

OF "LIKES" AND "PINS": MEASURING CONSUMERS'  
EMOTIONAL ATTACHMENT TO SOCIAL MEDIA

by

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Abstract

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Researchers have demonstrated the useful applicability of psychological attachment theory to a variety of marketing contexts, exploring how individual become attached to special possessions, places, brands, and services. Emotional attachment to these varied focal targets has been reliably and validly shown to influence important marketing related behaviors. This dissertation examines social media as a new target of emotional attachment, which is then linked to marketing related social media behaviors. To date research has not developed or tested conceptualization or operationalization of this construct. This dissertation undertakes two specific lines of research activities across multiple studies. After providing a foundational definition of emotional attachment to social media, seven studies are conducted to develop a measure that meets desired reliability and validity standards. The validated measure is then tested to assess its empirical usefulness in predicting social media behaviors in three different life domains; social, consumer, and work. Results indicate that the emotional attachment to social media (EASM) construct is related to proximity maintenance, safe haven, emotional security, and separation distress, four specific psychological behaviors historically indicative of attachment. The EASM scale presented here also helps to explain

phenomena such as the amount of time spent on social media platforms and social media activities in social, work, and consumer domains.

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## Chapter 1

### Introduction

#### 1.1 Overview

Just a few years ago, we were all talking about the *information revolution*— today, we are witnessing a *social media revolution*. For businesses, it's a double-edged sword. On one hand, one influencer can drive thousands of potential customers (or more) to a website or store. On the other hand, that same influencer can spread his or her dissatisfaction and erode both your brand equity and profitability. (Jim Davis, Sr. Vice President & CMO SAS, *Harvard Business Review*, 2010)

In the past decade, individuals have begun to use the internet in entirely different ways than was the case over the previous twenty years. Social media has emerged onto the scene and become a cultural, social, and economic phenomenon that has changed how individuals engage in interpersonal relationships and interact with companies and brands. In fact, social media's deep penetration into many consumers' everyday lives is so pervasive that, "all the rituals and rites in which individuals and groups in society participate... [now] play out on social media platforms" (Chui et al., 2012, pg.1). Communication about a brand and/or an organization is no longer limited to the information an organization creates and controls. Social media provides a means for any individual to create, publish, share, and consume content. This means the communications that occur surrounding a brand and/or company are not solely broadcast by marketers to consumers. Rather, consumers are now also generating the content. This occurs with or without the organization's approval... a distinctly different experience than that to which marketing professionals have traditionally been accustomed.

Never before have companies had the opportunity to talk to millions of customers, send out messages, get fast feedback, and experiment with offers at relatively low costs. And never before have millions of consumers had the ability to talk to each other, criticizing or recommending products—without the knowledge or input from a company. “Conventional marketing wisdom long held that a dissatisfied customer tells ten individual. But...in the new age of social media, he or she has the tools to tell ten million, says Paul Gillin, author of *The New Influencers* (Harvard Business Review, 2010, pg.2).

The following facts illustrate the pervasiveness of social media:

- It took television 13 years to reach 50 million households and internet service providers three years to sign their 50 millionth subscriber. However, it only took Facebook one year to attract 50 million users and Twitter only nine months (Chui et al., 2012).
- By the end of 2012, approximately 67% of all online adults with an online presence used social media sites. Facebook is now the largest social media site in the world, currently hosting over 1.2 billion users—a number that continues to grow. Each day, Facebook processes 2.7 billion “Likes,” 300 million photo uploads, and 2.5 billion status updates and check-ins (Vance, 2012).
- Since its beginning in 2006, Twitter has become the second largest social media site with over 500 million active users as of 2012. Twitter generates over 340 million tweets daily and handles over 1.6 billion search queries per day (Luden, 2012).
- Pinterest, the third largest social media site, was launched in March 2010, and by January 2012 had 11.7 million unique users. This makes Pinterest the fastest site in history to garner 10 million unique visitors (Constine, 2012).

- Between 2008 and 2011, the average amount of time spent on social networking sites more than doubled, as approximately 80% of the world's online population used social networks on a regular basis (Chui et al., 2012).
- According to Ipsos (2013), the typical American spends about 3.2 hours a day... an average of 22.4 hours a week— on social networking sites. The typical global user spends an average of 25.2 hours a week. Individuals under 35 years of age spend more than a full day (26.6 hours) of their week, on average, on social media sites, while those 35-49 years of age and 50-64 years of age spend an average of 21 hours and 17 hours a week, respectively, on social media.

Naturally, the trends have piqued the interest of both marketing researchers and practitioners, who wish to understand the challenges and opportunities associated with social media (e.g., Kaplan and Haenlein, 2010; Lapointe, 2012). A groundswell of white papers and academic articles address different aspects of social media. While some examine the personality traits of social media users (cf. Ehrenberg et al., 2008; Correa, Hinsley, and De Zuniga, 2010), others explore how social media usages impacts individuals (cf. Valkenburg, Peter, and Schouten, 2006) including consumers' purchase intentions (cf. Wang, Yu, and Wei, 2012) and brand perceptions (cf. Naylor, Lamberton, and West, 2012; Stokes, 2012). Still others explore how social media affects selling environments (cf. Marshall et al., 2012) and the company's ROI (cf. Fisher, 2009; Hoffman and Fodor, 2010).

Social media has also become a focal point in the marketing strategies of many companies. A report by the Social Media Marketing Industry in January of 2013 indicated

that 97% of businesses use social media to market their offerings, yet only about one-third of these businesses believe that they are effectively using the tool (Stelzner, 2013). This suggests a lamentable disconnect between what marketing managers wish to accomplish with social media and how well they are utilizing social media. An effective marketing strategy concentrates resources on optimal opportunities to increase sales and create a sustainable competitive advantage (Aaker, 2008). While most marketers are devoting resources to develop effective social media strategies, clear benefits of doing so are difficult to understand and demonstrate. In general there is a lack of clarity about what exactly drives consumers' social media usage and how this affects consumer behavior. That is, "despite their growing popularity and increasing frequent usage, a systematic understanding of how social network use affects consumer behavior remains elusive" (Wilcox and Stephen, 2013, pg.90). A theoretical explanation of the mass affinity for social media and how this relates to marketing continues to elude scholarly researchers and managers (VanMeter and Grisaffe, 2013).

In the current research, attachment theory is applied to social media as a framework for understanding individuals' connection to social media and developing a new construct: emotional attachment to social media (EASM). A series of studies is conducted to develop and validate a measure EASM. After demonstrating the psychometric properties of this measure, I demonstrate its power in predicting several outcomes and behaviors relevant to marketing.

This dissertation, then, aims to achieve three important objectives: (1) understanding the nature and structure of EASM, (2) developing a scale that reflects this structure and measures emotional attachment to social media in a reliable, valid, and generalizable manner, and, (3) examining marketing relevant outcomes which EASM is



hypothesized to influence. In the sections that follow, these objectives are discussed in greater detail.

## 1.2 Research Purpose

### 1.2.1 Objective 1

The first objective of this research is to gain a conceptual understanding of the nature and structure of the emotional attachment to social media construct. I define emotional attachment to social media (EASM) as *an emotion-laden bond between a person and social media, characterized by affective and cognitive connections with others and oneself facilitated by social media*. In order to accomplish this first objective I draw on research in psychology to demonstrate that individuals develop attachments to objects, events, and activities, including engaging in social media.

### 1.2.2 Objective 2

The second objective of this research is to employ a rigorous scale development process in order to (1) develop a psychometrically reliable measure of the strength of consumers' EASM and (2) demonstrate the scale's validity. Towards this end, I follow procedures recommended by Churchill (1979) and DeVellis (2003) to create the EASM scale.

First, the scale is constructed on the basis of both affective and cognitive terms that reflect the strength of consumers' attachments to social media. Convergent validity is then demonstrated, showing that the EASM measure maps onto adapted versions of two previously published and highly cited measures of emotional attachment to brands (Thomson, MacInnis and Park, 2005; Park et al., 2010). Additionally, convergent validity is assessed in relation to measures of proximity maintenance, safe haven, emotional security, and separation distress (Bowlby, 1980; Hazan and Zeifman, 1999; Thomson, MacInnis and Park, 2005). Next, discriminant validity is established by showing that the

EASM measure is empirically distinct from measures of sociability, social comparison, and information credibility. Finally, predictive validity of the EASM scale is assessed revealing that the scale predicts outcomes such as time spent on social media and behaviors across three different life domains.

### *1.2.3 Objective 3*

The third objective of this research is to develop a theoretically-based model that tests outcomes of EASM. Because attachment theory has been shown to have an association with related behaviors (e.g., proximity maintenance), an attachment-based approach to understanding social media phenomena is expected to show a tie to related social media behaviors that are of interest to marketers. That is, I undertake an attachment-based exploration of the affinity for social media and explore behavioral consequences of that attachment including time spent on social media platforms and engaging with brands and companies.

## 1.3 Organization of the Dissertation

The remainder of the dissertation is broadly organized as follows. In Chapter 2, the theoretical foundations of social media and the attachment literature are reviewed, followed by the theoretical motivations that suggest why a subset of individuals develops an emotional attachment to social media.

Chapter 3 describes the nature and structure of emotional attachment to social media and outlines the development of the emotional attachment to social media (EASM) scale that measures this structure. Items reflecting the EASM construct are generated and reduced to a parsimonious set based on the results from multiple measure-development studies. In Study 1, item generation occurs. In Study 2 the EASM measure is validated and replicated with two additional samples (one comprised of students and the other one of non-students). Study 3 confirms the structure of EASM using

confirmatory factor analysis (CFA); and assesses convergent validity and discriminant validity by examining how the scale relates to existing measures of emotional attachment to brands adapted to reflect emotional attachment to social media. This entails assessing the scales convergent and criterion-related validity. Study 4 demonstrates the content validity of the scale, and Study 5 establishes the stability of the EASM scale over time (i.e., test-retest reliability). Then, Study 6 demonstrates the criterion-related, convergent, and discriminant validity of the measure. Finally, Study 7 assesses the nomological network and predictive validity of EASM by examining the extent to which the scale predicts outcomes purported to emerge from strong emotional attachment, such as using social media across various life domains (social, consumer, and work related).

In Chapter 4, results are discussed in detail. The eight-factors (“Connecting,” “Nostalgia,” “Informed,” “Enjoyment,” “Advice,” “Affirmation,” “Enhances My Life,” and “Influence”) reflecting EASM are described and explained and results demonstrating the reliability and validity of the scale are presented.

The dissertation concludes with Chapter 5, where the contribution of the current research to the literature is presented and the limitations of the research identified. Finally, the theoretical and practical implications of this research are reviewed and directions for future research are discussed.

## Chapter 2

### A Theoretical Framework for Understanding Attachment to Social Media

#### 2.1 Overview

Over the past two decades interest in relationship marketing has flourished among academicians and practitioners. Marketing managers strive to develop relationships with consumers hoping this will enable their organizations to establish enduring, stable, and profitable interactions with consumers (cf. Sheth and Parvatiyar, 1995). While building such relationships is associated with clear economic benefits, it requires that organizations understand the nature of their consumers and the drivers of relationships with them. Complicating matters is the fact that today's consumers are more empowered than ever before (Harvard Business Review, 2010), with a host of social media and digital devices that allow them to connect with one another to discuss brands and products, as well as interact with brands easily and in real time. For these reasons, "those that use social media strategically have an opportunity to deepen connections with their consumers, building affinity and loyalty" (Powers et al., 2012, pg.480).

Social media is defined as, "interactive platforms via which individuals and communities create and share user-generated content" (Kietzmann et al., 2011). Given marketers' desire to form relationships with consumers and consumers' prolific use of social media, the use of theory about relationship formation provides a foundation to investigate consumers' social media behaviors. Attachment theory represents a substantial research tradition that has been instrumental in advancing knowledge about a variety of emotionally-laden relationships. Consequently, attachment theory presents a logical framework for investigating the way individuals interact and use social media, and how this impacts consumer behavior. Research utilizing attachment theory has shown that "strong attachments develop over time and are often based on interactions between

an individual and an attached object” (Baldwin et al., 1996). The interactions individuals have with a given attached object encourage the development of meaning and can invoke strong emotions in reference to the object (Thomson, MacInnis and Park, 2005). Consumers may be emotionally attached to any number of objects and the attachment is generally regarded as profound and significant (cf. Ball and Tasaki, 1992; Richins, 1994a). Just as individuals develop emotional attachments to other people, places, and brands, I propose that individuals may also develop emotional attachment to social media.

In the section that follows I review the literature pertaining to social media. Following this, I review various perspectives on attachment theory and how this affects behavior. Finally, I describe how attachment theory maps onto and social media usage and how this influences behavior. The objective of this selective literature review is to develop a theoretical foundation for the scale development process described in Chapter 3.

## 2.2 Social Media

According to Wilcox and Stephen (2013), “despite their growing popularity and increasingly frequent usage, a systematic understanding of how social network use affects consumer behavior remains elusive” (pg.90). Social media has become a cultural and social phenomenon that has changed the way millions of individual and businesses connect and communicate. A little more than a decade ago, AOL began allowing users to communicate with one another online through instant messenger and chat rooms centered on topics of interest. Soon thereafter Friendster, MySpace and LinkedIn were created allowing users to connect with others and to create and share personal information. Next, came Facebook, which combined the functions of several of the existing social networking sites. These social media platforms provide a means through

which individual can share photos, connect, and communicate. It is no surprise that academic researchers and practitioners in marketing alike are interested in this new form of communication, and wish to understand the challenges and opportunities associated with social media (e.g., Kaplan and Haenlein, 2010; Lapointe, 2012)

Research about social media users is burgeoning. Studies have shown that there is a relationship between an individual's social media usage and one's personality traits... including, extraversion, neuroticism, emotional stability, and openness to experiences and (Ross et al., 2009; Zywicka and Danowski, 2008; Ehrenberg et al., 2008; Correa et al., 2010). Other extant literature has shown social media helps individuals to stay connected with others (Raacke and Bonds-Raacke, 2008), to create and maintain social capital (Ellison, Steinfield, and Lampe, 2007), and to enhance their self-esteem and well-being (Valkenburg, Peter, and Schouten, 2006). Consumer behaviorists have discovered that social media usage causes individuals to have increased self-esteem, leading to a decrease in self-control (Wilcox and Stephen, 2013).

Other research focuses on understanding how using social media impacts marketing-related outcomes and phenomena, such as consumers' purchase intentions (Wang, Yu, and Wei, 2012), brand perceptions (Naylor, Lamberton, and West, 2012; Stokes, 2012), the selling environment (Marshall et al., 2012), and company ROI (Fisher, 2009; Hoffman and Fodor, 2010). Exploration in this area shows that consumers use Facebook as a venue to reflect their actual and ideal selves by creating brand connections on their personal page(s)<sup>1</sup> (Hollenbeck and Kaikati, 2012). Other research suggests that social media impacts the selling environment (Marshall et al., 2012), sales

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<sup>1</sup>The word "post" is used here to refer to the general ability to share content, with the understanding that for different social media platforms, the action of creating content is referred to differently (e.g., Tweet for Twitter, Pin for Pinterest, and Post or Like for Facebook). "Page" refers to the general platform or account (Facebook page, Twitter feed, and Pinterest board, etc.).

elasticity (Stephen and Galak, 2012), and influences the diffusion process for consumer new products (Katona, Zubcsek, and Sarvary, 2011). Research also demonstrates that consumers' brand evaluations and purchase intentions are influenced by the mere presence of other users' demographic characteristics displayed on a brand's social media page (Naylor, Lamberton, and West, 2012).

Another area of investigation focuses on how social media can/should be integrated into an organization's marketing strategy, given that consumers now use social media to gain knowledge about companies and their brands (Hanna, Rohm, and Crittenden, 2011; Goldenberg, Oestreicher-Singer, and Reichman, 2012; Kietzmann et al., 2011; Lapointe, 2012). Researchers generally agree that organizations should not only integrate social media into their marketing strategies (Hanna, Rohm, and Crittenden, 2011; Hennig-Thurau et al., 2010; Kaplan and Haenlein, 2010; Andzulis, Panagopoulos, and Rapp, 2012; Kaplan, 2012), but should also utilize social media to facilitate customer value co-creation (Trainor, 2012; Agnihotri et al., 2012). All of these activities necessitate the development of meaningful relationships between organizations and consumers via social media, which is informed by an understanding of attachment theory.

### 2.3 Attachment

Although attachment theory, was initially developed to explain the parent-infant relationship, it is now is believed to be an important component of human experience "from the cradle to the grave" (Bowlby, 1979, pg.129). Attachment is defined as *an emotion-laden parent-infant bond* (Bowlby, 1979; 1980) where each party manifests intense pleasure in the other's company. The attached individual is especially content when the other expresses affection, whereas distance and expressions of rejection are regarded as disagreeable or painful. Disconnection from the attachment figure produces anxiety and distress (Bowlby, 1969; 1979; 1980; Ainsworth and Bell, 1970). Emotional

attachment to others satisfies a basic human need, hence the strong desire to maintain proximity to the attachment figure. When an individual experiences stress in the external environment, that person often seeks physical and psychological protection provided by the attachment figure (Thomson, MacInnis, and Park, 2005). Although attachment begins as a child's attachment to their parent, it continues through to adult relationships with friends and siblings (Trinke and Bartholomew, 1997), same-sex or opposite-sex peers (Asendorpf and Wilpers, 2000), romantic partners (Hazan and Shaver, 1994), elder children and men who are "buddies" (Weiss, 1988), teachers, coaches, religious leaders or psychotherapists (Colin, 1996), as well as celebrities (Perse and Rubin, 1989; Adams-Price and Greene, 1990; Alperstein, 1991; Thomson, 2006).

More recently, attachment has been examined from two different perspectives: (1) an interpersonal attachment style (i.e., an individual difference trait); or, (2) as an individual's relationship with an object. While both approaches ultimately manifest themselves in attachment behaviors, there are key differences in the individual-object versus the trait perspective (Park, MacInnis, and Priester, 2007). In the trait perspective, attachment is viewed as *an individual difference variable characterizing one's systematic style of connection across relationships* (i.e., secure, dismissing, preoccupied, and fearful). With the individual-object perspective, attachment involves *the strength of the cognitive and affective link between a consumer and an object; denoted as a psychological state of mind* (Thomson, MacInnis and Park, 2005). I adopt the latter treatment of attachment, examining the links between consumers and social media.

According to attachment theory, an individual's more contextualized and relationship-specific models are "subordinate" to their more highly generalized and abstracted attachment models (Collins and Read, 1994; Crittenden, 1990; Overall et al., 2003; Pierce and Lydon, 2001). More generalized attachments form over time as a result



of familial relationships early on, and in peer relationships later in a person's life (e.g., Bowlby, 1969). As individuals mature and expand their network of relationships, these general attachments then influence the more contextualized attachments that develop for the specific relationship(s) the individual forms (Collins and Read, 1994). Specifically, in response to significant attachment experiences, individuals' relationship-specific attachments are likely to change. These in turn, influence their more abstract and generalized attachments, particularly if the experiences happened in a vital attachment relationship. Recent research substantiates that relationship-specific attachments are much more powerful in shaping general attachments over time than general attachments are in shaping relationship-specific attachments (Pierce and Lydon, 2001). Thus far, attachment research has shown that general and relationship-specific attachments are indeed related (Cozzarelli et al., 2000; Overall et al., 2003; Pierce and Lydon, 2001), although little is known about which type of relationship-specific attachments are most strongly predictive general attachments (Klohnen et al., 2005).

While this dissertation draws upon individual-object attachments, a brief history of the trait perspective is provided. Research in marketing suggests that one's attachment style predicts a person's pattern of commitment, involvement, and satisfaction when that individual is in a consumption relationship with a brand or service provider (Thomson and Johnson, 2006; Mende and Bolton, 2012). Similarly, an individual's attachment style predicts brand choice based on preference for certain brand personality types (Swaminathan, Stille, and Ahluwalia, 2009), as well as repurchase and word-of-mouth intentions (Mende, Bolton, and Bitner, 2009). Although knowledge about general attachment style provides valuable insights, this does not explain how consumers relate to specific objects. "It is now well established that individuals develop a multitude of attachment styles that are organized hierarchically from general to relationship-specific

attachment styles” (Mende, Bolton, and Bitner, 2012, pg.127). Thus, an individual’s attachment style can materialize as relationship-specific, which may or may not be consistent with the person’s general or higher-level style (Klohnen et al., 2005).

### 2.3.1 *Individual’s Relationship with an Object*

Although attachment research initially focused on parent-child relationships, more contemporary theoretical conceptualizations encompass a wider array of relationships and contexts. More recent work demonstrates that individuals not only form emotional attachments to other individuals, but also to a variety of objects, including pets (Hirschman, 1994; Sable, 1995), places (Rubinstein and Parmelee, 1992; Hill and Stamey, 1990), religious symbols and ideals (Kirkpatrick, 1995), gifts (Mick and DeMoss, 1990), collectables (Slater, 2000), brands (Greyer et al., 1991; Schouten and McAlexander, 1995; Fournier and Yao, 1997; Thomson, MacInnis, and Park, 2005; Park et al., 2010), other special objects (Ball and Tasaki, 1992; Kleine, Kleine, and Allen, 1995; Price, Arnould, and Curasi, 2000; Richins, 1994a; 1994b; Wallendorf and Arnould, 1988; Grayson and Shulman, 2000; Kleine and Baker, 2004), and firms and service employees (Mende and Bolton 2011; Mende, Bolton, and Bitner, 2012). Extending these research findings, it seems reasonable to propose that individuals can also develop an emotional attachment to social media as another kind of object or activity. A broader definition is offered by Thomson, MacInnis, and Park (2005) who view attachment as *an emotion-laden, target-specific bond between a person and a specific object*. As the attachment phenomenon became more popular, attachment has been determined to vary in strength (Aron and Westbay, 1996; Baldwin et al., 1996).

### 2.3.2 *Attachment Behaviors*

Individuals who are attached to an object or individual typically engage in specific behaviors, including: *distress upon separation, seeking a safe haven, seeking emotional*

*security, and proximity maintenance* (Bowlby, 1980; Hazan and Shaver, 1994; Hazan and Zeifanman, 1999). A person who is intensely attached to an object is concerned with (1) attaining or retaining proximity to the target of one's attachment. That proximity fosters (2) a sense of emotional security that allows the individual to function successfully in his or her environment. When one experiences stress in the external environment, s/he will seek (3) a safe haven in the form of physical or psychological protection provided by their attachment object. Finally, if the individual experiences real or threatened separation from the attachment object, (4) distress results in the form of negative emotions (e.g., anger, frustration, and sadness).

In past research attachment has been assessed by presence of these four attachment behaviors. That is, one's bond is inferred from the person's behavior with respect to the target object. The more distress an individual demonstrates when the target object is removed, the more that person is assumed to be intensely attached to the object (Berman and Sperling, 1994; Weiss, 1988; 1982). This approach was pioneered by Bowlby (1980), whose research focused on infants and children— subjects who are incapable of clearly articulating their feelings towards an attachment object. More recent attachment research on adults (Thomson, 2006; Thomson, MacInnis, and Park, 2005) employs self-report measures of emotional attachment. Regardless of measurement approaches, researchers generally concur that attached individuals behave in specific ways with respect to the attachment object. Given this I offer the following predictions:

***H<sub>1</sub>: Separation Distress:*** *Individuals who are more highly emotionally attached to social media will experience more distress when separated from social media than those who are less emotionally attached to social media.*

***H<sub>2</sub>: Safe Haven:*** *Individuals who are more emotionally attached to social media will use social media as a safe haven more than those who are less emotionally attached to social media.*

***H<sub>3</sub>: Emotional Security:*** *Individuals who are more emotionally attached to social media will use social media for emotional security more than those who are less emotionally attached to social media.*

***H<sub>4</sub>: Proximity Maintenance:*** *Individuals who are more emotionally attached to social media will maintain proximity to social media more than those who are less emotionally attached to social media.*

## 2.4 Attachment and Social Media

With the emergence of social media, consumers not only have the ability to share, connect, and interact with each other, but also with brands, companies, and organizations. This represents a notable change from past company-consumer interactions, when the marketers controlled communications, that were largely unidirectional. Social media usage among consumers is motivated by different factors, including fulfillment of an individual's social needs; affiliation, self-expression, self-presentation, self-esteem, increasing social capital, and receiving support (Back et al., 2010; Gonzales and Hancock, 2011; Valkenburg et al., 2006). If interaction with social media does indeed provide an avenue by which intrinsic human needs are fulfilled, it seems reasonable to suggest that individuals could become emotionally attached to social media. Assessment of this potentiality necessitates the development of a scale that measures the extent to which individuals can/do become attached to social media.

As mentioned previously, past researchers have operationalized attachment theory in the context of brands, places, and objects, and have assessed the degree of attachment by observing behaviors and using self-report measures. However no one has described a way to measure an individual's attachment to social media. Heavy users of social media log on to their preferred social media platforms daily—sometimes multiple times per day—for a variety of purposes. Individuals potentially can use social media in variety of ways. For example, a student is who attends college out-of-state could use social media to stay in touch with her friends that attend other universities around the

country— using social media for social connections. She could also use social media to learn about sales events her favorite retailer is having that week and enter the retailer's contest—using social media to stay informed and connected to the retailer. Further, she could use social media to communicate with coworkers and promote online coupons for the local sandwich shop that she works at part-time— using social media for work purposes to influence those in her social network. The development of an emotional attachment to social media (EASM) measure will allow researchers to gain a deeper understanding of individual's social media behaviors across different life domains and to gauge how each is related to EASM. Based on this, I offer the following hypotheses about how social media pervades one's different life domains:

***H<sub>5</sub>: Social Behaviors:*** *Individuals who are more highly emotionally attached to social media will be more active socially within social media than those who are less emotionally attached to social media.*

***H<sub>6</sub>: Consumer Behaviors:*** *Individuals who are more highly emotionally attached to social media will be more active as consumers within social media than those who are less emotionally attached to social media.*

***H<sub>7</sub>: Work Behaviors:*** *Individuals who are more highly emotionally attached to social media will be more active with work within social media than those who are less emotionally attached to social media.*

## 2.5 Forward

The next chapter outlines the development of the emotional attachment to social media scale. The scale development process follows accepted academic procedures to ensure a valid and reliable scale is established. Subsequently, a description of the data that allows for the testing of the hypotheses and the results will be reported and discussed.

## Chapter 3

### Methodology

#### 3.1 Overview

This chapter presents an overview of the methodology used in developing a scale to measure consumers' emotional attachment to social media (EASM). The scale development procedures are described with a description of the analytic procedures used to each step in the process. Followed by a discussion of the conceptual meaning of eight subdimensions that I hypothesize comprise EASM, and how EASM relates to the attachment behaviors. The chapter concludes with a description of the analytic procedures used to investigate EASM's relationship with social, consumer, and work behaviors.

#### 3.2 Background

As explained previously, an individuals' relationship-specific attachment to an object predicts the outcomes in a specific relationship (Belk, 1988; Grisaffe and Nguyen, 2011) better than an individual's general attachment style (Thomson, Whelan, and Johnson, 2012; Thomson and Johnson, 2006; Swaminathan, Stilley, and Ahluwalia, 2009; Mende, Bolton, and Bitner, 2009, Klohnen et al., 2005). While some work has been done to create a shortened version of the scale measuring interpersonal attachment style (cf. ERC-S: Wei et al., 2007), others have created scales explicitly to measure consumers' emotional attachment to objects such as brands (cf. EAB: Thomson, MacInnis, and Park, 2005; Park et al., 2010), service employees, and firms (Mende and Bolton, 2012; Mende, Bolton, and Bitner, 2013). The problem with using scales like the ERC-S is that psychological personality scales tend to measure elements of the self-concept that are not relevant to objects and do not capture other highly relevant elements. Further, adapting a scale that is originally intended to measure a self-concept

and using it to measure object-specific information might be limited in content and lack construct validity. Instead, an individual's specific relationship in the domain of interest should be measured in order to maximize predictive ability and validity (Klohnen et al., 2005). Therefore this dissertation aims to develop a reliable, valid, and generalizable scale that measures consumers' EASM is the main objective of this dissertation. In doing so, I follow well-accepted procedures for the conceptual development of factor identification (Hair et al., 2010) and the scale development process (Churchill, 1979; Crocker and Algina, 1986; DeVellis, 2003; Gerbing and Anderson, 1988; Netemeyer, Bearden, and Sharma, 2003; Nunnally and Bernstein, 1994). This process involves construct definition, item generation and purification, content validity, reliability and validity assessments.

### 3.3 Construct Definition

This phase of scale development requires specificity in delineating the construct's domain and facets, and in establishing what the construct does or does not entail (Churchill, 1979; Zaichkowsky, 1985; Haynes, Nelson, and Blaine, 1999; Haynes, Richard, and Kubany, 1995; Nunnally and Bernstein, 1994). The construct domain may be specified via a literature review of related constructs and measures (Clark and Watson, 1995; Haynes et al., 1999). Importantly, the measure for the construct must possess content validity and be appropriate for reliably and accurately predicting behaviors. EASM is defined here as *an emotion-laden bond between a person and social media, characterized by affective and cognitive connections with others and one's self facilitated by social media*. As discussed in Chapter 2, when investigating relationship outcomes, the relationship-specific attachment perspective is more appropriate than the higher-level individual attachment approach.

### 3.4 Item Generation

Item generation involves generating a representative pool of items for each dimension of the construct (Churchill, 1979). Often, open-ended responses are converted into items for the different dimensions (Richins and Dawson, 1992; Shimp and Sharma, 1987). It is important to develop items that are clear, concise, and specific (Peterson, 1999; Podsakoff et al., 2003; Spector, 1992), and to purge items that are verbose, obscure, or confusing (Angleitner and Wiggins, 1985). The extant literature is examined to uncover additional scale items, which are then incorporated with the other items to comprise the initial set of items (Bearden, Hardesty, and Rose, 2001). In this stage of scale development, validity means *value* defined as important, interesting, or useful (McGrath and Brinberg, 1983). To satisfy these recommendations, item generation is conducted in the three phases that follow.

#### *3.4.1 Exploratory Qualitative Item Generation*

In order to create an understanding of the underlying dimensions of emotional attachment to social media (EASM) and to attain items that utilize verbiage of social media users, approximately twenty respondents provide ratings and qualitative descriptions about the role of social media in their lives. This exercise provides qualitative data in order to generate items. A thematic analysis is conducted on the text of qualitative responses to classify the verbatims into the dimensions based on the natural language of respondents.

#### *3.4.2 Literature Review Item Generation*

Other potential items are generated from the literature on attachment theory and social media (e.g., Hollenbeck and Kaikati, 2012; Fennis, Pruyn, and Maasland, 2005; Wilcox and Stephen, 2012; Hanna, Rohm, and Crittenden, 2011). Multiple dimensions are expected to emerge based on the results of previous research of emotional



attachment (Thomson, MacInnis, and Park, 2005; Park et al., 2010), which conceptualize, the construct as a higher-order construct with underlying subdimensions.

#### *3.4.3 Pretesting and Exploratory Examination of Item Pool*

A preliminary pool of items is developed based on qualitative research and a review of literature. Pretests of these items are conducted and correlations, descriptive statistics, and item analyses are examined to identify low communalities, any ambiguity in the language used, and potential complexities in wording that might represent more than one underlying concept in a single item. Based on these early statistical explorations and conceptual item analyses, changes are made to the initial set of items to enhance the starting pool and more accurately sample the domain of interest.

The key informant technique is then applied to the improved item pool as a continuation of this exploratory research (Parasuraman, Grewal, and Krishnan, 2006). The pool of items is sequentially presented separately to each of two industry experts, who are asked to provide feedback on the items. The aim is to obtain a preliminary check of face validity, content validity, and thoroughness of domain coverage. Items are modified, created, and/or rejected based on the comments of these informants. Following this exploratory process the remaining items are used to collect subsequent quantitative data to explore the structure of the item pool and to undertake item purification using accepted scale development practices.

### 3.5 Item Purification

Item purification is undertaken to ensure that the developing scale is measuring what it is intended to measure and to further refine the item pool (cf. Shimp and Sharma, 1987; Bearden, Hardesty, and Rose, 2001). Factor analysis is utilized to reduce data and refine a developing scale (Ford, MacCallum, and Tait, 1986). Items are eliminated based on several criteria, including: factor loadings, the correlation (or regression weight) of a

variable with a factor, inter-item correlations, and item-to-total subscale correlations to determine if the items have statistically high correlations with their intended dimension. The outcome of item purification is a reduced set of items that more closely represents the construct being evaluated.

Exploratory factor analysis (EFA) allows a researcher to discover the nature of the constructs influencing a set of responses by statistically determining the number of common factors—sometimes called dimensions—influencing a scale or set of measures. Orthogonal rotation methods assume that the factors in the analysis are uncorrelated, while, oblique rotation methods assume that the factors are correlated (Gorsuch, 1983). Oblique EFA determines the strength of relationship (correlation) between each construct of interest within a scale. Factor axes are rotated in order to obtain simple and interpretable factors (Yaremko, 1986). The objective of EFA is to maximize the percent of variance explained by the model that it lays out. The researcher does not need to have a model in mind at the onset of EFA; factors are derived from the data and then interpreted by the researcher.

Exploratory factor analysis also helps determine the structure of the items. Principal component analysis with oblique rotation is used because I believe there is a second-order construct comprised of factors that are correlated. Any factor loading greater than 0.5 is assumed to possess practical significance (Hair et al., 2010) any item not demonstrating practical significance is eliminated. Item elimination also occurs if the item demonstrates significant cross-loadings (above 0.4) between two or more factors and non-significant loadings (less than 0.5) on any one factor. The decision of the appropriate number of factors is based on a combination of conceptual foundation and empirical evidence (Hair et al., 2010).

Although a set of subdimensions that underlie EASM as a second-order construct have been considered, the results of EFA allow for interpretable sets of items that group together, have some practical relevance and are empirically supported (Hair et al., 2010). The constructs are then named and investigated further. Empirically, a solution with more than 60% of variance explained and communalities of 0.6 or higher is deemed appropriate. This is an iterative process, in that the loadings and communalities change as items are eliminated. The final solution results from multiple iterations of item deletions and analysis.

Rosenthal and Rosnow (1991) argue that "Replicability is almost universally accepted as the most important criterion of genuine scientific knowledge" (pg.9), which suggests that replication, is held in high regard by some scientists. Holding all other things constant, the inability to obtain similar findings in a replication indicates the need for further investigation. On the other hand, a successful replication promotes confidence in the reliability of the results and suggests the need to investigate whether the findings can be generalized to different products, geographical areas, populations, and so on (Hubbard and Armstrong, 1994). "Replications and extensions play a valuable role in ensuring the integrity of a discipline's empirical results" (Hubbard and Armstrong, 1994, pg.233). Once a final solution is reached, the results are replicated in a comparable sample (students) and a more generalized sample (non-students) in order to advance the reliability of the emotional attachment to social media measure.

### 3.6 Assessment of the Measurement Model

Once the initial factor structure is determined and replicated in the item purification phase, assessing of the developing scale's latent structure, dimensionality, reliability, and validity is the next step (Bassi, 2011). The quality of the factor structure is typically tested by using confirmatory factor analysis (e.g., Grégoire, Laufer, and Tripp,

2010), which seeks to ensure the proposed model provides the best representation of the data and contains only appropriate dimensions with necessary items. Confirmatory factor analysis (CFA) allows a researcher to investigate the hypothesis that a connection exists between a set of observed variables and their higher-order latent factor(s). Here the empirical research and/or existing knowledge within the field about the theory, allows for the creation of a hypothesized model prior to testing it statistically.

Unlike other statistical techniques, CFA uses various measures to determine the adequacy of fit for the model. The reported fit indices follow the commonly accepted standards in extant literature. Because CFA can be used to demonstrate construct validity of a measure by linking observed variables to their underlying constructs (Floyd and Widaman, 1995), factors, and their respective items, are subjected to a CFA to confirm the factor structure of the EASM measure. The measurement model fit assesses the appropriateness of the multi-dimensional factor structure determined in the item purification phase. The  $\chi^2$  test of significance is also assessed. Fit statistics for this model must meet or come very close to meeting all the standard criteria (root mean square error of approximation [RMSEA] < .06, nonnormed fit index [NNFI] > .95, comparative fit index [CFI] > .95, standardized root mean square residual [SRMR] < .08; Hu and Bentler, 1999). Additionally, all *t* values associated with the items must be statistically significant and have standardized factor loadings greater than 0.60.

Next, the multi-dimensional factor model is compared to a one-factor model, and alternative factor models. Each of the nested models results are compared to determine if there is a significant change in chi squared. Evidence of construct validity demonstrates the appropriateness of the multi-dimensional measure. The analysis is conducted using LISREL 9.0.

### 3.7 Content Validity

*Content validity* is the representativeness of the content of the measurement instrument. Expert judges assess scale items iteratively in multiple stages. Items not assigned to a dimension by the majority of the judges are eliminated. Validity at this stage means *correspondence of fit* (McGrath and Brinberg, 1983). Lawshe (1975) points out that demonstrating content validity requires an accumulation of research results and he recommends calculating the Content Validity Ratio (CVR) for each item comprising the scale using the following formula to determine if the item is representative of the dimension being measured:

$$\text{CVR} = \frac{N_e - N/2}{N/2}$$

\*Where  $n_e$  is the number of panelists that classify the item correctly and  $N$  is the total number of judges.

The more judges who classify the item correctly, the greater the item's degree of content validity in measuring the scale's dimensions. Any items that have a low or negative CVR are eliminated from the developing scale. Next, the Content Validity Index (CVI) for the entire scale is calculated to assess the extent to which overlap occurs between the test items and the domain they are meant to assess (Lawshe, 1975). Item adjustments and eliminations are made on the basis of its CVI.

Further, a benchmark of chance assignment is examined. A random sorting of items into available dimensions produces an expected correct proportion by chance alone. A chance-corrected test of classification reliability compares the observed correct classification proportion in the sample against a hypothesized value of chance

assignment. A more stringent alpha to account for multiple item tests is applied (e.g., Bonferroni correction), and all tests must remain statistically significant.

### 3.8 Internal Reliability

Internal reliability is the degree to which items within the scale are representative of the construct being measured (Pedhazur and Schmelkin, 1991). The objective is to create a scale that allows for adequate sampling of the possible items representing the concept, while also ensuring that the scale produces high levels of reliability (Zaichkowsky, 1985). Using CFA results, reliability estimates are calculated for each dimension based on the standardized loadings from the model that best represents the data (identified through prior model testing) (Fornell and Larcker, 1981). Outside of CFA, the most commonly used measures are Cronbach's alpha (Price and Mueller, 1986) and test-retest reliability (Churchill, 1979).

#### 3.8.1 Cronbach's Alpha

Once a factor solution is derived that demonstrates a distinct pattern, the reliabilities of the construct will be assessed using Cronbach's alpha. Cronbach's alpha is the average of all the possible split half correlations. Nunnally and Bernstein (1994) recommend retaining items that collectively produce a Cronbach's alpha of 0.7 or higher.

#### 3.8.2 Test-Retest Reliability

Test-retest reliability shows a scale possesses "repeatability" or stability over time, measurement occasions, and subjects (Bollen, 1989; Nunnally and Bernstein, 1994). The idea is to demonstrate that the scale truly reflects its intended construct by showing that it elicits similar responses from the same respondents in different measurement periods. A test-retest or "stability" coefficient is estimated by calculating the magnitude of the correlation between the same measures (and sample) on different assessment

occasions (Netemeyer, Bearden, and Sharma, 2003). Reliability of the scale is enhanced when the stability coefficient is high in magnitude (Haynes et al., 1999).

### 3.9 Convergent Validity

Convergent validity occurs at the item level and the construct level. At the item level it is important the items are indicators of the latent construct and share a high proportion of common variance or converge on the latent construct (Hair et al., 2010). There are several ways to determine convergent validity at this level. The first method is to examine the communalities of the items, which represents how much variation in an item is explained by the latent factor, as discussed earlier communalities greater than .60 are desired. The second method is to calculate the average variance extracted (AVE). This is a summary indicator and an AVE above .50 is desirable (Fornell and Larcker, 1981). AVE indicates more variance is explained by the latent structure imposed on the measure than is explained by the error and is calculated by the sum of all squared standardized factor loadings divided by the number of items. The third item-level assessment of convergent validity often used at this stage of development is construct reliability (CR), which is the squared sum of the factor loadings for each latent construct divided by the squared sum of the factor loadings for each latent construct plus the sum of the error variance for the latent construct (Hair et al., 2010). The rule of thumb is a CR greater than .70 demonstrates the dependability of all items representing the latent construct (Fornell and Larcker, 1981).

Further, at the construct level, convergent validity is the extent to which multiple measurements of a construct are in agreement (Bagozzi, Davis, and Warshaw, 1992). This is assessed by examining at how the EASM scale relates to existing scales that measure consumers' emotional attachment to brands (Thomson, MacInnis, and Park, 2005; Park et al., 2010) that have been adapted to reflect social media instead of brands.

High correlations would provide evidence the constructs are tapping into something similar. However, it is not desired that the scales are too highly correlated. If the correlation is too high, the new scale would not be adding anything new above and beyond what the adapted existing scales are capable of assessing. Convergent validity is assessed by running CFA with the adapted measures of emotional attachment (Thomson, MacInnis, and Park, 2005; Park et al., 2010).

### 3.10 Criterion-Related Validity

Criterion-related validity involves the ability to draw inferences from test scores to other relevant constructs. Some criteria cannot be directly measured, and it is customary to differentiate between the two types of criterion-related validity: concurrent and predictive (Crocker and Algina, 1986, pg.224).

#### 3.10.1 *Concurrent-Related Validity*

Evidence of the measure's validity is further examined by exploring the relationship between EASM and a logical outcome variable measured on a different scale. Concurrent validity is evident when the scores on the test relate to a real behavioral variable of practical importance (Crocker and Algina, 1986) measured at the same time. The most important aspect of criterion-related validity is the strength of the empirical relationship between the two variables (DeVellis, 2003). To check the criterion validity of the new EASM scale, time spent on each of the social media platforms is collected from respondents with self-report measures. The measure of total hours is created by summing the time reported across all platforms participants used. The correlation between average hours spent on social media and EASM is estimated to demonstrate concurrent validity.



### 3.10.2 Predictive Validity

*Predictive validity* relates to the accuracy of the developing scale and the constructs within it and whether the scale allows the researcher to forecast measures of another construct when there is an expected relationship (Bagozzi, Davis, and Warshaw, 1992). As discussed in the literature review of attachment theory, there are four behaviors that are known to be related to emotional attachment: separation distress, proximity maintenance, safe haven, and secure base. It is expected that those who are highly emotionally attached to social media will be more likely to exhibit these attachment behaviors than those who are less emotionally attached to social media. Structural equation modeling is used to test the predicted relationship with the attachment outcomes.

Additionally, EASM is expected to relate to specific behaviors within social media across various life domains (social, work, and consumer). The ability of EASM to predict social media behaviors is investigated using structural equation modeling. It is expected that those who are more highly emotionally attached to social media will be more active on social media across various life domains than those who are less emotional attachment to social media.

### 3.11 Discriminant Validity

Discriminant validity is the degree to which two scales designed to measure similar, but conceptually distinct constructs, are related (Netemeyer, Bearden, and Sharma, 2003). A scale “discriminates” when it does not correlate too highly with measures from which it is supposed to differ (Churchill and Iacobucci, 2002). Assessing discriminant validity involves comparing the pairwise correlations between the comparison measure and the dimensions of the developing scale with low to moderate correlation providing evidence of discriminant validity (Fornell and Larcker, 1981). Thus,

running two CFA models, one in which EASM and the two adapted scales are perfectly correlated and another in which EASM and the two adapted scales are free to correlate would allow for the test of discriminant validity. If the model in which the constructs are free fits better than the perfectly correlated models and the estimated correlation is not too high, discriminant validity is demonstrated.

If the new measure performs differently from adapted measures, it further justifies development of a new scale as opposed to the adaptation of an existing scale. It is desired that EASM be more predictive of attachment behaviors than either of the two adapted EA scales. First, to investigate if EASM alone is predictive of the attachment behaviors, all of the behaviors will be entered as dependent variables, and EASM will be the independent variable; a significant and positive relationship is expected for each of the behaviors. Next, in order to test the discriminant validity of our measure with the adapted brand measures (Thomson, MacInnis, and Park, 2005; Park et al., 2010), hierarchical linear regression will be run to control a specific order of entry for the independent variables. Each adapted scale is entered into a regression model with the four attachment behaviors as the dependent variables, and then EASM is entered. It is expected that EASM will explain significant incremental variance above either of the existing EA scales.

In hierarchical regression analysis the independent variables are entered into the analysis in a stepwise fashion. One of the independent variables is entered into the model with the dependent variable (time spent on social media in this case). For each independent variable in the hierarchical regression the previously entered independent variable acts as a covariate for subsequent independent variables. The multiple correlations are recomputed as each new independent variable is added to predict the dependent variable. This allows both adapted brand scales to account for all the variance

they can in the criterion variable –time spent on social media. This hierarchical test will demonstrate initial evidence for discriminant validity when compared to brand attachment scales adapted to the social media context.

When theory testing, interpretation is very relevant as it is in this case. It is important to understand the extent to which each variable contributes to the prediction of the criterion. Interpretation is the primary concern in this case such that fundamental conclusions can be drawn regarding one predictor with respect to another (Johnson and LeBreton, 2004). To appropriately compare the strength of EASM versus the adapted Thomson, MacInnis, and Park (2005) and Park et al.(2010) scales, relative weights analysis (RWA) is also used (Johnson, 2000). This statistical technique is another way to investigate the relative importance of various independent variables on the dependent variable(s) of interest. RWA overcomes the inherent limitations of typical approaches used to examine relative importance such as hierarchical regression (see Johnson and LeBreton, 2004). With RWA, the original set of predictor variables are first transformed into a new set of predictor variables that are as close to the original predictor variables as possible yet still orthogonal to each another (see Gibson, 1962). Next, the dependent variable(s) is regressed on to these transformed predictors. The relationship between the new transformed variables and the dependent variable(s) is assimilated with information on the relationship between the original predictor variables and the new predictor variables. The result is a relative weight for each predictor variable that represents its relative contribution to prediction of the dependent variable (for a detailed discussion see Johnson (2000)).

To test whether the percent of variance explained was significantly different among the three different scales, confidence intervals are computed using a bootstrap approach to estimate standard errors (Johnson, 2004). Specifically, relative weights are

calculated across 500 random subsamples (taken with replacement), using the standard deviation of differences among the three different scales to represent the standard errors. Then, 95% confidence intervals are constructed by taking the upper and lower  $\alpha/2$  percentiles from the empirical distribution of those differences. The exclusion of zero from the confidence intervals indicates a statistically significant difference between the three different scales (Johnson, 2004). Two separate RWAs are conducted, one for each of two dependent variables (time spent on social media and separation distress). It is expected that EASM is the best unique contributor the explained variance in both models.

Additionally, because of the nature of social media, there are several constructs that could be related to or be proposed as alternative explanations for interacting and engaging in social media usage. If consumers are strongly influenced by others, using social media would be a way to always be up to date on what others are doing. Moreover, some consumers seek the latest trends or newest innovations and social media provides information on the latest trends. Therefore, EASM is examined in relation to susceptibility to interpersonal influence (Bearden, Netemeyer, and Teel, 1989) and consumer novelty seeking (Manning, Bearden, and Madden, 1995). Inherently, some individuals are more interdependent than others, and social media could be viewed as facilitating communication and dependence. As a result, consumers' self-construal (Singelis, 1994) is investigated in relation to EASM. By testing the relationship of EASM with related measures (consumer susceptibility to interpersonal influence, consumer novelty seeking and self-construal) one can determine whether low to moderate correlations emerge, which would distinguish EASM from other measures.

### 3.12 Nomological Validity

Nomological validity is the degree to which predictions from a formal theoretical network containing the phenomenon of interest are confirmed (Campbell, 1960). A scale possesses nomological validity when it is shown to be empirically related to constructs (i.e., significantly correlated in the expected manner) to which it is also theoretically related (e.g., Lewin and Sager, 2010). Demonstrating a scale's nomological validity involves showing that it "lawfully" fits into a nomological network of theoretical constructs and their respective measures (Cronbach and Meehl, 1955; Peter, 1981; Nunnally and Bernstein, 1994).

A broader nomological antecedent-construct-outcome system is tested. The outcome variables are measured more behaviorally than attitudinally, and in a methodologically different way to alleviate concerns about common method bias. I investigate the nomological validity of EASM by placing it between three antecedent constructs and three social media behavioral measures across substantially varied life domains. With regard to the social media behaviors, it is posited that individuals who are emotionally attached to social media should logically display more behaviors on social media platforms. Using a "check all that apply" approach, social media behaviors in the social sphere, the work sphere, and in the consumer sphere regarding social media activities are collected. Regarding outcomes, I sought variables with a logical conceptual relationship to functions of social media usage. The constructs of *sociability*, *social comparison*, and *information credibility* are chosen based on the nature of social media and a review of existing literature concerning social media usage.

The internet is often used to socialize with others; sometimes with individuals that one already knows and sometimes to expand one's circle of friends to individuals that one does not know. In accordance with this behavior, the first construct, *sociability* is

defined as *a tendency to affiliate with others and to prefer being with others to remaining alone* (Cheek and Buss, 1981). Several researchers have investigated how various individual and personality traits relate to social media usage (Correa, Hinsley, and de Zuniga, 2010; Ross et al., 2009; Zywicki and Danowski, 2008; Ehrenberg et al., 2008). As a result of this research we know that those who are extraverted, neurotic, and open to experiences tend to be drawn to social networking sites (Ross et al., 2009; Zywicki and Danowski, 2008; Ehrenberg et al., 2008), as are those who are emotionally unstable. These effects are moderated by gender and age (Correa, Hinsley, and de Zuniga, 2010). Therefore, in order to contribute to knowledge about social media usage, I investigate a different construct. Sociability seems to be a logical option given the nature of social media which allows for individuals to be in communication with others anytime and anywhere. Thus, it is hypothesized that sociability will be positively related to emotional attachment to social media.

The second construct, *social comparison* is *the human drive to evaluate oneself which is done by comparing oneself to others* (Festinger, 1954). Comparison is a basic human motive that has long been studied by social psychologists (Pettigrew, 1967). It has been noted that it is difficult to hear an extremely intelligent person speak, see an extremely attractive person in passing, or be in a room with an expert “without engaging in social comparison no matter how much I would like not to” (Goethals, 1986, pg.272). Others have touted that forced-comparison can intrude on a person, even when the comparison is unsolicited and has a positive or negative impact on self-feelings (Allen and Wilder, 1977; Wood, 1989). Advertising has long been criticized for portraying images, models, and lifestyles that are unrealistic and unattainable for the majority of consumers (Lakeoff and Scherr, 1984; Schudson, 1984; Snow and Harris, 1986). In

return consumers have raised comparison standards for attractiveness, and are less satisfied with their own attractiveness as a result (Richins, 1991).

With the advent of social media, the ability to compare oneself to others has intensified. Specifically, recent research has shown that using social networking sites increases self-esteem (Wilcox and Stephen, 2012). However, it has also been demonstrated that the longer a person is on Facebook the more they believe others are happier than themselves and the less they agree that life is fair (Chou and Edge, 2012). This leads to the hypothesis that there is a positive relationship between social comparison and emotional attachment to social media.

The third construct, *information credibility* is more cognitive, relating to the credibility of information on social media. Researchers in various fields are currently investigating how social media can be used to spread information (Agnihotri et al., 2012), the impact of socially earned media on sales rather than traditional media (Stephen and Galak, 2012), and the credibility of information spread through social media networks (Castillo, Mendoza, and Poblete, 2011). While there is extensive literature on information credibility, the coverage of it is by no means complete. I simply provide a brief summary of the construct and support for its' use as part of the nomological network of EASM.

Information credibility is defined as *information that offers reasonable grounds for being believed* (Castillo, Mendoza, and Poblete, 2011). The perception of users with respect to the credibility of online news seems to be positive, in general. People trust the Internet as a news source as much as other media, with the exception of newspapers (Flanagin and Metzger, 2000). For example, Twitter has been used widely during emergency situations, such as wildfires, hurricanes, floods, earthquakes, and even to report celebrity deaths (De Longueville, Smith, and Luraschi, 2009; Earle et al., 2009; Hughes and Palen, 2009). Therefore, it is hypothesized that the more credible an

individual perceives social media as an information source, the more likely s/he is to become emotionally attached.

In order to test EASM's nomological validity the antecedent-construct-outcome system will be investigated. Specifically, the following hypotheses are offered for the antecedents of emotional attachment to social media:

***H<sub>8</sub>: Sociability:*** *Individuals who value sociability more will be more highly emotionally attached to social media than those who value sociability less.*

***H<sub>9</sub>: Social Comparison:*** *Individuals who socially compare themselves to others more will be more highly emotionally attached to social media than those who socially compare themselves to others less.*

***H<sub>10</sub>: Information Credibility:*** *Individuals who view the information on social media as credible will be more highly emotionally attached to social media will than those who do not view the information on social media as credible.*

The outcome hypotheses were developed in Chapter 2 and investigate respondent's social media behaviors in the social sphere, the work sphere, and in the consumer sphere regarding social media activities.

The nomological validity of EASM is tested using structural equations modeling (SEM) which allows for the examination of the relationship between constructs and is represented empirically by the structural parameter estimates, also known as the path estimates. SEM is a powerful statistical technique that is flexible to model relationships among predictors and criterion variables to test a priori theoretical assumptions against empirical data (Chin, 1998). The evaluation of the model fit is not straightforward, and there is no single statistical significance test that identifies that the model "fits." Thus, multiple criteria should be taken into consideration and meet or come close to the following criteria (RMSEA < .06, NNFI > .95, CFI > .95, SRMR < .08) (Hu and Bentler, 1999).



### 3.13 Summary

The primary objective of this chapter was the outline of a process to develop a parsimonious, yet representative, scale that captures the strength of consumers' emotional attachment to social media. I followed the scale development procedures recommended (Churchill, 1979; Crocker and Algina, 1986; DeVellis, 2003; Gerbing and Anderson, 1988; Netemeyer, Bearden, and Sharma, 2003; Nunnally and Bernstein, 1994) in order to develop a measure which validly and reliably represents emotional attachment to social media (EASM).

### 3.14 Foreword

In the next chapter, a description of the analyses and results is presented. Each of the above discussed steps of scale development is conducted and the results are presented and discussed. Further, the hypotheses outlined in Chapter 2, and those developed with respect to nomological validity are tested, presented, and discussed.

## Chapter 4

### Analysis and Results

#### 4.1 Overview

Chapter 3 outlined each of the steps in developing a parsimonious scale that captures consumers' emotional attachment to social media based on classically accepted psychometric procedures (e.g., Churchill, 1979; DeVellis, 2003). These steps are implemented across a set of seven studies that are described within this chapter.

#### 4.2 Study 1

The objective of Study 1 was to generate a broad pool of initial items that tap into the proposed construct of emotional attachment to social media (EASM). Items are pretested, evaluated, reviewed by expert informants, and additional items are generated.

##### *4.2.1 Participants and Design*

The item generation process began with exploratory research. I asked a group of colleagues to contact one or more friends they felt were “heavy users” of social media to request their participation in a short informal survey. Approximately twenty respondents participated in this exploratory phase, providing ratings and qualitative descriptions about the role of social media in their lives.

The following four questions on 7-point Likert-type scales were asked: (1) “Please indicate the degree to which you consider social media to be part of your life;” (2) “Please indicate how important social media is in your life right now;” (3) “How much would you agree or disagree with this statement: *Social Media brings meaning to my life;*” and, (4) “To what extent would you say you are emotionally attached to social media?” Each of these questions was accompanied by a qualitative open-ended question asking

why a particular rating was chosen. Ultimately, a convenience sample of 21 social media users was acquired (79% female, average age 36, age range 27-59).

#### *4.2.2 Item Generation*

Next a thematic analysis was conducted to classify verbatim responses into dimensions based on the natural language of respondents. An initial working set of items was generated from these coded verbatim responses. The initial pool of items was then compared to the social media literature (e.g., Hollenbeck and Kaikati, 2012; Fennis, Pruyn, and Maasland, 2005; Stephen and Galak, 2012; Hanna, Rohm, and Crittenden, 2011). I searched for additional themes that could be important based on the literature, but which might not have been mentioned explicitly in the exploratory research.

A preliminary set of 53 items was generated based on the qualitative research and literature review. I ran several pretests of these items, examining correlations, descriptive statistics, and item analyses looking for potentially low communalities, ambiguity in the language that was used, and potential complexities in the wording that might represent more than one underlying concept in a single item. Based on these early statistical explorations and conceptual item analyses, changes were made to the initial set of items that improved the starting pool and more accurately sampled the domain of interest.

The key informant technique was then utilized as a continuation of the exploratory research (Parasuraman, Grewal, and Krishnan, 2006). I presented the working item pool to two separate industry experts, asking for open-ended feedback on the items. The objective was to obtain a preliminary check of face validity and content validity of the pool of items and the proposed multifaceted structure, and to check the thoroughness of the domain covered by the proposed set as a whole. Based on the insights of these experts the wording of a few items was modified for clarity, and the

proposed structure was expanded to capture an additional theme one expert felt was missing from the idea of EASM domain. In order to incorporate this additional theme, I developed additional items using the language from his description of this domain. Ultimately, a revised item pool consisting of 45 items (Table 4-1) was used to collect subsequent quantitative data, to explore the structure of the item pool, and to undertake item purification.

Table 4-1 Initial List of Items

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1	It makes me feel accepted when people comment on my social media posts.
2	I use social media as a way for me to de-stress after a long day.
3	Social media is a reliable source of information.
4	If I'm unsure about an upcoming decision I get input from friends on social media.
5	I have benefited from using social media.
6	Social media is a convenient way to get information.
7	Social media allows me to look back at meaningful events, people, and places from my past.
8	Using social media makes me feel nostalgic about things that I have done in the past.
9	I seek advice for upcoming decisions using social media.
10	It makes me feel good about myself when people validate me on social media.
11	I use social media to reconnect with 'the good old days.'
12	Sometimes social media reminds me of warm memories from my past.
13	I use social media to give myself a break when I've been busy.
14	Social media makes my life a little bit better.
15	Social media enhances my life.
16	I get advice about medical questions on social media.
17	Social media is a source of entertainment for me.
18	Social media is a good source of information.
19	Social media is one of my primary sources of information about news.
20	When people respond to my posts in social media I feel like they care about me.
21	Social media allows me to stay informed about events and news.
22	When friends agree with things I've said on social media I feel supported.
23	Social media is one of one of the main ways I get information about major events.
24	I ask for the opinions of my friends on social media.
25	Social media provides a way for me to stay connected to people across distances.
26	When I am in a down mood, I use social media to make me feel better.

Table 4-1—*Continued*

- 27 I use social media to interact with friends.
  - 28 I use social media to help me keep up with what is going on.
  - 29 Social media benefits me because it allows me to engage with other people.
  - 30 When I am thinking through a situation I seek advice through social media.
  - 31 I use social media because it makes staying in touch with others convenient.
  - 32 Social media is an enjoyable way to spend time.
  - 33 My life is a little richer because of social media.
  - 34 Social media provides a way for me to keep in touch with others that I care about.
  - 35 When others comment on my posts I feel affirmed.
  - 36 I post on social media to brighten other peoples' day.
  - 37 I post things on social media that I think will be helpful to my friends' lives.
  - 38 I think it is important to share things on social media so those I care about stay informed.
  - 39 Sometimes I post content on social media with the goal of helping others with their decisions.
  - 40 Social media allows me to give people advice about things that might be important to them.
  - 41 I use social media to help information “go viral.”
  - 42 Sometimes I post things just to have a positive effect on other peoples' moods.
  - 43 Sometimes I post things hoping to get people involved in a dialog or debate.
  - 44 I want to inspire other people with my social media posts.
  - 45 I “like” things on social media just so it is shared with those I care about.
- 

### 4.3 Study 2

Study 2 was designed to determine the underlying structure of EASM and to identify which items best represent the proposed multifaceted structure. In order to determine the underlying factor structure of the data, three different samples were collected and analyzed. The initial item purification was conducted with a (1) student sample, then replication and verification of the initial findings were tested with (2) a separate student sample, and (3) with a non-student sample.

#### 4.3.1 *Participants and Design*

Two hundred thirty-eight undergraduate business students (47% female, average age 24 years, age range 18-49 years of age) completed an online survey in exchange for partial course credit. Twelve responses were dropped because they did not provide

complete data. This initial data collection effort was used to conduct item purification based on the pool of items generated from Study 1. The first of two replication and verification samples was collected with 212 undergraduate students (54% female, average age 24 years, age range 18-50 years of age) who also completed the online survey in exchange for partial course credit. Three responses were dropped because they did not provide complete data. The second replication and verification study was conducted as part of an undergraduate marketing research effort. Approximately 900 faculty and staff across the university were contacted by student groups in an undergraduate class, asking them to participate in an online survey. If the faculty and staff member elected to participate in the survey, they were entered into a drawing for one of seven \$25 gift cards at one of five local restaurants. Of those who were contacted, 328 faculty and staff members took the survey (40% response rate). One hundred two responses were dropped because they did not provide complete data or because the respondent reported s/he does not use social media. As a result, 226 faculty and staff members (67% female, average age 44 years, age range 18 - over 91 years of age) completed the survey.

#### *4.3.2 Measures*

First, respondents were asked if they use social media. Respondents who answered in the affirmative were asked to select the various social media platforms that they use and to report to the average amount of time spent per week on each platform. Next, they were instructed to indicate their level of agreement with the 27 items measuring EASM on a 7-point Likert scale (1= "strongly disagree" to 7 = "strongly agree"). Randomized blocks of nine to eleven items were presented to respondents. Finally, respondents provided basic demographic information.

### 4.3.3 Results

#### 4.3.3.1 Initial Sample: Factor Analysis

The 45 items were subjected to exploratory factor analysis (EFA). As discussed in Chapter 3, principal components analysis using oblique rotation was used. The final solution is a result of multiple iterations of item deletions and analysis which produced eight interpretable dimensions containing 27 items (Table 4-2). These eight dimensions explained 79.6% of the variance in the data with all communalities exceeding the recommended .60 cut off (Hair et al., 2010). Correlations between the dimensions were all positive and significant ( $p < .01$ ).

#### 4.3.3.2 Initial Sample: Internal Reliability

The alpha reliability coefficients computed for each factor ranged from .82 to .91, well within the guidelines for scale development (Nunnally and Bernstein, 1994). Based on previous emotional attachment scale development research (Thomson, MacInnis, and Park, 2005; Park et al., 2010), a multi-dimensional second-order factor structure was anticipated, therefore, an alpha reliability coefficient score across the summated scale averages for each of the eight-factors was also computed. The second-order EASM measure also demonstrates adequate reliability ( $\alpha = .90$ ) (Table 4-2).

Table 4-2 Exploratory Factor Analysis Results and Internal Reliabilities

	<b>Coefficient</b>	<b>Communalities</b>
<i>I use social media because it makes staying in touch with others convenient.</i>	.82	.82
<i>Social media provides a way for me to stay connected to people across distances.</i>	.80	.85
<i>Social media provides a way for me to keep in touch with others that I care about.</i>	.80	.78
<i>I use social media to interact with friends.</i>	.70	.76
<b>Connecting</b>		<b>.92</b>
<i>Sometimes social media reminds me of warm memories from my past.</i>	.78	.81

Table 4-2—Continued

<i>Using social media makes me feel nostalgic about things that I have done in the past.</i>	.75	.76
<i>Social media allows me to look back at meaningful events, people, and places from my past.</i>	.74	.73
<b>Nostalgia</b>		<b>.82</b>
<i>Social media is one of one of the main ways I get information about major events.</i>	.88	.84
<i>Social media is one of my primary sources of information about news.</i>	.88	.83
<i>Social media allows me to stay informed about events and news.</i>	.85	.79
<b>Informed</b>		<b>.88</b>
<i>I use social media to give myself a break when I've been busy.</i>	.73	.82
<i>I use social media as a way for me to de-stress after a long day.</i>	.65	.80
<i>Social media is an enjoyable way to spend time.</i>	.44	.75
<b>Enjoyment</b>		<b>.84</b>
<i>I get advice about medical questions on social media.</i>	.83	.69
<i>If I'm unsure about an upcoming decision I get input from friends on social media.</i>	.81	.82
<i>I seek advice for upcoming decisions using social media.</i>	.81	.78
<b>Advice</b>		<b>.83</b>
<i>When others comment on my posts I feel affirmed.</i>	.85	.83
<i>When people respond to my posts in social media I feel like they care about me.</i>	.84	.83
<i>It makes me feel accepted when people comment on my social media posts.</i>	.82	.87
<b>Affirmation</b>		<b>.91</b>
<i>Social media makes my life a little bit better.</i>	.75	.84
<i>My life is a little richer because of social media.</i>	.70	.80
<i>Social media enhances my life.</i>	.66	.82
<b>Enhances My Life</b>		<b>.89</b>
<i>Sometimes I post things just to have a positive effect on other peoples' moods.</i>	.88	.84
<i>I post on social media to brighten other peoples' day.</i>	.88	.80
<i>I want to inspire other people with my social media posts.</i>	.85	.74
<i>I post things on social media that I think will be helpful to my friends' lives.</i>	.79	.76



Table 4-2—Continued

<i>I think it is important to share things on social media so those I care about stay informed.</i>	.58	.71
<b>Influence</b>		<b>.91</b>
<b>Emotional Attachment to Social Media</b>		<b>.90</b>

*\*Numbers in bold are the Cronbach's alpha for the summated scale.*

#### 4.3.3.3 Replication and Verification

The factor structure emanating from the initial round of item purification was replicated in both the student sample (n = 209) and in the non-student sample (n = 226). The coefficients, communalities, and internal reliabilities of the 27 items with eight subdimensions demonstrate that the pattern found in the initial testing of the items is verifiable within both a similar sample and a more generalizable sample (Table 4-3). These eight dimensions explain 79.9% and 88.2% of the variance in the student and non-student data respectively, with all communalities exceeding the recommended .60 cut off (Hair et al., 2010). The internal reliability of each of the subdimensions are all .80 or higher, and the second-order factors also demonstrate strong internal reliability with Cronbach's alphas of .88 and .93, respectively.

Table 4-3 Replication and Verification of Results

Items	Replication Sample 1 Student Sample (n=209)		Replication Sample 2 Non-student Sample (n=226)	
	Coefficients	Communalities	Coefficients	Communalities
<i>I use social media to interact with friends.</i>	.81	.79	.81	.84
<i>Social media provides a way for me to stay connected to people across distances.</i>	.86	.82	.96	.88
<i>I use social media because it makes staying in touch with others convenient.</i>	.82	.81	.87	.92
<i>Social media provides a way for me to keep in touch with others that I care about.</i>	.79	.75	.77	.88
<b>Connecting</b>		<b>.91</b>		<b>.95</b>
<i>Social media allows me to look back at meaningful events, people, and places from my past.</i>	.66	.79	.75	.86
<i>Using social media makes me feel nostalgic about things that I have done in the past.</i>	.80	.76	.83	.91
<i>Sometimes social media reminds me of warm memories from my past.</i>	.65	.74	.71	.88
<b>Nostalgia</b>		<b>.82</b>		<b>.93</b>
<i>Social media is one of one of the main ways I get information about major events.</i>	.81	.83	.85	.90
<i>Social media allows me to stay informed about events and news.</i>	.78	.82	.79	.89

Table 4-3—Continued

<i>Social media is one of my primary sources of information about news.</i>	.85		.84	.88	.89
<b>Informed</b>		<b>.89</b>			<b>.93</b>
<i>I use social media as a way for me to de-stress after a long day.</i>	.80		.79	.76	.86
<i>I use social media to give myself a break when I've been busy.</i>	.63		.76	.84	.92
<i>Social media is an enjoyable way to spend time.</i>	.67		.76	.63	.88
<b>Enjoyment</b>		<b>.80</b>			<b>.92</b>
<i>I seek advice for upcoming decisions using social media.</i>	.79		.82	.77	.87
<i>I get advice about medical questions on social media.</i>	.65		.66	.89	.83
<i>If I'm unsure about an upcoming decision I get input from friends on social media.</i>	.82		.81	.84	.89
<b>Advice</b>		<b>.81</b>			<b>.91</b>
<i>When others comment on my posts I feel affirmed.</i>	.80		.87	.85	.89
<i>When people respond to my posts in social media I feel like they care about me.</i>	.82		.83	.90	.94
<i>It makes me feel accepted when people comment on my social media posts.</i>	.91		.87	.91	.92
<b>Affirmation</b>		<b>.90</b>			<b>.95</b>
<i>Social media makes my life a little bit better.</i>	.74		.81	.92	.92
<i>Social media enhances my life.</i>	.71		.80	.88	.92
<i>My life is a little</i>	.77		.82	.92	.89

Table 4-3—Continued  
*richer because of  
social media.*

<b>Enhances My Life</b>	<b>.89</b>			<b>.95</b>
<i>Sometimes I post things just to have a positive effect on other peoples' moods.</i>	.91	.90	.72	.88
<i>I post on social media to brighten other peoples' day.</i>	.87	.83	.70	.88
<i>I post things on social media that I think will be helpful to my friends' lives.</i>	.87	.83	.68	.81
<i>I want to inspire other people with my social media posts.</i>	.92	.82	.74	.88
<i>I think it is important to share things on social media so those I care about stay informed.</i>	.55	.68	.50	.80
<b>Influence</b>	<b>.92</b>			<b>.94</b>
<b>Emotional Attachment to Social Media</b>	<b>.88</b>			<b>.93</b>

\*Numbers in bold are the Cronbach's alpha for the summated scale.

#### 4.3.4 Discussion

Although a multifaceted structure was anticipated, the exact nature of the items that group together was determined by the data. Eight subdimensions composed of 27 items emerged from the data representing the construct of emotional attachment to social media (EASM). The initial findings demonstrate the dimensionality of EASM is replicated in both a student and non-student sample. A second-order structure is supported based on internal consistency reliability. The eight subdimensions are named and defined as follows. The first factor, *connecting*, reflects respondents' use of social media to stay connected to others. Factor two, *nostalgia*, taps into respondents' ability to use social media in order to remember things from the past. The third factor, *informed*, deals with

social media's role in keeping the respondent informed. The fourth factor, *enjoyment*, reflects social media's role as a way for the respondent to experience relaxation and enjoyment. Factor five, *advice*, reflects respondents' ability to seek advice via social media. The sixth factor, *affirmation*, taps into respondents' ability to feel personally affirmed from their usage of social media. The seventh factor, *enhances my life*, demonstrates social media's role in making respondents' lives better. The final factor, *influence*, taps into the ability to use social media to encourage, influence, and help others.

#### 4.4 Study 3

Study 3 was designed to closely follow two lines of validating analyses conducted by Thompson, MacInnis and Park (2005) and Park et al.(2010), and to accomplish the following objectives: (1) testing the proposed second-order structure of EASM, (2) testing the proposed structure against competing measurement models, (3) demonstrating EASM's convergent and discriminant validity with respect to the adapted emotional attachment to brands measures, and, (4) demonstrating EASM is related to traditional attachment outcomes. As discussed in Chapter 3, the attachment literature has established that attachment is associated with proximity maintenance, safe haven, emotional security, and separation distress (Bowlby, 1980; Hazan and Zeifman, 1999). Strong relationships with these outcomes demonstrate convergent and criterion-related validity.

##### 4.4.1 Participants and Design

Two hundred forty-six undergraduate business students (44% female, average age 24 years, age range 19-46 years of age) completed an online survey in exchange for partial course credit. Five responses were dropped because they did not provide

complete data, and 32 were dropped because respondents reported not using social media, resulting in a final sample of 209 respondents.

#### 4.4.2 Measures

The 27 EASM items and a set of 15 items measuring the four attachment outcomes were randomly presented in blocks of five to ten items. EASM items were measured on a 7-point Likert scale (1= “strongly disagree” to 7= “strongly agree”). Two existing scales of brand attachment (Thomson, MacInnis, and Park, 2005; Park et al., 2010) adapted to reflect attachment to social media were also included. While adapted measures can “disturb the clarity and/or psychometric balance of the measure” (Schriesheim et al., 1993, pg.394), these measures were included to permit a preliminary test of convergent validity. Thomson, MacInnis, and Park’s (2005) adapted scale was measured on a 7-point scale (1 = “not at all” to 7 = “very well”), and Park et al.’s (2010) adapted scale was measured on an 11-point scale (0 = “not at all” to 10 = “completely”). Measures for assessing attachment behaviors were adapted from existing scales (Hazan and Zeifman, 1994; Fraley and Davis, 1997) to appropriately reflect a social media context. Most of these items were also measured on 7-point scales (1= “not at all like me” to 7= “just like me”), with the exception of two separation distress items taken from the brand attachment literature (Park et al., 2010) that employed 11-point scales (anchored by 0 = “not at all” and 10 = “completely”). The items are provided in Table 4-4.

Table 4-4 Attachment Outcome Items

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**Proximity Maintenance adapted** (Hazan and Zeifman, 1994)

*I like to have access to social media near me.*

*Throughout the day I like to have access social media.*

*I feel compelled to check my social media sites throughout the day.*

**Emotional Security adapted** (Hazan and Zeifman, 1994; Fraley and Davis, 1997)

*Social media helps me to take on the world.*

Table 4-4—Continued

*Social media helps me feel emotionally secure.*

*I can always count on social media.*

**Safe Haven adapted** (Hazan and Zeifman, 1994; Fraley and Davis, 1997)

*When I'm feeling down, I often turn to social media.*

*If something upsets me, social media can make me feel better.*

*I like to get on social media when I am feeling upset or down.*

**Separation Distress** (developed based on literature)

*I would miss social media if I didn't have it.*

*Social media would be hard for me to live without.*

*I would be sad without social media.*

**Separation Distress adapted** (Park et al., 2010)

*To what extent would you be distressed if the social media you use were discontinued?*

*To what extent is it difficult to imagine life without the social media you use?*

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#### 4.4.3 Results

##### 4.4.3.1 Evidence for the Second-Order EASM Measurement Model

As a first step in analyzing the data from Study 3, confirmatory factor analysis (CFA) was conducted to test the appropriateness of this conceptualization of EASM as a second-order construct (Figure 4-1). All fit statistics for this model meet standard criteria (Hu and Bentler, 1999): degrees of freedom [df] = 316; chi-squared = 638.91; root mean square error of approximation [RMSEA] = .067; nonnormed fit index [NNFI] = .98; comparative fit index [CFI] = .98; and standardized root mean square residual [SRMR] = .066. Loadings for each of the items to the factors are statistically significant ( $p < 0.01$ ); factors of the higher-order EASM construct are reported in Table 4-5. The factor intercorrelations are provided in Table 4-6, and demonstrate that each of the factors is unique but related to each of the other factors. Convergent validity at the item level is also assessed at this stage of scale development. Each group of indicators meet or

exceed the minimum accepted standards (Fornell and Larcker, 1981): communalities of all the items exceed .60; the average variance extracted (AVE) is .69, and, the construct reliability (CR) is .99.

Additionally, the internal reliability of each of the subdimensions and the second-order factor should exceed a threshold of .70 (Hair et al., 2010). All of the first-order factors exceed this threshold (Table 4-5), and the second-order factor of EASM ( $\alpha = .96$ ), demonstrates the internal consistency of the first-order factors and the second-order factor.

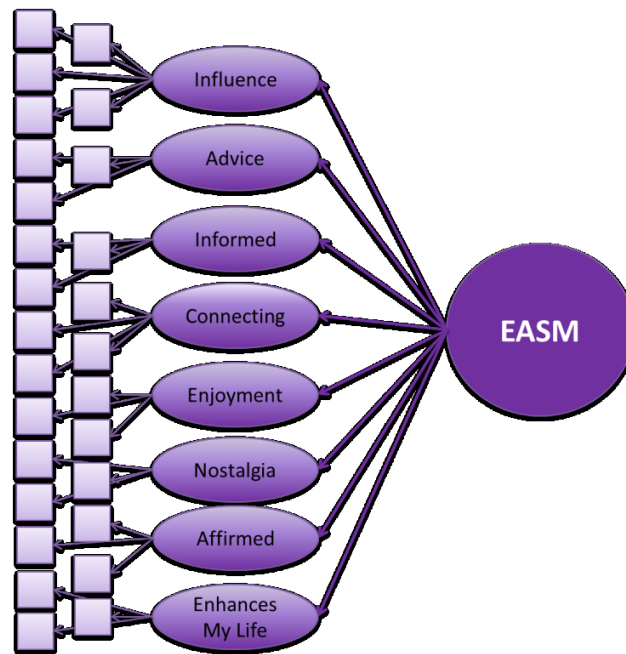


Figure 4-1 EASM Measurement Model



Table 4-5 Factor Loadings for Measurement Model

	Loadings
<b>Connecting</b>	<b>.79</b>
<i>interact</i>	.85
<i>connected across distances</i>	.78
<i>convenient staying in touch</i>	.93
<i>keep in touch</i>	.81
<b>Nostalgia</b>	<b>.88</b>
<i>look back on past</i>	.87
<i>nostalgic</i>	.76
<i>warm memories from past</i>	.87
<b>Informed</b>	<b>.71</b>
<i>main ways get info</i>	.88
<i>stay informed</i>	.90
<i>primary source of info</i>	.82
<b>Enjoyment</b>	<b>.90</b>
<i>de-stress</i>	.81
<i>give myself a break</i>	.85
<i>enjoyable</i>	.85
<b>Advice</b>	<b>.66</b>
<i>upcoming decision</i>	.82
<i>advice about medical</i>	.68
<i>unsure</i>	.90
<b>Affirmed</b>	<b>.81</b>
<i>feel affirmed</i>	.87
<i>feel cared about</i>	.91
<i>feel accepted</i>	.92
<b>Enhances My Life</b>	<b>.86</b>
<i>little bit better</i>	.87
<i>enhances</i>	.89
<i>little richer</i>	.79
<b>Influence</b>	<b>.70</b>
<i>positively affect others' moods</i>	.87
<i>brighten others' day</i>	.84
<i>helpful to friends' lives</i>	.89
<i>inspire others</i>	.89
<i>those I care about stay informed</i>	.79

\*Numbers in bold are the loadings to the higher-order EASM factor

Table 4-6 Factor Intercorrelations

	Conn.	Inform.	Nostal.	Enjoy.	EML	Advic.	Affirm.	Influe.
<b>Connecting</b>	1.00							
<b>Informed</b>	0.47	1.00						
<b>Nostalgia</b>	0.60	0.44	1.00					
<b>Enjoyment</b>	0.62	0.53	0.60	1.00				
<b>Enhances My Life</b>	0.55	0.53	0.60	0.73	1.00			
<b>Advice</b>	0.36	0.54	0.40	0.46	0.55	1.00		
<b>Affirmation</b>	0.53	0.41	0.57	0.62	0.71	0.51	1.00	
<b>Influence</b>	0.47	0.43	0.42	0.47	0.55	0.56	0.61	1.00

Subsequently, two competing models (Hair et al., 2010) were estimated for comparative purposes, similar to the approach taken by Thomson, MacInnis, and Park 2005 and Park et al.2010. The first model specified all the items as loading on a single latent factor (Figure 4-2 a). The second tested a model in which items were assigned to their respective first-order constructs. The first-order factors were then specified as either cognitively-oriented or affectively-oriented as demonstrated in Figure 4-2 b. The competing models were then assessed and the results are shown in Table 4-7. The original second-order factor model fits the data better than the two competing specifications; providing confirmatory support for the second-order EASM model specification, with eight first-order subdimensions.

Table 4-7 Assessment of Competing Models

	$\chi^2$	df	$\Delta \chi^2$	RMESA	NNFI	CFI	SRMR
<b>(1) One Factor</b>	3163.93	324		0.19	0.8	0.82	0.11
<b>(2) Two Factors</b>	1746.57	323	1417.36 (1)*	0.17	0.9	0.91	0.01
<b>(3) 2<sup>nd</sup> Order</b>	638.913	316	90.88 (20)*	0.06	0.98	0.98	0.065
		(3 vs 2)	1172.44 (7)*				
		(3 vs 1)	2589.8 (8)*				
				* p-value ≤ 0.000			

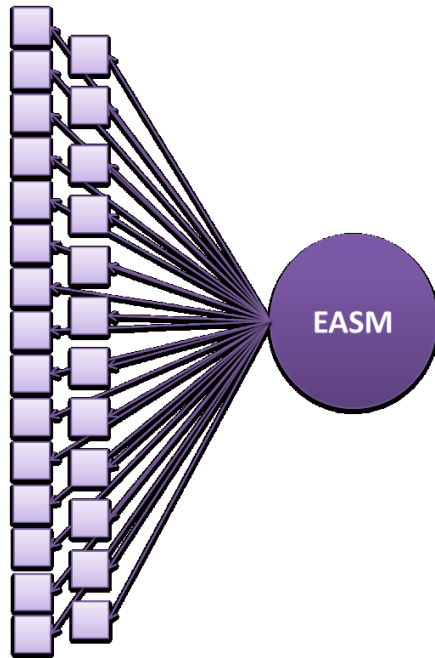


Figure 4-2 EASM Single Latent Factor

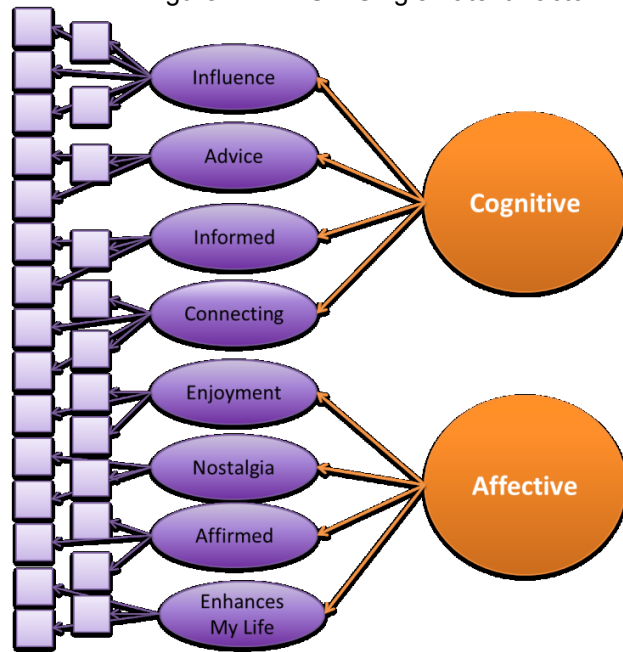


Figure 4-3 EASM Alternative Second Order Factor Structure

#### 4.4.3.2 Convergent and Discriminant Validity with Adapted Measures

As previously discussed, two existing brand attachment scales were adapted to reflect social media (Thomson, MacInnis, and Park, 2005; Park et al., 2010). The adapted scales demonstrate good reliability (both with  $\alpha = .95$ ). Correlations with EASM show favorable convergent validity for both of the emotional attachment to brands (EAB) scale Thomson, MacInnis, and Park (2005) ( $r = .80$ ;  $p < 0.001$ ) and Park et al.(2010) ( $r = .76$ ;  $p < 0.001$ ). Correlations of this magnitude imply approximately 60% to 50% shared variance with the measure of EASM, meaning that the EASM scale has 40% to 50% variance that is unique and captures something distinct.

Two structural equations models were run to further assess if EASM is similar to, yet unique, from the adapted measure of EAB. The first model demonstrates convergent validity by allowing for the three higher-order constructs to freely correlate with one another (Figure 4-3). The fit statistics of the model demonstrate moderate fit, with an RMSEA (.103) that is higher than desirable but otherwise acceptable fit statistics ( $df = 347$ ;  $\chi^2 = 1,040.79$ ; NNFI = .976; CFI = .978; SRMR = .057) (Hu and Bentler, 1999). The second model sets the paths of the three higher-order constructs to 1.0 (Figure 4-4), forcing them to be perfectly correlated and representative of one general factor of emotional attachment to social media. The fit statistics of this model demonstrate poorer fit ( $df = 350$ ;  $\chi^2 = 1,187.56$ ; RMSEA = .112; NNFI = .971; CFI = .973; SRMR = .300) (Hu and Bentler, 1999). Ideally, the fit of the first model would be slightly better; however the poor fit of the second model provides evidence that the constructs are somewhat related but definitely distinct.

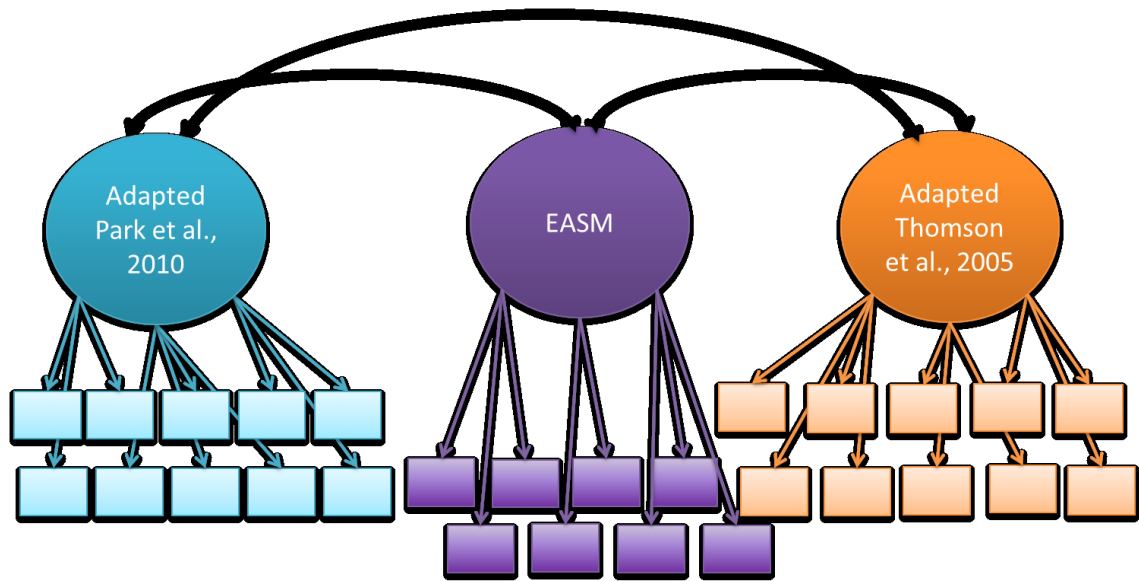


Figure 4-4 EASM Convergent Validity with Adapted Measures

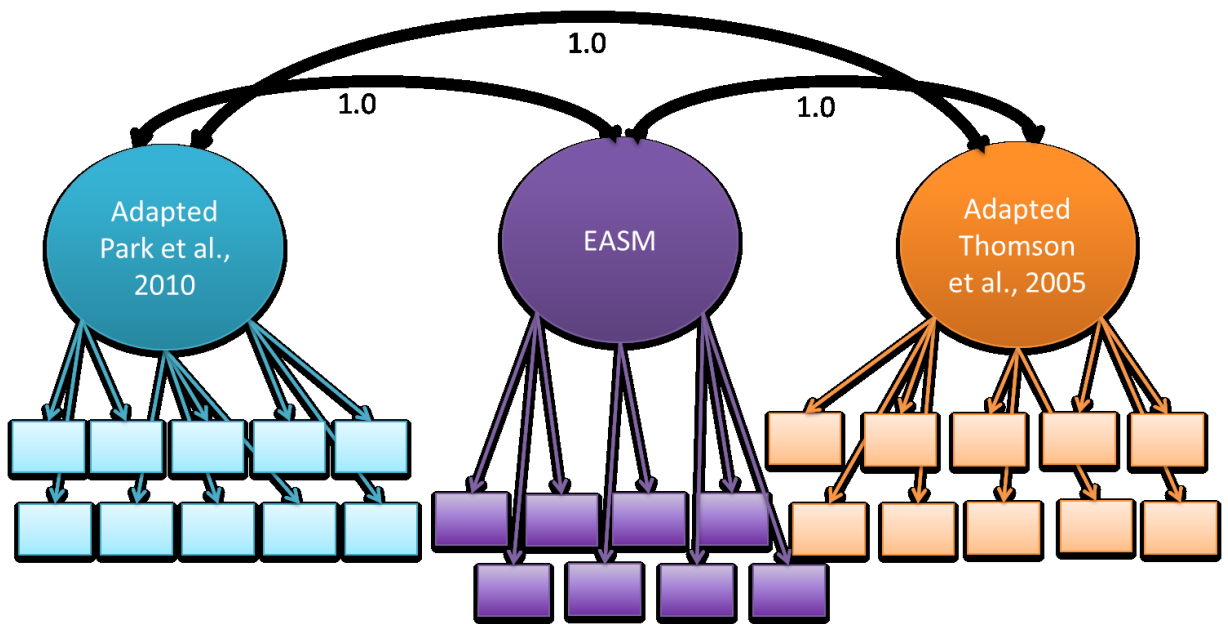


Figure 4-5 EASM Discriminant Validity with Adapted Measures

#### 4.4.3.3 Convergent and Criterion-Related Validity with Proximal Attachment Outcomes

Having garnered support for the second-order specification for EASM, the model in which the relationship between EASM and the four attachment outcomes (i.e., proximity maintenance, safe haven, emotional security, and separation distress) was then tested. The internal reliability of the adapted outcome measures was tested. All items had factor loadings between .76 and .94 and acceptable reliability coefficients as well (*proximity maintenance*  $\alpha = .91$ , *safe haven*  $\alpha = .95$ , *emotional security*  $\alpha = .90$  and *separation distress*  $\alpha = .94$ ). This provides support for the internal reliability of the attachment outcomes. Fit statistics for this model met all standard criteria (Hu and Bentler, 1999): root mean square error of approximation (RMSEA) = .069, nonnormed fit index (NNFI) = .98, comparative fit index (CFI) = .98, and standardized root mean square residual (SRMR) = .076. The paths from EASM to the attachment outcomes are all meaningfully large and statistically significant (Figure 4-5). As expected, the context-specific measure of emotional attachment predicts context-adapted proximal outcomes of attachment, providing evidence of convergent and criterion-related (concurrent and predictive) validity.

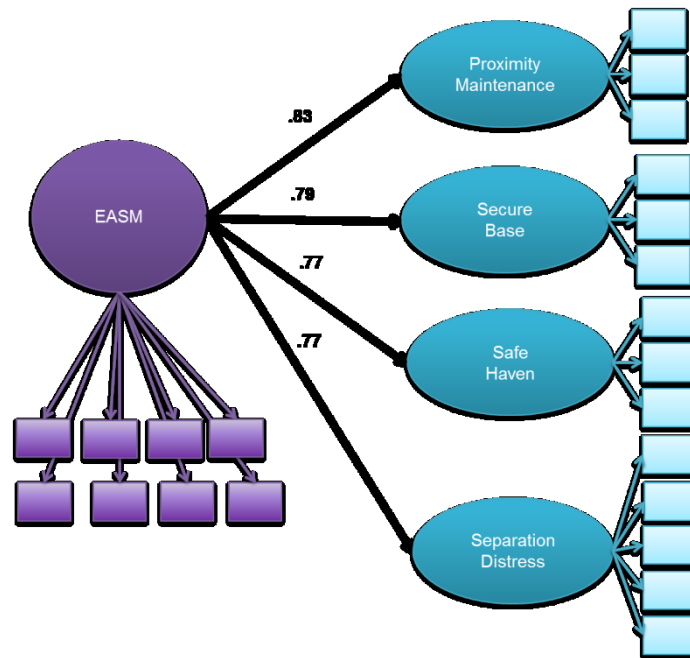


Figure 4-6 EASM Related to Attachment Outcomes

The results clearly show how individuals with differing levels of emotional attachment to social media (EASM) will also display differing levels of attachment behaviors, supporting  $H_1 - H_4$ . Those who are more emotionally attached to social media (1) report higher levels of maintaining proximity to social media, (2) use social media to feel a sense of emotional security, (3) seek social media as a safe haven in the form of psychological protection when they are feeling upset or down, and, (4) experience distress in the form of negative emotions (e.g., anger, frustration, and sadness) at the threat of social media being discontinued. These results provide further evidence of the validity of the EASM measure.

#### 4.4.4 Discussion

Study 3 provides support for the second-order representation of EASM with its eight subdimensions. This conceptualization fits the data better than two other plausible competing model specifications. Finally, because EASM was found to be strongly related

to four key theory-based outcomes of attachment Study 3 also provides support for the measure's convergent validity and criterion-related validity.

#### 4.5 Study 4

Together, the exploratory work, extant literature, input from subject matter experts, the confirmatory second-order model and the statistically significant relationships to attachment outcome behaviors all provide a strong foundation for EASM's content and construct validity. Study 4 is a more formal and rigorous confirmation of EASM's content validity—the degree to which items of the measurement instrument are representative of the target construct for a particular assessment purpose (Haynes, Richard, and Kubany, 1995).

##### *4.5.1 Participants and Design*

In Study 4, 68 undergraduate students participated in a sorting task in exchange for partial course credit. Eight respondents entered the room at a time and were each seated at separate tables. On the tables were four manila envelopes and a baggie with individual scale items printed on separate strips of paper. Each labeled envelope had a definition for a particular subdimension of the EASM scale. Each scale item printed on a strip of paper was associated with one and only one subdimension. Participants were instructed to read the definitions carefully and then sort each item from the baggie into the best fitting envelope. To make the task manageable for participants, the sorting task was limited to four dimensions per participant; however, eight different combinations of four subdimensions were created to protect against biases. The participants were read the instructions prior to starting the task, and were also provided a print out of the instructions at their table.

For each of the items the participants received, one and only one envelope was consistent with the hypothesized construct. For example, the item “sometimes social



media reminds me of warm memories from my past" is hypothesized to reflect *nostalgia*. If a respondent placed this item in the *nostalgia* envelope under the definition, "to remember previous experiences, emotions, and/or individual," the response was coded as correct. If the item was placed in any of other envelope it was coded as incorrect. For each item a correct choice (sort) ratio was then computed and is shown in Table 4-8.

#### 4.5.2 Results

Note that a random sorting of items into four envelopes would produce an expected correct proportion of .25 by chance alone. I calculated a chance-corrected test of classification reliability by comparing the observed correct classification proportion in the sample against a hypothesized value of .25. The observed correct classification proportions were high (ranging from .77 to 1.0), and the tests against chance were all statistically significant (observed alpha for all items,  $p < 0.001$ ). Even using a more stringent alpha standard to account for multiple tests (e.g., Bonferroni correction), results were still statistically significant for all items,  $p < 0.001$ .

Thus, all items yielded correct sorting percentages between 77% – 100% accurate, producing content validity ratios (CVR), ranging from .53 - 1.00 and a content validity index (CVI) of 91%. Based on our participant pool, the minimum value for CVR is between .33 and .37 (Lawshe, 1975). These results exceed the minimum accepted standards and provide supporting evidence of EASM's content validity. The results suggest all 27 items should be retained in the EASM measure.

Table 4-8 Content Validity

<b>Factors</b>	<b>Items</b>	<b>CVR</b>	<b>% Classified Correctly</b>
<b>Connecting</b>	I use social media to interact with friends.	.86	92.9%
	Social media provides a way for me to stay connected to individual across distances.	.86	92.9%
	I use social media because it makes staying in touch with others convenient.	.93	96.4%
	Social media provides a way for me to keep in touch with others that I care about.	.93	96.4%
<b>Nostalgia</b>	Social media allows me to look back at meaningful events, individual, and places from my past.	1.0	100.0%
	Using social media makes me feel nostalgic about things that I have done in the past.	.87	93.3%
	Sometimes social media reminds me of warm memories from my past.	1.0	100.0%
<b>Informed</b>	Social media is one of one of the main ways I get information about major events.	1.0	100.0%
	Social media allows me to stay informed about events and news.	1.0	100.0%
	Social media is one of my primary sources of information about news.	1.0	100.0%
<b>Enjoyment</b>	I use social media as a way for me to de-stress after a long day.	1.0	100.0%
	I use social media to give myself a break when I've been busy.	1.0	100.0%
	Social media is an enjoyable way to spend time.	.94	96.8%
<b>Advice</b>	I seek advice for upcoming decisions using social media.	.93	96.3%
	If I'm unsure about an upcoming decision I get input from friends on social media.	.85	92.6%
	I get advice about medical questions on social media.	1.0	100.0%
<b>Affirmation</b>	When others comment on my posts I feel affirmed.	.93	96.6%
	When individual respond to my posts in social media I feel like they care about me.	.86	93.1%
	It makes me feel accepted when individual comment on my social media posts.	.86	93.1%
<b>Enhances My Life</b>	My life is a little richer because of social media.	.93	96.4%
	Social media enhances my life.	.86	92.9%
	Social media makes my life a little bit better.	.79	89.3%
<b>Influence</b>	Sometimes I post things just to have a positive effect on other individuals' moods.	.80	90.0%
	I post on social media to brighten other individuals' day.	.93	96.7%
	I post things on social media that I think will be helpful to my friends' lives.	.80	90.0%
	I want to inspire other individual with my social media posts.	1.0	100.0%
	I think it is important to share things on social media so those I care about stay informed.	.53	76.7%
		<b>CVI</b>	<b>90.5%</b>

## 4.6 Study 5

Study 5 seeks to provide additional psychometric evidence of EASM's reliability. While internal consistency reliability is typically assessed with data from a single cross-sectional snapshot, another form of reliability estimation is *test-retest reliability*— which involves within-subjects measurement at two points in time. Meaningful and significant correlation between the two measurements demonstrates a measure's consistency and stability over time (Nunnally and Bernstein, 1994). In Study 5, test-retest reliability of the measure of emotional attachment to social media is examined.

### 4.6.1 Participants and Design

Ninety-two undergraduate and graduate business students were asked to take part in a two-part online survey in exchange for partial course credit. The surveys were sent approximately three weeks apart. Seventy-seven (84% return rate ) of those individuals completed the survey both times (47% female, average age 24 years, age range 18-48 years of age). The same questionnaire was used both times and contained only the 27 EASM items with a 7-point Likert response scale (1= “strongly disagree” to 7 = “strongly agree”).

### 4.6.2 Results

First-order summated scale scores were computed for each of the eight EASM dimensions. A second-order summated scale score was then computed using the eight first-order summated scale scores. The test-retest reliability correlation for this overall EASM score was  $r = .90$  ( $p < 0.001$ ). Additionally, each subscale was examined for time 1 – time 2 correlations. The test-retest correlations for each of the eight-factors were as follows: *connecting*  $r = .91$ , *nostalgia*  $r = .76$ , *informed*  $r = .87$ , *enjoyment*  $r = .81$ , *advice*  $r = .85$ , *affirmation*  $r = .79$ , *enhances my life*  $r = .88$ , and *influence*  $r = .83$ . All of these correlations were statistically significant at ( $p < 0.001$ ) and met Nunnally's (1978) criterion

of correlations for .70 or higher. Study 5 demonstrates the consistent stability of the EASM measure across time, thus providing further psychometric evidence in favor of the reliability of the higher-order construct and its subdimensions (DeVellis, 2003).

#### 4.7 Study 6

Study 6 was designed to accomplish multiple objectives. First, the study was meant to demonstrate how the scale relates to a criterion measure of proximity-maintenance—a key attachment behavior. In this case self-reported time spent on social media is used as a proxy for proximity maintenance. Secondly, Study 6 was conducted to demonstrate the incremental validity of the emerging measure of EASM as compared to adapted existing scales. This was done with respect to EASM predicting time spent on social media and a second outcome used by Park et al. (2010)—separation distress. Finally, the Study 6 provides an additional test of convergent and discriminant validity of the EASM scale by comparing it to the two existing attachment scales adapted to reflect attachment to social media.

##### *4.7.1 Study 6a: Participants and Design*

Two hundred and eight undergraduate students (41% female, average age 25 years, age range 18-75 years of age) completed an online survey in exchange for partial course credit. Seventeen responses were dropped because they did not provide complete data, resulting in 191 surveys.

##### *4.7.2 Study 6a: Measures*

Respondents were asked to select the various social media platforms that they use and to report the average amount of time they spend per week on each platform selected. Participants indicated their level of agreement with each of the 27 EASM items using a 7-point Likert response scale (1= “strongly disagree” to 7 = “strongly agree”). Modifications of two existing scales of brand attachment (Thomson, MacInnis, and Park,

2005; Park et al., 2010) were also included, which were measured on a 7-point scale (1 = “not at all” to 7 = “very well”), and an 11-point scale (0 = “not at all” to 10 = “completely”) respectively. All items were randomized in blocks of nine to eleven, and were randomly presented to respondents. Finally, respondents provided basic demographic information.

#### 4.7.3 Study 6a: Results

##### 4.7.3.1 Initial Evidence for Criterion-Related Validity

In order to provide further support for EASM’s criterion-related validity, total hours spent on social media were investigated. This criterion measure was regarded as a reflection of proximity maintenance, a key behavior historically investigated in relation to attachment (Bowlby, 1979; Hazan and Shaver, 1994; Hazan and Zeifman, 1994). The higher the emotional attachment, the more an individual is expected to seek to be close in proximity to the attachment target. In this case, the more emotionally attached an individual is to social media, the more that person is expected to seek to be close to social media. Self-reported time spent on each of the social media platforms was collected from respondents with self-report measures. The measure of total hours<sup>2</sup> was created by summing the time reported across all platforms participants used. EASM<sup>3</sup> correlates  $r = 0.49$  ( $p < 0.001$ ) with the criterion measure of self-reported time spent on social media platforms, providing initial evidence for criterion-related validity.

##### 4.7.3.2 Evidence for Discriminant Validity

It is also important to demonstrate EASM’s discriminant validity to warrant its necessity for the specific context of social media. Study 3 established that EASM is distinct from the two adapted scales (Thompson, MacInnis, and Park 2005; Park et al.,

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<sup>2</sup> The measure of total hours spent on social media is log transformed to standardize the measure and allow for further analyses which assume normality.

<sup>3</sup> The  $\alpha$ 's for the subdimension ranges from .80 (advice) to .94 (connecting). The overall alpha for EASM was .94 demonstrating acceptable fit (Nunnally and Bernstein, 1994).

2010); however, it is important to understand whether this difference is also clear in predicting outcome behaviors. Two key dependent variables are investigated here to assess discriminant validity—time spent on social media and separation distress (as used in Park et al., 2010). In order to test the discriminant validity of EASM with the adapted brand measures, hierarchical linear regression was used to control a specific order of entry for the independent variables. By allowing both adapted brand scales to account for all the variance they could in the dependent variables, discriminant validity is then assessed by determining EASM's ability to explain unique incremental variance beyond what is explained by the two existing scales.

When time spent on social media is the dependent variable and Thompson, MacInnis, and Park's (2005) adapted emotional attachment to brands (EAB) measure is the only measure in the model, it is significant; however, when Park et al.'s (2010) EAB measure is entered, the 2005 EAB measure becomes non-significant. However, when EASM is subsequently entered in the model, it explains unique, incremental variance above and beyond the two adapted measures. Results (Table 4-9, 4-10, 4-11) show that the amount of variance accounted for in time spent on social media by the three predictor variables is 25%. As expected, not only does EASM significantly add to the prediction of time spent on social media—EASM contributes unique variance, and the other two scales become nonsignificant when it is in the model.

Table 4-9 Total Hours: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics				Durbin-Watson
						F Change	df1	df2	Sig. F Change	
1	.335 <sup>a</sup>	.112	.107	.772	.112	21.56	1	171	.000	
2	.435 <sup>b</sup>	.189	.179	.740	.077	16.11	1	170	.000	
3	.513 <sup>c</sup>	.263	.250	.707	.074	17.04	1	169	.000	2.002

a. Predictors: Constant, TMP2005; b. Predictors: Constant, TMP2005, Park 2010; c. Predictors: Constant, TMP2005, Park 2010, EASM; Dependent Variable: Log Total Hours

Table 4-10 Total Hours: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.851	1	12.851	21.557	.000 <sup>a</sup>
	Residual	101.942	171	.596		
	Total	114.793	172			
2	Regression	21.673	2	10.836	19.783	.000 <sup>b</sup>
	Residual	93.120	170	.548		
	Total	114.793	172			
3	Regression	30.200	3	10.067	20.112	.000 <sup>c</sup>
	Residual	84.592	169	.501		
	Total	114.793	172			

a. Predictors: Constant, TMP2005; b. Predictors: Constant, TMP2005, Park 2010; c. Predictors: Constant, TMP2005, Park 2010, EASM; Dependent Variable: Log Total Hours

Table 4-11 Total Hours: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		Correlations			Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	Constant	2.04	.17		12.25	.000					
	TMP2005	.21	.04	.335	4.64	.000	.33	.33	.33	1.00	1.00
2	Constant	1.83	.17		10.98	.000					
	TMP2005	.04	.06	.068	.71	.476	.33	.05	.05	.52	1.92
	Park 2010	.15	.04	.384	4.01	.000	.43	.29	.28	.52	1.92
3	Constant	1.26	.21		5.92	.000					
	TMP2005	-.03	.06	-.042	-.44	.661	.33	-.03	-.03	.48	2.09
	Park 2010	.08	.04	.204	2.01	.046	.43	.15	.13	.42	2.36
	EASM	.29	.07	.383	4.13	.000	.49	.30	.27	.51	1.98

Similar results are found when separation distress is used as the dependent variable (Table 4-12, 4-13, 4-14). In this model 75% of the variance in separation distress is accounted for using the three predictor variables. One departure from the previous model is that, when separation distress is the criterion variable, the Park et al.(2010) measure remains a significant predictor. However, EASM still explains unique, incremental variance as a predictor. This hierarchical test demonstrates additional evidence for EASM's discriminant validity when compared to brand attachment scales adapted to the social media context.

Table 4-12 Separation Distress: Model Summary

Model	R	R Square	Adjusted R Square	of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.688 <sup>a</sup>	.474	.471	1.18	.474	170.32	1	189	.000	
2	.790 <sup>b</sup>	.624	.620	1.00	.150	74.91	1	188	.000	
3	.866 <sup>c</sup>	.750	.746	0.82	.126	94.02	1	187	.000	2.147

: (Constant), TMP 2005 b. Predictors: (Constant), TMP2005, Park 2010 c. Predictors: (Constant), TMP 2005, Park 2010, EASM d. Dependent Variable: Separation Distress

Table 4-13 Separation Distress: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	235.8	1	235.8	170.32	.000 <sup>a</sup>
	Residual	261.7	189	1.4		
	Total	497.5	190			
2	Regression	310.4	2	155.2	155.922	.000 <sup>b</sup>
	Residual	187.1	188	1.0		
	Total	497.5	190			
3	Regression	373.0	3	124.3	186.723	.000 <sup>c</sup>
	Residual	124.5	187	0.7		
	Total	497.5	190			

Predictors: (Constant), TMP 2005 b. Predictors: (Constant), TMP 2005, Park 2010 c. Predictors: (Constant), TMP 2005, Park 2010, EASM d. Dependent Variable: Separation Distress



Table 4-14 Separation Distress: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		Correlations			Collinearity Statistics		
		B		Beta	T	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	Constant	.71	.22		3.27	.001					
	TMP 2005	.79	.06	.688	13.05	.000	.69	.69	.69	1.00	1.00
2	Constant	.34	.19		1.77	.078					
	TMP 2005	.29	.08	.250	3.71	.000	.69	.26	.17	.44	2.28
	Park 2010	.41	.05	.585	8.66	.000	.77	.53	.39	.44	2.28
3	Constant	-.72	.19		-3.81	.000					
	TMP 2005	.09	.07	.080	1.38	.169	.69	.10	.05	.40	2.51
	Park 2010	.22	.04	.316	5.12	.000	.77	.35	.19	.35	2.85
	EASM	.68	.07	.543	9.70	.000	.83	.58	.36	.43	2.35

Since these three scales are acknowledged as being correlated, relative weights analysis (RWA) is also appropriate (Johnson, 2000) for comparing the strength of EASM versus measures developed by Thomson, MacInnis, and Park (2005) and Park et al. (2010). RWA is another statistical technique for investigating the relative importance of various independent variables in explaining variance of the dependent variable(s) of interest because it overcomes the inherent limitations of other approaches such as hierarchical regression (see Johnson and LeBreton, 2004).

The overall amount of variance accounted is 25% for time spent on social media (Table 4-15). EASM accounts for 53.5% of the variance accounted for in time spent on social media, compared to the remaining 46.5% associated with the two adapted scales combined. The confidence interval for time spent on social media does not include zero, indicating a statistically significant difference between Thomson, MacInnis, and Park's (2005) adapted measure and EASM. Zero is included in the confidence interval between EASM and Park et al.'s (2010) measure, indicating the two are not statistically different in

the unique variance they are capable of explaining. However, the majority of the evidence indicates that EASM is a better predictor of time spent on social media, and that the measure possesses incremental validity.

The overall amount of variance accounted is 75% for separation distress (Table 4-15). In this model the EASM measure is statistically significantly different from both of the adapted scales and accounts for 45% of the explained variance in separation distress, with the remaining 55% of the explained variance associated with the other two scales combined. Confidence intervals indicate that EASM is significantly different from both of the adapted scales in the prediction of separation distress. Again, EASM is deemed to be a relatively better predictor of separation distress, and possesses incremental validity.

Table 4-15 Relative Weights Analysis Results

<b>DV= Ln Total Hours</b>			
Total R <sup>2</sup> = .25 F (10.1) = 20.112, p < .001			
Predictor	Relative Weights Percentage		
TMP 2005	14.5%		
Park 2010	32.0%		
EASM	53.5%		
	Difference	95% CI Low	95% CI High
EASM vs. TMP 2005	38.9%**	-26.3%	-2.3%
EASM vs. Park 2010	21.5%	-18.9%	5.5%

<b>DV= Separation Distress</b>			
Total R <sup>2</sup> = .75 F (124.3) = 186.7, p < .001			
Predictor	Relative Weights Percentage		
TMP 2005	22.5%		
Park 2010	32.6%		
EASM	45.0%		
	Difference	95% CI Low	95% CI High
EASM vs. TMP 2005	22.5%**	-26.2%	-9.3%
EASM vs. Park 2010	12.4%**	-17.7%	-1.8%

Relative weight percentage refers to the percent of total variance accounted for by all predictors.

95% CI refers to lower and upper  $\alpha/2$  percentiles of the sampling distribution. Percentages may not 100% due to rounding.

\*\*p < .01

#### 4.7.4 Study 6b: Participants and Design

Two hundred and forty-five undergraduate students participated in a survey for partial course credit. Fifty-two respondents provided incomplete data and were thus eliminated. Of the 193 remaining respondents, 12 of them reported that they do not use social media and were also eliminated. The final sample for this study was comprised of 181 respondents (54% female, average age 29 years, age range 18-42 years of age).

#### 4.7.5 Study 6b: Measures

Respondents were asked to select the various social media platforms that they use and to report the average amount of time they spend per week on each platform selected. Participants provided their level of agreement with each of the 27 EASM items using a 7-point Likert response scale (1= "strongly disagree" to 7 = "strongly agree"). To

provide another test of discriminant validity, the following measures were also included: consumer susceptibility to interpersonal influence (Bearden, Netemeyer, and Teel, 1989); consumer novelty seeking (Manning, Bearden, and Madden, 1995); and self-construal (Singelis, 1994). These three scales were measured on 7-point Likert scales (1= “strongly agree” to 7 = “strongly disagree”). All items were randomized in blocks of nine to eleven, which were randomly presented to respondents. Finally, respondents provided basic demographic information.

#### 4.7.6 Study 6b: Evidence for Discriminant Validity

There is empirical evidence to suggest that EASM is unique from consumer susceptibility to interpersonal influence, consumer novelty seeking, and self-construal. EASM is weakly related to consumer susceptibility to interpersonal influence ( $r = .325$ ), consumer novelty seeking ( $r = .233$ ), and interdependent self-construal ( $r = .249$ ), and has no relationship with independent self-construal ( $r = .059$ ) (Table 4-16).

Table 4-16 Correlations with Discriminant Variables

		<b>EASM</b>
<b>Consumer Susceptibility to Interpersonal Influence</b>	Pearson Correlation	.325
	Sig.(2-tailed)	.000
<b>Consumer Novelty Seeking</b>	Pearson Correlation	.233
	Sig.(2-tailed)	.002
<b>Interdependent Self-Construal</b>	Pearson Correlation	.249
	Sig.(2-tailed)	.001
<b>Independent Self-Construal</b>	Pearson Correlation	.059
	Sig.(2-tailed)	.429

#### 4.7.7 Discussion

Data from Study 6 shows EASM's criterion-related validity in predicting time spent on social media, a representation for proximity maintenance. Results show that EASM explains unique incremental variance and show it to have superior predictive validity in comparison to the adapted brand scales. Finally, EASM is shown to be distinctly different from the constructs of *consumer susceptibility to interpersonal influence*, *consumer novelty seeking*, and *self-construal*.

#### 4.8 Study 7

Study 7 tests EASM's ability to predict additional outcome variables in three life domains. These domains are measured more behaviorally than attitudinally, and in a methodologically different way to alleviate concerns about common method bias. I also introduce three antecedent constructs to be tested simultaneously as *independent* variables that plausibly should relate to EASM. I examine the nomological validity of EASM by placing it between three antecedent constructs (i.e., *sociability*, *social comparison*, and *information credibility*) and three social media behavioral measures across substantially varied life domains (i.e., *social*, *work*, and *consumer*).

With respect to the social media behaviors, I posited that individuals who are emotionally attached to social media should engage in more behaviors on social media platforms. I asked respondents to ("check all that apply") for distinct sets of social media behaviors in the social, work, and consumer spheres of social media activities.

##### 4.8.1 Participants and Design

Two hundred fifty-eight undergraduate business students (41% female, average age 24 years, age range 18-53 years of age) completed an online survey in exchange for partial course credit. Seven responses were dropped because they did not provide complete data.

#### 4.8.2 Measures

Items for EASM were assessed on 7-point Likert scales (1= “strongly disagree” to 7 = “strongly agree”). Respondents were also asked to think about their social media behaviors in three separate life domains: socially-related, work-related, and consumer-related. I provided a list of actions that an individual can perform within each domain (separately) and asked them to check all the actions they have personally done in the last two weeks (These items are provided in Appendix A through C.) These behaviorally-oriented self-reported measures are constrained to the very recent past. The more boxes they checked, the more behaviorally active in social media respondents were assumed to be in each of the life domains. A summated count of each was used as one indicator of a three-indicator latent variable called Social Media Behavior.

The antecedents of EASM for this model were measured using the following existing scales from the literature: *sociability* (Gilford, 1959) was measured on a 5-point scale (1 = “extremely uncharacteristic” to 5 = “extremely characteristic”), *social comparison* (Hill, 1987) was measured on a 5-point scale (1 = “not at all true” to 5 = “completely true”), and *information credibility* (Flanagin and Metzger, 2000) was measured on a 7-point scale (1 = “not at all” to 7 = “extremely”). A diagram of our nomological network is shown in Figure 4-6.

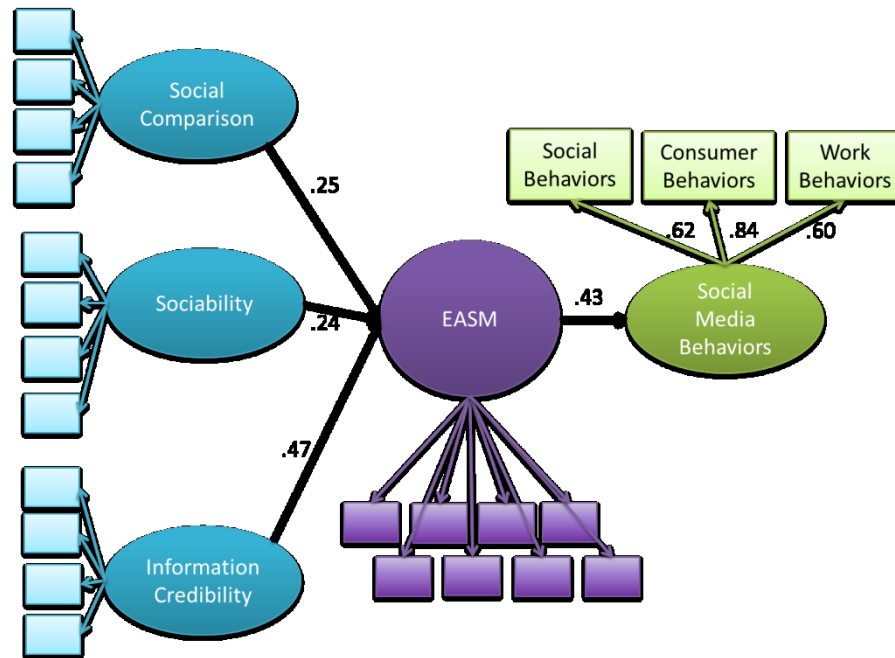


Figure 4-7 Nomological Validity

#### 4.8.3 Results

This nomological SEM model with a second-order EASM latent construct<sup>4</sup> was estimated using LISREL 9.0. EASM was predicted by information credibility, sociability, and social comparison and EASM was predictive of the three domains of social media behaviors. Reliability coefficients of each of the three antecedents are .89, .81, and .85 respectively. This model demonstrates adequate fit:  $df = 223$ ,  $\chi^2 = 518.01$ ,  $NNFI = .96$ ,  $CFI = .96$ ,  $SRMR = .069$ ,  $RMSEA = .077$  (Hu and Bentler, 1999). Each of the antecedents relates positively and significantly to EASM (social comparison:  $\gamma = .25$ ,  $p < .01$ ; sociability:  $\gamma = .24$ ,  $p < .01$ ; information credibility:  $\gamma = .47$ ,  $p < .01$ ), supporting H<sub>8</sub>-

<sup>4</sup> Given the number of items involved, a very large variance-covariance matrix existed if a full second-order operationalization of EASM was used. I therefore applied a composite variable approach for the eight subdimensions of EASM. This simplifies and reduces the size of the problem for estimation. However, a model with the full second-order operationalization was run and compared. This model produced very similar parameter estimates; model fit statistics, and equivalent substantive results.

H<sub>10</sub>. EASM also relates positively and significantly to each of the life domain social media behaviors (social behaviors media:  $\beta = .43$ ,  $p < .01$ ), supporting H<sub>5</sub>-H<sub>7</sub>.

#### *4.8.4 Discussion*

Study 7 frames a nomological network for EASM in relation to three antecedents (sociability, social comparison, and information credibility) and outcome behaviors across three life domains where social media is prevalent. Results show that each of the antecedents is positively and significantly related to EASM, and that EASM relates significantly and positively to actual behaviors across three life domains (social, work, and consumer). Individuals who are more emotionally attached to social media are significantly more actively engaged in social, work, and consumer related social media activities.

#### 4.9 Forward

The next chapter of this dissertation is a discussion of the results. Subsequently, a description of the limitations and future directions for research with EASM are also discussed.



## Chapter 5

### Conclusions and Future Research

#### 5.1 Overview

Results from seven studies with close to 1,700 respondents demonstrate that some consumers are, indeed emotionally attached to social media. I provided empirical evidence for the reliability, validity, and generalizability of a multidimensional conceptualization and operationalization of EASM that includes eight distinct elements: (1) *connecting*, use of social media to stay connected to others; (2) *nostalgia*, the ability to use social media in order to remember things from the past; (3) *informed*, social media's role in keeping the respondent informed; (4) *enjoyment*, social media's role as a way for the respondent to experience relaxation and enjoyment; (5) *advice*, ability to seek advice via social media; (6) *affirmation*, ability to feel affirmed from social media usage; (7) *enhances my life*, social media's role in enhancing life; and, (8) *influence*, the ability to use social media to encourage, influence, and help others. This chapter discusses research findings, offers managerial implications, proposes future research, and presents the limitations of this body of work.

#### 5.2 Overall Research Findings

Two of the objectives of this dissertation were to identify the nature and structure of EASM and to develop a measurement scale that would represent consumers' emotional attachment to social media in a reliable and valid way. By following scale development procedures recommended in the literature (Nunnally and Bernstein, 1994; DeVellis, 2003), I have achieved these objectives.

First, exploratory research with social media users and key informants was conducted to generate a pool of items to tap into the construct of EASM. Then, based on the factor analysis results, eight first-order factors emerged to tap into the higher-order

construct of emotional attachment to social media. Next, to ensure the robustness of the factor structure across different individuals and to further test the reliability and validity of the measure, a second measurement phase was conducted. Specifically, two additional samples, one of students (n=209) and one of non-students (n=226), completed the same survey described in previous studies. Results of the exploratory and confirmatory factor analyses show strong support for the eight-factor structure. Finally, to establish the reliability and validity of a second-order factor conceptualization of emotional attachment to social media, analyses were conducted to demonstrate (a) convergent validity, (b) discriminant validity, (c) criterion-related validity, (d) content validity, (e) test-retest reliability, (f) predictive validity, and, (g) nomological validity. Results of these analysis all showed strong support for a second-order EASM construct with eight first-order subdimensions measured with 27-items. Importantly, the nomological model of Study 7 convincingly demonstrates that the validated, reliable EASM measure predicts social media behaviors in the consumer realm, as well as in work and life domains.

### 5.3 Managerial Implications

Several managerial implications can be drawn from this dissertation. There is a theoretical and measurable phenomenon underlying social media usage which should help managers understand why some individuals use social media heavily and why others do not. Not all individuals have a psychological drive to interact within various social media platforms; however, there are some individuals who use social media for a variety of reasons (e.g., as a way to feel connected and stay informed about news and events). Insights from this dissertation enable managers to develop strategies for social media, with a deeper understanding of what drives consumers' social media behaviors.

The ability to identify individuals who have higher EASM is a useful tool for marketing managers, because it reveals which customers are willing to interact and

engage on social media in their personal lives, and as consumers. With this knowledge managers can create more effective social media strategies, and also specifically target high EASM consumers with marketing initiatives via social media. Marketing managers now have the ability to understand explicitly who they should target with social media strategies, which consumers are most likely to appreciate social media information about companies and brands, and respond in more favorable ways. By segmenting and targeting social media users based on their EASM, companies' social media efforts should become more efficient and effective, allowing for managers to demonstrate stronger ROI for marketing efforts in the social media space.

Finally, the development of the EASM scale also provides a way for companies to make better hiring decisions for their social media teams. In the last several years many companies have placed a greater emphasis on social media in their promotional mix. To illustrate, in 2009, the *New York Times* hires a social media editor, and even the Catholic Press Association is now offering webinars on how churches can use social media to connect with the community. Hiring the right individual for any position is important, and EASM allows managers to determine if those being considered for the social media positions possess a strong psychological connection with social media. As Confucius said, "if you choose a job you love you'll never have to work a day in your life."

#### 5.4 Limitations

The present research should be couched within the context of its limitations. Some of which provide directions for future research. First, the development of the EASM scale was implemented by treating social media holistically, rather than decomposing it into specific platforms. Addressing idiosyncrasies of different social media platforms was beyond the scope of this this dissertation; however, exploration in this area would likely yield interesting tactical insights for managers. The relative weight of the subdimensions

comprising EASM could vary across different social media platforms. Understanding how and why individuals are differentially attached to different social media platforms, would certainly inform marketing strategy.

Secondly, the focus of this dissertation was on the impact that EASM exerts on consumers' behaviors within social media. Little attention was paid to the impact of the various platform-related attributes on consumer behaviors. This approach was taken in order to demonstrate and understand the nature of emotional attachment in social media holistically, without introducing a host of additional confounding factors into the models. However, additional research is needed to explore the relationship between platform-related attributes which might form on the basis of utilitarian attitudes, and non-platform related attributes (e.g., attitude towards social media), which might form based on experiences.

Finally, this research entails the identification of an eight-factor structure and the development of a 27-item EASM scale. Every attempt was made to validate the factor structure by using a wide variety of samples for analyses. In addition, measures of internal reliability, test-retest reliability, content validity, criterion-related validity, discriminant validity, convergent validity, predictive validity and nomological validity were all provided. However, the extent to which the EASM construct relates to *general attitudes* towards social media was not examined. This area needs to be explored in future research, and might follow the precedent set by Thomson, MacInnis, and Park (2005). More work is also needed to definitively assess the role a person's interpersonal attachment style may play within the EASM construct. For instance, it would be interesting to determine if a person who is anxious or avoidant of human attachment is more or less likely to be highly emotionally attached to social media, or if a person with a

secure human attachment is more likely to be highly emotionally attached to social media.

### 5.5 Future Research

Exploration of social media is in its infancy in academic research. This dissertation is the starting point for various additional research topics. A logical the next step might be to see how emotional attachment to brands and emotional attachment to social media interact. Does a person's attachment to a given brand drive his/her participation in and advocacy for the brand via social media? Does a person's emotional attachment to social media drive his/her attachment to brands and thus his/her participation in and advocacy for the brand via social media? Or does some interplay between attachment to brands and attachment to social media drive consumers to engage with, participate in, and advocate on behalf of a brand via social media? Academically and managerially, understanding how to increase consumer engagement, social media participation, and advocacy both within social media would be enhanced by answers to these questions.

Further, in this research, EASM was examined as a positive bond between social media and the self, a view of this relationship that is supported by others (cf. Valkenburg, Peter, and Schouten 2006). However, recent research has shown that social media usage can have a strong, negative impact on consumers and their face-to-face/personal relationships (cf. Corstjens and Umblijs 2012; Wilcox and Stephen 2013). In fact, there appears to be a dark side to social media that researchers are only just beginning to explore and understand. Future research should investigate the extent to which EASM has the ability to negatively impact individuals' personal relationships. Extreme EASM might resemble an "addictive" profile, where the consequences of high EASM actually

interfere with healthy life function and lead individuals to neglect life events and responsibilities in order to spend more time on social media.

Other marketing questions relevant to EASM abound. For example, how is a consumer's rapport with a given brand in terms of loyalty, repurchase intentions, advocacy, and the like impacted when they are exposed to negative chatter on social media about the company, brand, and/or products? Stakeholders certainly take note of information on social media as evidenced in April 2013 when a Twitter hoax claimed President Obama was injured in an explosion at the White House. Following this, the Dow Jones Industrial Average dropped temporarily by 150 points, resulting in the loss of \$136 billion in market value (Chozick and Perlroth, 2013).

The current research does illuminate who is likely to be attending and reacting to social media. Companies and government agencies might begin to tailor messaging accordingly and strategically leverage this knowledge in ways that improve performance of, or support for, organizations. Finally, subsequent research efforts could aim to construct a "short form" version of EASM. Twenty-seven items is a fairly large number to include in survey-based research, be it academic or practitioner research. A lesser number of the most representative items could be identified and assessed psychometrically to create a short form instrument.

Appendix A  
Social Media Social Behaviors

**Below we use the word "post" to refer to the general ability to share content and "page" refers to the general social media platform, with the understanding that different platforms refer to the "page" differently (i.e., Twitter feed, Pinterest pinboard, etc.).**

**Listed below are some activities that people do when using social media. Please indicate which of these you have done in the last 2 weeks associated with your social life.**

**Please check all that apply.**

Looked at what my friends posted.  
Shared new trend in fashion, music, etc. social media.  
Felt better about myself after reading someone else's post.  
Liked a friends post.  
Sought advice from my friends.  
Felt worse about myself after reading someone else's post.  
Commented on a friends post.  
Looked at old pictures from my photos.  
Became mad or frustrated after reading someone else's post.  
Re-posted/shared a friends post.  
Looked at old pictures of my friends.  
De-friended someone.  
Shared my location.  
Re-posted a story that touched me.  
Shared a photo.  
Looked at someone else's location.  
Changed my mind based on something I've read on social media.  
Re-posted a photo a friend posted.  
Facebook "stalked" a friend.  
Encouraged a friend.  
Invited others to events.  
Looked at posts of someone I'm not friends with.  
Reconnected with someone from my past.  
RSVP'd to attend an event.  
Became friends with someone new.  
Connected with a celebrity.  
Looked for new trends in fashion, music, etc. on social media.  
None of these in the last 2 weeks.



Appendix B  
Social Media Work Behaviors

**Below are some activities that people do when using social media. Please indicate which of these you have done in the last 2 weeks associated with your work or job.**

**Please check all that apply.**

Looked at my employer's page.  
Encouraged a co-worker/peer.  
Shared a job opening.  
Liked my company's post.  
Facebook "stalked" a co-worker/peer.  
Completed some training for my job.  
Commented on my company's post.  
Facebook "stalked" a superior.  
Invited others to work events.  
Shared my company's post.  
Participated in a work contest.  
RSVP'd to attend a work event.  
Looked at pictures on my company's social media page.  
Applied for a job on a company or organization's page.  
Shared a pictures on my company's social media page.  
Looked for job openings on a company or organization's page.  
None of these in the last 2 weeks.

Appendix C  
Social Media Consumer Behaviors

**Now we would like you to think about Brands and Companies in general. Below are some activities that people do when using social media. Please indicate which of these you have done in the last 2 weeks associated with brands and companies.**

**Below we use the word "post" to refer to the general ability to share content and "page" refers to the general social media platform, with the understanding that different platforms refer to the "page" differently (i.e., Twitter feed, Pinterest pinboard, etc.).**

**Please check all that apply.**

Shared when I was at a company's location.  
Made a positive comment on a company or brand's social media page.  
Shared a photo on a company or brand's social media page.  
Looked at a company or brands' social media page.  
Made a negative comment on a company or brand's social media page.  
Changed my mind based on something I saw on a company or brand's social media page.  
Learned information from a company or brand's social media page.  
Bashed a company or brand on my personal social media page.  
"Unliked" a company or brand's social media page.  
"Liked" a company or brand's social media page.  
Advocated for a company or brand on my personal social media page.  
Participated in a company or brand's contest.  
Read a company or brand's post.  
Asked a question on a company or brand's social media page.  
Bought something because of what I read on company or brand's social media page.  
"Liked" a company or brand's post.  
Looked for new trends in fashion, music, etc. on a company or brand's social media page.  
RSVP'd to attend a company or brand's event.  
Shared a company or brand's post.  
Looked at pictures on a company or brand's social media page.  
None of these in the last 2 weeks.

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### Biographical Information

Rebecca VanMeter is a summa cum laude graduate of the University of Pikeville where she played collegiate volleyball. While at Pikeville Rebecca was Scholar Athlete of the week several times as well as a First and Second Team All-American. University of Kentucky is where she completed her Executive Masters of Business Administration as an honors student and served as a Graduate Student Congress Representative. Rebecca is completing her doctorate at the University of Texas at Arlington. She is currently working on several research projects with UTA faculty. Her current research interests include social media, employee and consumer attachment, virtual gifts, servant leadership, and research methods. She has published in the *Journal of Business Ethics* and presented papers at national conferences.

Prior to the pursuit of her doctorate, Rebecca worked at Target as an Executive Team Leader of Human Resources Management, at State Farm as a licensed sales representative, as a Tier Four Support Specialist with the American Board of Family Medicine, and was a part-time instructor at Bluegrass Community and Technical College. She was also a volleyball coach at two high schools and for various select teams while living in Kentucky.