customer engagement research in determining the factors that result in and from customer engagement. For practitioners, this research identifies the positive outcomes of having engaged customers as well as the mechanisms through which firms can engage customers.

The dissertation proceeds as follows. Since I employ ‘customer value co-creation behavior’ to represent the behavioral aspect of engagement, the next chapter begins by reviewing the literature on customer value co-creation behavior and then demonstrates its relevance to customer engagement. Then, I use SDT to identify the constructs of interest to this dissertation, build the conceptual model, and propose a set of substantive hypotheses. The proposed hypotheses will then be tested using both self-report and objective data by designing studies in two different service contexts: fitness and online courses in higher education. The last chapter will discuss the findings and their implications and limitations.

CHAPTER II

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

This chapter begins with a literature review of relevant constructs, followed by an explanation of why behavioral engagement overlaps with customer value co-creation behavior. Then, a set of hypotheses will be presented.

Customer Value Co-creation Behavior

Service-dominant (S-D) logic (Vargo and Lusch 2004, 2008a, 2008b, 2008c) is a school of thought that views all businesses as *service* providers who exchange service for service as the fundamental basis of exchange (Vargo and Lusch 2004). ‘Service’ is defined as the “application of skills and knowledge (operant resources) for the benefit of another party” (Vargo and Lusch, 2008c, p. 6). S-D logic consists of 10 fundamental premises (FPs). Two of these premises emphasize the collaborative nature of value creation (FP-6: “Customer is always a co-creator of value” as well as the pragmatic nature of value (FP-10: “value is always uniquely and phenomenologically determined by the beneficiary” (Vargo and Lusch, 2008c, p. 7).

With the evolution towards a dominant logic of marketing in which customers are not merely responders but rather active value co-creators, researchers have begun to focus on customer behavior in this regard (Xie, Bagozzi, & Troye, 2008), extending previous customer behavior literature that focuses on the customer decision-making process at the time of purchase (Yi and Gong, 2013). To explain the nature of customer value co-creation behavior, some studies use a

multidimensional approach and identify distinctive components (e.g. Bettencourt, 1997; Bove, Pervan, Beatty, and Shiu, 2009; Groth, 2005; Yi and Gong; 2013), whereas other studies follow a unidimensional approach (e.g. Cermak, File, and Prince, 1994; Dellande, Gilly, and Graham, 2004; Fang, Palmatier, and Evans, 2008).

Among the multidimensional approaches, Bettencourt (1997) has employed three dimensions for customer co-creation behavior: cooperation, participation, and loyalty. Furthermore, Bettencourt and Brown (1997) divided customer participation in the service process into in-role and extra-role behaviors. Bove et al. (2009) focused on customer extra-role behaviors and labeled it as customer organizational citizenship behaviors (customer OCB), while considering several dimensions, including positive word-of-mouth, suggestions for service improvements, policing of other customers, voice, benevolent acts of service facilitation, displays of relationship affiliations, flexibility, and participation in the firm's activities. Also, customer participation included a range of behaviors, such as preparation, relationship building, information exchange, quality assurance, and assessment (Kellogg Youngdahl, and Bowen, 1997; Youngdahl et al., 2003).

To this day, only Yi and Gong (2013) have systematically explored the dimensionality of customer value co-creation behavior, resulting in the identification of two dimensions: customer participation behavior (which is typically expected or required) and customer citizenship behavior (which goes beyond what is typical or expected, given a particular frame of reference).

Customer Participation Behavior

I begin with evolution of customer participation behavior and followed by explanation of approaches to its measurement.

Evolution of Customer Participation Behavior

Customer participation has been studied for more than 40 years. As participation is increasingly studied, the concept has evolved. The evolution of the customer participation behavior concept was drafted by Mustak, Jaakkola, and Halinen as a systematic review in 2013. The preliminary research of customer participation in the 1970s and 1980s focused on the service provider side. For example, the study of Levitt (1972) conceptualized participation as a means to affect production efficiency. Similarly, Lovelock and Young (1979, p. 179) focused on “encouraging consumers to modify their behavior so that services can be delivered in a more productive and economically efficient manner.” Furthermore, Fitzsimmons (1985) developed the customer participation concept by proposing the notion that “opportunities exist for productivity gains by shifting some of the service activities on the consumer” (p. 61).

While researchers view customer participation as being influential on production efficiency (e.g. Bendapudi and Leone, 2003; Hsieh and Chang, 2004), the customer participation concept slowly evolved to incorporate a range of customer roles, behaviors, and resources during the service process (e.g. Johnston, 1989; Bettencourt et al., 2002). Different roles that customers may potentially perform have been described, such as partial employee (Johnston, 1989), co-producer (Kelley Donnelly, and Skinner, 1990), decision maker (Bitner et al., 1997), and quality evaluator (Ennew and Binks, 1999). Also, customer participation included a range of behaviors, such as preparation, relationship building, information exchange, quality assurance, and assessment (Kellogg et al., 1997; Youngdahl et al., 2003). In addition, researchers recognized a range of resources that customers contribute, such as tangible resources, information, knowledge and competencies (Bettencourt et al., 2002; Skjolsvik et al., 2007). At the same time, several researchers asserted that customer participation is broader than the service process, participation

includes customers' desire to learn and involve in conversation, collaboration, and co-development with the provider (Wikström, 1996; Prahalad and Ramaswamy, 2004).

Afterward, the customer participation concept was gradually extended to both product and service offerings (Wikström, 1996; Vargo and Lusch, 2004). Researchers explained how new perspectives challenged the dominant logic of the time that was focused on the exchange of tangible resources, embedded value, and transactions, and how S-D logic was introduced to shift the focus onto intangible resources, the cocreation of value, and relationships (Vargo and Lusch, 2004). The wide scope of activities is explained, such as customer interaction with providers or other actors (Tether and Tajar, 2008), as well as participation in product development (Wikström, 1996) or innovation (Hippel, 2001; Magnusson, Matthing, and Kristensson, 2003). As Lusch and Vargo (2006) explained, customers might participate in the creation of the core value that the provider offers with “shared inventiveness, co-design, or shared production of related goods” (p. 284). Customer participation in product design and development started with studies concentrated on the IT-products context (e.g. McKeen et al., 1994) and extended to other types of offering (e.g. Milewa, 1997; Misra, 2002).

Hence, customer participation conceptualization—which started with the notion of customers' interference in service production activities (e.g. Levitt, 1972) —has ultimately evolved to consider customers as integral contributors of all kinds of resources throughout the value co-creation process (Lusch and Vargo, 2006; Heinonen et al., 2010; Grönroos and Ravald, 2011).

Measurement of Customer Participation Behavior

There are four approaches on the dimensionality of customer participation measures: 1) one-dimensional, 2) two-dimensional, 3) three-dimensional, and 4) four-dimensional as shown in

Table 2-1. A one-dimensional approach has measured it with a single item (e.g. Cermak, File, and Prince, 2011; Dean, 1997) and has been criticized for its reliability (Andreasen, 1983; Silpakit, and Fisk, 1985). The two-dimensional approach has considered customer participation as a dichotomous measure, either self-service or full service (Dabholkar, 1996; Lee, 1996). This measure has also elicited criticism; participation is more of a continuum made up of different behaviors rather than a dichotomy since this is a joint production of customers and employees in full service (Chua and Sweeney, 2003). Researchers also introduced and used a three-dimensional measure. Ennew and Binks (1999) included information sharing, responsible behavior, and personal interaction with the service provider. Claycomb, Lengnick-Hall, and Inks (2011) measured participation with 1) customer attendance, 2) information provision, and 3) coproduction behavior (e.g. helping out).

Additionally, Chen and Raab (2014) introduced a three-dimensional scale with a different way of labeling: 1) attitudinal participation, 2) information participation, and 3) actionable participation. Attitudinal participation items represent ‘personal interaction’ items (e.g. I am friendly to the restaurant staff); information participation items represent ‘information seeking’ items (e.g. I read reviews of other customers about the restaurant, I spend time searching for information about the restaurant, and I ask people I know for their opinions about the restaurant); and actionable participation items represent ‘tolerance’ items (e.g. I intervene when I feel something is not right when dining in the restaurant) and ‘feedback’ items (e.g. I openly discuss questions and concerns with the restaurant staff). Lastly, the four-dimensional approach offers the most comprehensive measurement scale for participation behavior so far. Kellogg et al. (1997) explained four dimensions of customer participation: 1) preparation, such as an information search; 2) information exchange with the service provider to clarify service

requirements and ensure that the customer understands his or her role in service delivery; 3) relationship building with the service provider in delivering the service; and 4) intervention if the customer believes the service provider is unlikely to produce a satisfactory outcome. Similarly, Auh, Bell, McLeod, and Shih (2007) explained four dimensions of customers' participation: 1) communication, 2) customer expertise, 3) affective commitment, and 4) interactional justice. In the end, the measurement scale that is the most comprehensive measurement so far and is used in my dissertation is Yi and Gong's (2013) measurement scale. They consider participation behavior as a multi-dimensional construct with four dimensions, namely: 1) information seeking, 2) information sharing, 3) responsible behavior, and 4) personal interaction.

Customer Citizenship Behavior

Customer citizenship behavior involves voluntary actions that may not provide a specific benefit to customers (Bove et al., 2009; Yi and Gong, 2006). However, customer citizenship behavior may have an impact on organizational performance (Groth, 2005; Rosenbaum and Massiah, 2007) and offers an additional value (Yi et al. 2011). Customer citizenship behavior in the business discipline literature has been studied extensively because of its possible impact on organizational performance (Bettencourt, 1997; Groth, 2005; Rosenbaum and Massiah, 2007; Woo and Fock, 2004); however, few contributions exist on citizenship behavior antecedents and consequences (Revilla-Camacho, Vega-Vázquez, and Cossío-Silva, 2015). Researchers have used the theoretical framework of Borman and Motowidlo's (1993) study in management literature in which task performance and contextual performance are two components of individual performance (Yi and Gong, 2013). This study used the same rationale and argued in a similar way as employees; customers in the process of value co-creation may take part in

voluntary behaviors that are not required for the successful value co-creation. Next, the relevance of customer value co-creation and customer engagement has been discussed.

A Typology of Customer Engagement

Customer engagement is a relatively new construct (e.g. Pansari and Kumar, 2016; Kumar and Pansari, 2016; Chandler and Lusch, 2014; Brodie et al. 2011; Viveket al., 2012). Lately, researchers have shown how the goal of organizations evolved from transactions to engaging customers (Pansari and Kumar, 2016 p.1). In the 1990s, marketing was focused on customer transactions and firm profitability; in the late '90s and early 2000s, corporate goals slowly evolved into establishing positive relationships (Morgan and Hunt, 1994; Berry, 1995) and profitable loyalty (Homburg and Geirging, 2001; Shankar, Smith, and Rangaswamy, 2003). Now, more and more firms aim to develop engaged customers (e.g. Brodie et al. 2011; Vivek et al. 2012; Pansari and Kumar, 2016) to achieve desired differentiation and sustainable competitive advantage (Pansari and Kumar, 2016).

Despite the increasing number of publications in the marketing discipline about the concept of engagement, the construct does not have a clear definition and understanding. Table 2-2 provides an overview of current definitions of engagement in marketing literature from selected journals. The idea that engagement is a desired phenomenon with positive outcomes is the common thread across these definitions.

The inconsistent interpretations of customer engagement in the marketing discipline resonate with the inconsistent interpretations of employee engagement in the industrial psychology discipline (e.g. May, Gilson, and Harter, 2004; Salanova, Agut, and Peiro, 2005). Many other important psychological constructs have suffered from a lack of precision at the early stages of their development.

Behavioral Engagement or Value Co-creation Behavior

Based on two reasons, I would like to explain that the customer behavioral engagement notion is similar to the customer value co-creation. First, in industrial psychology, Macey and Schneider (2008) defined behavioral engagement in terms of in-role or extra-role behaviors. *Engagement as in-role behavior* refers to the “demonstration of initiative behaviors and proactively seeking opportunities to *contribute what is typically expected or required*” (Macey and Schneider, 2008, p.15). *Engagement as an extra-role behavior* includes “*actions that, given a specific frame of reference, go beyond what is typical, usual, and/or ordinarily expected*” (Macey and Schneider, 2008, p.16) which is normally characterized as organizational citizenship behavior (Organ, 1997; Lee, 2002). Macey and Schneider’s (2008) definition closely resonates with the notion of ‘value co-creation behavior’ in the marketing discipline since value co-creation behavior is comprised of the two conceptually similar dimensions (e.g. see Yi and Gong, 2013): participation behavior (in-role behavior) and citizenship behavior (extra-role behavior). The first facet of customer value co-creation behavior, customer participation, consists of behaviors that are *required* for successful value co-creation (Groth, 2005; Fang, Palmatier, and Evans, 2008; Yi et al., 2011). Such behaviors are customary and fundamental to any co-creation processes. Customer participation is, essentially, what Vargo and Lusch (2004, 2008c) had in mind for their sixth Foundation Premise (FP6): the customer is always a co-creator of value. This premise implies that value creation is interactional. Customers have duties and responsibilities to do the job as one of the parties in the service encounter (Yi et al., 2011; Zeithaml, Bitner, and Gremler, 2013) in order to accomplish a successful service delivery. Customer value co-creation behavior also includes customer citizenship behavior, defined as *discretionary* behaviors that are not necessary for service delivery but are helpful and valuable

for the firm (Groth, 2005; Yi et al., 2011) and that *exceed* far beyond the customer role expectation (Gruen, 1995). These kinds of behaviors which include feedback, advocacy, helping, and tolerance (Yi and Gong, 2013) do not contribute directly to a successful service delivery. Rather, they contribute to the overall firm performance (Motowidlo and Van Scotter, 1994; Yi et al., 2011) with helping others in the service and recommending the services to others (Yi et al., 2011; Yi and Gong, 2013).

Secondly, the foregoing discussion brings forth the fact that most marketing researchers who have incorporated behavioral engagement have conceptualized it, more or less, as customer value co-creation behavior (i.e. Van Doorn et al., 2009; Kumar et al., 2010; Jaakkola and Alexander, 2014; Kumar and Pansari, 2016; Pansari and Kumar, 2016). I will argue in detail how I believe the ‘Jaakkola and Alexander (2014)’ and ‘Kumar et al. (2010)’ article conceptualized customer engagement in a way that resonates with customer co-creation behavior.

First, Jaakkola and Alexander (2014) focus on the behavioral manifestations of “customer engagement through which customers make voluntary resource contributions” (p. 248). Service-dominant logic foundational premise 6 states: “(the) customer is always a co-creator of value” (Vargo and Lusch, 2008c, p. 7) which implies that value creation is interactional (Vargo and Lusch, 2008c, p. 7) and all actors are resource integrators (Lusch and Vargo, 2006, p.283). Therefore, behavioral engagement is what is fundamentally termed as value co-creation behavior. In addition, Jaakkola and Alexander (2014) identify four types of customer engagement: augmenting, co-developing, influencing, and mobilizing behavior. These four types of behavioral customer engagement introduced by Jaakkola and Alexander (2014) are fundamentally the components of customer value co-creation behavior. I explain the reasons for this in the following.

Augmenting behavior refers to “customer contributions of resources such as knowledge, skills, labor, and time, to directly augment and add to the focal firm’s offering beyond that which is fundamental to the transaction (p. 225).” Customer participation, as a component of customer value co-creation behavior, is all about ‘employ(ing) customers’ to increase productivity in the service delivery context (Dong, Evans, and Zou, 2008). In other words, the service customer has been referred to as ‘partial employee’ of the organization who contributes effort, time, or other resources to the service production process (Zeithaml et al., 2013 p. 351). Thus, ‘augmenting behavior’ is equally defined as participation behavior. *Co-developing* behavior refers to “customer contributions of resources such as knowledge, skills, and time, to facilitate the focal firm’s development of its offering (p. 225).” Also, value co-creation includes all-encompassing processes when customers contribute resources during the process (i.e. as a co-producer in the firm’s service production process, as a co-designer in a design process, or as a co-developer in a product development process) (Grönroos, 2011, p. 5). Thus, co-developing behavior is part of customer value co-creation behavior.

The other two types of customer engagement by Jaakkola and Alexander (2014) are ‘influencing behavior’ and ‘mobilizing behavior.’ *Influencing behavior* refers to “customer contributions of resources such as knowledge, experience, and time to affect other actors’ perceptions, preferences, or knowledge regarding the focal firm;” and *mobilizing behavior* refers to “customer contributions of resources such as relationships and time to mobilize other stakeholders’ actions toward the focal firm (p. 225).” Influencing behavior and mobilizing behavior are conceptually equivalent to feedback, advocacy and helping behavior as components of customer value co-creation behavior (Yi and Gong, 2013). Feedback includes “solicited and unsolicited information that customers provide to the employee, who helps employees and the

firm to improve the service creation process in the long run”; advocacy refers to “recommending the business to others” and helping refers to “customer behavior aimed at assisting other customers” (Yi and Gong, 2013, p. 1280 and 1281).

Secondly, Kumar et al.’s (2010) study is another example of marketing research which has incorporated behavioral engagement and has conceptualized it, more or less, as customer value co-creation behavior. They proposed four components of customer engagement: customer purchasing behavior, customer referral behavior, customer influencer behavior through customers’ influence on other acquired customers as well as on prospects, and customer knowledge behavior via feedback provided to the firm for ideas for innovations and improvements, and contributing to knowledge development. Customer engagement conceptualization by Kumar et al. (2010) is mostly about customer citizenship behavior (extra-role behavior), the second dimension of customer value co-creation behavior (except purchase behavior; Kumar in another study with Pansari in 2016 mentioned that customer engagement is beyond purchase behavior), , which includes: feedback, advocacy, helping, and tolerance (Yi and Gong, 2013). Behavioral engagement overwhelmingly overlaps with the notion of customer value co-creation behavior.

I submit that researchers might want to use ‘customer value co-creation behavior’ instead of ‘behavioral customer engagement’ so that the literature and future researchers can benefit from semantic clarity. In conclusion, customer engagement encompasses two, multi-dimensional constructs: customer PSEngagement and customer value co-creation behavior (behavioral engagement). Customer value co-creation behavior (behavioral engagement) refers to customer contributions of resources to directly and indirectly augment and add to the focal agent’s/object’s offering, which includes two types of behavior: participation behavior (in-role) and citizenship

behavior (extra-role behavior). Participation behavior refers to the “demonstration of initiative behaviors and proactively seeking opportunities to contribute what is typically expected or required,” and citizenship behavior includes “actions that, given a specific frame of reference, go beyond what is typical, usual, and/or ordinarily expected.” Each of the two dimensions consists of four sub-dimensions, qualifying participation behavior (information seeking, information sharing, responsible behavior, and personal interaction) and citizenship behavior (feedback, advocacy, helping, and tolerance) as a second-order construct. This study draws on the Macey and Schneider (2008) framework to build on the work of Brodie et al. (2011), while considering two multidimensional customer engagement constructs: customer PSEngagement and customer value co-creation behavior with the former serving as an antecedent to the latter. In the next sections, I explain the association of customer value co-creation behavior with PSEngagement and their antecedent and outcomes as shown in Figure 2-1.

Customer Value Co-Creation as a Consequence of PSEngagement

Engagement as a psychological state refers to the level of a customer’s *cognitive* and *emotional* connectedness with a focal agent/object/task in their relationship with a focal agent/object, which includes (a) vigor: a customer’s level of energy and mental resilience in interacting with a focal engagement object or task; (b) dedication: a customer’s sense of belonging to the organization/brand/task, which corresponds to the emotional dimension of engagement; and (c) absorption: the level of customer concentration on a focal engagement object, such as a brand/organization/task, thus reflecting the cognitive dimension of engagement. The behavioral and dimensional conceptualization of value co-creation provides insight into the specific types of customer behaviors that spread the effects of PSEngagement. Customer value co-creation behavior consists of distinct sets of behaviors that provide value to firm performance

(Motowidlo and Van Scotter, 1994; Yi, et al., 2011; Yi and Gong, 2013). Accordingly, it is important to consider how different aspects of customer value co-creation behavior might be influenced by PSEngagement. Generally, people who are highly psychologically engaged in their role (or any focal agent/object) not only focus their physical efforts on the pursuit of role-related goals, but also appear cognitively vigilant and emotionally connected to the role (Ashforth and Humphrey, 1995; Kahn, 1990, Rich, Lepine, and Crawford, 2010). In contrast, people who are not engaged in their roles refuse to put their physical, cognitive, and emotional energies into action; this is echoed in their role activities and makes them robotic, passive, and detached (Goffman, 1961; Kahn, 1990, Rich et al., 2010). Two vital attributes of psychologically engaged customers are the cognitive and emotional connections with a focal agent/object/task.

A couple of examples of companies that put forth effort to engage their customers psychologically are Dove and Always. Dove's "Real Beauty Sketches" is the most viral advertisement with 114 million total views because of the "contents of the video, which *elicited the intense emotional* responses of 'warmth, 'happiness' and 'knowledge' from its target demographic—one of the key factors behind a video's sharing success" (Stampler, 2013). Always' "Like a Girl" is the second most viral advertisement with more than 90 million views because of "*using the brain's ability to think.*" "Like a Girl" brought up issues of gender disparity, the innocence and potential that children have, how society molds boys and girls differently—and encourages adults to remember the potential and self-confidence they had lost along the way and make use of it—reclaiming the phrase 'like a girl'. In a study conducted in December 2014, almost 70% of women and 60% of men claimed that "the video changed my perception of the phrase 'like a girl'" (Thomas, 2016). Companies have been shifting from 'selling' to 'cognitively and emotionally connecting.'

Psychologically engaged customers have a cognitive and emotional connectedness with a focal agent/object/task, which results in “value co-creation behavior.” In the service system, those who are engaged in their roles are fully present, attentive, connected and focused on what they are doing. Psychologically engaged individuals bring their complete selves to perform their tasks (Kahn, 1992). Ultimately, PSEngagement is devoting the “hands, head, & heart” (Ashforth and Humphrey, 1995, p.110) in action and full task performance. Psychologically engaged individuals allocate their personal resources to role/task intensely and persistently (Kanfer, 1990). PSEngagement reflects its cause of the investment of the various energies on a role (Kahn, 1992; Schaufeli, Salanova, González-Romá, and Bakker, 2002; Rich et al., 2010). Since psychologically engaged individuals become “cognitively vigilant and empathically connected to others in the service of the work they are doing in ways that display what they think and feel, their creativity, their beliefs and values and their connection to others (Kahn, 1990, p. 700),” they exhibit greater participation and citizenship behavior. I hypothesize:

H1. PSEngagement is positively associated with customer participation behavior.

H2. PSEngagement is positively associated with customer citizenship behavior.

Antecedents of PSEngagement: Applying Self-Determination Theory (SDT)

Relative to explaining the effects of PSEngagement, it is more difficult to explain why some customers reach and experience high levels of energy to perform their role while others do not. I will try to facilitate this theoretical task by first discussing the customer readiness construct and its association with participation behavior and then by drawing on self-determination theory (SDT; Deci and Ryan, 1985).

Customer Readiness

Inherent to the notion of value co-creation is the assumption that there are at least two entities where one offers value propositions, and the other helps to determine value through use (Vargo and Lusch, 2011). Determining value through use or context remains a critical component in the co-creation of value for more research (Vargo, Maglio, and Akaka, 2008). Customers are supposed to make the potential value evident and be ready for value co-creation requirements. I define customers' readiness as the state of being fully prepared for simultaneous production and consumption of service and the willingness to serve as an active element in the value co-creation process. Customer readiness is conceptualized as a construct consisting of role clarity, ability, and motivation (e.g. Meuter, Bitner, Ostrom, and Brown, 2005).

Role clarity refers to customer awareness of their role, what they need to do, and their knowledge of what to do. Easingwood (1986) reports 89% of firms have problems with employee or customer confusion over their roles. Customer confusion is due to the perceived uncertainty and lack of role clarity. Scholars argue that customers need to be informed about what the service requirements are (Kellogg et al., 1997, Yi and Gong, 2013; Yi, 2014). Customer participation will decrease when customers do not have a sufficiently developed understanding of their role in the service process (Larsson and Bowen, 1989). Additionally, when customers have the necessary skills to complete a task, they will perform more proficiently. According to Seltzer, (1983), individuals will not perform an activity when they believe that they are unable to perform a task required by that activity. Consequently, ability is a critical component of customer readiness. Finally, because customers may participate in the value co-creation process actively or passively, they must be motivated to participate actively. Based on the Valence-Instrumentality-Expectancy (VIE) theory of motivation (Lewin, 1938; Tolman, 1959; Vroom, 1964; Porter and Lawler, 1968) an individual's behavior results from conscious choices and these choices are

associated with an individual's perception and formation of beliefs and attitude. VIE assumes that individuals base their acts on perception and belief and base on that, individuals place a different level of importance on the outcomes of their behavior (i.e. *valence*: positive, negative or zero valence). Hence, VIE establishes that individuals decide to act in a certain way because they are motivated to select a specific behavior over other behaviors due to valences. In addition, the first level outcome is associated with the second level outcome (i.e. *instrumentality*: the degree to which first level outcome leads to the second level outcome). Thus, based on the VIE argument, customers will be motivated if they perceive that their active participation leads to successful value co-creation.

H3a. Role clarity is positively associated with customer participation behavior.

H3b. Ability is positively associated with customer participation behavior.

H3c. Motivation is positively associated with customer participation behavior.

The sequence of role clarity, ability, and motivation in developing customer readiness has also received scholarly attention. Bowers, Martin, and Luker (1990, p.62) propose a three-part sequence to improve participation, "Step 1: Define the customer's job. Step 2: Train the customer to perform his or her job. Step 3: Retain the valuable customer by rewarding the customer for a job well done." Essentially, they argue that role clarity supports ability, which in turn fuels motivation. In hospital settings, Dellande, Gilly, and Graham (2004) find that patients who are not clear about their role in the service process are unable to acquire the needed skills to carry out the tasks required of them. Moreover, patients will become frustrated and will lose their motivation if they are not able to perform expected behaviors.

H4a. The higher the customer role clarity, the more able the customer is to perform the expected tasks.

H4b. The higher the customer ability, the more motivated the customer is to perform the expected tasks.

Self-Determination Theory (SDT)

Self-determination theory was initially developed by Ryan and Deci (2000). SDT is a theory of motivation which is centrally concerned with how to mobilize effort and persist at the tasks. SDT views PSEngagement as the level of energy available to the self. Psychological nutrients that enhance the level of energy to perform a task are the reasons that incite people to psychologically engage in an activity. PSEngagement corresponds with activities or situations in which basic psychological needs are satisfied. As such, we must recognize the satisfied basic needs as reasons for customers to become psychologically engaged and subsequently perform value co-creation behaviors.

Although several basic psychological needs have been advanced as contributing to PSEngagement, two that have received a great deal of attention are ability³ and motivation. In one study, Sheldon, Ryan, and Reis (1996) found that people's perception of their ability predicts individual differences in PSEngagement. Moreover, in an experimental study of video games, Ryan, Rigby, and Przybylski (2006) examined the need satisfaction on changes in PSEngagement from pre- to post-play. The simple platform video games they used provide multiple opportunities for the feeling of ability or mastery. Respondents, most of whom were novices at such games, on average showed a decline in engagement pre- to post-play. Those who experienced the ability to play the game maintained their engagement, whereas those who had low levels of perceived ability showed diminished engagement after play. In another study, Gagné, Ryan, and Bargmann (2003) followed elite level female gymnasts over several weeks of

³ The term *ability* is often called *competence* in the referent literature. However, for purposes of clarity and consistency, I use *ability*.

practice. Ratings of engagement were obtained, as well as the degrees to which ability was experienced during practice. Results showed that daily changes in engagement were affected by the perceived ability to practice by gymnasts. On days where these gymnasts felt more able to perform the practice, they were more engaged in physically demanding and calorie-draining activities.

The second psychological nutrient to the self that enhances PSEngagement is motivation. Motivation concerns the improving of people's psychological processes (Deci and Ryan, 2008). Also, psychologically engaged people who inspired with intrinsic motivation are different from people who inspired with extrinsic motivation. On the basis of SDT, people who place more importance on extrinsic motivation would have less PSEngagement than those who are more centered on intrinsic motivation. This expectation has been supported in several studies. Kasser and Ryan (1993) showed that the relative importance of financial motives was negatively associated with individual differences in PSEngagement. Kasser and Ryan (1996, 2001) extended this finding to a broader array of extrinsic motivations including fame and attractiveness. Kim, Kasser, and Lee (2003) found similar effects on PSEngagement in South Korean samples. Also, Vansteenkiste et al. (2007) presented two studies of working adults showing that intrinsic versus extrinsic motivation were differentially associated with PSEngagement, and, moreover, intrinsic motivation, relative to extrinsic, is associated with greater PSEngagement.

In short, when customers perceive that they have the ability to perform a task and when they feel motivated to do so, the level of their PSEngagement is maintained or enhanced. Moreover, the pursuit of meaningful activities, especially those associated with intrinsic benefits, maintains or enhances PSEngagement. As such I hypothesize:

H5a. Ability is positively associated with PSEngagement.

H5b. Motivation is positively associated with PSEngagement.

H5c. PSEngagement will be higher when people are intrinsically motivated versus extrinsically motivated.

Customer Value Co-Creation Behavior Outcomes: Goal Attainment and Satisfaction

Customer Participation Behavior Outcomes

In 1972, Duncan argued that customer participation reaches the pinnacle of its importance during the service delivery stage because it is this stage that affects the service outcomes the most. As a result of participation in the service delivery process, customers may feel responsibility for service outcomes. When service customers take responsibility for service outcomes, there is greater likelihood that they will achieve their goals (Bagozzi and Dholakia 1999). Mills, Chase, and Margulies (1983) further argue that as a result of taking part in the service delivery process, customers become accountable for the activities and the extent to which they achieve their goals. There is considerable empirical support across service industries for the positive association between participation behavior and goal attainment. For example, in the health care context, Dellande et al. (2004) confirm the direct association between patient participation in weight-loss programs and goal attainment which is an important result “because compliance decreases as the duration of the regimen increases, providers can reassure or impress on consumers during periodic meetings that if they stick with the program, they will realize their goal (p. 88).” In higher education, student participation has appeared to be a precursor to academic achievement (Finn and Cox, 1992; Voelkl, 1995). In online learning, specifically, Davies and Graff (2005) find students who participate less frequently may be more likely to fail the course. Relying on these findings, I hypothesize:

H6a. Customer participation behavior is positively associated with goal attainment

Mittal and Frennea (2010, p. 3) define customer satisfaction as “a customer’s post-consumption evaluation of a product or service.” Satisfaction occurs when the perceived performance of a product or service reaches or exceeds the individual’s prior expectations (Bearden and Teel 1983; Oliver 2014). As a central construct in marketing and consumer research (e.g., Luo and Homburg, 2007; Szymanski and Henard, 2001), customer satisfaction has been shown to influence other important outcome constructs such as customer loyalty and willingness to pay (Seiders, Voss, Grewal, and Godfrey, 2005; Homburg, Koschate, and Hoyer 2005). Scholars and practitioners regard customer satisfaction as a “strategic imperative” (Mittal and Kamakura, 2001, p. 131) and urge businesses, for-profit or non-for-profit, to invest in creating a base of satisfied customers (Simester, Hauser, Wernerfelt, and Rust, 2000). Higher education institutions, too, have shown much interest in the satisfaction of the stakeholders they serve, especially students (Greenland and Moore 2014; Zhang et al. 2010).

Beyond the direct linkage, customer participation has an indirect relationship with satisfaction. Specifically, providing a greater amount of input and interacting with employees and other customers to a greater extent create opportunities for the service provider to better understand the focal customer’s needs and wants. Increased understanding, in turn, can enable the provider to achieve a superior value co-creation design (Mustak, Jaakkola, and Halinen, 2013). This cause-and-effect chain is applicable in higher education, as well.

H6b. Customer participation behavior is positively associated with satisfaction

Customer Citizenship Behavior Outcomes

Customers in service delivery comprise “partial employees” of the firm (Bowen and Schneider, 1985; Mills and Morris, 1986) because they contribute to the development and delivery of service in ways similar to the firm’s traditional employee (Bettencourt, 1997). To the extent that service customers qualify as partial employees, extant knowledge about employee performance and satisfaction can be consulted to gain insights into customer performance and satisfaction (Bowen, 1986; Bettencourt, 1997).

During the past 20 years, research on the relationship between Organizational Citizenship Behavior (OCB) and one of its most important consequences, namely, performance, has emerged as a primary focus (e.g., Allen & Rush, 1998; DeGroot & Brownlee, 2006; Ehrhart, Bliese, & Thomas, 2006; Koys, 2001; Podsakoff, Ahearne, & MacKenzie, 1997; Podsakoff, Blume, Whiting, & Podsakoff, 2009; Sun, Aryee, & Law, 2007). Interest in performance is based on the intuitively appealing notion that employees who are more helpful and cooperative will perform better. Social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) are often cited as theoretical bases for expecting OCB to influence performance. For example, if Employee A helps Employee B to finish an important report, then Employee A gives of his or her own time to improve the performance of Employee B. Employee B may subsequently return the favor, thus improving the performance of Employee A. In a similar vein, based on the reciprocity norm in the social exchange theory, when services customers help others (i.e. service providers or other customers), they can also expect to receive help from others in the services process. As such, I hypothesize:

H7a. Customer citizenship behavior is positively associated with goal attainment

H7b. Customer citizenship behavior is positively associated with satisfaction

Goal Attainment and Satisfaction Outcome: Retention

Customer retention is an important construct because it has direct implications for customer lifetime value and firm profitability (Blattberg, Getz, and Thomas, 2001; Reinartz, Thomas, and Kumar, 2005). It is then no surprise that firms take a strong interest in identifying the determinants of customer retention. One of the driving forces behind customer retention is customer goal attainment. When the first encounter leads the customer to feel that the goal was attained, the customer is likely to come back and repeat the successful goal attainment process (Kivetz, Urminsky, and Zheng, 2006). For example, declining enrollment is a pressing issue in higher education (Marcus, 1989), and increased attrition creates a plethora of problems for all stakeholders (Tinto 1993). Research shows that attrition rates in online courses are higher than those in face-to-face courses (Waugh and Su-Searle, 2014). It is widely understood that empowering students to achieve higher levels of learning, which is often accompanied by improvements in grades, is an effective means of retaining them (Hoffman, 2016). When students feel they are learning more, which is in part reflected by the higher grades they earn, they tend to persevere towards completing the intended program (Wetzel, O'Toole, and Peterson, 1999; Konyu-Fogel, and Grossnickle, 2013). On the other hand, when students do not achieve the level of learning or the specific grade they expect, they find fewer reasons and feel less confident about returning to the same department and school the next semester (Lau, 2003). Given the clear linkage between goal attainment and retention in education literature, I hypothesize:

H8. Goal attainment is positively associated with retention.

Customer satisfaction is a key antecedent of customer retention (Anderson and Sullivan, 1993). In fact, service firms understand that the key to retaining customers is to first satisfy them

(Petruzzellis, D'Uggento, and Romanazzi, 2006). Marketing literature offers abundant conceptual and empirical support for the association between satisfaction and retention (Oliver, 1980; Oliver and Swan, 1989; Fornell, 1992; Taylor and Baker, 1994; Jones, Mothersbaugh, and Beatty, 2000). For example in education services, the effect of student satisfaction on student retention is underscored by the considerable investments that universities and colleges make towards satisfying their students (e.g., Hoyt, 1999; Tinto, 1987; Lau, 2003). These investments are justified by the fact that online students who are highly satisfied with their experience in one semester are more likely to take an additional online course the next semester (Roberts-DeGennaro & Clapp, 2005). Thus, I postulate:

H9. Satisfaction is positively associated with retention.

CHAPTER III

METHODOLOGY

This chapter elaborates on the design of research studies that will test the hypotheses as validly, objectively and accurately as feasible (Kerlinger and Lee, 2000). The contexts, respondents, and operationalization and measurement of the constructs will be discussed.

Setting and Respondents

To test the proposed relationships, this dissertation conducts two studies, together encompassing self-report and objective data aimed at minimizing common method variance typical of survey research (Podsakoff, et al. 2003). Zeithaml, Bitner, and Gremler (2013) provide a three-tier typology of customer participation: 1) low: consumer *presence* required during service delivery (i.e. airline travel, motel stay, and fast-food restaurant); 2) moderate: consumer *inputs* required for service creation (i.e. haircut, annual physical exam, full service restaurant); and 3) high: customer *co-creates* the service (i.e. education, personal training, weight reduction program and marriage counseling). To give the hypothesized effects a fair chance to emerge, the study will be contextualized in services that fit the latter category. As such, fitness center and online courses in higher education were chosen as study contexts. These services represent high levels of customer co-creation in service production and delivery.

In the higher education context, data were collected from college students enrolled in online courses in a comprehensive, public university in Southwest United States and with the help of the university's *Center for Online Learning, Teaching, and Technology*. In the fitness center

context, data were collected from popular local fitness center members in Southeast United States.

Instrumentation

Survey items were adapted from existing validated scales in order to increase the validity and reliability of the results (Straub, 1989). To check and improve the content validity of the adapted scale items, an expert panel of five marketing and education faculty members was formed, whose comments and suggestions proved instrumental in arriving at an acceptable instrument. The conceptual model consists of three variables of customer readiness (role clarity, ability, and motivation), PEngagement, two customer value co-creation variables (participation behavior, citizenship behavior), goal attainment, satisfaction, and retention. These nine variables, along with measures of control variables and demographics, made up the survey instrument. The objective data were gathered for two of those variables: participation behavior and goal attainment.

Self-Report Measures

Table 3-1 shows items which have been used in this study. All items were measured on a 7-point Likert scale. Customer readiness scale items were adapted from Meuter et al. (2005) and included role clarity (five items), ability (six items), and intrinsic and extrinsic motivation (24 items). The latter was measured using the expectancy theory of motivation, which encompasses separate sets of items for Expectancy (E), Instrumentality (I), and Valence (V). This model comes with a definite multiplicative rule that calculates intrinsic and extrinsic values using V, I, and E as follows:

$$\text{Intrinsic Motivation } (M_i) = f \left[E_j \times \left(\sum_{k=1}^{ni} (V_{ki} \times I_{jki}) \right) \right]$$

$$\text{Extrinsic Motivation } (M_e) = f \left[E_j \times \left(\sum_{k=1}^{ne} (V_{ke} \times I_{jke}) \right) \right]$$

Where:

M = the motivational force to perform the behavior

E_j = expectancy, the estimate that performing a behavior will result in some increase in performance level j.

I_{jk} = instrumentality, the estimate that improved performance on dimension j will result in reward, k.

V_k = valence, the desirability of reward, k.

To calculate motivation, the paired instrumentality and valence items (i.e., “taking this class enables me to be in shape” and “being in shape is desirable to me”) are multiplied and then summed. This total is then multiplied by the sum of the expectancy scores (Meuter et al. 2005, Technical Appendix).

To measure PEngagement, the most widely used scale called Utrecht Work Engagement Scale (UWES) for students (Schaufeli, Salanova, González-Romá, and Bakker, 2002) was adopted for the higher education context, and adapted to fit the fitness context. UWES is a second-order construct with three dimensions: vigor, dedication, and absorption. Vigor consists of six items, dedication has five items, and absorption includes six items. Customer value co-creation behavior was measured using Yi and Gong’s (2013) scale, which encompasses two second-order constructs of participation behavior and citizenship behavior. Participation behavior includes information seeking (four items), information sharing (four items), responsible behavior (four items), and personal interaction (four items). Citizenship behavior dimensions are feedback (four items), advocacy (four items), helping (four items), and tolerance (four items). A three-item scale

was used to measure goal attainment. Satisfaction and retention were measured via 3-item and 4-item semantic differential scales, respectively.

Objective Measures

In addition to their self-report measures, participation behavior and goal attainment were also measured using objective data offered by the university in the higher education context and by the fitness center in the fitness context. In higher education, participation was captured by tracking a variety of student inputs within the online course environments (i.e., Blackboard). These inputs included (1) hits: the number of times students logged in the course and clicked on different content areas on the course platform; (2) posts: the number of messages students posted in online discussions forums; (3) length: the average length of the posts in online discussions forums; and (4) time: the amount of time spent within the online course. Official course grade served as the objective measure of goal attainment. Although grade is not the only or primary goal of students in higher education, it is the only objective measure accessible to researchers upon course completion (Hiltz and Wellman, 1997; Dumont, 1996).

In fitness, participation was captured by tracking members' activities in two areas of attendance and adherence to instructions, while goal attainment was measured using weight-loss, the percentage of lean mass, cardio, and strength. To gather the objective data, respondents were tracked using personal identifiers (i.e., name and ID number in higher education and membership number in fitness).

Data Processing and Analysis

Data processing began with data screening to make sure data is ready for use in further statistical analysis. Missing data, outliers, non-responses, and inattentive responses were addressed at this stage. All the second-order constructs are reflective-reflective as they are shown

in figure 4-1 to figure 4-4. Using data for further analysis, some calculation processes have been needed. In regard to objective data, since in higher education, I have gathered data from seventeen online courses with different designs which requires different levels of activities in compare to each other (for instance in one course, the discussion post length ranged from 353 to 1021 words, but in the other course, it ranged from 1520 to 2620 words). To be able to use participation behavior objective data, I have compared the respondents' activities with their corresponding course activities and I have categorized the objective data, course by course. Less than the first quartile of the class is coded as low (0), between the first and third quartiles is coded as medium (1), and higher than the third quartile is coded as high (2). I summed the codes for each respondent, and I created single item participation behavior ranges from 0 to 8. In fitness, I ran the model with formative items for participation behavior and goal attainment with objective data and then I created one reflective index with the latent score for both constructs. Also, I calculated the score for motivation construct with the VIE formula. Therefore, one single index was calculated for each motivation sub-dimensions (intrinsic and extrinsic). Next, the reliability and validity of the measures were checked. Finally, the path analysis technique was used to test the hypotheses which two separate models have run per context (once with only survey data and another time with incorporation survey data and objective data). This dissertation employed component-based structural equation modeling (Smart-PLS) for several reasons. First, the complexity of the model, which included several second-order constructs (Ringle, Wende, and Will, 2005); secondly, the proposed model included some formative measurements when I used objective data (participation behavior and goal attainment); thirdly, some of the constructs have single items (Tabachnick and Fidell, 2007); and finally, the nature of

the study is exploratory (Hair et al, 2012). The results of these analyses are presented in the next chapter.

CHAPTER IV

ANALYSIS AND RESULTS

This chapter begins with data analysis in higher education and will continue with data analysis in fitness. Reliability and validity of the measures, as well as the results of hypothesis testing are reported per study.

Study 1 - Higher Education

Data gathered from seventeen online courses in public university in southwest of the United State. The sample size is 454 respondents that comprise 39% male and 61% female. Age ranges from 19 to 55 with the mean of 25. The ethnicity of the respondents are 10% Caucasian, 85% Hispanic, 2% African-American, 1% Asian, and 2% others.

Structure, Validity, and Reliability

To verify the validity of the measures, a measurement model was created and tested in SEM using SmartPLS. The purpose of testing the measurement model is to ensure that the measurement scales used are truly measuring the underlying constructs of interest and that the measurement model demonstrates an acceptable fit to the data.

Measurement Model

All first and second order constructs were subjected to CFA. As a result of this process, one item from the original measure for dedication was dropped due to the low loading. After dropping one item, in overall, measurement model was good to move forward with the process.

Standard error values were investigated to ensure there are no near-zero standard errors that can indicate an estimation problem. There were no near-zero standard errors. The standardized loadings were also strong (see Table 4-1). The loadings ranged from .62 to .97 with only four (RC5=.64, .65; AB6=.62, .63; VI1=.68, .69; VI3=.64, .63; VI5=.69, .69) below, still not too far from, the recommended value of .70 as an excellence cut off point (Tabachnick and Fidell, 2007). Therefore, all loadings are sufficiently large to provide confidence in their measurement abilities. In addition, a variety of analytical techniques were used to determine if the indicators are accurate and effective in measuring what they are intended to measure. This is determined by assessing the indicator reliability, composite reliability, variance extracted estimates, as well as convergent and discriminant validity.

Reliability

The reliability of an indicator variable is the square of the correlation between a latent factor and that indicator. This can also be calculated as the square of the standardized factor loading. The indicator reliability specifies the percent of the variation in the indicator variable that is explained by the latent factor that it is intended to measure (Long 1983). These values range from a low of .39 to a high of .94 (see Table 4-1). Higher numbers, and specifically a pattern of higher numbers associated with each latent factor, signal that each indicator variable is an effective measure of the latent construct. Overall, these indicator reliability values are sufficiently high (Jackson, 2003).

Composite Reliability (CR) is analogous to Cronbach alpha, or other measures of internal consistency. I have used CR instead of Cronbach alpha for several reasons; first, Cronbach alpha is obtained under the assumption of parallelity (equal factor loadings); second, Cronbach alpha may underestimate or overestimate the reliability (Raykov, 1997), and underestimation of

reliability become serious when the test is not uni-dimensional (Kamata, Turhan, and Darandari, 2003). Essentially, this measure indicates if the items that make up a scale are strongly correlated with each other. The CR score for each latent factor is shown in Table 4-1, these values range from a low of .86 to a high of .98. With no composite reliability below .80 the results are very strong.

Validity

The variance extracted statistic assesses the amount of variance that is captured by an underlying factor in relation to the amount of variance due to measurement error (Fornell and Larcker 1981). Larger numbers are desirable and a general rule of thumb of .50 has been proposed (Fornell and Larcker 1981). As shown in Table 4-1, none of latent factor has a variance extracted estimate lower than .50.

Convergent validity is achieved when different instruments are used to measure the same construct, and scores from these different instruments are strongly correlated (Campbell and Fiske 1959; Hatcher 1994). Multiple instruments were not available to measure the same constructs; however, an alternative test can provide insight into the convergent validity of the measures. Convergent validity can be determined by reviewing the t-tests for the factor loadings. When all factor loadings for the indicators measuring the same construct are statistically significant, then this provides evidence supporting the convergent validity of those indicators (Hatcher 1994). As can be seen from Table 4-1, all t-values are sufficiently large and significant at the $p < .0001$ level. The smallest t-value is 17.28 which is highly significant. This indicates that all indicators are effectively measuring the same construct.

Discriminant validity is established when different instruments are used to measure different constructs and the correlations between these measures of these different constructs are relatively

weak (Campbell and Fiske 1959). Essentially, it is important to show that an item does not measure a construct that it was not designed to measure. Once again, without multiple methods measuring constructs, the multi-trait, multi-method approach is not feasible. Fortunately, the variance extracted test can provide insight into discriminant validity. Furthermore, discriminant validity is established if the average variance extracted estimates are greater than the squared correlation (Fornell and Larcker 1981; Hatcher 1994). With the 18 possible latent factor pairings, none had variance extracted estimates less than the squared correlation between the two factors (See Tables 4-2 and 4-3).

It appears that the measurement model is sufficiently strong. Based on these positive results, I am confident in the revised measurement model and the measures feel confident in progressing with the testing of the structural part of the model.

Common Method Bias and Multicollinearity

In assessing common method bias, I followed Podsakoff et al., (2003). First, scales were carefully adapted and improved by the experts' panel of five. Second, independent and dependent variables were separated in the questionnaire, using other items which are not relevant to this study. I statistically checked the common method biases. Unrotated exploratory factor analysis indicated nine factors, explaining 64% of the total variance. This rejects the probability of one general factor (Chin, Thatcher, & Wright, 2012). Multicollinearity was assessed through 2 steps. First, all AVEs were higher than 0.50. Second, the variance inflation factors ranged from 1.41 to 2.83, below the accepted cutoff of 5 (Hair et al., 2012).

Hypothesis Testing Using Self-Report Data Only

To test the conceptual model, simultaneous path analysis is used. A summary of the findings is available in Table 4-6.

Direct Effects

The tested model results are shown in Figure 4-1. H1 proposed a positive association between customer PSEngagement and customer participation behavior, this association was positive and statistically significant ($\beta = .34, p < .01$), thus H1 is supported. H2 hypothesized a positive association between customer PSEngagement and customer citizenship behavior. This association was positive and statistically significant ($\beta = .57, p < .01$). H3a proposed a positive association between customer role clarity and customer participation behavior. H3a was not supported as the hypothesized association was positive but not statistically significant ($\beta = .03, t\text{-value} = .459$). H3b hypothesized a positive association between customer ability and customer participation behavior. This association was positive and statistically significant ($\beta = .28, p < .01$), providing support for H3b. H3c proposed a positive association between customer motivation and customer participation behavior. This association was positive and statistically significant ($\beta = .26, p < .01$), then H3c is supported.

H4a proposed a positive association between customer role clarity and customer ability. This association was positive and statistically significant ($\beta = .59, p < .01$), providing support for H4a. H4b hypothesized a positive association between customer ability and customer motivation. This association was positive and statistically significant ($\beta = .59, p < .01$), providing support for H4b. H5a proposed a positive association between customer ability and customer PSEngagement. H5a was not supported as the proposed association was positive but not statistically significant ($\beta = .05, t\text{-value} = .675$). H5b hypothesized a positive association between customer motivation and customer PSEngagement. This association was positive and statistically significant ($\beta = .48, p < .01$), providing support for H5b. H5c proposed that customer PSEngagement will be higher when people intrinsically motivated versus extrinsically. An independent-samples t-test was conducted

to test H5c. Result shows the PSEngagement mean is higher when people intrinsically motivated ($M=5.20$, $SD=.92$) versus extrinsically ($M=4.53$, $SD=.83$) and this means difference is statistically significant ($t(452) = -7.165$, $P=.000$), thus H5c is supported.

H6a proposed a positive association between customer participation behavior and goal attainment; this association was positive and statistically significant ($\beta = .27$, $p < .01$), then H6a is supported. H6b hypothesized a positive association between customer participation behavior and customer satisfaction. This association was positive and statistically significant ($\beta = .19$, $p < .05$), providing support for H6b. H7a proposed a positive association between customer citizenship behavior and goal attainment. This association was positive and statistically significant ($\beta = .38$, $p < .01$), providing support for H7a. H7b hypothesized a positive association between customer citizenship behavior and customer satisfaction. This association was positive and statistically significant ($\beta = .25$, $p < .01$), providing support for H7b. H8 proposed a positive association between goal attainment and retention. This association was positive and statistically significant ($\beta = .11$, $p < .05$), then H8 is supported. Lastly, H9 hypothesized a positive association between customer satisfaction and retention. This association was positive and statistically significant ($\beta = .60$, $p < .01$), providing support for H9. Importantly, endogenous variables R^2 and Q^2 are as following, respectively: customer ability (0.34; 0.20), motivation (0.35; 0.32), PSEngagement (0.21; 0.10), participation behavior (0.50; 0.22), citizenship behavior (0.33; 0.15), goal attainment (0.38; 0.33), satisfaction (0.17; 0.15), and retention (0.44; 0.40). Stone-Geisser's values of blindfolding analyses indicated that Q^2 ranged from 0.10 to 0.40. Following Hair et al. (2012) rule of thumb R^2 and Q^2 values indicate that the exogenous variables are moderate to powerful predictors of endogenous variables and the model has a high level of quality. Table 4-11 provides a summary of path coefficient, effect size f^2 , and effect size q^2 . In order to provide

more explanations, I ran mediation analyses using Process by Hayes in SPSS. Table 4-8 provide an overview for the results of mediation tests.

Mediating Effects of Ability

I used the logic of Zhao, Lynch, and Chen, (2010) article and four-step process of Baron and Kenny (1986). According to four-step Baron and Kenny (1986) procedure; first, the independent variable must be significantly associated with the mediator; second, the mediator must be significantly associated with the dependent variable; third, the independent variable must be significantly associated with the dependent variable; fourth, the presence of the mediator must weaken the direct path. The first three of these conditions were met since role clarity has a significant effect on ability ($\beta = .50; p < .01$); ability has a significant effect on motivation ($\beta = .48; p < .01$); and role clarity has a significant effect on motivation ($\beta = .48; p < .01$). In the fourth step, role clarity maintained a significant effect on motivation ($\beta = .24; p < .01$) having controlled for the effect of ability on motivation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .24$, 95% CI = .184 to .311) having accounted for the effects of age, gender, and ethnicity. Therefore, ability partially mediates the relationship between role clarity and motivation.

Second, ability as a mediator of the relationship between role clarity and participation behavior is tested. This test will provide further explanation for statistically non-significant association between role clarity and participation behavior. The first three mediation conditions were met since role clarity has a significant effect on ability ($\beta = .50; p < .01$); ability has a significant effect on participation ($\beta = .36; p < .01$); and role clarity has a significant effect on participation ($\beta = .26; p < .01$). In the fourth step, role clarity maintained a significant effect on motivation ($\beta = .08; p < .05$) having controlled for the effect of ability on participation. Following

Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .24$, 95% CI = .181 to .319) having accounted for the effects of age, gender, and ethnicity. Therefore, ability partially mediates the relationship between role clarity and participation.

Mediating Effects of Motivation

First, motivation as a mediator of the relationship between customer ability and participation behavior is tested. The first three mediation conditions were met since ability has a significant effect on motivation ($\beta = .65$; $p < .01$); motivation has a significant effect on participation ($\beta = .33$; $p < .01$); and ability has a significant effect on participation ($\beta = .41$; $p < .01$). In the fourth step, ability maintained a significant effect on participation ($\beta = .20$; $p < .01$) having controlled for the effect of ability on motivation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .25$, 95% CI = .187 to .320) having accounted for the effects of age, gender, and ethnicity. Therefore, motivation partially mediates the relationship between ability and participation.

Second, motivation as a mediator of the relationship between customer ability and PSEngagement is tested. This test has been done for providing further explanation why the association between customer ability and participation behavior was not supported. The first three mediation conditions were met since ability has a significant effect on motivation ($\beta = .65$; $p < .01$); motivation has a significant effect on PSEngagement ($\beta = .48$; $p < .01$); and ability has a significant effect on PSEngagement ($\beta = .22$; $p < .01$). In the fourth step, ability does not have significant effect on PSEngagement when having controlled for the effect of ability on motivation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .28$, 95% CI = .208 to .355) having accounted

for the effects of age, gender, and ethnicity. Therefore, motivation fully mediates the relationship between ability and PSEngagement.

The Mediating Effect of PSEngagement

PSEngagement as a mediator of the relationship between customer motivation and participation behavior is tested. The first three mediation conditions were met since motivation has a significant effect on PSEngagement ($\beta = .44$; $p < .01$); PSEngagement has a significant effect on participation ($\beta = .23$; $p < .01$); and motivation has a significant effect on participation ($\beta = .43$; $p < .01$). In the fourth step, motivation maintained a significant effect on participation ($\beta = .33$; $p < .01$) having controlled for the effect of PSEngagement on participation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($B = .13$, 95% CI = .090 to .183) having accounted for the effects of age, gender, and ethnicity. Therefore, PSEngagement partially mediates the relationship between motivation and participation.

Simultaneous Mediation by Motivation and PSEngagement

Motivation and PSEngagement as a double mediator of the relationship between ability and participation behavior is tested. After controlling for the mediators, motivation and PSEngagement, ability is significant predictor of participation behavior ($\beta = .22$; $p < .01$). The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Hayes, 2013). These results indicated the indirect coefficient was significant, $\beta = .09$, 95% CI = .056 to .125. Therefore, motivation and PSEngagement partially mediate the relationship between ability and participation behavior.

Simultaneous Mediation by Ability and Motivation

Ability and motivation as a double mediator of the relationship between role clarity and participation behavior is tested. After controlling for the mediators, ability and motivation, role clarity is not significant predictor of participation behavior. The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Hayes, 2013). These results indicated the indirect coefficient was significant, $\beta = .11$, 95% CI = .076 to .155. Therefore, ability and motivation fully mediate the relationship between role clarity and participation behavior.

Hypothesis Testing Using Self-Report and Objective Data

This section shows the result of the tested model with incorporating the objective data for ‘participation behavior’ and ‘goal attainment’. The hypotheses and mediation tests that include association with these two variables are reported here in the following sections. The remaining hypotheses and mediations stayed relatively the same. The sample size reduced from 454 to 413 due to the unavailability of objective data for 41 respondents.

Direct Effects

The tested model results are shown in Figure 4-2. H1 proposed a positive association between customer PSEngagement and customer participation behavior, this association was positive and statistically significant ($\beta = .24$, $p < .01$), thus H1 is supported. H3a proposed a positive association between customer role clarity and customer participation behavior. H3a was not supported as the hypothesized association was positive but not statistically significant ($\beta = .05$, $t\text{-value} = .857$). H3b hypothesized a positive association between customer ability and customer participation behavior. This association was positive and statistically significant ($\beta = .15$, $p < .01$), providing support for H3b. H3c proposed a positive association between customer

motivation and customer participation behavior. This association was not statistically significant ($\beta = -.13$, $t\text{-value} = 1.613$).

H6a proposed a positive association between customer participation behavior and goal attainment; this association was positive and statistically significant ($\beta = .35$, $p < .01$), then H6a is supported. H6b hypothesized a positive association between customer participation behavior and customer satisfaction. This association was positive and statistically significant ($\beta = .09$, $p < .05$), providing support for H6b. H7a proposed a positive association between customer citizenship behavior and goal attainment. H7a was not supported as the proposed association was positive but not statistically significant ($\beta = .07$, $t\text{-value} = 1.48$). Lastly, H8 proposed a positive association between goal attainment and retention. This association was positive and statistically significant ($\beta = .10$, $p < .05$), then H8 is supported. Importantly, endogenous variables R^2 and Q^2 are as following, respectively: customer ability (0.34; 0.19), motivation (0.36; 0.31), PSEngagement (0.19; 0.08), participation behavior (0.07; 0.06), citizenship behavior (0.32; 0.15), goal attainment (0.14; 0.13), satisfaction (0.15; 0.12), and retention (0.44; 0.39). Stone-Geisser's values of blindfolding analyses indicated that Q^2 ranged from 0.06 to 0.39. Following Hair et al. (2012) rule of thumb R^2 and Q^2 values indicate that the exogenous variables are moderate to powerful predictors of endogenous variables and the model has a high level of quality. Table 4-12 provides a summary of path coefficient, effect size f^2 , and effect size q^2 .

In order to provide more explanations, I ran mediation analyses following the same mediation procedures as previously described in previous section. Table 4-8 provides an overview for the results of mediation tests related to paths with 'participation behavior' and 'goal attainment'.

Mediating Effects of Ability

Ability as a mediator of the relationship between role clarity and participation behavior is tested. The first three mediation conditions were met since role clarity has a significant effect on ability ($\beta = .50$; $p < .01$); ability has a significant effect on participation ($\beta = .28$; $p < .01$); and role clarity has a significant effect on participation ($\beta = .21$; $p < .01$). In the fourth step, role clarity does not have a significant effect on participation when having controlled for the effect of ability on participation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .08$, 95% CI = .034 to .012) having accounted for the effects of age, gender, and ethnicity. Therefore, ability partially mediates the relationship between role clarity and participation.

The Mediating Effect of PSEngagement

PSEngagement as a mediator of the relationship between customer motivation and participation behavior is tested. The first three mediation conditions were met since motivation has a significant effect on PSEngagement ($\beta = .42$; $p < .01$); PSEngagement has a significant effect on participation ($\beta = .37$; $p < .01$); and motivation has a significant effect on participation ($\beta = .17$; $p < .01$). In the fourth step, motivation does not have a significant effect on participation when having controlled for the effect of PSEngagement on participation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .09$, 95% CI = .039 to .143) having accounted for the effects of age, gender, and ethnicity. Therefore, PSEngagement fully mediates the relationship between motivation and participation.

Simultaneous Mediation by Motivation and PSEngagement

Motivation and PSEngagement as a double mediator of the relationship between ability and participation behavior is tested. After controlling for the mediators, motivation and

PSEngagement, ability is significant predictor of participation behavior ($\beta = .35$; $p < .01$). The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Hayes, 2013). These results indicated the indirect coefficient was significant, $\beta = .05$, 95% CI = .024 to .095. Therefore, motivation and PSEngagement partially mediate the relationship between ability and participation behavior.

Study 2 – Fitness

Data gathered from fitness center in southeast of the United State. The sample size is 122 respondents that comprise 34% male and 66% female. Age ranges from 19 to 35 with the mean of 24. The ethnicities of the respondents are 6% Caucasian, 91% Hispanic, 1% African-American, and 2% Asian. The level of their income 88% is less than 40K, 10% between 40K and 80K, and 2% is other categories. 89% of respondents are never married and single, 10% are married, and 1% are belong to other categorize of marital status. In regards to the level of education, 25% of respondents have high school diploma, 38% have associate degree, and 36% have bachelor degree, and 1% have master or higher degrees.

Structure, Validity, and Reliability

As stated in study 1, to verify the validity of the measures, a measurement model was created and tested in Smart PLS. The purpose of testing the measurement model is to ensure that the indicator variables are accurately and truly measuring the underlying constructs of interest and that the measurement model demonstrates an acceptable fit to the data.

Measurement Model

All three customer readiness variables, three PSEngagement variables, four participation behavior variables, four citizenship behaviors variables, goal attainment, satisfaction, and retention were tested. As a result of this process, eleven items from the original measure were

dropped. After droppings, in overall, measurement model was good to move forward with the process.

Standard error values were examined to make sure there are no near-zero standard errors which can indicate an estimation problem. There were no near-zero standard errors. As shown in Table 4-1, the standardized loadings are also strong. The loadings range from .70 to .99. Therefore, all loadings are excellent and provide confidence in their measurement abilities (Tabachnick and Fidell, 2007).

Same as Study 1, a variety of techniques were used to determine if the indicators are accurate and effective by assessing the indicator reliability, composite reliability, variance extracted estimates as well as convergent and discriminant validity. Each of these is discussed next.

Reliability

Square of the correlation between a latent factor and that indicator has been used for assessing the reliability of the indicators. These values range from a low of .49 to a high of .98 (see Table 4-1). Overall, these indicator reliability values are sufficiently high (Jackson, 2003).

Composite Reliability (CR) is analogous to Cronbach alpha, or other measures of internal consistency. I have used CR instead of Cronbach alpha due to the same reasons in Study 1. The CR scores for each latent factor shown in Table 4-1, these values range from a low of .86 to a high of .99. With no composite reliability below .80 the results are very strong.

Validity

The variance extracted statistic scores were assessed and none of latent factor has a variance extracted estimate lower than .50 (see Table 4-1). Convergent validity is achieved by reviewing the t-tests for the factor loadings. As can be seen from Table 4-1, all t-values are sufficiently

large and significant at the $p < .0001$ level. The smallest t-value is 16.88 which is highly significant.

Discriminant validity is established by comparing the variance extracted estimates for the latent variables to the square of the correlation between the two latent variables. With the 18 possible latent factor pairings, none had variance extracted estimates less than the squared correlation between the two factors (See Tables 4-4 and 4-5).

Common Method Bias and Multicollinearity

Same as study 1, in assessing common method bias, I followed Podsakoff et al., (2003). First, scales were carefully adapted and improved by the experts' panel of five. Second, independent and dependent variables were separated in the questionnaire, using other items which are not relevant to this study. I statistically checked the common method biases. Unrotated exploratory factor analysis indicated nine factors, explaining 74% of the total variance. This rejects the probability of one general factor (Chin, Thatcher, & Wright, 2012). Multicollinearity was assessed through 2 steps. First, all AVEs were higher than 0.50. Second, the variance inflation factors ranged from 1.85 to 4.68, below the accepted cutoff of 5 (Hair et al., 2012).

It appears that the measurement model is sufficiently strong, and I feel confident in progressing with the testing of the structural part of the model.

Hypothesis Testing Using Self-Report Data Only

Following the same procedures as described in Study1, the conceptual model is tested. A summary of the findings is available in Table 4-6.

Direct Effects

The tested model results are shown in Figure 4-3. H1 proposed a positive association between customer PSEngagement and customer participation behavior, this association was

positive and statistically significant ($\beta = .36, p < .01$), thus H1 is supported. H2 hypothesized a positive association between customer PSEngagement and customer citizenship behavior. This association was positive and statistically significant ($\beta = .71, p < .01$). H3a hypothesized a positive association between customer role clarity and customer participation behavior. This association was positive and statistically significant ($\beta = .15, p < .01$), providing support for H3a. H3b proposed a positive association between customer ability and customer participation behavior. This association was not statistically significant ($\beta = -.05, t\text{-value}=1.032$). H3c proposed a positive association between customer motivation and customer participation behavior. This association was positive and statistically significant ($\beta = .39, p < .01$), providing support for H3c.

H4a proposed a positive association between customer role clarity and customer ability. This association was positive and statistically significant ($\beta = .69, p < .01$), providing support for H4a. H4b hypothesized a positive association between customer ability and customer motivation. This association was positive and statistically significant ($\beta = .74, p < .01$), providing support for H4b. H5a proposed a positive association between customer ability and customer PSEngagement. H5a was not supported as the proposed association was positive but not statistically significant ($\beta = .09, t\text{-value}=1.628$). H5b hypothesized a positive association between customer motivation and customer PSEngagement. This association was positive and statistically significant ($\beta = .65, p < .01$), providing support for H5b. H5c proposed that customer PSEngagement will be higher when people intrinsically motivated versus extrinsically. An independent-samples t-test was conducted to test H5c. Result of means difference is not statistically significant ($t(120) = -1.002, P = .318$) for PSEngagement when people intrinsically motivated ($M = 5.21, SD = 1.16$) versus extrinsically ($M = 4.97, SD = 1.22$), thus H5c is not supported. H6a proposed a positive association between customer participation behavior and goal attainment; this association was positive and

statistically significant ($\beta = .15, p < .01$), then H6a is supported. H6b hypothesized a positive association between customer participation behavior and customer satisfaction. This association was not statistically significant ($\beta = .10, t\text{-value} = 1.717$). H7a proposed a positive association between customer citizenship behavior and goal attainment. The proposed association was positive and statistically significant ($\beta = .71, p < .01$). H7b hypothesized a positive association between customer citizenship behavior and customer satisfaction. This association was positive and statistically significant ($\beta = .70, p < .01$), providing support for H7b. H8 proposed a positive association between goal attainment and retention. This association was not statistically significant ($\beta = .02, t\text{-value} = .98$). Lastly, H9 hypothesized a positive association between customer satisfaction and retention. This association was positive and statistically significant ($\beta = .95, p < .01$), providing support for H9. Importantly, endogenous variables R^2 and Q^2 are as following, respectively: customer ability (0.48; 0.33), motivation (0.55; 0.51), PSEngagement (0.58, 0.33), participation behavior (0.60; 0.32), citizenship behavior (0.57, 0.36), goal attainment (0.71, 0.67), satisfaction (0.62; 0.60), and retention (0.95; 0.89). Stone-Geisser's values of blindfolding analyses indicated that Q^2 is higher than 0.32. Following Hair et al. (2012) rule of thumb R^2 and Q^2 values indicate that the exogenous variables are powerful predictors of endogenous variables and the model has a high level of quality. Table 4-13 provides a summary of path coefficient, effect size f^2 , and effect size q^2 .

In order to provide more explanations, I ran mediation analyses following the same mediation procedures as previously described in study 1. Table 4-9 provide an overview for the results of mediation tests.

Mediating Effects of Ability

First, ability as a mediator of the relationship between role clarity and motivation is tested. The first three of these conditions were met since role clarity has a significant effect on ability ($\beta = .60; p < .01$); ability has a significant effect on motivation ($\beta = .54; p < .01$); and role clarity has a significant effect on motivation ($\beta = .64; p < .01$). In the fourth step, role clarity maintained a significant effect on motivation ($\beta = .32; p < .01$) having controlled for the effect of ability on motivation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .34, 95\% \text{ CI} = .229 \text{ to } .483$) having accounted for the effects of age, gender, ethnicity, education, marital status, and income. Therefore, ability partially mediates the relationship between role clarity and motivation.

Second, ability as a mediator of the relationship between role clarity and participation behavior is tested. The first three mediation conditions were met since role clarity has a significant effect on ability ($\beta = .60; p < .01$); ability has a significant effect on participation ($\beta = .23; p < .01$); and role clarity has a significant effect on participation ($\beta = .38; p < .01$). In the fourth step, role clarity maintained a significant effect on motivation ($\beta = .25; p < .05$) having controlled for the effect of ability on participation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .20, 95\% \text{ CI} = .093 \text{ to } .341$) having accounted for the effects of age, gender, ethnicity, education, marital status, and income. Therefore, ability partially mediates the relationship between role clarity and participation.

Mediating Effects of Motivation

First, motivation as a mediator of the relationship between customer ability and participation behavior is tested. The first three mediation conditions were met since ability has a significant

effect on motivation ($\beta = .77$; $p < .01$); motivation has a significant effect on participation ($\beta = .52$; $p < .01$); and ability has a significant effect on participation ($\beta = .41$; $p < .01$). In the fourth step, ability does not have a significant effect on participation when having controlled for the effect of ability on motivation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .51$, 95% CI = .374 to .687) having accounted for the effects of age, gender, ethnicity, education, marital status, and income. Therefore, motivation fully mediates the relationship between ability and participation.

Second, motivation as a mediator of the relationship between customer ability and PSEngagement is tested. The first three mediation conditions were met since ability has a significant effect on motivation ($\beta = .77$; $p < .01$); motivation has a significant effect on PSEngagement ($\beta = .59$; $p < .01$); and ability has a significant effect on PSEngagement ($\beta = .51$; $p < .01$). In the fourth step, ability does not have significant effect on PSEngagement when having controlled for the effect of ability on motivation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .51$, 95% CI = .380 to .660) having accounted for the effects of age, gender, ethnicity, education, marital status, and income. Therefore, motivation fully mediates the relationship between ability and PSEngagement.

The Mediating Effect of PSEngagement

PSEngagement as a mediator of the relationship between customer motivation and participation behavior is tested. The first three mediation conditions were met since motivation has a significant effect on PSEngagement ($\beta = .63$; $p < .01$); PSEngagement has a significant effect on participation ($\beta = .35$; $p < .01$); and motivation has a significant effect on participation ($\beta = .53$; $p < .01$). In the fourth step, motivation maintained a significant effect on participation ($\beta = .31$; $p <$

.01) having controlled for the effect of PSEngagement on participation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .30$, 95% CI = .154 to .440) having accounted for the effects of age, gender, ethnicity, education, marital status, and income. Therefore, PSEngagement partially mediates the relationship between motivation and participation.

Simultaneous Mediation by Motivation and PSEngagement

I test motivation and PSEngagement as a double mediator of the relationship between ability and participation behavior. After controlling for the mediators, motivation and PSEngagement, ability is not a significant predictor of participation behavior. The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Hayes, 2013). These results indicated the indirect coefficient was significant, $\beta = .21$, 95% CI = .105 to .341. Therefore, motivation and PSEngagement partially mediate the relationship between ability and participation behavior.

Hypothesis Testing Using Self-Report and Objective Data

This section shows the result of the tested model with incorporating the objective data for ‘participation behavior’ and ‘goal attainment’. The hypotheses and mediation tests that include association with these two variables are reported here in the following sections. The remaining hypotheses and mediations stayed relatively the same.

Direct Effects

The tested model results are shown in Figure 4-4. H1 proposed a positive association between customer PSEngagement and customer participation behavior, this association was positive and statistically significant ($\beta = .45$, $p < .01$), thus H1 is supported. H3a proposed a positive association between customer role clarity and customer participation behavior. H3a was positive and statistically significant ($\beta = .17$, $p < .01$). H3b hypothesized a positive association

between customer ability and customer participation behavior. This association was positive and statistically significant ($\beta = .08, p < .05$), providing support for H3b. H3c proposed a positive association between customer motivation and customer participation behavior. This association was positive and statistically significant ($\beta = .18, p < .01$).

H6a proposed a positive association between customer participation behavior and goal attainment; this association was positive and statistically significant ($\beta = .70, p < .01$) then H6a is supported. H6b hypothesized a positive association between customer participation behavior and customer satisfaction. This association was positive and statistically significant ($\beta = .25, p < .05$), providing support for H6b. H7a proposed a positive association between customer citizenship behavior and goal attainment. H7a was not supported as the proposed association was positive but not statistically significant ($\beta = .06, t\text{-value} = .626$). Lastly, H8 proposed a positive association between goal attainment and retention. This association was positive and statistically significant ($\beta = .04, p < .05$), then H8 is supported. Importantly, endogenous R^2 and Q^2 variables are as following, respectively: customer ability (0.48; 0.33), motivation (0.54; 0.50), PSEngagement (0.66; 0.33), participation behavior (0.78; 0.75), citizenship behavior (0.65; 0.40), goal attainment (0.58; 0.57), satisfaction (0.61; 0.59), and retention (0.96; 0.89). Stone-Geisser's values of blindfolding analyses indicated that Q^2 higher than 0.33. Following Hair et al. (2012) rule of thumb R^2 and Q^2 values indicate that the exogenous variables are powerful predictors of endogenous variables and the model has a high level of quality. Table 4-14 provides a summary of path coefficient, effect size f^2 , and effect size q^2 .

In order to provide more explanations, I ran mediation analyses following the same mediation procedures as previously described. Table 4-10 provides an overview for the results of mediation tests related to paths with 'participation behavior' and 'goal attainment'.

Mediating Effects of Ability

Ability as a mediator of the relationship between role clarity and participation behavior is tested. The first three of these conditions were met since role clarity has a significant effect on ability ($\beta = .60; p < .01$); ability has a significant effect on motivation ($\beta = .34; p < .01$); and role clarity has a significant effect on motivation ($\beta = .49; p < .01$). In the fourth step, role clarity maintained a significant effect on motivation ($\beta = .28; p < .01$) having controlled for the effect of ability on motivation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .27, 95\% \text{ CI} = .150 \text{ to } .439$) having accounted for the effects of age, gender, ethnicity, education, marital status, and income. Therefore, ability partially mediates the relationship between role clarity and motivation.

The Mediating Effect of Motivation

Motivation as a mediator of the relationship between customer ability and participation behavior is tested. The first three mediation conditions were met since ability has a significant effect on motivation ($\beta = .77; p < .01$); motivation has a significant effect on participation ($\beta = .49; p < .01$); and ability has a significant effect on participation ($\beta = .55; p < .01$). In the fourth step, ability maintained a significant effect on participation ($\beta = .17; p < .01$) having controlled for the effect of ability on motivation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .45, 95\% \text{ CI} = .326 \text{ to } .607$) having accounted for the effects of age, gender, ethnicity, education, marital status, and income. Therefore, motivation partially mediates the relationship between ability and participation.

The Mediating Effect of PSEngagement

PSEngagement as a mediator of the relationship between customer motivation and participation behavior is tested. The first three mediation conditions were met since motivation has a

significant effect on PSEngagement ($\beta = .63$; $p < .01$); PSEngagement has a significant effect on participation ($\beta = .35$; $p < .01$); and motivation has a significant effect on participation ($\beta = .61$; $p < .01$). In the fourth step, motivation maintained a significant effect on participation ($\beta = .35$; $p < .01$) having controlled for the effect of PSEngagement on participation. Following Hayes (2013), a 5,000-sample bootstrap estimation was used, which suggests that the indirect effect is significant ($\beta = .32$, 95% CI = .194 to .451) having accounted for the effects of age, gender, ethnicity, education, marital status, and income. Therefore, PSEngagement partially mediates the relationship between motivation and participation.

Simultaneous Mediation by Motivation and PSEngagement

I test motivation and PSEngagement as a double mediator of the relationship between ability and participation behavior. After controlling for the mediators, motivation and PSEngagement, ability is significant predictor of participation behavior ($\beta = .15$; $p < .05$). The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Hayes, 2013). These results indicated the indirect coefficient was significant, $\beta = .21$, 95% CI = .128 to .333. Therefore, motivation and PSEngagement partially mediate the relationship between ability and participation behavior.

CHAPTER V

SUMMARY AND CONCLUSION

This chapter begins by presenting a summary of the conceptual framework, method, discussion of the findings, and conclusions of the research. Then, it discusses the practical and academic implications of the empirical results. Finally, it exposes the limitations associated with the research design and sampling.

Conceptual

This dissertation incorporated two types of customer engagement: engagement as a particular psychological state induced by the customer's specific interactive experiences with a focal engagement object (Brodie et al., 2011), and engagement as behavior that manifests within the broader dynamic processes of value co-creation behaviors (Hollebeek et al., 2016).

Psychological State Engagement (PSEngagement) is a precursor to value co-creation behavior (behavioral engagement). Additionally, this dissertation has explored the antecedents and outcomes of customer engagement. Using the self-determination theory, customer perceived ability and motivation are corroborated as antecedents of PSEngagement, and subsequently value co-creation behaviors, which in turn antecede such outcomes as customer goal attainment, satisfaction, and retention. The conceptual framework bearing the substantive hypotheses was developed and tested here based on a multidisciplinary body of knowledge.

Method

The literature review identified reliable and valid measurement scales for constructs of interest, which were refined and adapted to the study contexts, namely fitness and online higher education courses. Both self-report and objective data were collected to test the conceptual model in each of these contexts.

Discussion of the Findings

The findings of the studies support most of the hypotheses. The direct effects of PSEngagement on participation behavior (H1) and citizenship behavior (H2) were significant across the study contexts and data types (see Tables 5-1a & 5-2a). Although the PSEngagement–participation behavior path remained strong and significant, the PSEngagement–citizenship behavior path was even stronger. Therefore, an increase in PSEngagement has a greater impact on the likelihood of citizenship behavior than participation behavior. Since customer citizenship behavior influences firm performance (Groth, 2005; Rosenbaum and Massiah, 2007) and contributes additional sources of value to the firm in the form of positive word-of-mouth and suggestions for service improvement (Yi et al. 2011), the stronger effect of PSEngagement on citizenship behavior relative to participation behavior is noteworthy. It suggests that firms that aim at increasing and enhancing customer voluntary behavior should focus on nurturing PSEngagement.

The effects of customer readiness constructs on participation behavior (H3a-H3c) were also replicated across the study contexts and data types. In higher education, the direct effect of role clarity on participation behavior (H3a) was not supported; rather, role clarity influenced participation behavior indirectly through ability and motivation. In fitness, the direct and indirect effects of role clarity on participation behavior were both supported. These results underscore

context-dependency of the role of role clarity. One difference is the fact that the role of an ‘instructor’ in higher education is different than that of a fitness ‘trainer’. Moreover, students of higher education are exposed to considerable degree of peer pressure, which makes participation dependent on more factors than mere role clarity (such as student ability and intrinsic and extrinsic motivations, as well as instructor expertise) (Dellande et al., 2004). The difference might also be attributable to the self-service nature of online higher education courses versus in-person and group-work nature of fitness classes.

Interestingly, the direct impact of customer ability on participation behavior (H3b) was supported in higher education but not in fitness; in the latter, motivation completely mediated that relationship. This pattern surfaced consistently regardless of data type (self-report vs. objective) (see Tables 5-1b & 5-2b). The difference is understandable given the fact that most consumers have the ability, more or less, to engage in fitness classes, but what makes some more participative than others is motivation. While motivation was associated with participation behavior (H3c) across study contexts and data types; the strength of that association was rather overestimated with self-report data relative to objective data (see Tables 5-1c & 5-2c).

The role clarity-ability (H4a) and the ability-motivation (H4b) paths were supported in both study contexts. In both study contexts, motivation completely mediated the effect of ability on PSEngagement. This result highlights motivation as a critical antecedent to PSEngagement (H5a and H5b). The prediction that PSEngagement would be higher when people were intrinsically (as opposed to extrinsically) motivated was supported in the case of higher education, but not fitness.

The findings underscore goal attainment (H6a) and satisfaction (H6b) as outcomes of customer participation behavior. While the strength of the customer participation–goal

attainment relationship remained the same in higher education, in fitness the association appeared significantly stronger with objective data than self-report data (see Tables 5-1d and 5-2d). The strength of the customer participation–satisfaction relationship was statistically indifferent across data types.

In contrast, the effect of customer citizenship behavior on goal attainment (H7a) appeared sensitive to data type (see Table 5-1h & 5-2h). In both study contexts, whereas testing with self-report data supported the existence of a significant relationship, the path failed to reach significance using objective data. The citizenship behavior–satisfaction path (H7b) was consistently significant across study contexts. Lastly, while retention was a significant outcome of satisfaction (H9) in both study contexts, the effect of goal attainment on retention (H8) was much weaker, reaching non-significance in fitness using self-report data. (see Tables 5-1g and 5-2g). Retention is the primary concerns of online courses provider (EdD, 2013) because of receding student retention despite the increasing enrollment percentages (Bawa, 2016) also retention is the critical component for most gym owners (Lang, 20107).

Implications for Practitioners

Firms across various industries have begun exploring and investing in customer engagement as a means of gaining competitive advantage (Harmeling et al. 2017). For example, Anheuser-Busch has allocated an annual budget of \$200 billion to their engagement marketing strategies (Barris 2015). This dissertation result suggests that practices that engender customer psychological state engagement can enhance customer value co-creation behavior, and these improvements in customer value co-creation behavior come in the form of both participation behavior and citizenship behavior. An understanding of variables that underlie effective

customer co-creations can increase the likelihood of product or service success and can present a competitive opportunity for firms.

To enhance customer engagement (both psychological state engagement and value co-creation behavior), this dissertation results show that higher levels of customer readiness variables are associated with higher levels of customer engagement. Although there are already good reasons to believe in the value of practices that can increase the prevalence of these factors, their strong impact of motivation and ability on psychological state engagement provides an additional reason for recommending these practices. By establishing the consumer readiness variables as engagement drivers, I provide an actionable set of factors to help firms understand and influence customer engagement. Managers can use tactical strategies to influence role clarity, ability, and motivation.

Managers can take several steps to influence the actionable customer readiness variable directly. Training—in the form of detailed, customer friendly instructions or aids—is important in influencing role clarity. For instance, training on the proper way to use the equipment and weights in gyms or using posters to show how to use equipment may be useful in building role clarity. Another example in an online course, instructor explaining clearly the objectives of each module, and/or providing rubrics to help students what criteria they will be evaluated for an assignment. This may be useful for role clarity.

An important driver of customer engagement is motivation because of its strong direct effect and its mediation role between customer ability and customer engagement (for both types: psychological state engagement and customer value co-creation). For example, experts suggest that getting and staying in shape is 90% motivation and the rest is training and proper diet (Vahinison, 2015). Marketers need to know and understand how to keep their customers' level of

motivations high and utilizing this understanding to formulate strategies. A greater level of motivation is associated with a greater likelihood of customer engagement.

Motivation is concerned with the improvement of people's psychological processes and behavior (Deci and Ryan, 2008). Within SDT, psychological state engagement comes directly and indirectly from perceived ability and motivation, which is empowering and allows people to act, harness, and persist in purposive activities. Managers might provide opportunities for customers to feel ability or mastery. As illustrated in the simple platform video games they used to provide multiple opportunities for the feeling of ability or mastery psychological state engagement has been linked with specific configurations of brain activation and positive response mechanisms (e.g., Barrett, Della-Maggiore, Chouinard and Paus, 2004; Rozanski, Blumenthal, Davidson, Saab, and Kubzansky, 2005).

Participation behavior which is in-role and required behavior for successful service delivery will improve if marketers enhance customer PSEngagement. Also, customer citizenship behavior that provides extraordinary value to a firm but is not an obligation in service delivery (Yi and Gong, 2013) is influenced by customer engagement. By allocating the resource on enhancing customer psychological state engagement, firms can benefit from voluntary behavior such as customers providing feedback to service providers regarding services they received and suggesting constructive ideas to improve the service business.

However, although the relevance of engagement to customer value co-creation behavior may be important in and of itself, what may be more noteworthy is the greater usefulness of engagement in predication customer value co-creation behavior relative to goal attainment, satisfaction, and retention. This pattern of findings suggests that it may be worthwhile to focus resources on practices that assess and enhance customer engagement.

Implications for Researchers

This dissertation provides a theoretical and empirical foundation for customer engagement research and calls for linking concepts and literatures in ‘value cocreation behavior’ and ‘behavioral engagement’ that may remain unlinked if we use two different labels to refer to the same concept. The danger of using ‘behavioral engagement’ is that future research may neglect the rich and sizeable ‘value co-creation behavior’ literature instead of incorporating and learning from/building upon it. The current study used the Macey and Schneider (2008) framework in the industrial psychology discipline to build on the work of Brodie et al. (2011) to facilitate the specification and refinement of the definition of customer engagement with incorporating two themes: first, customer engagement reflects a customer’s particular psychological state induced by the individual’s specific interactive experiences with a focal engagement object (e.g., a brand or task). Secondly, Brodie et al. asserts specific customer engagement states to occur within a broader dynamic process of service relationships that co-creates value (Brodie et al., 2011). Moreover, this study addresses the multidimensional nature of the customer engagement. Two different components of customer engagement which include customer PSEngagement and customer value co-creation behavior (as a behavioral engagement component) are defined, with the former serving as a precursor or antecedent to the latter.

Behavioral and dimensional conceptualization of value co-creation provides insight into the specific types of customer behaviors that spread the effects of PSEngagement. The current study shows that different aspects of customer value co-creation behaviors are influenced by PSEngagement. Results show customers who are highly psychologically engaged in their tasks (or any focal agent/object) not only focus their physical effort on the pursuit of task-related activities, but also appear cognitively attentive and emotionally connected to the task (Ashforth

and Humphrey, 1995; Kahn, 1990, Rich et al., 2010). It has been acknowledged that customers who are psychologically engaged are more likely to exhibit value co-creation behavior which is in line with the propositions of the previous studies in industrial psychology discipline (e.g. see Macey and Schneider, 2008).

Additionally, the model and results contribute significantly to our theoretical understanding of the factors that influence PSEngagement. Based on the self-determination theory the current research is concerned with two different psychological nutrients that enhance the level of PSEngagement, namely ability and motivation. . More specifically, when customers perceive that they have the ability to perform a task and when they feel motivated to do so, the level of their PSEngagement is enhanced. Moreover, the pursuit of meaningful activities, especially those associated with intrinsic benefits, enhances PSEngagement greater than those associated with extrinsic benefits.

Even more importantly, the findings suggest that the PSEngagement is not only an antecedent of value co-creation behavior but also a key factor with strong mediating properties. The mediating role of PSEngagement also provides a partial answer to the ‘why’ question with respect to customer readiness variables that have been tested in previous research. For example, literature concludes that as role clarity, ability, and motivation increase, the chance of participating in service delivery also increases. The PSEngagement mediator role helps to explain why this relationship exists. It is not merely that increased customer readiness leads to a greater likelihood of value co-creation behavior but also that increased customer readiness leads to higher levels of PSEngagement, which increases the likelihood of value co-creation behavior.

The current research discovers if customers becoming informed about what the service requirements are (Kellogg et al., 1997, Yi and Gong, 2013; Yi, 2014) will not directly affect the

likelihood of the participation behavior; however there are indirect impacts on participation behavior through other customer readiness variables. When customers have the necessary skills to complete a task, they are more likely to demonstrate the participation behavior. According to Seltzer, (1983), individuals will not perform an activity when they believe that they are unable to perform a task required by that activity. Consequently, ability is a critical component of customer readiness and an antecedent of participation behavior. Finally, because customers may participate in the value co-creation process actively or passively, they must be motivated to actively participate.

Another contribution to this dissertation is when service customers participate in service delivery, there is a greater likelihood that they will achieve their goals—which previous research has not disputed (see, Bagozzi and Dholakia, 1999). The result is in line with Mills et al.'s (1983) argument that taking part in the service delivery process makes customers accountable for the activities and the extent to which they achieve their goals.

Limitations

Although the findings of this dissertation are generally supportive of our hypotheses, the research design had limitations that may be addressed in future research. First, the degree to which our results would generalize to other customers and services is unknown. For example, the high level of customer role in higher education and fitness may have helped respondents to distinguish between physical and cognitive energies in a way that would be more difficult in another context. Although this may be a valid concern, the factor structure of the PSEngagement and customer value co-creation behavior measurement scale with students was relatively similar to that of fitness members. Secondly, I used cross-sectional data rather than a longitudinal study. Kahn (1990, 1992) originally described engagement in terms of dynamic moments and fluctuate

in particular moments and situations. Therefore, future research should begin to capture the variance in customers' engagement over time.

Thirdly, although I used multiple data sources, this research was cross-sectional; therefore inferences regarding causality are limited. Although I had strong theoretical and logical reasons to presume causal ordering, which was subsequently reflected in the structural equation modeling, I caution readers that alternative causal models are plausible, which can be examined in future research. For example, to fully understand how PSEngagement and customer value co-creation behavior are related, researchers may consider the impact that customer value co-creation has on PSEngagement.

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APPENDIX A

APPENDIX A

TABLES

Table 2-1: Participation Measures examples

Groth (2005)	One dimension (five items, $\alpha = .94$)
Auh et al. (2007)	One dimension (three items, $\alpha = .80$)
Yi et al. (2011)	One dimension (three items, CR= .88, AVE = .64)
Kelley et al. (1990)	Two dimensions
	1. Technique quality (i.e., what customers do) 2. Functional quality (i.e., how customers do what they do)
Ennew and Binks (1999)	Three dimensions
	1. Information sharing (five items, $\alpha = .82$)
	2. Absence of fear (two items, $\alpha = .66$) 3. Monitoring (two items, $\alpha = .32$)
Claycomb et al. (2001)	Three dimensions
	1. Attendance (one item), 2. Information provision (five items), and 3. Coproduction (three items)
Chen and Raab (2014)	Three dimensions
	1. Attitudinal participation (Three items, CR= .71, AVE = .60)
	2. Information participation (Three items, CR= .85, AVE = .70) 3. Actionable participation (Two items, CR= .71, AVE = .55)
Kellogg et al. (1997)	Four dimensions
	1. Preparation, 2. Relationship building, 3. Information exchange, and 4. Intervention
Uzkurt (2010)	Four dimensions
	1. Information exchange, 2. Behavioral participation, 3. Emotional/interactive participation, and 4. Willingness or ability to participate
Yi and Gong (2013)	Four dimensions
	1. Information seeking (Three items, CR= .91, AVE = .78)
	2. Information sharing (4 items, CR= .94, AVE = .79)
	3. Responsible behavior (4 items, CR= .77, AVE = .77) 4. Personal interaction (5 items, CR= .95, AVE = .74)

Note: Cronbach Alpha (α), Composite Reliability (CR), and Average Variance Extracted (AVE) are presented when these statistics were reported in the works cited.

Table 2-2: Literature review on customer engagement definitions

Author(s)	Year	Journal	Dimensions		Paper Type	Definition
			P	B		
Harmeling, Moffett, Arnold, and Carlson	2017	JAMS		X	QUAN	customer engagement as a customer’s voluntary resource contribution to a firm’s marketing function, going beyond financial patronage (p. 316)
Hollebeek, Srivastava, and Chen	2016	JAMS	X	X	QUAL	A customer’s motivationally driven, volitional investment of focal operant resources (including cognitive, emotional, behavioral, and social knowledge and skills), and operand resources (e.g. equipment) into brand interactions in service systems (p. 6)
Kumar and Pansari	2016	JMR		X	QUAN	Engagement is defined as “the attitude, behavior, the level of connectedness (1) among customers, (2) between customers and employees, and (3) of customers and employees within a firm” (p.498). They develop a 16-item scale to measure CE as a second order construct (subdimensions are: Purchase, Referrals, Influence, and Knowledge). The minimum score for the scale is 16, and the maximum 80. Based on the scores customers are divided into four categories: disengaged (score of 16–31), somewhat engaged (score of 32–47), moderately engaged (score of 48–63), and super-engaged (score of 64–80).
Pansari and Kumar	2016	JAMS		X	Conceptual	The mechanics of a customer’s value addition to the firm, either through direct and/or indirect contribution (p. 2) Customer engagement include buying, referring, Influencing, and feedback
Chandler and Lusch	2015	JSR	X		Conceptual	They assert that engagement is based on both the connections of an actor and the psychological dispositions of an actor. We refer to these as the properties of engagement, and, as seen in Table 1, these properties are either external to an actor (i.e.,

						connections) or internal to an actor (i.e., dispositions). (p. 9) An actor's external connections are characterized by temporal contexts. Hence, Actor Engagement (AE) “is based on actors' present-day connections that have emerged from past service experiences and are oriented toward future service experiences” (p. 5), and AE “is based on actors' present-day connections as comprised of other actors and the social roles that affiliate them with these actors” (p. 5).
Hollebeek, Glynn, and Brodie	2014	Interactive Marketing	X	X	QUAL	A consumer's positively valenced brand-related cognitive, emotional and behavioral activity during or related to focal consumer/brand interactions p. 154
Jaakkola and Alexander	2014	JSR		X	QUAL	Expand the behavioral view into multi-stakeholder service systems, and identify four types of customer engagement behaviors based on informational properties: augmenting, co-developing, influencing and mobilizing behaviors
Verleye, Gemmel, and Rangarajan	2014	JSR		X	QUAN	voluntary, discretionary customer behaviors with a firm focus... customers’ interactive, cocreative experiences with a firm (p. 69)
Vivek, Beaty, and Morgan	2012	JMTP	X	X	QUAL	They define CE as the intensity of an individual’s participation in and connection with an organization’s offerings and/ or organizational activities, which either the customer or the organization initiate (p. 127). CE comprises cognitive, emotional, behavioral, and social elements in their conceptual framework

Brodie, Hollebeek, et al.	2011	JSR	X	X	Conceptual	(1) customer engagement “reflects a psychological state, which occurs by virtue of interactive customer experiences with a focal agent/object within specific service relationships”; (2) varying states of customer engagement “occur within a dynamic, iterative process of service relationships that co-create value”; (3) customer engagement plays a “central role within a nomological network of service relationships”; (4) engagement “is a multidimensional concept subject to a context- and/or stakeholder-specific expression of relevant cognitive, emotional, and behavioral dimensions”; (5) Customer engagement “occurs within a specific set of situational conditions generating differing customer engagement levels.”
Hollebeek	2011a	JSM	X	X	Conceptual	The level of an individual customer’s motivational, brand-related and context-dependent state of mind characterized by specific levels of cognitive, emotional and behavioral activity in direct brand interactions (p. 790)
Hollebeek	2011b	JMM	X	X	QUAL	A customer's level of cognitive, emotional and behavioral investment in specific brand interactions
Kumar, Aksoy, Donkers, Venkatesan, Wiesel, and Tillmanns	2010	JSR		X	Conceptual	Customer Lifetime Value, Customer Referral Value, Customer Influence Value, and Customer Knowledge Value are the components of the CE framework. (1) Customer purchasing behavior, whether it be repeat purchases or additional purchases through up-selling and cross-selling (corresponding to Customer Lifetime Value [CLV]). (2) Customer referral behavior as it relates to the acquisition of new customers through a firm initiated and incentivized formal referral programs (extrinsically motivated; corresponding to Customer Referral Value [CRV]). (3) Customer influencer behavior through customers’ influence on other acquired

						customers as well as on prospects [CIV]). (4) Customer knowledge behavior via feedback provided to the firm for ideas for innovations and improvements, and contributing to knowledge development (extrinsically or intrinsically motivated; corresponding to Customer Knowledge Value [CKV]).
Mollen and Wilson	2010	JBR	X		Conceptual	A cognitive and affective commitment to the brand as personified by the website or other computer-mediated entities (p. 920)
Van Doorn, Lemon, et al.	2010	JSR		X	Conceptual	CE is a “customer’s behavioral manifestation towards a brand or firm, beyond purchases, resulting from motivational drivers” (p. 253)
Verhoef, Reinartz, and Krafft	2010	JSR		X	Conceptual	A behavioral manifestaion toward the brand or firm that goes beyond transactions (p. 247)
Bowden	2009	JMTP	X	X	Conceptual	A psychological process that models the underlying mechanisms by which customer loyalty forms for new customers of a service brand as well as the mechanisms by which loyalty may be maintained for repeat purchase customers of a service brand (p. 695)
Calder, Malthouse, and Schaedel	2009	Interactive Marketing	X	X	QUAN	A second-order construct manifested in various types of first-order ‘experience’ constructs, with ‘experience’ being defined as “a consumer's beliefs about how a (web)site fits into his/her life.” 1. Stimulation & inspiration (E); 2. Social facilitation (E); 3. Temporal (C); 4. Self-esteem & civic mindedness (E); 5. Intrinsic enjoyment (E); 6. Utilitarian (C); 7. Participation & socializing (B); 8. Community (E)

Sprott, Czellar, and Spangenberg	2009	JMR	X		QUAN	An individual difference representing consumers' propensity to include important brands as part of how they view themselves (p. 92).
Vivek	2009	Dissertation	X	X	QUAN	The intensity of an individual's participation and connection with the organization's offerings and activities initiated by either the customer or the organization (p. 7)
Calder and Malthouse	2008	Kellogg on advertising and media	X		QUAN	Customer engagement focusing on the consumer's psychological experience while consuming media Distinguish media engagement from mere liking, implying that engagement is a stronger state of connectedness between the customer and the media than liking alone.
O'Higgins and Morgan (2006)	2006	Society and Business Review			Conceptual	Engagement as a second source of experience beyond the hedonic source of experience resulting from a motivational force to make or not make something happen
Patterson, Yu, and De Ruyter (2006)	2006	ANZMAC conference	X	X	Conceptual	Customer engagement refers to the level of a customer's physical, cognitive and emotional presence in their relationship with a service organization (p.1) Dimensions: 1) Absorption, 2) Dedication, 3) Vigor, and 4) Iteration

Note- P: psychological; B: behavioral; QUAN: quantitative; QUAL: qualitative

Table 3-1 Measurement Items

Higher education	Fitness
Role Clarity: (Meuter et al, 2005)	
I feel certain about what I should do in this online course.	I feel certain about what I should do in this class.
I am NOT sure what to do in this online course.	I am NOT sure what to do in this class.
I know what is expected of me in this online course	I know what is expected of me in this class.
The process of this online course is clear to me	The process of this class is clear to me
I believe there are only vague directions regarding what I should do in this course.	I believe there are only vague directions regarding what I should do in this class.
Ability: (Meuter et al, 2005)	
I am fully capable of completing the requirements of this course	I am fully capable of satisfying the requirements of this class.
I am confident in my ability to complete this course	I am confident in my ability to complete this class.
This course is well within the scope of my abilities	This class is well within the scope of my abilities
I do NOT feel I am qualified to take this course	I do NOT feel I am qualified to take on this class
My past experiences increase my confidence that I will be able to successfully complete the requirements of this course	My past experiences increase my confidence that I will be able to successfully satisfy the requirements of this class
In total, this course involves things that are more difficult than I am capable	In total, this class involves things that are more difficult than I am capable
Extrinsic Motivation: (Meuter et al, 2005)	
Expectancy	
If I put forth the effort, I could successfully complete this course	If I put forth the effort, I will do well in this class
If I tried to perform the required tasks in this course, my performance would be satisfactory	If I try, I can live up to the expectations in this class
Making the effort to fulfill the requirements in this course would result in the course being completed successfully	Making the effort to meet the requirements of this class will qualify me as a successful member.
Instrumentality	
Taking this course online would provide me with added convenience	Taking this class helps me manage my weight
Taking this course online would allow me to study from wherever I am	Taking this class enables me to be in shape

<p>Taking this course online would allow me to study whenever I want</p> <p>Taking this course online would provide me more control over the studying process</p>	<p>Taking this class increases my physical attractiveness.</p> <p>Taking this class makes me more athletic.</p> <p>Taking this class prepares me for athletic competitions.</p>
Valence	
<p>Convenience is desirable to me as a student.</p> <p>Being able to study from wherever I am is desirable to me as a student.</p> <p>Being able to study whenever I want is desirable to me as a student.</p> <p>Having control over the studying process is desirable to me as a student.</p>	<p>Managing my weight is desirable to me</p> <p>Being in shape is desirable to me</p> <p>Being physically attractive to others is desirable to me</p> <p>Being athletic is desirable to me.</p> <p>Being prepared for athletic competitions is desirable to me.</p>
Intrinsic Motivation (Meuter et al, 2005)	
Expectancy	
<p>If I put forth the effort, I could Successfully complete this course</p> <p>If I tried to perform the required tasks in this course, my performance would be satisfactory</p> <p>Making the effort to fulfill the requirements in this course would result in the course being completed successfully</p>	<p>If I put forth the effort, I will do well in this class</p> <p>If I try, I can live up to the expectations in this class</p> <p>Making the effort to meet the requirements of this class will qualify me as a successful member.</p>
Instrumentality	
<p>Taking this course online would provide me personal feelings of worthwhile accomplishment</p> <p>Taking this course online would provide me with feelings of enjoyment from using the technology</p> <p>Taking this course online would provide me with feelings of independence</p> <p>Taking this course online would allow me to feel innovative in how I interact with others in the course.</p> <p>Taking this course online would allow me to have increased confidence in my skills</p>	<p>Taking this class provides me with personal feelings of worthwhile accomplishment</p> <p>Taking this class provides me with feelings of enjoyment</p> <p>In this class, I feel I am right where I belong</p> <p>I feel great each time I go to this class</p> <p>Taking this class allows me have increased confidence in my skills</p>

Valence	
Personal feeling of worthwhile accomplishment is desirable to me as a student.	Personal feelings of worthwhile accomplishment is desirable to me
Personal feeling of enjoyment is desirable to me as a student.	Feelings of enjoyment is desirable to me
Feeling of independence is desirable to me as a student.	Sense of belonging is desirable to me
Feeling innovative in how I interact with others in the course is desirable to me as a student.	Feeling great is desirable to me
Increased confidence in my skills is desirable to me as a student.	Having increased confidence in my skills is desirable to me
Engagement (Schaufeli et al, 2002)	
Vigor	
When I get up in the morning, I feel like going to this online course.	When I get up in the morning, I feel like going to FFC
When I'm doing my work as a student, I feel bursting with energy	When I'm doing my workout, I feel bursting with energy
As far as my studies are concerned I always persevere, even when things do not go well	As far as my exercises are concerned, I always persevere, even when things do not go well
I can continue studying for very long periods at a time	I can continue exercising for long periods
I am very resilient, mentally, as far as my studies are concerned	I am very resilient, mentally, as far as my exercises are concerned
I feel strong and vigorous when I'm studying	I feel strong and vigorous when I'm exercising
Dedication	
To me, my studies are challenging	To me, my exercises are challenging
My study inspires me	Exercising inspires me
I am enthusiastic about my studies	I am enthusiastic about my exercises
I am proud of my studies	I am proud of my exercises
I find my studies full of meaning and purpose	I find my exercises full of meaning and purpose
Absorption	
When I am studying, I forget everything else around me	When I am exercising, I forget everything else around me
Time flies when I am studying	Time flies when I am exercising
I get carried away when I am studying	I get carried away when I am exercising
It is difficult to detach myself from my studies	It is difficult to detach myself from my exercises
I am immersed in my studies	I am immersed in my exercises

I feel happy when I am studying intensely	I feel happy when I am exercising intensely
Customer Co-Creation Behavior (Yi and Gong, 2013)	
Participation Behavior	
Information Seeking	
When I have a question, I ask the professor. I do not mind asking clarifying questions from other students. Whenever I feel lost, I communicate with other students to figure out what I need to know.	When I have a question, I ask the trainer. I do not mind asking clarifying questions from other members. Whenever I feel lost, I communicate with other members to figure out what I need to know.
I usually try and find answers to my questions as a student.	I usually try and find answers to my questions as a member.
Information Sharing	
Whenever necessary, I give updates to my professor. When needed, I provide proper information to other students. I always try to answer questions that other students may have. I don't mind sharing information with others.	Whenever necessary, I give updates to my trainer. When needed, I provide proper information to other members. I always try to answer questions that other members may have. I don't mind sharing information with others.
Responsible Behavior	
I perform all of the tasks required of me as a student. I adequately complete all the expected assignments. I adequately complete all my responsibilities as a student in the course. I follow my professor's instructions.	I perform all of the tasks required of me as a member. I adequately complete all the expected exercises. I adequately complete all my responsibilities as a member in the class. I follow my trainer's instructions.
Personal Interaction	
I am polite toward everyone in the classroom. I never act rudely towards others. As a student, I try to maintain mutual respect. I am a courteous student.	I am polite toward everyone at FCC. I never act rudely towards others. As a member, I try to maintain mutual respect. I am a courteous member.
Citizenship Behavior	
Feedback	
If I have useful ideas that might result in an improvement, I let the professor know. If I have a comment about a specific issue, I share it with others in this course. I let other students know when I like a discussion.	If I have useful ideas that might result in an improvement, I let the trainer know. If I have a comment about a specific issue, I share it with others at FCC. When I experience a problem, I let the staff know about it

I like giving feedback to my professor.	I like giving feedback to my trainer.
Advocacy	
I say positive things about this online course to others. I often make course recommendations to other students. I encourage other students to take this course. I tend to defend this online course when others criticize it.	I say positive things about FFC to others I recommend FFC to others I encourage friends and relatives to join FFC
Helping	
I assist other students if they need my help. I help other students if they seem to have problems I consider myself to be a helpful student inside the classroom. I give advice to other students.	I assist other members if they need my help I help other members if they seem to have problems I teach other members to use the equipment correctly I give advice to other members
Tolerance	
I exercise tolerance when I face difficulties in this online course. When a given online course discussion is not what I expect, I usually put up with it. I am sympathetic when a professor makes a mistake. When I experience difficulties in a course, I try to adapt.	I exercise tolerance when I face difficulties at FFC. When the class is not what I expect, I usually put up with it. I am sympathetic when the trainer makes a mistake. When I experience difficulties at FFC, I try to adapt.
Goal Attainment	
I have learnt a lot in this online course. So far, this online course has taught me a great deal. I have acquired plenty of knowledge and skills in this online course.	I have made a lot of progress at FFC So far, FFC has helped me accomplish a great deal I have attained the goals I have been pursuing through FFC
Satisfaction (Semantic differential)	
How satisfied you are with this online course using the following 7-point scales. Dissatisfied ... Satisfied Displeased ... Pleased Unfavorable ... Favorable	How satisfied you are with this center using the following 7-point scales. Dissatisfied ... Satisfied Displeased ... Pleased Unfavorable ... Favorable
Retention (Semantic differential)	
How likely you are to take more online courses such as this one in future using the following 7-point scales. Unlikely ... Likely	How likely you are to continue to be a member of this center in future using the following 7-point scales. Unlikely ... Likely

Very Improbable ... Very Probable
 Impossible ... Possible
 No Chance ... Certain

Very Improbable ... Very Probable
 Impossible ... Possible
 No Chance ... Certain

Table 4-1: Statistical Properties of the Measurement Model

Constructs and Indicators	Standardized Loading				t-value				Indicator Reliability			
	Study 1		Study 2		Study 1		Study 2		Study 1		Study 2	
	S ^a	S-O ^b	S ^a	S-O ^b	S ^a	S-O ^b	S ^a	S-O ^b	S ^a	S-O ^b	S ^a	S-O ^b
Role Clarity (AVE=.58; CR=.87; α =.82) ¹ (AVE=.66; CR=.90; α =.87) ²												
RC1	0.78	0.77	NA	NA	20.29	18.94	NA	NA	0.61	0.59	NA	NA
RC2	0.77	0.78	0.85	0.86	20.30	22.84	33.12	36.94	0.60	0.61	0.72	0.74
RC3	0.78	0.76	NA	NA	25.66	21.08	NA	NA	0.60	0.58	NA	NA
RC4	0.83	0.82	0.84	0.84	34.26	32.58	58.90	57.99	0.68	0.67	0.71	0.71
RC5	0.64	0.65	0.70	0.70	13.17	14.25	16.88	18.03	0.40	0.42	0.49	0.49
Ability (AVE=.58; CR=.89; α =.85) ¹ (AVE=.67; CR=.92; α =.90) ²												
AB1	0.80	0.81	NA	NA	29.22	30.39	NA	NA	0.64	0.66	NA	NA
AB2	0.84	0.84	NA	NA	24.12	23.01	NA	NA	0.71	0.70	NA	NA
AB3	0.87	0.87	0.86	0.86	44.940	40.12	105.35	93.77	0.76	0.75	0.74	0.74
AB4	0.68	0.69	0.83	0.83	14.60	15.56	30.86	33.48	0.46	0.48	0.69	0.69
AB5	0.73	0.72	NA	NA	19.20	17.65	NA	NA	0.53	0.52	NA	NA
AB6	0.62	0.63	0.83	0.83	13.03	14.14	33.28	37.43	0.39	0.40	0.69	0.69
Motivation (AVE=.88; CR=.94; α =.87) ¹ (AVE=.94; CR=.97; α =.93) ²												
Vigor (AVE=.54; CR=.87; α =.83) ¹ (AVE=.68; CR=.93; α =.90) ²												
VI1	0.68	0.69	NA	NA	22.01	21.63	NA	NA	0.47	0.48	NA	NA
VI2	0.81	0.82	NA	NA	43.54	42.44	NA	NA	0.66	0.68	NA	NA
VI3	0.64	0.63	0.82	0.82	15.12	15.09	34.40	37.82	0.41	0.40	0.67	0.67
VI4	0.73	0.73	0.92	0.91	25.10	25.04	88.64	82.21	0.53	0.54	0.85	0.83
VI5	0.69	0.69	0.90	0.89	16.06	15.05	80.75	79.74	0.48	0.47	0.81	0.79
VI6	0.82	0.82	NA	NA	45.22	43.00	NA	NA	0.68	0.68	NA	NA
Dedication (AVE=.61; CR=.88; α =.82) ¹ (AVE=.77; CR=.93; α =.90) ²												
DE2	0.84	0.83	0.88	0.87	49.31	47.76	46.55	45.60	0.71	0.69	0.77	0.76

DE3	0.89	0.89	0.92	0.92	73.46	70.88	79.77	78.76	0.79	0.78	0.85	0.85
DE4	0.84	0.83	NA	NA	28.65	27.20	NA	NA	0.71	0.70	NA	NA
DE5	0.86	0.85	0.86	0.86	44.91	41.72	42.73	43.83	0.74	0.72	0.74	0.74
Absorption (AVE=.62; CR=.91; α =.88) ¹ (AVE=.68; CR=.93; α =.90) ²												
Abs1	0.76	0.76	0.82	0.82	30.15	29.34	40.54	41.97	0.58	0.58	0.67	0.67
Abs2	0.74	0.76	0.82	0.83	23.10	26.51	47.38	46.94	0.55	0.57	0.67	0.69
Abs3	0.80	0.80	0.81	0.81	27.42	29.84	36.74	33.17	0.64	0.65	0.66	0.66
Abs4	0.79	0.80	0.80	0.80	35.25	34.90	39.83	38.03	0.63	0.63	0.64	0.64
Abs5	0.84	0.84	0.89	0.89	51.19	49.31	65.32	65.38	0.70	0.71	0.79	0.79
Abs6	0.78	0.78	NA	NA	34.45	33.10	NA	NA	0.61	0.60	NA	NA
Feedback (AVE=.67; CR=.89; α =.83) ¹ (AVE=.82; CR=.95; α =.92) ²												
FB1	0.82	0.82	0.93	0.93	35.86	36.12	84.82	92.21	0.68	0.67	0.86	0.86
FB2	0.85	0.85	0.94	0.94	37.66	37.08	109.62	108.75	0.71	0.72	0.88	0.88
FB3	0.80	0.80	NA	NA	35.21	35.29	NA	NA	0.64	0.65	NA	NA
FB4	0.79	0.79	0.93	0.93	25.95	24.87	87.72	89.10	0.63	0.62	0.86	0.86
Advocacy (AVE=.71; CR=.91; α =.86) ¹ (AVE=.94; CR=.98; α =.97) ²												
AD1	0.87	0.87	0.95	0.95	55.60	50.76	99.93	100.75	0.76	0.75	0.90	0.90
AD2	0.78	0.78	0.98	0.98	22.09	23.38	256.14	271.09	0.60	0.61	0.96	0.96
AD3	0.91	0.91	0.98	0.98	85.90	84.11	238.50	246.01	0.84	0.84	0.96	0.96
AD4	0.81	0.81	-	-	32.54	30.21	-	-	0.65	0.65	-	-
Helping (AVE=.80; CR=.94; α =.92) ¹ (AVE=.87; CR=.96; α =.95) ²												
H1	0.91	0.91	0.92	0.92	49.65	50.11	61.96	65.61	0.83	0.82	0.85	0.85
H2	0.92	0.92	0.95	0.95	79.28	76.06	154.17	149.81	0.85	0.85	0.90	0.90
H3	0.90	0.90	0.93	0.93	50.39	50.37	110.31	113.73	0.80	0.81	0.86	0.86
H4	0.85	0.86	0.92	0.92	39.91	41.85	108.84	105.04	0.72	0.73	0.85	0.85
Tolerance (AVE=.61; CR=.86; α =.79) ¹ (AVE=.71; CR=.91; α =.87) ²												
T1	0.85	0.85	0.83	0.83	54.33	58.94	42.07	43.25	0.72	0.73	0.69	0.69
T2	0.73	0.76	0.81	0.80	21.02	22.78	23.67	22.74	0.54	0.57	0.66	0.64
T3	0.74	0.74	0.87	0.87	19.96	19.80	52.78	54.78	0.55	0.55	0.76	0.76
T4	0.81	0.82	0.87	0.87	22.99	23.44	68.88	69.73	0.65	0.67	0.76	0.76
Satisfaction (AVE=.91; CR=.97; α =.95) ¹ (AVE=.97; CR=.99; α =.99) ²												

SAT1	0.97	0.97	0.98	0.98	142.21	138.72	276.69	282.07	0.93	0.93	0.96	0.96
SAT2	0.95	0.95	0.99	0.99	74.27	64.28	534.39	582.01	0.90	0.90	0.98	0.98
SAT3	0.94	0.95	0.99	0.99	93.71	95.03	490.43	500.49	0.89	0.90	0.98	0.98
Retention (AVE=.92; CR=.98; α =.97) ¹ (AVE=.94; CR=.98; α =.98) ²												
R1	0.96	0.96	0.97	0.97	112.86	94.475	263.41	257.26	0.93	0.93	0.94	0.94
R2	0.97	0.97	0.96	0.96	150.20	129.46	139.74	132.99	0.94	0.94	0.92	0.92
R3	0.94	0.94	0.97	0.97	52.72	44.22	195.52	198.25	0.89	0.89	0.94	0.94
R4	0.95	0.95	0.97	0.97	107.38	91.69	171.13	180.17	0.91	0.90	0.94	0.94

Table 4-1: Statistical Properties of the Measurement Model (Continued)

Constructs and Indicators	Standardized Loading		t-value		Indicator Reliability	
	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
	S ^a	S ^a	S ^a	S ^a	S ^a	S ^a
Info. Seeking (AVE=.61; CR=.86; α =.79) ¹ (AVE=.62; CR=.98; α =.97) ²						
Info. S1	0.78	NA	23.45	NA	0.61	NA
Info. S2	0.83	0.85	43.23	38.41	0.69	0.65
Info. S3	0.80	0.86	36.91	40.19	0.64	0.62
Info. S4	0.71	0.85	20.48	45.79	0.51	0.73
Info. Sharing [^] (AVE=.60; CR=.86; α =.78) ¹ (AVE=.72; CR=.91; α =.86) ²						
Info. Sh1	0.70	0.80	19.72	31.282	0.49	0.55
Info. Sh2	0.87	0.90	49.00	85.40	0.76	0.84
Info. Sh3	0.85	NA	45.31	NA	0.73	NA
Info. Sh4	0.66	0.81	12.98	35.14	0.43	0.65
Responsible Behavior [^] (AVE=.81; CR=.94; α =.92) ¹ (AVE=.81; CR=.95; α =.92) ²						
RB1	0.88	0.94	37.18	94.78	0.78	0.83
RB2	0.94	0.89	91.38	50.75	0.88	0.82
RB3	0.93	NA	61.79	NA	0.86	NA
RB4	0.85	0.90	41.56	67.78	0.73	0.77
Personal Interaction [^] (AVE=.72; CR=.91; α =.87) ¹ (AVE=.77; CR=.93; α =.90) ²						
PI1	0.87	0.82	47.59	21.50	0.76	0.67
PI2	0.77	0.86	20.37	35.44	0.59	0.73
PI3	0.91	0.91	68.22	56.21	0.84	0.83
PI4	0.83	0.93	19.37	59.50	0.69	0.86
Goal Attainment [^] (AVE=.89; CR=.96; α =.94) ¹ (AVE=.95; CR=.98; α =.97) ²						
GA1	0.91	0.97	26.62	232.17	0.84	0.94
GA2	0.96	0.97	141.14	182.96	0.92	0.94
GA3	0.95	0.98	111.40	225.20	0.91	0.95

^a S: Self-Report Data;

^b S-O: Self-Report Data plus Objective Data

¹ Study 1

² Study 2

Table 4-2: Descriptive Statistics, Reliabilities, and Correlation among Variables – Study 1 (Self-Report Data)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Mean	5.8	6.1	3.4	3.0	5.0	5.7	4.5	5.6	5.4	6.0	6.4	5.1	5.6	5.6	5.7	6.0	6.2	6.3	
Standard Deviation	.98	.82	1.2	.89	1.1	.92	1.3	1.0	.99	.88	.73	1.1	1.1	1.1	.8	1.0	1.0	1.2	
1 Role clarity	.58																		
2 Ability	.59	.58																	
3 Intrinsic motivation	.45	.52	1.0																
4 Extrinsic motivation	.52	.60	.77	1.0															
5 Vigor	.25	.27	.51	.35	.54														
6 Dedication	.25	.28	.49	.31	.64	.61													
7 Absorption	.07	.09	.38	.19	.68	.57	.62												
8 Information seeking	.28	.41	.44	.36	.37	.42	.28	.61											
9 Information sharing	.21	.31	.40	.37	.33	.37	.32	.65	.60										
10 Responsible behavior	.41	.53	.51	.49	.50	.49	.33	.48	.47	.81									
11 Personal interaction	.32	.41	.47	.45	.30	.41	.20	.40	.40	.61	.72								
12 Feedback	.18	.23	.45	.32	.40	.39	.41	.51	.57	.33	.27	.67							
13 Advocacy	.37	.38	.61	.49	.46	.51	.41	.45	.44	.52	.47	.54	.71						
14 Helping	.20	.30	.44	.38	.36	.41	.33	.57	.70	.43	.48	.58	.58	.80					
15 Tolerance	.31	.35	.44	.41	.40	.46	.32	.50	.54	.48	.51	.45	.54	.61	.61				
16 Goal Attainment	.42	.41	.59	.49	.39	.46	.34	.44	.38	.48	.44	.37	.59	.45	.48	.89			
17 Satisfaction	.41	.41	.52	.48	.40	.36	.26	.30	.25	.38	.23	.29	.47	.22	.27	.56	.91		
18 Retention	.35	.36	.49	.48	.31	.26	.22	.24	.23	.34	.21	.21	.43	.21	.22	.44	.66	.92	

Notes: Sample size is 454. I report means and standard deviations on the basis of a seven point scale (except for variables 3 and 4 which I recalibrated to be in alignment with the other measures). AVE is reported along the diagonal. The expectancy theory conceptualization of motivation results in as single motivation score, thus motivations AVE are 1.

Table 4-3: Descriptive Statistics, Reliabilities, and Correlation among Variables – Study 1 (Objective Data)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mean	5.82	6.08	3.39	3.02	4.97	5.67	4.50	3.46	5.15	5.60	5.62	5.76	2.90	6.27	6.39
Standard Deviation	.96	0.83	1.15	0.88	1.05	0.90	1.32	1.74	1.13	1.10	1.07	0.85	1.16	1.00	1.13
1 Role clarity	.81														
2 Ability	.58	.86													
3 Intrinsic motivation	.44	.52	1.00												
4 Extrinsic motivation	.51	.61	.77	1.00											
5 Vigor	.24	.28	.50	.33	.83										
6 Dedication	.26	.31	.51	.29	.64	.82									
7 Absorption	.06	.10	.37	.16	.68	.58	.88								
8 Participation Behavior	.12**	.17**	.09	.09	.22	.22	.17	1.00							
9 Feedback	.16	.23	.44	.32	.39	.40	.42	.08	.83						
10 Advocacy	.36	.38	.60	.48	.45	.52	.42	.11	.54	.86					
11 Helping	.20	.30	.43	.36	.35	.38	.33	.11	.60	.57	.92				
12 Tolerance	.31	.35	.43	.40	.40	.47	.33	.15	.49	.54	.61	.80			
13 Goal Attainment	.15**	.25**	.17	.18	.24	.17	.11	.36	.07	.16	.05	.12	1.00		
14 Satisfaction	.40	.41	.50	.46	.40	.38	.26	.14**	.27	.47	.21	.26	.22	.95	
15 Retention	.35	.36	.48	.48	.29	.26	.21	.16	.20	.42	.19	.21	.24**	.66	.97

Notes: Sample size is 413. I report means and standard deviations on the basis of a seven point scale (except for variables 3 and 4 which I recalibrated to be in alignment with the other measures). AVE is reported along the diagonal. The expectancy theory conceptualization of motivation results in a single motivation score, thus motivations AVE are 1.

Table 4-4: Descriptive Statistics, Reliabilities, and Correlation among Variables – Study 2 (Self-Report Data)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Mean	4.9	5.3	29.1	26.0	5.0	5.5	4.9	5.2	5.4	5.7	6.2	5.2	5.4	5.5	5.3	5.4	5.5	5.5
Standard Deviation	1.4	1.3	13.7	14.2	1.4	1.3	1.3	1.4	1.3	1.2	0.9	1.5	1.6	1.3	1.3	1.6	1.8	1.7
1 Role clarity	.64																	
2 Ability	.69	.71																
3 Intrinsic motivation	.72	.77	1.00															
4 Extrinsic motivation	.63	.66	.87	1.00														
5 Vigor	.49	.55	.65	.60	.77													
6 Dedication	.62	.60	.73	.65	.70	.78												
7 Absorption	.47	.45	.63	.58	.59	.75	.69											
8 Information seeking	.56	.40	.61	.59	.57	.58	.56	.72										
9 Information sharing	.56	.48	.61	.58	.61	.58	.52	.76	.70									
10 Responsible behavior	.51	.56	.67	.56	.66	.60	.58	.63	.77	.82								
11 Personal interaction	.41	.42	.58	.52	.41	.41	.36	.40	.53	.62	.77							
12 Feedback	.54	.52	.60	.54	.60	.59	.51	.69	.67	.70	.40	.87						
13 Advocacy	.76	.68	.81	.69	.62	.72	.59	.70	.63	.70	.51	.66	.94					
14 Helping	.53	.57	.66	.56	.57	.58	.51	.58	.70	.68	.55	.78	.65	.87				
15 Tolerance	.59	.57	.68	.63	.57	.59	.55	.57	.62	.62	.56	.60	.70	.70	.71			
16 Goal Attainment	.77	.70	.82	.71	.66	.74	.69	.67	.64	.72	.51	.65	.91	.62	.77	.95		
17 Satisfaction	.75	.70	.74	.64	.58	.63	.53	.64	.58	.63	.48	.60	.86	.57	.71	.87	.97	
18 Retention	.71	.64	.71	.63	.53	.60	.53	.64	.55	.59	.47	.59	.84	.54	.71	.84	.97	.94

Notes: The figures are based on data from Study 1. Sample size is 122. I report means and standard deviations on the basis of a seven point scale (except for variables 3 and 4 which I recalibrated to be in alignment with the other measures). AVE is reported along the diagonal. The expectancy theory conceptualization of motivation results in a single motivation score, thus motivations AVE are 1.

Table 4-5: Descriptive Statistics, Reliabilities, and Correlation among Variables – Study 2 (Objective Data)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Mean	4.9	5.27	29.13	26	5.02	5.5	4.94	~	5.18	5.45	5.5	5.3	~	5.49	5.52
Standard Deviation	1.43	1.28	13.65	14.18	1.37	1.28	1.34	~	1.5	1.57	1.32	1.32	~	1.77	1.7
1 Role clarity	0.64														
2 Ability	0.69	0.71													
3 Intrinsic motivation	0.72	0.76	1.00												
4 Extrinsic motivation	0.63	0.66	0.87	1.00											
5 Vigor	0.49	0.55	0.65	0.60	0.77										
6 Dedication	0.62	0.60	0.73	0.65	0.69	0.78									
7 Absorption	0.47	0.44	0.63	0.58	0.59	0.75	0.69								
8 Participation Behavior	0.71	0.67	0.79	0.69	0.66	0.74	0.67	1.00							
9 Feedback	0.53	0.52	0.60	0.54	0.60	0.59	0.51	0.85	0.87						
10 Advocacy	0.75	0.68	0.81	0.69	0.62	0.72	0.59	0.84	0.66	0.94					
11 Helping	0.53	0.57	0.66	0.56	0.57	0.58	0.51	0.84	0.78	0.65	0.87				
12 Tolerance	0.58	0.57	0.68	0.63	0.57	0.59	0.55	0.81	0.60	0.70	0.70	0.71			
13 Goal Attainment	0.63	0.65	0.80	0.79	0.70	0.72	0.60	0.76	0.64	0.68	0.61	0.64	1.00		
14 Satisfaction	0.75	0.69	0.74	0.64	0.58	0.63	0.53	0.77	0.60	0.86	0.57	0.72	0.65	0.97	
15 Retention	0.71	0.63	0.71	0.63	0.53	0.60	0.53	0.74	0.59	0.84	0.54	0.71	0.64	0.97	0.94

Notes: Sample size is 122. I report means and standard deviations on the basis of a seven point scale (except for variables 3 and 4 which I recalibrated to be in alignment with the other measures). AVE is reported along the diagonal. The expectancy theory conceptualization of motivation results in as single motivation score, thus motivations AVE are 1.

Table 4-6: Support Found for each Hypotheses across studies

		Study 1	Study 2
H1	PSEngagement is positively associated with customer participation behavior	S./ S.	S./ S.
H2	PSEngagement is positively associated with customer citizenship behavior	S.	S.
H3	a Role clarity is positively associated with customer participation behavior	N. S./ N. S.	S./ S.
	b Ability is positively associated with customer participation behavior	S./ S.	N. S./ S.
	c Motivation is positively associated with customer participation behavior	S./ N. S.	S./ S.
H4	a The higher the customer role clarity, the more able the customer to perform the expected tasks	S.	S.
	b The higher the customer ability, the more motivated the customer to perform the expected tasks	S.	S.
H5	a Ability is positively associated with PSEngagement	N. S.	N. S.
	b Motivation is positively associated with PSEngagement	S.	S.
	c PSEngagement will be higher when people intrinsically motivated versus extrinsically	S.	N. S.
H6	a Customer participation behavior is positively associated with goal attainment	S./ S.	S./ S.
	b Customer participation behavior is positively associated with satisfaction	S./ S.	N. S./ S.
H7	a Customer citizenship behavior is positively associated with goal attainment	S./ N. S.	S./ N. S.
	b Customer citizenship behavior is positively associated with satisfaction	S.	S.
H8	Goal attainment is positively associated with retention	S./ S.	N. S./ S.
H9	Satisfaction is positively associated with retention	S.	S.

Note: Hypotheses 1, 2, 3a, 3b, 3c, 6a, 6b, 7a, 7b, and 8 were not only tested twice per study context, but also twice per data type (self-report vs. objective) for ‘participation behavior’ and/or ‘goal attainment’.

S.: Supported; N.S.: Not Supported

Table 4-7: Results of Tests for Mediation (Study 1 – Self-Report Data)

Path	Path A ^a	Path B	Path C'	Path C	Indirect effect ^b 95% confidence interval			Type
	(X→M) <i>B</i>	(M→Y _X) <i>B</i>	(X→Y) <i>B</i>	(X→Y _M) <i>B</i>	Effect	Lower	Upper	
Role Clarity → Ability → Motivation	.50***	.48***	.48***	.24***	.24†	.18	.31	Partial
Role Clarity → Ability → Participation	.50***	.36**	.26***	.08*	.24†	.18	.32	Partial
Role Clarity → Ability (Motivation) → Participation	.50*** (.24***)	.20*** (.33***)	.26***	-.001	.11†	.08	.15	Full
Ability → Motivation → Participation	.65***	.33***	.41***	.20***	.25†	.19	.32	Partial
Ability → Motivation → PSEngagement	.65***	.48***	.22***	-.10	.28†	.21	.35	Full
Ability → Motivation (PSEngagement) → Participation	.65*** (-.10)	.22*** (.24***)	.41***	.22***	.09†	.06	.12	Partial
Motivation → PSEngagement → Participation	.44***	.23***	.43***	.33***	.13†	.09	.18	Partial

Note: 5000 bootstrap samples with 95% confidence level. *p<0.05, t=1.96; **p<0.01, t=2.56; # p<0.001, t= 3.29.

^aPath A = relationship between IV and mediator; Path B = relationship between mediator and DV, controlling for IV; Path C'= direct effect of IV on DV, Path C= direct effect of IV on DV controlling for mediator.

^b Indirect effect of IV on DV, using Preacher & Hayes, (2008) bootstrapping technique. '†' indicates the significance of the indirect effect due to the absence of 0 in the confidence interval. Control Variables: Age, Gender, and Ethnicity.

Table 4-8: Results of Tests for Mediation (Study 1 – Self-Report and Objective Data)

Path	Path A ^a	Path B	Path C'	Path C	Indirect effect ^b 95% confidence interval			Type
	(X→M) <i>B</i>	(M→Y _X) <i>B</i>	(X→Y) <i>B</i>	(X→Y _M) <i>B</i>	Effect	Lower	Upper	
Role Clarity → Ability → Participation	.50***	.28**	.21*	.07	.08†	.034	.012	Full
Ability → Motivation → Participation	NA	NA	NA	NA	-.00	-.070	.071	No Mediation
Ability → Motivation (PSEngagement) → Participation	.65*** (-.06)	-.17 (.38***)	.33**	.35***	.05†	.024	.095	partial
Motivation → PSEngagement → Participation	.42***	.37***	.17*	.006	.09†	.039	.143	Full

Note: 5000 bootstrap samples with 95% confidence level. *p<0.05, t=1.96; **p<0.01, t=2.56; # p<0.001, t= 3.29.

^a Path A = relationship between IV and mediator; Path B = relationship between mediator and DV, controlling for IV; Path C'= direct effect of IV on DV, Path C= direct effect of IV on DV controlling for mediator. NA= Not Applicable

^b Indirect effect of IV on DV, using Preacher & Hayes, (2008) bootstrapping technique. '†' indicates the significance of the indirect effect due to the absence of 0 in the confidence interval. Control Variables: Age, Gender, and Ethnicity.

Table 4-9: Results of Tests for Mediation (Study 2 – Self-Report Data)

Path	Path A ^a	Path B	Path C'	Path C	Indirect effect ^b 95% confidence interval			Type
	(X→M) <i>B</i>	(M→Y _X) <i>B</i>	(X→Y) <i>B</i>	(X→Y _M) <i>B</i>	Effect	Lower	Upper	
Role Clarity → Ability → Motivation	.60***	.54***	.64***	.32***	.34†	.229	.483	Partial
Role Clarity → Ability → Participation	.60***	.23**	.38***	.25***	.20†	.093	.341	Partial
Ability → Motivation → Participation	.77***	.52***	.41***	.01	.51†	.374	.687	Full
Ability → Motivation → PSEngagement	.77***	.59***	.51***	.05	.51†	.380	.660	Full
Ability → Motivation (PSEngagement) → Participation	.77*** (.05)	.31*** (.35***)	.41***	-.005	.21†	.105	.341	Full
Motivation → PSEngagement → Participation	.63***	.35***	.53***	.31***	.30†	.154	.440	Partial

Note: 5000 bootstrap samples with 95% confidence level. *p<0.05, t=1.96; **p<0.01, t=2.56; # p<0.001, t= 3.29.

^aPath A = relationship between IV and mediator; Path B = relationship between mediator and DV, controlling for IV; Path C'= direct effect of IV on DV, Path C= direct effect of IV on DV controlling for mediator.

^b Indirect effect of IV on DV, using Preacher & Hayes, (2008) bootstrapping technique. '†' indicates the significance of the indirect effect due to the absence of 0 in the confidence interval. Control Variables: Age, Gender, Income, Education, Marital Status, and Ethnicity.

Table 4-10: Results of Tests for Mediation (Study 2 – Self-Report and Objective Data)

Path	Path A ^a	Path B	Path C'	Path C	Indirect effect ^b 95% confidence interval			Type
	(X→M) <i>B</i>	(M→Y _X) <i>B</i>	(X→Y) <i>B</i>	(X→Y _M) <i>B</i>	Effect	Lower	Upper	
Role Clarity → Ability → Participation	.60***	.34***	.49***	.28***	.27†	.150	.439	Partial
Ability → Motivation → Participation	.77***	.49***	.55***	.17*	.45†	.326	.607	Partial
Ability → Motivation (PSEngagement) → Participation	.77*** (.05)	.26*** (.39***)	.55***	.15*	.21†	.128	.333	Partial
Motivation → PSEngagement → Participation	.63***	.35***	.61***	.35***	.32†	.194	.451	Partial

Note: 5000 bootstrap samples with 95% confidence level. *p<0.05, t=1.96; **p<0.01, t=2.56; # p<0.001, t= 3.29.

^aPath A = relationship between IV and mediator; Path B = relationship between mediator and DV, controlling for IV; Path C'= direct effect of IV on DV, Path C= direct effect of IV on DV controlling for mediator.

^b Indirect effect of IV on DV, using Preacher & Hayes, (2008) bootstrapping technique. '†' indicates the significance of the indirect effect due to the absence of 0 in the confidence interval. Control Variables: Age, Gender, Income, Education, Marital Status, and Ethnicity.

Table 4-11: Summary of Results – Path Coefficients, Effect Size f^2 and q^2 (Study 1)

	PSE			PB			CB		
	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size
AB	0.48	0.19	0.08	0.28	0.09	0.03	0.57	0.49	0.18
MOT				0.26	0.07	0.03			
PSE				0.34	0.18	0.06			
	GA			SAT			R		
	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size
PB	0.27	0.05	0.05	0.19	0.02	0.02	0.11	0.01	0.01
CB	0.38	0.11	0.09	0.25	0.03	0.03			
GA									
SAT									

Table 4-12: Summary of Results – Path Coefficients, Effect Size f^2 and q^2 (Study 1 – Self-Report and Objective Data)

	PSE			PB			CB		
	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size
AB	0.44	0.16	0.06	0.15	0.01	0.01	0.56	0.47	0.18
MOT				0.24	0.05	0.05			
PSE									
	GA			SAT			R		
	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size
PB	0.35	0.14	0.14	0.09	0.01	0.002	0.10	0.02	0.00
CB				0.36	0.15	0.13			
GA									
SAT									

Table 4-13: Summary of Results – Path Coefficients, Effect Size f^2 and q^2 (Study 2)

	PSE			PB			CB		
	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size
RC	0.65	0.54	0.19	0.15	0.02	0.01	0.71	1.33	0.56
MOT				0.39	0.10	0.04			
PSE				0.36	0.14	0.05			
	GA			SAT			R		
	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size
PB	0.15	0.01	0.02	0.70	0.39	0.36	0.95	4.82	2.12
CB	0.71	0.51	0.43						
SAT									

Table 4-14: Summary of Results – Path Coefficients, Effect Size f^2 and q^2 (Study 2 – Self-Report and Objective Data)

	PSE			PB			CB		
	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size
RC	0.69	0.76	0.20	0.17	0.28	0.16	0.76	1.86	0.67
AB				0.08	0.19	0.050			
MOT				0.18	0.22	0.13			
PSE				0.45	0.57	0.40			
	GA			SAT			R		
	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size	Path Coefficient	f^2 effect size	q^2 effect size
PB	0.70	0.11	0.10	0.25	0.01	0.02	0.94	13.57	4.56
CB				0.54	0.06	0.06			
GA									
SAT									

Table 5-1: Path Differences Tests (Higher education)

(a)

Difference in slopes test for path:
(PSEngagement → Participation Behavior)

	Self-Report	Objective
Sample Size	454	413
Regression Weight	0.335	0.241
Standard Error (S.E.)	0.0442	0.0553
t-statistic	1.34	
p-value (2-tailed)	0.18	

(b)

Difference in slopes test for path:
(Ability → Participation Behavior)

	Self-Report	Objective
Sample Size	454	413
Regression Weight	0.282	0.15
Standard Error (S.E.)	0.0657	0.066
t-statistic	1.42	
p-value (2-tailed)	0.16	

(c)

Difference in slopes test for path:
(Motivation → Participation Behavior)

	Self-Report	Objective
Sample Size	454	413
Regression Weight	0.263	-0.126
Standard Error (S.E.)	0.0619	0.0705
t-statistic	4.17	
p-value (2-tailed)	0.00	

(d)

Difference in slopes test for path:
(Participation Behavior → Goal Attainment)

	Self-Report	Objective
Sample Size	454	413
Regression Weight	0.271	0.354
Standard Error (S.E.)	0.0785	0.0436
t-statistic	0.90	
p-value (2-tailed)	0.37	

(e)

Difference in slopes test for path:
(Participation Behavior → Satisfaction)

	Self-Report	Objective
Sample Size	454	413
Regression Weight	0.191	0.095
Standard Error (S.E.)	0.0937	0.0433
t-statistic	0.90	
p-value (2-tailed)	0.37	

(h)

Difference in slopes test for path:
(Citizenship Behavior → Goal Attainment)

	Self-Report	Objective
Sample Size	454	413
Regression Weight	0.384	0.069
Standard Error (S.E.)	0.082	0.0437
t-statistic	3.30	
p-value (2-tailed)	0.00	

(g)

Difference in slopes test for path:
(Goal Attainment → Retention)

	Self-Report	Objective
Sample Size	454	413
Regression Weight	0.106	0.103
Standard Error (S.E.)	0.0543	0.0455
t-statistic	0.04	
p-value (2-tailed)	0.97	

$$t = \frac{Path_{sample_1} - Path_{sample_2}}{\sqrt{\frac{(m-1)^2}{(m+n-2)} * S.E.^2_{sample1} + \frac{(n-1)^2}{(m+n-2)} * S.E.^2_{sample2}}} * \left[\sqrt{\frac{1}{m} + \frac{1}{n}} \right]$$

Table 5-2: Path Differences Tests (Fitness)

(a)

Difference in slopes test for path:
(PSEngagement → Participation Behavior)

	Self-Report	Objective
Sample Size	122	122
Regression Weight	0.36	0.45
Standard Error (S.E.)	0.0534	0.0389
t-statistic	1.368	
p-value (2-tailed)	0.173	

(b)

Difference in slopes test for path:
(Ability → Participation Behavior)

	Self-Report	Objective
Sample Size	122	122
Regression Weight	0.05	0.08
Standard Error (S.E.)	0.0511	0.0427
t-statistic	0.452	
p-value (2-tailed)	0.651	

(c)

Difference in slopes test for path:
(Motivation → Participation Behavior)

	Self-Report	Objective
Sample Size	122	122
Regression Weight	0.39	0.18
Standard Error (S.E.)	0.0561	0.0486
t-statistic	2.841	
p-value (2-tailed)	0.005	

(d)

Difference in slopes test for path:
(Participation Behavior → Goal Attainment)

	Self-Report	Objective
Sample Size	122	122
Regression Weight	0.15	0.70
Standard Error (S.E.)	0.0549	0.1045
t-statistic	4.679	
p-value (2-tailed)	0.000	

(e)

Difference in slopes test for path:
(Participation Behavior → Satisfaction)

	Self-Report	Objective
Sample Size	122	122
Regression Weight	0.10	0.25
Standard Error (S.E.)	0.0593	0.1038
t-statistic	1.260	
p-value (2-tailed)	0.209	

(h)

Difference in slopes test for path:
(Citizenship Behavior → Goal Attainment)

	Self-Report	Objective
Sample Size	122	122
Regression Weight	0.71	0.06
Standard Error (S.E.)	0.056	0.1007
t-statistic	5.664	
p-value (2-tailed)	0.000	

(g)

Difference in slopes test for path:
(Goal Attainment → Retention)

	Study 3	Study 4
Sample Size	122	122
Regression Weight	0.02	0.04
Standard Error (S.E.)	0.0171	0.0166
t-statistic	0.843	
p-value (2-tailed)	0.400	

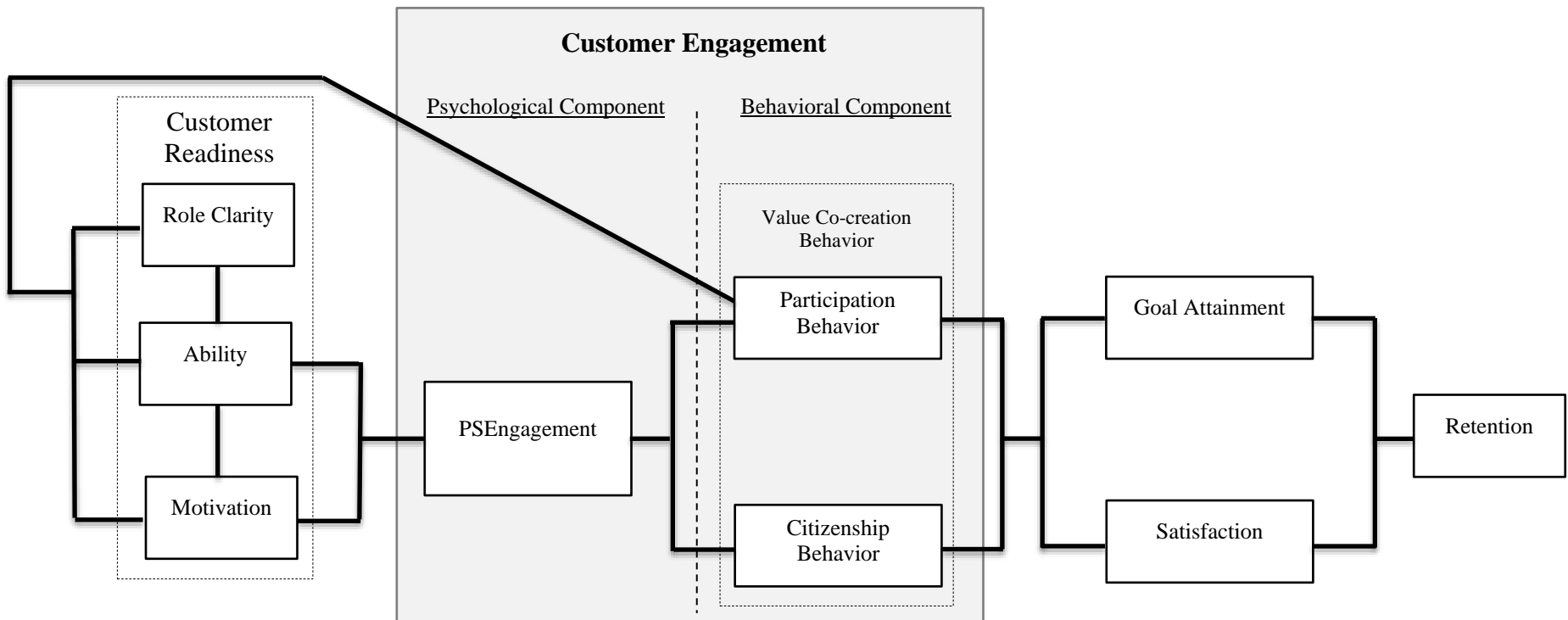
$$t = \frac{Path_{sample_1} - Path_{sample_2}}{\sqrt{\frac{(m-1)^2}{(m+n-2)} * S.E.^2_{sample1} + \frac{(n-1)^2}{(m+n-2)} * S.E.^2_{sample2}}} * \left[\sqrt{\frac{1}{m} + \frac{1}{n}} \right]$$

APPENDIX B

APPENDIX B

FIGURES

Figure 2-1: The Proposed Conceptual Model



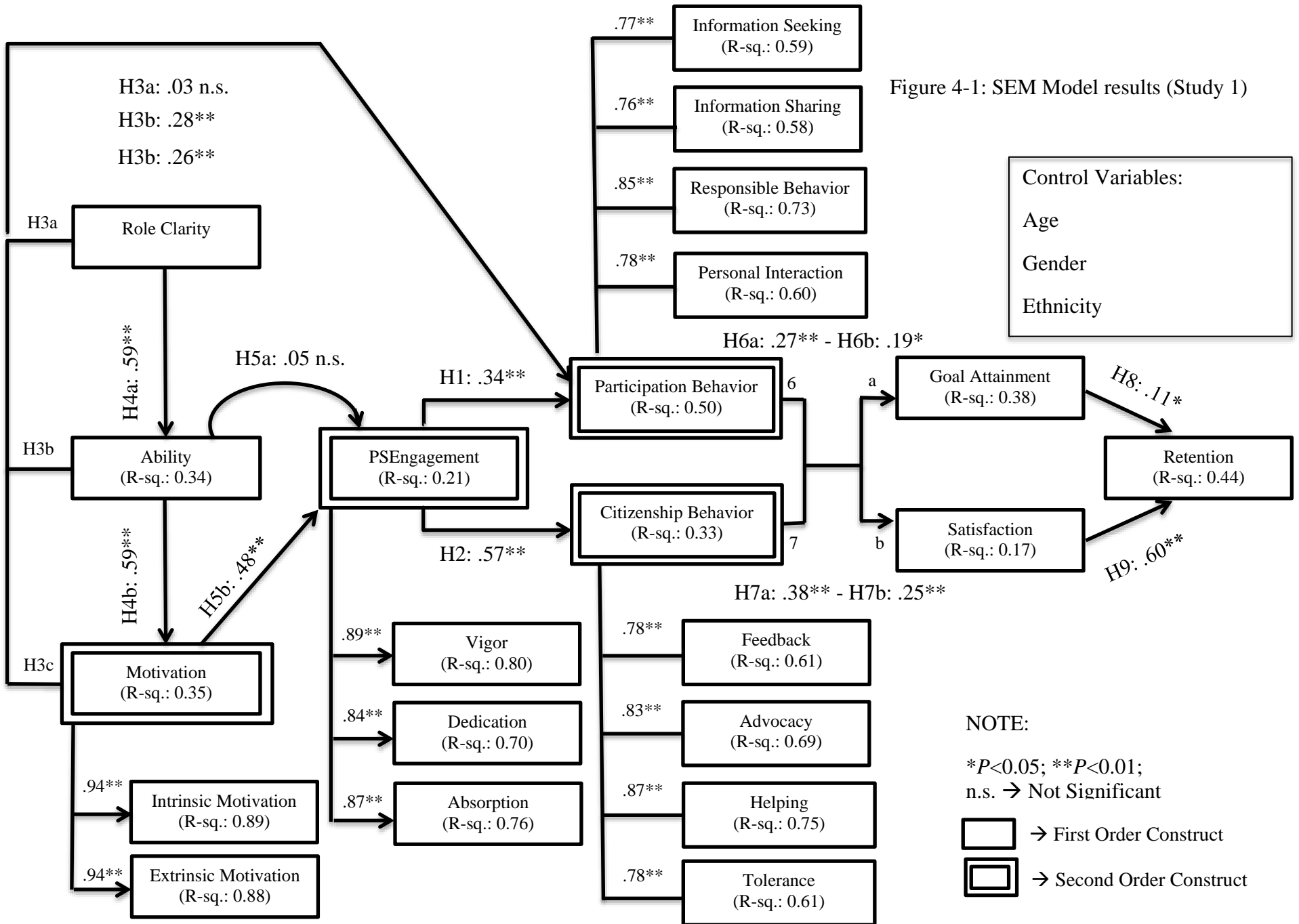
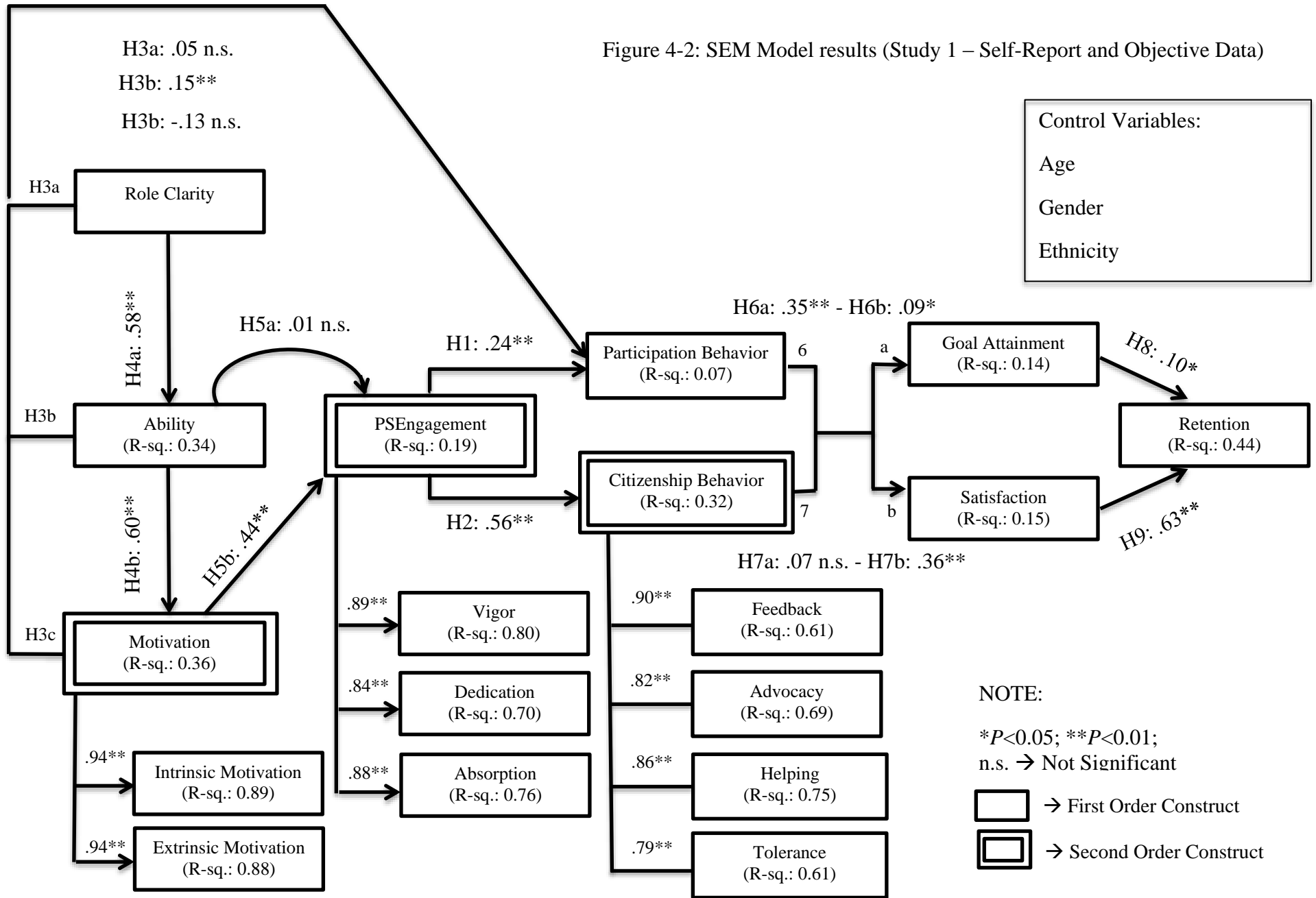


Figure 4-2: SEM Model results (Study 1 – Self-Report and Objective Data)



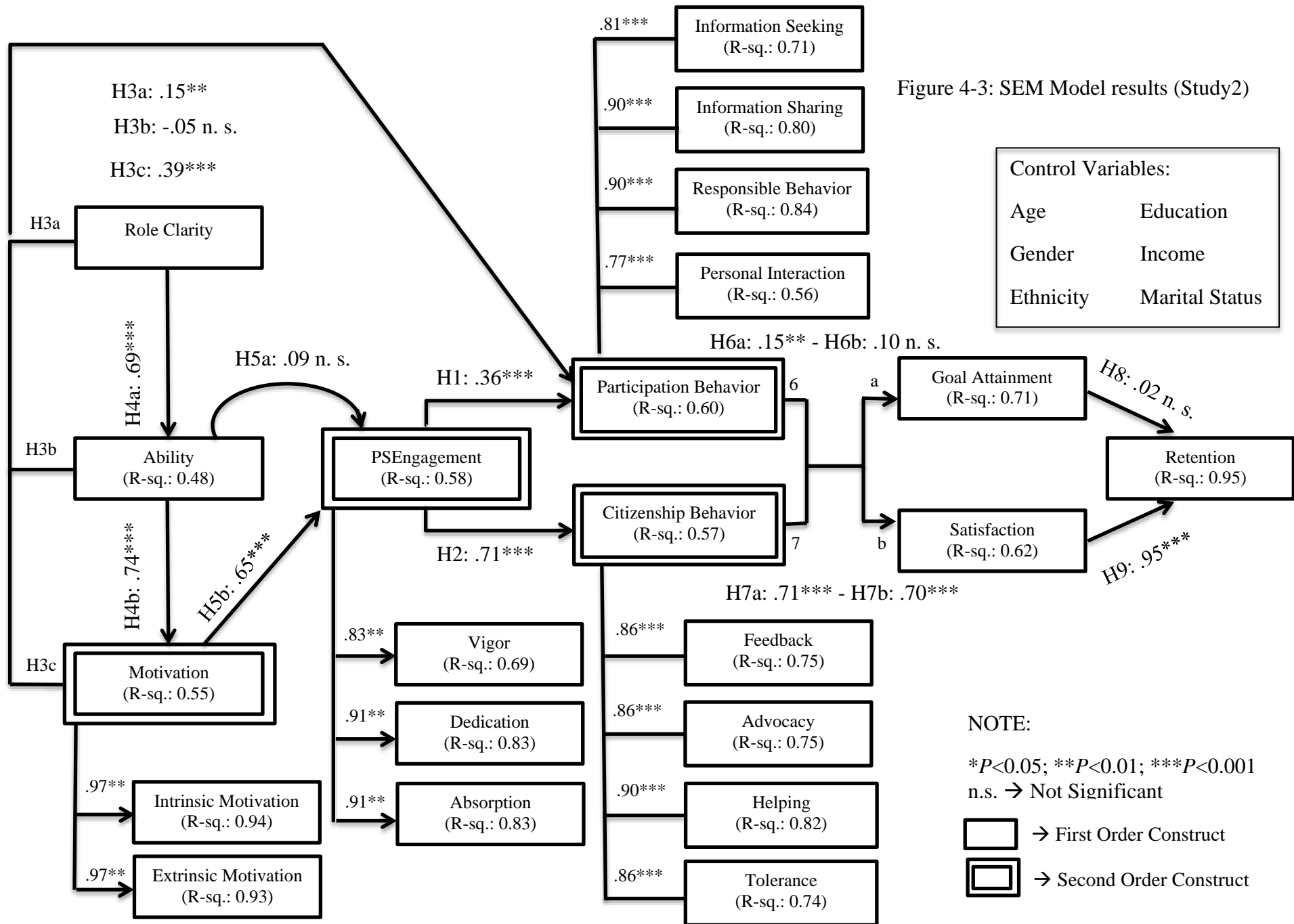
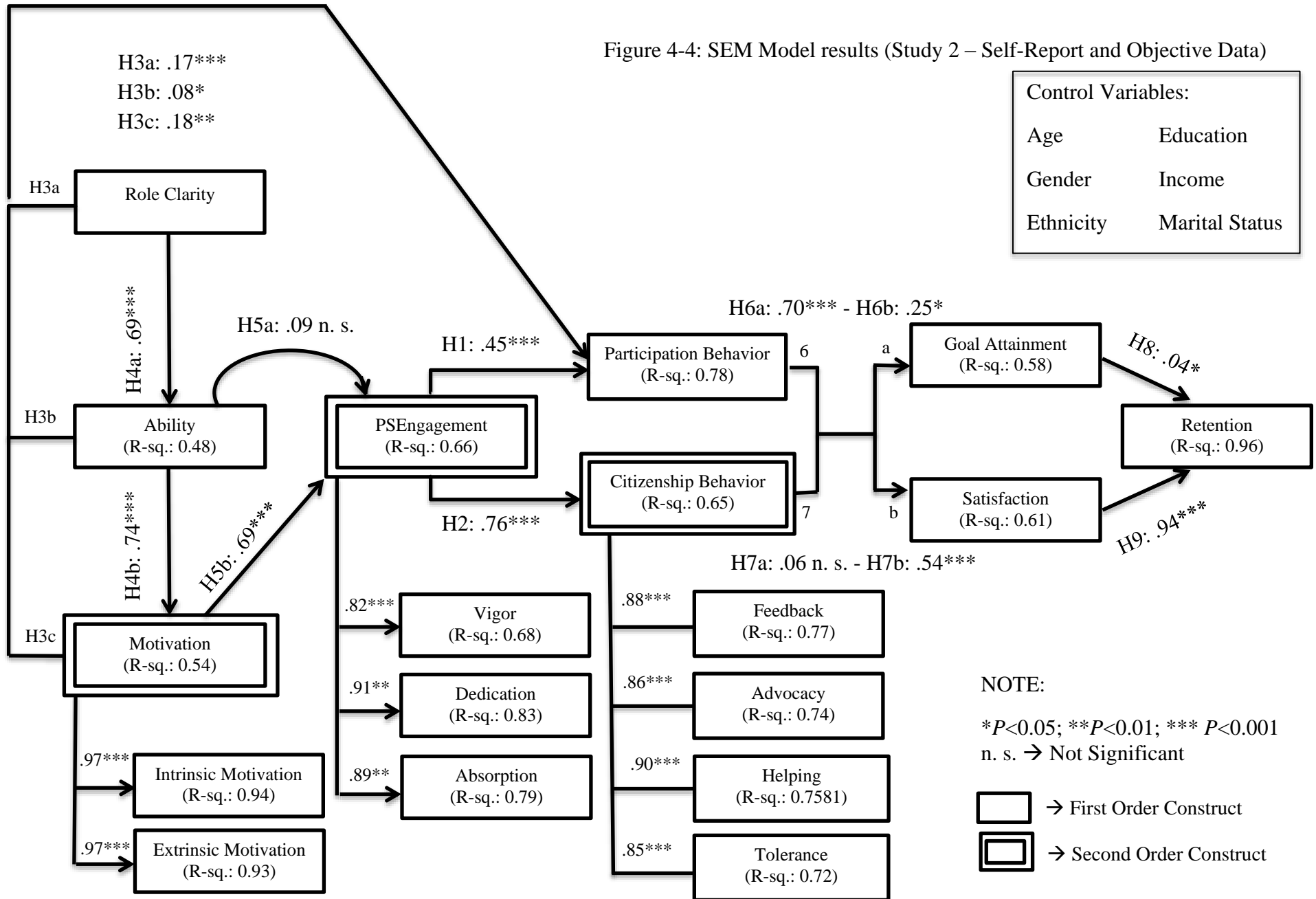


Figure 4-4: SEM Model results (Study 2 – Self-Report and Objective Data)



BIOGRAPHICAL SKETCH

Samaneh Torkzadeh completed her Bachelor and Master Degree in Business in the University of Tehran in 2007 and 2011, respectively. She earned her Ph.D. degree in Marketing from University of Texas Rio Grande Valley in 2017. During Ph.D. program, she worked on research projects in services marketing, customer value co-creation behavior, higher education and digital marketing. Her paper which studies, the role of readiness and participation behavior has been published in *Marketing Management Journal*. Currently, her co-authors and she are working to finalize the manuscripts for Journal of Services Marketing, Journal of Business Research and Journal of Marketing Theory and Practice. In addition, she has presented papers at several U.S conferences.

In addition to her academic background in business about 15 years, she also has extensive professional experience in Sales and Marketing Management. Five years of work in industry taught her that professional experience is the central component of business schools. She expects her students to do more than reading textbooks and memorize facts. She wants them to learn theories, yes, but more importantly, she wants them to be able to put into practice what they read and apply that knowledge to actual situations and issues. To that end, she uses local businesses as course project and works with teams of students toward completing such projects with tangible deliverables for local businesses and unforgettable learning experiences for the students. She believes, this creates a sense of accountability and contributes to a dynamic atmosphere.

If you have any question please contact her by email: 'samaneh.torkzadeh@gmail.com'