From Personal Trust to Professional Behavior: A Study of the Impact of Trust and Enjoyment on Behavior Intentions in Business Analytics

by

Benjamin Everett Larson

A dissertation submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy

Auburn, Alabama
August 6, 2016

Keywords: Trust, Enjoyment, Social Media, Business Analytics,
IT Consumerization, Hedonic Motivation

Approved by

Casey Cegielski, Chair, J.W. Woodruff Sr. Professor, Aviation and Supply Chain Management
Terry A. Byrd, Bray Distinguished Professor, Aviation and Supply Chain Management
Dianne Hall, Torchmark Professor, Aviation and Supply Chain Management
R. Kelly Rainer, George Phillips Privett Professor, Aviation and Supply Chain Management
Jennifer Mueller-Phillips, Director of School of Accountancy and KPMG Professor

Abstract

Information technology consumerization represents technology designed for the consumer finding its way into the workplace. This is a phenomenon which is wide spread but has not currently sufficiently understood as technology becomes pervasive throughout the daily lives of most people. The purpose of this dissertation is to further explore this concept by examining the relationship of trust in social media use and social media based business analytics. Social media may be viewed as a hedonic information system implying that the enjoyment of using the system is a key driver of its use and may drive the user's intentions to use more than its usefulness. We therefore explore the relationships using trust and enjoyment at an individual level.

Trust was explored first through a pilot study, of 264 students, showing that trust built through the personal use of social media transfers into trust and perceived relative advantage of social media based business analytics. Trust in social media was divided into three constructs consisting of cognitive trust in algorithms, emotional trust in social media providers, and emotional trust in social media communities. The relationships between trust in social media and trust and relative advantage of social media based business analytics was explored. This dissertation study expanded upon this by adding enjoyment as an additional mediating construct and exploring the relationships of enjoyment, trust and relative advantage of social media based business analytics and behavioral intentions. To make the results more generalizable the study

also included participants who were active employees with management experience. The full study consisted of a sample of 224 students and 315 working professionals.

The fill study Measurement and Structural models were assessed, and the hypothesized relationships tested, with results suggesting support for the majority of the study hypotheses. Study results indicate that trust transfers from personal technology to trust in data use in the workplace. It also indicates that with increased trust in the personal technology there is also an increase in enjoyment. Further, the study indicates that trust in social media based business analytics and perceived enjoyment have a direct influence on behavioral intentions of using social media based business analytics. Results and implications are discussed, along with limitations to the study's generalizability and areas for potential future research

Acknowledgments

I give thanks to God, for the many blessings bestowed, including the wonderful people who made this achievement possible.

I am immensely grateful to my wife and daughters, Wi-Suk, Hannah, and Jean. Pursuing my PhD has meant years of struggle and stress that have tested our health and our faith.

I am grateful to my friends at Auburn University, who often provided guidance and inspired with and stories of their own troubles in academia. Witnessing the success and struggles of others helped to maintain the vision of light at the end of the journey.

I am incredibly indebted to my dissertation chair, Dr. Casey Cegielski, by whose patience, knowledge, and guidance were required to achieve this goal. I am also incredibly grateful to my committee members, Dr. Dianne Hall, Dr. Terry Byrd, and Dr. Kelly Rainer whose both professional guidance and personal wisdom were essential in completing the Ph.D. program. Also, I would like to thank Dr. Jennifer Mueller-Phillips for serving as the university reader.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

BA	Benevolence of Algorithms
IA	Integrity of Algorithms
CA	Competence of Algorithms
BSMBA	Benevolence of Social Media Business Analytics
ISMBA	Integrity of Social Media Business Analytics
CSMBA	Competence of Social Media Business Analytics
ETSMP	Emotional Trust in Social Media Providers
SMBA C&B	Benevolence and Integrity of Social Media Business Analytics
ETSMC	Emotional Trust in Social Media Communities
PE	Perceived Enjoyment, RA=Relative Advantage
BI	Behavioral Intentions.
CTSMBA	Cognitive Trust in Social Media Business Analytics
CTA	Cognitive Trust in Algorithms
DOI	Diffusion of Innovations and the
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
TPB	Theory of Planned Behavior
IS	Information Systems
IT	Information Technology

Chapter 1: Introduction

Justification

Trust has been defined as the willingness of the trustor to be vulnerable to the trustee (Bhattacherjee, 2002; Gefen, Karahanna, & Straub, 2003; McKnight, Choudhury, & Kacmar, 2002). Trust has been a popular concept in studies examining individuals' behavioral intentions towards a technology, particularly consumers' intentions towards e-commerce (e.g., Bhattacherjee, 2002; Gefen et al., 2003). In these studies, trust has often been found to influence the behavioral intentions of the user (Bhattacherjee, 2002; Gefen et al., 2003).

However, mismanagement of trust may lead to a misuse of a system (Parasuraman & Riley, 1997). As firms look to create information systems with the ability to learn and adapt, users play an important role as their ability to challenge and categorize the accuracy of the solutions provided propels the system to learn solutions that are more optimal or more likely given the conditions (El Sawy, 2007; Nan, 2011). For example, some systems are designed in a way that input from the user enables the system to learn and adopt the best solutions (El Sawy, 2007). Because the user's actions while using the system are important to the performance and capabilities of the system, a greater understanding of what influences the user's behavior is needed.

Information systems have become more complex with diverse factors affecting the user's perception of a technology. This complexity has created a call for more in-depth studies on the antecedents to intentions such as the dimensions of relative advantage at various stages of the decision to use (Choudhury & Karahanna, 2008). Information systems have also become pervasive throughout our personal lives, and the differences in technology that we use in the workplace and in our personal lives have shrunk. IT consumerization, or the spread of products

intended for personal use into the workplace, has been a widespread trend, adding a variety of environments and purposes in which the user is interacting with the information system. (Gens, Levitas, & Segal, 2011). Additionally, some researchers have recognized that as systems become more personalized, additional research is needed into the impact of emotional trust and emotions on behavioral intentions (Komiak & Benbasat, 2006). Research has also provided evidence that emotions such as enjoyment are influencing consumerization not just the usefulness of the systems (Buettner, 2015).

Theories such as the Diffusion of Innovations (DOI) and the Technology Acceptance Model (TAM) have been extensively used to examine behavioral intentions. The constructs used in these models may be adapted to work with each other and alongside trust (Tung, Chang, & Chou, 2008). As technology has become more mainstream, research models have seen modifications to incorporate hedonic and emotional factors. For example, TAM has been modified by incorporating enjoyment to explain the acceptance of information systems (Yu, Ha, Choi, & Rho, 2005). Trust may help account for emotions as well since trust may be broken down into cognitive trust and emotional trust, lending itself as an appropriate method to incorporate both traditional ideas such as ease of use and usefulness as well as hedonic factors.

Trust may also be examined simultaneously using multiple relationships in which trust can be formed, allowing a researcher to study how an individual sees a more complex system through separate trust relationships with the individual trustees involved in a technology. The ability to use trust to examine cognitive and emotional aspects of multiple relationships within a system suggests that trust may be an ideal construct for explaining behavioral intentions as users look to adapt in the workplace a technology which they have used personally. If trust formed through personal use is transferring into biased decision making in the workplace, researchers

need to develop interventions so that organizations may manage trust to optimize the performance of their information systems. Trust transfer in information systems has been studied as a cognitive process (Lin, Lu, Wang & Wei, 2011; Lu, Yang, Chau & Cao, 2011), while this suggests a logical decision making process. The present study examines if emotional trust and feelings, along with cognitive trust, are being transferred into business analytics, which have been argued not to have a place in business (Gefen et al., 2003).

Business analytics and big data systems have seen a rise in popularity as information systems have been able to electronically capture and store more data. Positions such as data scientists have been increasingly used in organizations to deal with big data, with the objective of creating a competitive advantage (Davenport & Patil, 2012; Miller, 2014). But, despite the importance of big data, the supply of talented individuals needed to fill these positions may not match the demand for some time (Davenport & Patil, 2012). Miller (2014) argues that organizations need to adopt a big data culture throughout their enterprise and that a closer collaboration between industry and academia is needed to properly train the employees of the future.

In a big data environment, the quantity of data is so large that a single person cannot hope to consume or process it without technology. In such an environment, a danger exists that organizations' performance may be impacted by biases in data selection (Bollier & Firestone, 2010). Automation bias, or the overreliance on automated information, is influenced by factors such as workload, multitasking, and the complexity of the task (Goddard, Roudsari, & Wyatt, 2012; Parasuraman & Riley, 1997). When examining automation bias, trust represents the willingness to use the technology for decision making in the workplace; a bias towards automated technology such as decision support systems implies that the user has a higher trust in

the decision support system than in their own ability (Goddard et al., 2012; Parasuraman & Riley, 1997). Although the use of technology such as decision support is generally beneficial, excessively high levels of trust may potentially lead to information being accepted as reliable based on complacency rather than proper evaluation (Goddard et al., 2012; Parasuraman & Riley, 1997). Factors influencing automation bias are similar to factors in DOI, which includes the perceived relative advantage and complexity of the technology (Rogers, 2010). Big data systems and business analytics are designed to simplify and organize the data so that they can be presented in simplified manner for decision support and are therefore open to automation bias. If an enterprise has made the decision to implement big data technology and establishes a culture that encourages its employees to adopt big data thinking, the choice of data and alternative models used in the decision support may be with individuals or small teams. Additional individual biases with regard to the technology used to analyze the data as well as the perception of the data itself are an important issue to be aware of in such a system. The use of social media data in business analytics is an example of information which a user may have personal exposure to and have formed multiple trust relationships in their private life that may bias their perception of the data in the decision making process. For instance, managers who have a large group of *friends* on their Facebook and use this social media to express and share their personal experience and opinion to their Facebook friends on a daily basis may form a deep trust in this social media, which in turn may make them feel comfortable using other big data accumulated through Facebook for making their professional decisions such as identifying customer trends and needs. Social media have become entrenched in our personal lives as indicated by such statistics as Facebook reaching nearly a billion daily active users (Facebook, 2015) and Twitter having hundreds of millions of users (Thomas, 2013). Social media has produced a variety of

data including posts documenting customer complaints which have allowed companies to respond to common complaints and improve customer service (Fan & Gordon, 2014). Social media based big data also has potential to be harmful because within the mass of data it is difficult to detect biases (Harford, 2014).

Research Purpose and Research Questions

This study aims at investigating user behavioral intentions of using social media data in business analytics through a trust and hedonic lens. Specifically, this study will examine whether trusting relationships formed with the technology powering social media (*Algorithms*), companies providing the social media platform (*Social Media Providers*), and other users of social media (*Social Media Communities*) will translate into *trust* in social media data, *enjoyment* in using social media data, and *relative advantage* of social media data over not using such data in business analytics, as perceived by the user. This study also will examine the influence of these perceptions on behavioral intentions toward using social media data in business analytics. If the trust relationships influence the perceptions which in turn influence behavioral intentions, this would suggest that a bias was formed through personal use of the technology. This study will also investigate whether perceived enjoyment influences trust in social media data in business analytics and its relative advantage. Finally, this study will investigate whether trust, perceived enjoyment, and relative advantage influence behavioral intentions. The research questions that guide this study are as follows.

1. Does cognitive and emotional trust formed through personal use of a technology, social media, influence trust in business analytics using that technology?

2. Does emotional trust built through personal use of social media influence perceived enjoyment of using social-media based business analytics?

3. Does emotional trust built through personal use of social media lead to a perceived relative advantage in using social media in business analytics?

4. Does the perceived enjoyment act as a mediator for the influence of emotional trust in social media from personal use on trust in social media based business analytics and the relative advantage perceived about social media based business analytics?

5. Do the perceived enjoyment of, trust in, and relative advantage of social media business analytics influence the behavioral intention of using social media based business analytics?

Potential Research Contribution

This research has the potential to impact research in statistics, business intelligence, and information systems literature. Information systems (IS) have become increasingly complex, and how, when, and where an individual interacts with technology has been evolving rapidly. Current research is unclear how interactions with personal technology influences workplace decisions and how the increasing complexity of IS is influencing important adoption constructs. While trust in IS has been studied in the workplace, there is a need to discover additional external antecedents to trust in the workplace (Li, Hess, & Valacich, 2008). In response to this need, this study will explore these issues by examining whether trust in personal technology (i.e., social media) influences the decisions made in the workplace.

Although trust transfer has been examined in IS as a cognitive process (Lin et al., 2011; Lu, et al., 2011), little has been done to examine how emotional trust transfers from one environment to another. Emotional trust has examined as a significant component of e-commerce (Sun, 2010). Little research has been done in regards to how emotional trust influences information use in the workplace. Some researchers have suggested the need for more research

on the role of emotional trust and emotions in technology acceptance in general (Komiak & Benbasat, 2006). Addressing this research need can be a contribution to adoption of a technology as well as a discovery of an area of risk as emotions arguably should not be used in business transactions (Geffen et al., 2003). Information has been seen as increasingly valuable. However, with big data such as social media data, there is a danger of not only investing time and money to get irrelevant data but also making decisions using the wrong information due to a biased perception.

For professionals in organizations, this research can help expose the above risks. Social media data are collected outside of the control of most originations and should be viewed with skepticism. Although social media data have been used to report trends in society and can be a valuable tool, there are also cases of falsified information in social media (Haustein, Bowman, Holmberg, Tsou, Sugimoto, & Larivière, 2015). A company which is not vigilant in the proper value of information will be open to making the wrong strategic decisions. An improved understanding in where bias is formed will help practitioners to develop interventions appropriate to their systems. Interventions such as mindfulness training may be required not only for the individual but also for teams. As phenomenon such as social media is widespread, the organization may be open to groups within a team made up of individuals having the same bias. The development of instruments that recognize bias will help managers to create teams that are diverse in thought rather than locked into collective thinking.

Dissertation Structure

This dissertation is organized into five chapters. Chapter 2 presents a review of the relevant literature. Research investigating the IT consumerization concept is reviewed, followed by studies investigating business analytics. Following is a review of the literature that defines the

concept of trust and its application in information systems research. The review of trust will be

broken down into cognitive trust, emotional trust, antecedents of trust, and finally consequences

of trust. The final part of Chapter 2 is a development of the hypotheses predicting relationships

between the study's theoretical constructs and the presentation of the study model. Chapter 3

describes the context, research domain, and target participants for the pilot study. Then, the

chapter describes context, research domain, and target participants for the full study of the

hypothesized model and presents the development of the measurement instrument. Procedures

for data collection are presented as well as the statistical analyses that will be used to investigate

the data collected and the hypothesized relationships. Chapter 4 presents the results of the full

phase of the study. First, the demographics and respondent characteristics, assessment of the

measurement model and the modifications to the measurement instrument are discussed and

justified. This is followed by an assessment the measurement and structural models used in the

full study and an investigation of alternative models. In the final section of Chapter 4, the study's

hypothesized relationships are tested and the results are presented. Chapter 5 discuses of the

study findings by examining the implications for researchers and practitioners, limitations of the

study, and suggestions for future research.

Chapter 2: Literature Review

IT Consumerization

IT consumerization has had many definitions (Ruch & Gregory, 2014). This study defines IT consumerization as the use of technology that is designed for the consumer in the workplace. People are increasingly using the same types of technology at home that they use in the workplace, leading to the popularity of phenomena such as *bring your own device* and the use of personal cloud services. The familiarity that the user has gained with the technology through personal use is associated with trust and acceptance of the technology, and has been theorized to change the perceived usefulness and the perceived enjoyment in using it (Buettner, 2015). Researchers suggest that IT consumerization has led to employees working longer, having increased satisfaction, and that it has even become a factor in choosing where to work (Loose, Weeger, & Gewald, 2014; Singh, 2012). IT consumerization is an ongoing trend that is not likely to end anytime soon. Yet, research has not explained the phenomenon through a widely agreed upon theory (Ruch & Gregory, 2014).

Recent research has suggested enjoyment as a key factor in IT consumerization and that factors such as perceived usefulness are post hoc justifications (Buettner, 2015). However, if decisions regarding technology usage are made based on perceived enjoyment formed by personal use rather than on the usefulness in the workplace, it creates a risk that urgently needs to be addressed. One antecedent to perceived enjoyment is emotional trust in the actors of the system that is being used (Sun, 2010). Although emotional trust has been studied in the context of e-commerce, little has been done to explore how emotional trust formed through personal use influences the technologies or variables used in business analytics or even the workplace in general.

Business Analytics: Big Data

Business analytics can be defined in a number of ways (Holsapple, Lee-Post, & Pakath, 2014). In this study, business analytics are considered to be a combination of a capabilities and technologies that provide a competitive advantage to the organization, which implies the use of different technologies and analytical capabilities to aid in making decisions (Holsapple et al., 2014). With such a definition of business analytics, it is important for managers to wisely choose a set of technologies and capabilities to provide the optimal combination. Therefore, if management or users are biased by emotional attachments to a technology or information, then they may not be able to accurately assess the usefulness, the correct technology or data may not be used, and the full array of the company's analytical capabilities may not be effectively applied. Business analytics is a multidisciplinary field that uses statistics, business intelligence, and information systems and has been called the next frontier for practitioners and academics (Evans & Lindner, 2012). Researchers have seen similarities between the business analytics and the dynamic capabilities which organizations need in the modern environment, but there is not an agreed upon theoretical foundation to understand business analytics (Sharma, Reynolds, Scheepers, Seddon, & Shanks, 2010). While researchers are looking for an optimal theoretical structure, the demand for business analytics talent has surpassed the available talent (Davenport & Patil, 2012), and businesses also face the issue of having so much data that they lose sight of the important information (Bollier & Firestone, 2010). These practical issues place an urgent need for researchers not only to research them at the organization level but also to understand them at the individual level. Researchers have noted that decisions are not entirely a cognitive process and that there is a need for research on the role of emotions and emotional trust in technology (Komiak & Benbasat, 2006).

Social media is the term used to refer to the collection of online resources that enables its users to create, share, and consume content and to engage in interactions (Abrahams, Jiao, Fan, Wang, & Zhang, 2013). Social media providers are the organizations that provide the platform on which these interactions occur and include organizations such as Facebook, YouTube, FourSquare, WordPress, and Wikipedia, as well as various public forums and other resources. The social media community consists of users of the services that are provided. Social media analytics refer to the process of collecting, analyzing, and summarizing social media data so that usable information is created (Abrahams et al., 2013). One example is the use of social media posts to signal safety defects (Abrahams, Jiao, Wang, & Fan, 2012). However, techniques such as sentiment analysis can be very domain specific and therefore difficult to use the same techniques in other issues (Abrahams et al., 2012). Social media are open to the public and have in the past been manipulated, both by human users and by automated systems (Haustein et al., 2015). The complexity of each domain and the potential for misinformation indicates the risk of having an excess of trust in the data. This risk occurs when applying old or new techniques to a new problem and for monitoring changes in an existing system. The complexity also implies that people tend to be biased towards trusting the ability of the information system to analyze the data more than their own ability to disseminate the information. Managers should be aware of this and need to manage this trust carefully to ensure that the results of any analysis using social media information will be accurate without paralyzing the organization's use of the system.

Trust in Information Systems

Three of the most widely referenced trust in information system articles are by McKnight, Choudhury, and Kacmar (2002), Bhattacherjee (2002), and Gefen, Karahanna, and Straub (2003). These researchers examined trust and developed instruments that measured trust

11

in information systems. All discuss several definitions of trust and the difficulty of defining such an abstract concept. The definition seems to depend on the researcher and the field of study. Trust may be defined using a holistic concept such as the trustor's willingness to be vulnerable to the trustee (Mayer, Davis, & Schoorman, 1995). Trust may also mean trustworthiness and be viewed as a collection of trusting beliefs, primarily identified as benevolence, integrity, and ability/competence, which in turn lead to trusting intentions (Bhattacherjee, 2002; Geffen et al., 2003; McKnight et al., 2002). Trust may also be evaluated in terms of feelings or emotions, or as a combination of several or all of the above concepts (Geffen et al., 2003).

Defining trust is not a simple task, and the concept may be used in a number of ways, depending on the nature of the situation. Trust has been examined in varying ways by the trust relationships investigated. For example, interpersonal trust and inter-organizational trust have been found to differ greatly (Zaheer, McEvily, & Perrone, 1998). Researchers have also explored the antecedents to trust in order to identify how trust is formed (Geffen et al., 2003). Trust may be conceptualized as a small component of a model to predict its consequences, such as behavior intentions, or it may be part of a larger model that examines its mediating effect between its antecedents and consequences. The various ways trust has been applied in information systems research has resulted in the diverse definitions and dimensions of the trust construct as it is applied in various contexts and domains.

Some researchers prefer to make a clear distinction between cognitive and emotional trust (Sun, 2010). In next sections, trust literature will be reviewed by first previous research examining cognitive trust and emotional trust, followed by studies on the antecedents of trust as applicable to explaining trust in social media based business analytics, and finally literature on the consequences of trust (see Figure 2.1).
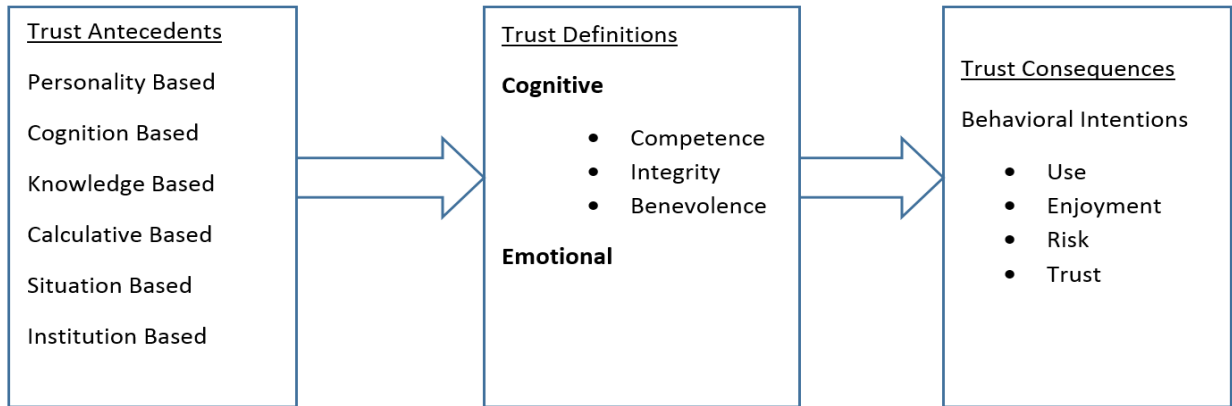
Trust Antecedents	Trust Definitions	Trust Consequences

Trust Antecedents

Personality Based

Cognition Based

Knowledge Based

Calculative Based

Situation Based

Institution Based

Trust Definitions

Cognitive

- Competence
- Integrity
- Benevolence

Emotional

Trust Consequences

Behavioral Intentions

- Use
- Enjoyment
- Risk
- Trust

Figure 2.1. Conceptualization of Trust

Cognitive Trust: Trusting Beliefs

Cognitive trust does not involve emotions or feelings and can be depicted as a set of trusting beliefs that typically include integrity, benevolence, and competency (Sun 2010). The beliefs in the trustee's integrity and benevolence are based ly upon ethics (McKnight et al., 2002). Integrity implies that the trustee is trustworthy and honest and intends to honor their commitments (McKnight et al., 2002). Benevolence implies that the trustee cares for the trustor or will not take advantage of the situation (McKnight et al., 2002). Finally, the belief of the trustee's competence implies that the trustee has the skill to accomplish the action that they are trusted to do (McKnight et al., 2002).

The environment that is being studied helps to determine whether each individual trusting belief is applied and how it is represented (McKnight et al., 2002). The trust studies typically included all three beliefs as either a single construct (e.g., Venkatesh et al., 2102) or as a second-order construct (e.g., McKnight et al., 2002). Most studies did not test how these trusting beliefs were created or if the consequences of the beliefs were different. One study (Pavlou & Dimoka,

2006) examined trust by separating it into credibility (integrity and competence) and benevolence in the context of online auctions and provided evidence that trust in benevolence was more difficult to form and that trust in benevolence had a larger influence on price premiums than credibility. In another study (Geffen et al., 2003), the beliefs have been selected to represent ethical beliefs leaving competence out in the evaluation of the trustee. The diverse applications of trust beliefs in previous studies suggest value in collecting information on the sub-constructs of individual beliefs when measuring cognitive trust. Geffen et al. (2003) argue that it is through cognitive trust that business decisions should be made. In the present study, cognitive trust is conceptualized in two trust relationships: trust in algorithms and trust in business analytics which use social media data. Trust in algorithms refers to users' perceptions of the integrity, benevolence, and competence of the underlying technology that that power social media based on their experience in social media from personal life. On the other hand, trust in business analytics that use social media data is defined as users' perceptions of the integrity, benevolence, and competence of the process of using social media data in their profession to make business decisions.

Emotional Trust

Emotional trust is defined by feelings of being secure, comfortable, and content with the trustee or by having shared emotions with the trustee. It has been argued that feelings have no place in business transactions (Geffen et al., 2003), but some information systems research has included this dimension of trust, and many researchers have suggested that emotional trust is an essential component of trust (Liu, Li, & Zhu, 2012; Robert, Denis, & Hung, 2009; Stewart & Gosain, 2006; Komiak & Benbasat, 2006; Sun, 2010). However, emotional and cognitive trust have not been modeled together consistently, with some studies considering cognitive trust to be

14

an antecedent to emotional trust (Komiak & Benbasat, 2006; Stewart & Gosain, 2006; Sun 2010), while others have argued that they are separate concepts that directly affect different consequences (Huang, Qian, Davison, & Gu, 2011). An instrument developed by Liu et al. (2012) combines both cognitive beliefs (reliability and benevolence) and an emotional concept (security) to measure trust in a technology artifact. However, the instrument's treatment of emotional trust may be limited because it ignores other emotional concepts such as comfort and contentedness, which are key emotional trust concepts that are significantly affected by characteristics of information systems such as personalization (e.g., Komiak & Benbasat, 2006). Emotional trust has been reported to form with continued use in online auctions (Sun, 2010), implying that emotional trust may be attached to a particular artifact or organization. Some researchers have found that teamwork has been affected by emotional trust (Stewart & Gosain, 2006).

Although emotional trust is covered in the literature, the extent of this coverage is limited in that it rarely evaluates emotional trust beyond a single trust relationship, and little research has been done to examine whether emotional trust transfers from one environment to another. A technology such as online auctions has been represented in terms of emotional trust, but little research has been done on specific features such as an algorithm. This is a gap in the literature that presents an interesting area for future research, but it falls outside the scope of the current study. As mentioned earlier, this study will examine trust in specific technology features, namely algorithms, in the frame of cognitive trust. However, given that emotional trust can form with technology such as personalized recommendation agents and that researchers need to go beyond cognitive trust in decision models and include emotions and emotional trust (Komiak & Benbasat, 2006), this study will evaluate emotional trust in social media providers and social

15

media communities to provide useful insight into how this emotional trust can transfer from one environment (i.e., personal use) to another (i.e., business use).

Antecedents to Trust

Personality-based antecedents. Personality-based antecedents to trust address the individual differences in the trustor that influence their willingness to be vulnerable to others across a number of situations, without necessarily having experience either with the trustee or the situation. Individual differences have been examined in a number of studies (e.g., Gefen & Pavlou, 2012; Kim, Ferrin, & Rao, 2009; Lowry, Vance, Moody, Beckman, & Read, 2008; Robert et al., 2009; Wang & Benbasat, 2007; Zahedi & Song, 2008). One individual difference is the disposition to trust, or how the individual perceives society or other individuals in general, and therefore how willing they are to trust. Disposition to trust may be represented as the cognitive trust that people feel towards humanity along with the trusting stance that they take in trust (McKnight et al., 2002). In this study, the variable, cognitive trust in algorithms may be seen as part of users' disposition to trust technology. In addition, researchers have looked at individual variables such as age (Montoya, Massey & Khatri, 2010), culture (Cyr 2008; Cyr, Head, Larios, & Pan, 2009; Kim, 2008; Lowry et al., 2008), and gender (Awad & Ragowsky, 2008; Montoya et al., 2010; Riedl, Hubert, & Kenning, 2010) as trust antecedents, providing evidence that these personal characteristics influence trust. As technology becomes ever more closely integrated into various aspects of individuals' lives, their ability to personalize systems based on information far beyond simple demographics expands exponentially. This also underscores the importance of being able to control for individual differences within such a study as age and length of exposure impacts trust. Demographic information will be used as controls within this study.

Cognition-based antecedents. Cognition-based trust antecedents examine the trustor's attempt to gain an element of control by examining the trustee to evaluate their trustworthiness based on no prior experience. This causes cognition to primarily be seen as an antecedent of trust. As cognition-based trust antecedents in studies have included heuristic design factors of websites such as color schemes (Cyr, 2008), adding human features such as virtual agents' faces (Cyr, 2008), or trustors' perception factors such as their perception of ease of use (Awad & Ragowsky, 2008; Cyr, 2008). The perception that information is coming from an individual similar to the trustor is another cognition based concept and has also shown the ability to influence trust (Geffen et al., 2003). For example, researchers have examined how feedback mechanisms or customer recommendations influence trust formation within e-commerce, especially whether users find feedback or recommendations more trustworthy when they can identify and categorize the source of feedback or recommendations as being like themselves (Lim, Sia, Lee, & Benbasat, 2006; Wang & Benbasat, 2008).

Trust in a social media community may form in much the same way as people typically associate in groups that they feel a cultural connection (Gefen, 2004). Having a high sense of trust in that community may also indicate a connection to the community where recommendations from the social media community can been seen as recommendations from a like-minded source. This may have an impact even upon the desire to use like groups in business analytics. If a user is disposed to trust in social media communities as trustworthy source in their personal life, they may look for them as a source professionally. This study will examine the trust in social media communities through emotional trust which includes the component of security. If the user is able to choose something in which they already have a feeling of security, then this implies that this emotional trust should also help to represent control for the user.

Calculation-based antecedents. Calculation-based trust antecedents imply that the trustor performs an economic analysis of whether the trustee is likely to violate the trust despite the consequences of being seen as untrustworthy. Mutual dependence (Goo, Kishore, Rao, & Nam, 2009) and commitment (Hart & Saunders, 1998) in the context of partnership and outsourcing has been used in examining this type of trust antecedent. In B2C e-commerce, calculation-based trust antecedents have been directly measured as a reason to trust (Geffen et al., 2003). They have also been examined indirectly by manipulating site content containing products presented representing various prices, implying various risk/benefit levels for if the trustee does not fulfill their commitment (Kim & Benbasat, 2009). Researchers have also argued that the risks and benefits to the trustor can be viewed as calculative factors to determine whether the trustor can safely place trust in the trustee (Wang & Benbasat, 2008). Although not in the scope of this study, an evaluation of the user's impression of the risk reward of the value of providing reliable information to the social media providers may be appropriate in evaluating trust in social media data use in business analytics.

Knowledge-based antecedents. Knowledge-based trust antecedents refer to how previous experiences that the trustor has had directly with the trustee influences trust. This type of trust antecedent has been studied in terms of the level of familiarity of the participants in the relationship in question (Geffen et al., 2003; Komiak & Benbasat, 2006; Van Slyke, Shim, Johnson, & Jiang, 2006), with perceptions of past experiences (Goh & Wasko, 2012; Goo et al., 2009; Sun, 2010), or changes in the amount of trust over a period of time (Kanawattanachai & Yoo, 2007; Piccoli & Ives 2003; Robert et al., 2009). As knowledge is gained through direct experience, trust or distrust forms and eventually overrides the initial trust beliefs that were cognition- or personality-based. Although experience has been found to overcome initial

18

perceptions, this may not be ideal in business analytics as the business environment is dynamic and requires a discerning eye, creating a need to study how best to optimize trust overtime. The present study examines trust in making a decision when the user has gained a degree of experience through personal exposure. Research in terms of familiarity typically addresses advertisements and viewing online material (Geffen et al., 2003) or familiarity with the company name or availability of a service (Bhattacherjee, 2002; Van Slykeet al., 2005). Other research has provided evidence for the influence of familiarity with how a product works on both emotional and cognitive trust (Komiak & Benbasat, 2006). Little research has been done to examine the impact of familiarity with parts of a complex system (i.e., social media in personal use) on the desire to use the whole (i.e., social media for both personal and work uses). But, trust transfer has shown that trust formed in one situation should pass on into another situation (Stewart, 2003).

Institution-based antecedents. Institution-based trust antecedents examine how structures or processes support the trust formation (Geffen et al., 2003). Structural assurances provide the trustor means to come back at the trustee to ensure the successful performance of the trustee in their commitment. Institution-based trust antecedents may also reflect the nature of combinations of the different trust antecedents reviewed above such as the ability to provide negative reviews or government assurance of lawful performance preventing fraud. Structural assurance may originate from a third party, society as a whole, or the trustee in the form of guarantees that allow recourse for the trustor against the trustee in the event of inadequate performance (Geffen et al., 2003). The ability to provide feedback to other users can impact trust as people often see it as a mechanism by which they also form trust (Awad & Ragowsky, 2008; Benlian, Titah, & Hess, 2012; Pavlou & Dimoka, 2006). Such mechanism allows users not only to evaluate purchases by looking at similar users but also to see a recourse if they are not satisfied and can therefore be

19

seen both as institution- and cognition-based. Structural assurances where the trustee must create

positive feedback can result in an initial cost to the trustee related to building a reputation that

eventually results in premium prices being paid by the trustor (Pavlou & Dimoka, 2006). The

costs expended on in the quest for strengthened trust can lead to a reduction in economic activity

in the marketplace (Pavlou & Dimoka, 2006). This suggests the possibility that trust building

through a structural assurance may be a sub-optimal situation for both the trustor and trustee, as

both may expend too many resources to create a level of trust exceeding what is needed for both

parties to meet their needs in the interaction. This underscores managing risk to improve

performance and the importance of the concept in e-commerce. In the case of social media,

additional controls by the providers to reduce false or misleading data may drive away some

users.

How the user views trust in the internet is a kind of structural assurance examined in e-

commerce (McKnight et al., 2002). Similarly, social media providers supply the backbone of

gathering social media data similar to the internet in e-commerce. Emotional trust in social

media providers may therefore transfer to trust in the use of social media data in business

analytics because it represents faith in a key institution that enables the technology.

Situation-based antecedents. Trust may also be formed based on the individual's

perception of the situation (McKnight et al., 2002). Situation normality refers to the way the

trustor's relationship with the trustee is affected by their familiarity with similar situations but

not necessarily their familiarity with the trustee. Situation normality in information systems

research has mainly been studied in terms of familiarity with websites and internet use (Gefen et

al., 2003; McKnight et al., 2002). One prominent study operationalized this concept in e-

commerce by measuring the cognitive trust in similar e-commerce sites (McKnight et al., 2002).

20

This demonstrates versatility of the concept of trust and also how trust can transfer from one artifact to another (Stewart, 2003). As we are increasingly using the same technology in our personal and professional lives, including both devices and software, the personal use could provide familiarity and situation normality. By using social media at home, the user becomes familiar with data, the community, the providers, and the associated algorithms.

Consequences of Trust

Trust in IS research is often seen as an antecedent to behavioral intentions represented typically by use or the continued use of technology or processes related to information systems. Many popular theories such as the theory of reasoned action (TRA), unified theory of acceptance and use of technology, the theory of planned behavior (TPB), the technology acceptance model (TAM), and the diffusion of innovations (DOI), have been utilized in IS research to explain behavioral intentions. Trust has been applied within or added to all these theories. Furthermore, that a trustor who places a high level of trust in the trustee is more willing to use products, services, or information from the trustee is logical on its face. The primary motivation in trust research in IS literature has been to determine how to better attract or maintain users to the information system. Researchers have begun to study trust as an antecedent to use intent in order to understand how to optimize the management of trust (Gefen & Pavlou, 2012). Trust can be a complex construct in behavioral intentions as it does not always operate in a simple linear fashion and has demonstrated varying inflection points (Liu & Goodhue, 2012).

Many research models have examined trust alongside calculation-based antecedents such as benefits and risk based upon the context of the relationship (Chandra et al. 2012; Gefen et al., 2003; Kim et al., 2009; Nicolaou & McKnight, 2006). Within TAM, trust has been incorporated as a direct influence on both behavioral intentions and the perceived usefulness of the system

(Gefen et al., 2003; Wang & Benbasat, 2008). Evaluated using TRA, trust displayed the ability to influence behavioral intentions directly and indirectly by influencing perceptions of risk and reward (Kim et al., 2009). TRA also showed cognitive trust mediated through affective trust (Komiak & Benbasat, 2006). Researchers using TPB have incorporated trusting beliefs as a component of attitude which influences behavioral intentions (Pavlou & Fygenson, 2006). Other research has used DOI and TAM in combination with trust to show a direct effect on behavioral intentions (Carter & Bélanger, 2005). The utility of trust within e-commerce was especially common in these studies, but determining the trustee in the relationship can be confusing in electronic market places such as eBay as there are many agents. This is similar to the environment presented in social media analytics, where social media providers, social media communities, and technology all play a role.

Trust can help to measure the complexity of this environment because it has demonstrated the ability to examine how trust transfers from one situation or relationship to another (Lin et al., 2011; Lu, et al., 2011; Stewart, 2003). The use of trust to represent the antecedents above has also been accepted in IS research (McKnight et al., 2002). Furthermore, the ability of trust to transfer from tradition e-commerce to mobile e-commerce has been demonstrated (Lin et al., 2011; Lu, et al., 2011). This transference of trust reflects the ability of trust in one trustee to directly influence trust in another trustee also to influence other factors such as ease of use and relative advantage (Lin et al., 2011; Lu, et al., 2011).

In studies of online auction communities, the degree of trust tended to be evaluated in terms of the trust characteristics of the seller, and as trust increased so did the premium that the buyer was willing to pay (Ba & Pavlou, 2002; Dimoka, 2010; Pavlou & Dimoka, 2006; Pavlou & Gefen, 2004; Pavlou & Gefen, 2005). This indicates that the perceived trust was a relative

22

advantage between sellers. The relative advantage, or the perception that one trustee is more

trustworthy than another, was also identified as a significant component when making decisions

between two alternatives (Choudhury & Karahanna, 2008).

Studies have also began to use hedonic factors such as perceived enjoyment in using the

technology as an antecedent to behavioral intentions (Sun, 2010). Affective trust of

intermediaries and buyers in online auctions were found to have an impact on behavioral

intentions, but the influence was mediated by enjoyment and usefulness (Sun, 2010). Other

research has used enjoyment and TAM to demonstrate that enjoyment influenced ease of use.

(Venkatesh, 2000; Venkatesh & Bala, 2008). Enjoyment has also been used alongside factors

representing usefulness and ease of use and having a direct effect on behavioral intentions

(Venkatesh et al., 2012). Others have found perceived ease of use as an antecedent to enjoyment

and that enjoyment again has a direct influence on behavioral intentions (Lowry et al., 2012; Van

der Heijden, 2004).

Theoretical Model and Hypotheses

This section introduces the theoretical model (see Figure 2.2) and hypotheses that guide

the present study. Figure 2.3 represents the model and tested results from the pilot study (Larson,

Cegielski, Ezell, & Hall., 2016) whose results will not fully be detailed but the differences in

methodology and target audience will be discussed. The information provided in the literature

review above is used to justify the hypotheses.
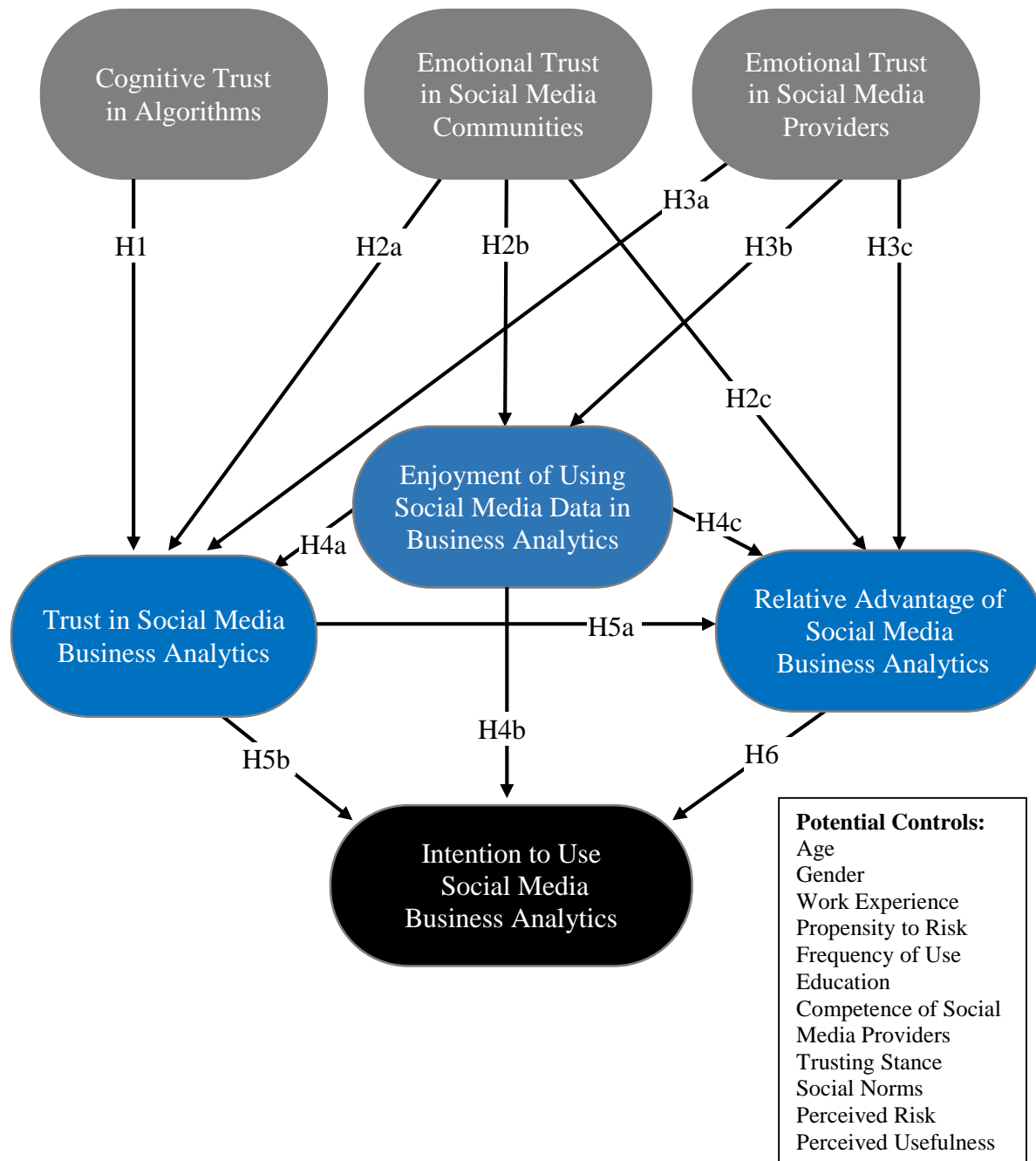
Figure 2.2. Theoretical Model and Hypotheses
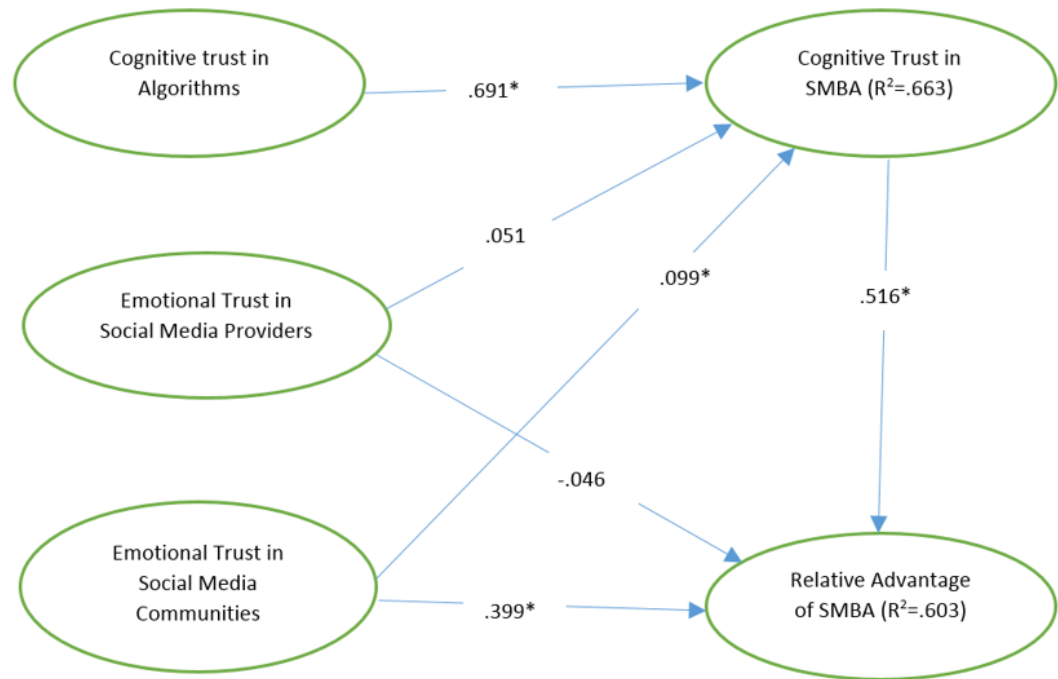
Figure 2.3. Results of Pilot Study (Larson et al., 2016)

Cognitive trust in a technology has been used to measure a situation-based trust antecedent in IS research (McKnight et al., 2002), providing evidence that trust in a technology can transfer to trust in a similar technology in which the user has no experience. This has also been demonstrated by the transfer of trust from tradition e-commerce to mobile e-commerce (Lin et al., 2011; Lu, et al., 2011). Cognitive trust has also been used to evaluate personality-based trust antecedents in the form of disposition to trust (McKnight et al., 2002). Disposition to trust typically represents the user's view of society so that the trustor's trust in society would pass to an individual. Cognitive trust in this case is used with the concept of the individual's trusting stance towards society in order to view if the trustor is disposed to have trust in the trustee (McKnight et al., 2002). As technology becomes more pervasive, technology may also be seen

as a proxy to individuals' views on society, and therefore trust may transfer based upon personality, which leads to the following hypothesis.

> H1: Personal cognitive trust in algorithms will positively influence trust in social media data in business analytics.

Affective trust has similarly been demonstrated to transfer from one entity to another (Sun, 2010). One affective trust transfer mechanism is by structural assurances (Sun, 2010). For example, belief in the institution may pass to an entity belonging to that institution (Lewis & Weigert 1985; Sun, 2010; Stewart, 2003). Technology, social media providers, and social media communities can all be viewed as part of the structure required to construct business analytics which use social media data. Trust has demonstrated the ability to transfer both between potential trustors, institutions, and situations (Stewart, 2003). The pilot study did not support the significance of hypothesis H3a however in discussing the results it was felt that the hypothesis was still valid and that a further clarification of social media providers was warranted in the full study. We, therefore, form the following hypotheses.

> H2a: Emotional trust in social media communities will positively influence trust in social media data in business analytics.

> H3a: Emotional trust in social media providers will positively influence trust in social media in business analytics.

Research on the impact of emotional trust of a technology on behavioral intentions is limited. Emotional trust has been shown to be a direct antecedent to behavioral intentions (Komiak & Benbasat, 2006) as well as an indirect antecedent, mediated by factors such as perceived usefulness and enjoyment (Sun, 2010). However, these studies have not examined behavior in a workplace environment. As such, this study examines the role of emotional trust in

the context of IT consumerization. Recent research in IT consumerization demonstrates that enjoyment is a key factor in the adoption of technology in the workplace (Buettner, 2015). Feeling safe, content, and secure in aspects of a technology would facilitate enjoyment and perceptions of superiority of the product. Therefore, the following hypotheses are proposed:

> H2b: Emotional trust in social media communities will positively influence the enjoyment of using social media data in business analytics.

> H3b: Emotional trust in social media providers will positively influence the enjoyment of using social media data in business analytics.

> H2c: Emotional trust in social media communities will positively influence the relative advantage of using social media data in business analytics.

> H3c: Emotional trust in social media providers will positively influence the relative advantage of using social media data in business analytics.

Social media has been perceived as a hedonic system suggesting that enjoyment may be seen as a valuable acceptance of social media and other personal technologies (Rosen & Sherman, 2006, Turela, Serenkob, & Bontisc, 2009) Enjoyment has been seen as having various roles in the adoption of technology. Perceived enjoyment has been shown to positively influence the perception of ease of use (Venkatesh, 2000; Venkatesh & Bala, 2008). But, enjoyment has also been used along with constructs similar to usefulness and ease of use to explain directly behavioral intentions (Venkatesh et al., 2012). Others have found perceived ease of use as an antecedent to enjoyment and that enjoyment again has a direct influence on behavioral intentions (Lowry et al., 2012; Van der Heijden, 2004). Enjoyment has been found to diminish over time but to provide attractiveness (Van der Heijden, 2004). This finding suggests that enjoyment may be seen as a cognition based antecedent to trust which gives an impression of control the user

will have positive feelings of trust. Enjoyment has also been found to have a direct influence on relative advantage (Al-Gahtani & King, 1999). Thus, it is plausible that perceptions of enjoyment would have a positive influence on both cognitive trust and the perceived relative advantage of using a system as well as the intention to use. The following hypotheses reflect this idea in the context of social media data use in business analytics:

H4a: Perceived enjoyment in using social *media* data in business analytics will positively influence trust in social media data in business analytics.

H4b: Perceived enjoyment in using social media data in business analytics will positively influence the intention to use social media data in business analytics.

H4c: Perceived enjoyment in using social media data in business analytics will positively influence the relative advantage of using social media data in business analytics.

Trust is widely seen as an antecedent to behavioral intentions (Geffen et al., 2003). Trust also can be a strong enough component to have both a direct positive influence on behavior intentions and an influence of lowering the perception of risks and raising the perception of rewards in a decision to use a technology (Kim et al., 2009). Therefore, cognitive trust in an artifact can influence behavioral intentions both directly and indirectly through relative advantage. A perception of relative advantage of a technology represents a calculation of reduced risks and increased usefulness of using it, both of which are antecedents of behavioral intentions (Kim et al., 2009). Additionally, relative advantage is seen as an antecedent to diffusion in DOI (Rogers, 2010) and has demonstrated the ability to influence behavioral intentions between alternative choices (Choudhury & Karahanna, 2008). All this literature leads to the following hypotheses.

H5a: Trust in social media data in business analytics will positively influence the

relative advantage of using social media data in business analytics.

H5b: Trust in social media data in business analytics will positively influence the

intention to use social media data in business analytics.

H6: The relative advantage of social media data in business analytics will positively

influence the intention to use social media data in business analytics.

Chapter 3: Research Methodology

Context

In the preceding two chapters, IT consumerizations, business analytics, and trust have been discussed. The concepts have been explored using the IS research literature. Trust has been defined and the antecedents and consequences have been explored. We build upon the previous historical and empirical work done in these research areas by examining a complex information system in which trust relationships are formed with similar technology in different environments. We examine if the trust formed in a personal environment influences trust and emotions in a workplace environment. First, the impact of cognitive trust in algorithms, the emotional trust in social media communities and social media providers, and the perceived enjoyment of using social media data in business analytics on the cognitive trust in the use of social media data in business analytics is explored. Next, the impact of emotional trust in social media communities and social media providers on the perceived enjoyment of using social media data in business analytics is explored. After this, the cognitive trust in the use of social media data in business analytics, the emotional trust in social media communities and social media providers, and the perceived enjoyment of using social media data in business analytics on the relative trust advantage in the use of social media data in business analytics is explored. Last, the impact of the cognitive trust, perceived enjoyment, and relative advantage of the use of social media data in business analytics on the behavioral intentions of using of social media data in business analytics is explored. The relationships between these factors are investigated at the individual level.

Institutional Approval

The Institutional Review Board (IRB) at Auburn University granted approval to conduct the pilot study on November 9, 2014 under Protocol Number 14-478 EX 1411, the full study with a student sample and a professional sample on January 19, 2016 under Protocol Number 16-012 EP 1601. All of the approved IRB protocols are presented in Appendix A

Research Domain and Samples

Research into the hypothesized relationships between the above mentioned factors of cognitive trust in algorithms, emotional trust in social media providers, emotional trust in social media communities, enjoyment, relative advantage, trust in social media business analytics, and use intent took place in two study phases. A pilot study was conducted with university students in order to test the measurement validity of our electronic survey instrument and to refine the full study model. The full phase of the study was conducted next with a refined electronic survey instrument being administered to a broader group of participants representing a wider range of work experience.

<div align="center">

Pilot Study

</div>

Research Domain and Participants

The pilot study was aimed at the individual user who would be required to make managerial decisions without having experience with the technology. The instrument items involved managerial purchasing decisions to be made based on trust of using social media data in making business decisions. The participants, however, should have experience in using social media.

The pilot participants included a convenience sample of students who were enrolled in courses offered by the Colleges of Business and Human Sciences. These participants were

selected as an appropriate sample because they represent individual users of social media who would potentially be faced with the decision to use social media data in a workplace environment. Further, students were deemed an appropriate sample because they would have personal experience in the subject matter but would have had less exposure to business analytics in a work environment and therefore can develop trust and relative advantage in the workplace.

The students were asked to complete an online questionnaire designed to capture their trusting beliefs and trust relative advantage, as well as to record demographic information (see Appendix A). The online questionnaire was distributed to 391 students, among whom 264 completed it, yielding a 67.5% response rate. A majority of the respondents were male (51.6%), 22 years old or younger (74%), and undergraduate students (89.8%). Most survey respondents reported using social media on a daily basis (98.5%) and indicated that they would be willing to use business analytics with social media data versus business analytics without social media data (81.1%) (see Table 3.1). Although we feel that the participants were appropriate for the research domain, the fact that they had limited work experience was an issue we wanted to address in the full study.

Table 3.1. Pilot Study Participants (Larson et al., 2016)

Characteristic	Statistic
Potential Participants Contacted	391
Usable Responses	264
Usable Response Rate	67.5%
22 Years Old or Less	74.0%
Graduate Students or Higher Education	10.2%
Female	48.4%
Use social media daily or more frequently	98.5%
Indicated willingness to use business analytics with social media data vs. business analytics without	81.1%

Instrument

      The pilot study employed an online survey using an online questionnaire administered via Qualtrics. The pilot instrument represented an examination of only of the trusting relationships of the model. It included measures for cognitive and emotional trust in algorithms, cognitive and emotional trust in social media providers, cognitive and emotional trust in social media communities, cognitive and emotional trust in business analytics using social media data, relative advantage, risk propensity, intended use, and demographic information. Prior to the beginning of the pilot study, the survey instrument was reviewed by two doctoral IS students and a non-IS faculty member at a major southeastern university in order to examine the instrument for clarity and fit of the constructs. The instrument was adjusted and was then evaluated by a faculty member in IS at a major southeastern university. Further changes were suggested and the instrument was again refined.

Procedure

      Once the questionnaire was finalized, potential participants were recruited through an invitation email sent by the researcher via course instructors who permitted the researcher with access to their students for this pilot study. The invitation email included a short introduction of the study along with a hyperlink to the Qualtrics survey website. Clicking on the survey website link in the email led the students to the pilot study website. On the study website, respondents first read the information page where study information, such as the study purpose, participant eligibility, confidentiality, and participant compensation, was explained. After reading the information page, students who agreed to participate in the survey clicked on the link to the online questionnaire given at the bottom of the information page. After completing the

questionnaire, participants clicked on the submit button to be led to the thank you and survey termination page.

Results

The paths of the relevant paths of pilot model were presented in Figure 2.3 (Larson et al., 2016), the full results of the pilot study are under review for publication and will not be covered in entirety as they are not the focus of this dissertation. Construct were evaluated to be valid the following details the resulting changes to the model and instrument. It was determined to remove all but the hypothesized relationships so that enjoyment could be tested as a meditator and that additional controls may be adapted. Additionally, the original measure of use was changed to represent behavioral intentions. While no items were dropped from the remaining constructs, additional descriptions were added prior to the items dealing with social media providers to clarify the definition of providers within the instrument.

<div align="center">

Full Study

</div>

Research Domain and Target Population

The target population of the full study phase of this research consists of individuals who work or study in the United States although they may have been born in another country. The study intends to extend the generalizability of the research by examining individuals across a wider range of age and work experience. Therefore, the target population includes both individuals who serve at the management level in organizations as well as users with no managerial experience but are being trained for such roles. The target population may not work within IT but are likely to be users of information or be part of a team which would use business analytics to make decision. The target population have experience in using social media but have limited experience in using social media data to make business decisions.

Sampling

Because the target population of this study includes a wide range of mangers and potential managers representing a broad range of work experience, we desired to capture both (a) less-experienced individuals who were being trained for making management decisions and (b) experienced managers. Therefore, the sampling was conducted in two phases.

In the first phase, to recruit a sample representing the less-experienced group who had limited work experience but were trained to potentially fill management roles, students in the Colleges of Business and Human Sciences at Auburn University were recruited. A survey instrument was emailed to 363 students at Auburn University within the Colleges of Business and Human Sciences among whom 242 completed it, yielding a 66.7% response rate. Of the 242 completed responses, three were eliminated for not having substantially complete data, seven were screened for lack of understanding of business analytics, and eight were eliminated because they never used social media or did not answer the social media use frequency question, resulting in the usual student sample size of 224.

In the second phase targeting the experienced manager group, 316 members of the Qualtrics' panel of working professionals were recruited. The working professionals were screened to ensure that they were aware of business analytics and that they were experienced in purchasing company capital assets or managing people.

Research Model

First, we investigate the impact that cognitive trust in algorithms (CTA), emotional trust in social media providers (ETSMP), and emotional trust in social media communities (ETSMC) have on cognitive trust in social media use in business analytics (CTSMBA). Next, we investigate the impact that ETSMP and ETSMC have on the perceived enjoyment of using social

media in business analytics (PE). Next, we investigate the impact that ETSMP, ETSMC, CTSMBA, and PE have on the relative advantage of using social media in business analytics (RA). Finally, we investigate the impact of CTSMBA, PE, and RA on the behavior intention of the use of social media data in business analytics (BI). Figure 3.3 presents the research model of this study including first order factors.

Instrumentation

The study consists of seven latent variables which are of primary interest, CTA, ETSMP, ESMC, CTSMBA, PE, RA, and BI. Five of these variables are represented by first-order factors, ETSMP, ESMC, PE, RA, and BI. The research model uses second-order factors to represent the two trust relationships measuring cognitive trust, CTA and CTSMBA. Both of these second-order factors are represented by first-order factors that measure the benevolence, integrity, and competence dimensions of cognitive trust as it relates to that specific trusting relationship. The study also incorporates five first-order factors as potential control variables. These include trusting stance, social norms, perceived risk, perceived usefulness, and the competence belief in social media providers. All of the first-order factors were measured using multi-item scales, and all items were based on a 7-point Likert-type scale, with 1 referring to the lowest score in the measure ("Strongly Disagree") and 7 representing the highest score ("Strongly Agree"). The risk propensity of the user was measured as an additional control variable using a single item which evaluates the user's willingness to accept risk in an implementation scenario. Table 3.2 presents a summary of the items used in this study and the item wordings are presented in Appendix B, the literature they are drawn from, and the reliability measure found in the pilot study if it is applicable.
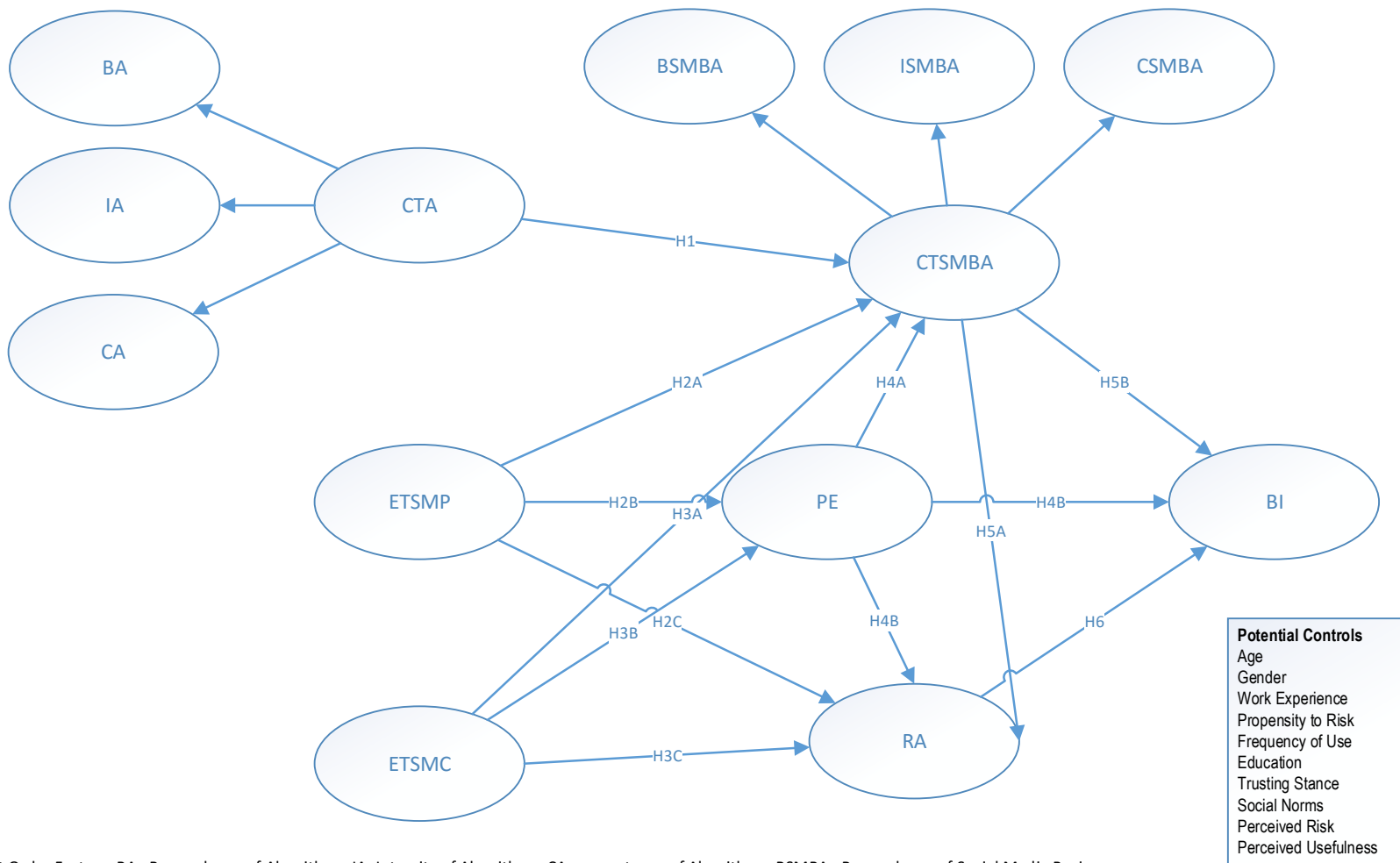
First Order Factors: BA= Benevolence of Algorithms, IA=Integrity of Algorithms, CA=competence of Algorithms, BSMBA= Benevolence of Social Media Business Analytics, ISMBA=Integrity of Social Media Business Analytics, CSMBA=competence of Social Media Business Analytics, ETSMP=Emotional Trust in Social Media Providers, ETSMC=Emotional Trust in Social Media Communities, PE= Perceived Enjoyment, RA=Relative Advantage, BI=Behavioral Intentions.

Second Order Factors: CTSMBA= Cognitive Trust in Social Media Business Analytics, CTA= Cognitive Trust in Algorithms.

Figure 3.3. Research Model

Table 3.2. Summary of Measures Adapted from Prior Studies and CR in Preliminary Study

Construct	Dimension	Number of Items	Reference	CR in Pilot if Applicable
Emotional Trust in Social Media Providers		3	(Sun, 2010)	.942
Emotional Trust in Social Media Communities		3	(Sun, 2010)	.955
Cognitive Trust in Algorithms	Benevolence	3	(McKnight et al., 2002)	.874
	Integrity	3		
	Competence	3		
Cognitive Trust in Business Analytics Using Social Media	Benevolence	3	(McKnight et al., 2002)	.915
	Integrity	3		
	Competence	3		
Relative Advantage		3	(Choudhury & Karahanna, 2008)	.889
Perceived Enjoyment		3	(Venkatesh, 2000)	
Behavioral Intentions		3	(Agarwal & Karahanna, 2000)	
Social Norms		3	(Venkatesh, Thong & Xu, 2012)	
Trusting Stance		3	(McKnight et al., 2002)	
Risk Propensity		4	(Robbins S., 2004)	
Competence Belief in Social Media Providers		4	(McKnight et al., 2002)	
Awareness		6	(Bulgurcu, Cavusoglu, & Benbasat, 2010)	
Intuitive		4	(Scott, & Bruce, 1995)	
Rational		4	(Scott, & Bruce, 1995)	
Perceived Risk		3	(Pavlou & Geffen, 2005)	
Perceived Usefulness		3	(Sun, 2010)	

In addition to measures of the study variables, the questionnaire also included screening questions to check the eligibility of the participants and a demographic information section where participants' age, gender, work experience, frequency of social media use, education, and so on will be asked. Next sections present more detailed explanations about the measurements.

Screening questions. Participants were screen based on if they indicated that their frequency of social media use was never or that they did not recognize the given definition for business analytics.

Cognitive trust. Cognitive trust measures the belief of the trustor in the trustee's benevolence, integrity, and competence. Cognitive trust has been measured in a number of ways. The three underlying dimensions of benevolence, integrity, and competence have been separated into separate constructs, represented as a first-order factor with single items and shown as a second-order construct. As this is a view of the cognitive trust in this IT environment, this study will represent the construct as a second-order factor. In order to operationalize cognitive trust, nine items from McKnight, Choudhury, and Kacmar (2002) were adapted for each of the corresponding trusting relationships (i.e., trust in algorithms and trust in social media data in business analytics).

Emotional trust. Emotional trust measures the feelings of security, contentedness, and comfort that the trustor has towards their relationship with the trustee. In order to operationalize this construct, three items from Sun (2010) were adapted for each of the corresponding trusting relationships (i.e., trust in social media providers and trust in social media communities).

Perceived enjoyment. Perceived enjoyment in this study measures the joy that the user believes he or she will feel in using social media data in business analytics. In order to operationalize this variable, three items from Venkatesh (2000) were adapted.

Relative advantage. Relative advantage in this study measures the extent to which the user believes he or she would trust social media data in business analytics more than business analytics that does not use social media data. In order to operationalize this variable, three items from Choudhury and Karahanna (2008) were adapted.

Behavioral intentions. Behavioral intentions in this study measures the extent to which the user believes he or she would be likely to use social media data in business analytics. In order to operationalize this variable, three items from Agarwal and Karahanna (2000) were adapted.

Additional variables. Trusting stance in this study measures the user's willingness to trust a generic technology. In order to operationalize this variable, three items from McKnight, Choudhury, and Kacmar (2002) were adapted.

Social norms measures the societal pressure in which the user feels to use social media data in business analytics. In order to operationalize this variable, three items were adapted from Venkatesh, Thong, and Xu (2012).

Risk propensity in this study examines the extent of risk that the individual is willing to take when implementing a system. In order to operationalize this variable, four measurement scenarios were adopted from Keil, Wallace, Turk, Dixon-Randall, Nulden, 2000.

Awareness in this study examines the extent that the user is aware of potential issues with misinformation and in the difficulties in social media based business analytics. In order to operationalize this variable, 6 items were adopted from Bulgurcu, Cavusoglu, & Benbasat, 2010.

Rational decision style in this study examines the extent that the use of rational processes to make decisions. In order to operationalize this variable, 4 items were adopted from Scott and Bruce, 1995.

Intuitive decision style in this study examines the extent that the use of intuition to make decisions. In order to operationalize this variable, 4 items were adopted from Scott and Bruce, 1995.

Competence belief in social media providers in this study examines the belief that social media providers are able to provide the ability to facilitate the communications of the social media community. In order to operationalize this variable, four items were adapted from McKnight, Choudhury, and Kacmar (2002).

Perceived risk in this study examines the amount of risk that the user has in utilizing social media data in business analytics. In order to operationalize this variable, three items were adapted from Pavlou and Geffen (2005).

Perceived usefulness in this study examines the usefulness of utilizing social media data in business analytics that the user perceives. In order to operationalize this variable, four items were adapted from Sun (2010).

Data Collection Procedure

Potential participants were recruited via a study invitation message. The invitation message was emailed to the student sample via course instructors who permitted the researcher with access to their students for this study. For the professional sample, the invitation message was delivered by Qualtrics to its professional panel members. The invitation message included a short introduction of the study along with a hyperlink to the Qualtrics survey website. Clicking on the survey website link in the email led the students to the study website. On the study website, respondents first read the information page where study information, such as the study purpose, participant eligibility, confidentiality, and participant compensation, was explained. After reading the information page, students who agreed to participate in the survey clicked on the link to the online questionnaire given at the bottom of the information page. The respondents will then complete the questionnaire and clicked on the submit button to be led to the thank you and survey termination page.

Statistical Analysis

The statistical analysis procedures used for the data analysis are described in detail below.

Preliminary analysis. Integrity of the data and the appropriateness for covariance-based structural equation modeling analysis were analyzed. The normality of the responses to each item was evaluated through the skewness and kurtosis values (Kline, 2011). A missing-at-random test was performed (Kline, 2011). Investigation for outliers in the response data was carried out to assess possible biasing effects on study results.

Confirmatory factor analysis. Confirmatory factor analysis (CFA) were be conducted in AMOS to evaluate the convergent and discriminant validity of the measurements. The CFA were

ran using the maximum likelihood estimation procedure. The fit statistics of the measurement confirmatory factor analysis model will be calculated and reported. For each analysis, the Chi-Square Goodness of Fit (Hair et al., 2010; Kline, 2011), standardized root mean square residual (SRMSR) (Byrne, 2009), root mean square error of approximation (RMSEA) (Kline, 2011), and comparative fit index (CFI) (Byrne, 2009; Gefen et al., 2011; Kline, 2011) statistics will be calculated and compared to commonly accepted threshold values.

Convergent validity of the constructs was evaluated by (a) assessing that measurement item factor loadings on latent variables are statistically significant (Fornell & Larcker, 1981); assessing the statistical significance of unstandardized factor loadings of observed items on latent variables, and (c) comparing the standardized factor loadings of observed items on latent factors with accepted research thresholds (Hair et al., 2010); and (c) comparing the average variance extracted (AVE) with commonly accepted thresholds found in the literature (Hair et al., 2010).

The discriminant validity of measurement items were evaluated through (a) the assessment of the inter-correlations of the constructs (Hair et al., 2010); (b) the comparison of the AVE value to the square of the construct inter-correlations (Fornell & Larcker, 1981; Hair et al., 2010); (c) the Chi-Square Difference Test (Hair et al., 2010) between the constrained model with each factor correlation of 1.0 and the unconstrained model , which examines the statistical significant deterioration in the Chi-Square Goodness-of-Fit statistic.

***Construct reliability*.** In order to investigate the reliability of items addressing each latent variable, Cronbach's α was calculated (Hair et al., 2010) and compared to the threshold accepted in the research literature. Indicator reliability was also investigated by assessing the value of the square of each item's factor loading and comparing it to commonly accepted research threshold in the empirical literature (MacKenzie et al., 2011).

Common method bias. Harman's single-factor test was conducted in order to determine is common method bias was introduced through the instrument (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Hypothesis testing. The study's hypothesized construct relationships were tested through covariance-based structural equation model analysis of survey data. The paths will be considered significant at $\alpha=.1$.

Summary

In this chapter, the overall research methodology was presented. The research domain and scope, and the participants for the pilot and full study have been described. Participants, procedures, and analyses used in the study's pilot phase and full phase of data collection were presented. Finally, a listing of the statistical analyses to be used for the study has been detailed and describes how the hypothesized relationships were tested.

Chapter 4: Analyses and Results

In the preceding chapter, the methodology used for this research study was described. In this chapter, the analyses and results of the data collected from the study will be presented. The chapter begins with a description of the sample characteristics and item descriptive analysis. This is followed by results from data normality and missing data analysis as well as the measurement model analysis. The assessment of the structural model follows next, in order to test the hypothesized relationships proposed in Chapter 2. Results are summarized at the conclusion of this chapter.

Sample Characteristics

Table 4.1 presents demographic and managerial experience characteristics of the sample. The full study sample consisted of 55% females; but the student sample had slightly more male students (55%) than female students, whereas the professional sample gender distribution was reversed (62% females). The full study respondents' ages ranged between 19 and 75 years old. The student sample's mean age was 22.1 (SD = 3.7) with the majority of their ages fall between 19 and 24 years old (88%), whereas the professional respondents' mean age was 41.7 (SD = 11.8), with the majority between 30 and 49 years old (59%). The student sample consisted of 87% undergraduate and 13% graduate students, whereas most professional sample had at least some college education (93%).

The majority of the student sample had no or less than 1 year of experience in managing people (73%) and corporate purchasing (94%), whereas most professional respondents had 1 or more years of experience in managing people (96%) and corporate purchasing (71%). When the maximum values from either management of people and corporate purchasing are considered to

estimate a minimum level of management experience, the results indicate that both

inexperienced and experienced respondents are represented in the sample.

Table 4.1. Sample Demographic and Managerial Characteristics

Variable	Categories	Student Sample		Professional Sample		Full Study Total	
		f	*%*	*f*	*%*	*%*	*f*
Gender	Male	122	54.5	121	38.4	243	45.1
	Female	102	45.5	194	61.6	296	54.9
Age	19-24	197	87.9	15	4.8	212	39.3
	25-29	16	7.1	30	9.5	46	8.5
	30-34	5	2.2	57	18.1	62	11.5
	35-39	3	1.3	51	16.2	54	10.0
	40-44	2	0.9	43	13.7	45	8.3
	45-49	1	0.4	36	11.4	37	6.9
	50-54			27	8.6	27	5.0
	55-59			26	8.3	26	4.8
	60-64			20	6.3	20	3.7
	65+			10	3.2	10	1.9
	Missing			9	2.9	9	1.7
Education	High School or Less			22	7.0	22	4.1
	Some College	195	87.1	77	24.4	272	50.5
	College Degree			122	38.7	122	22.6
	Some Graduate School	29	12.9	15	4.8	44	8.2
	Graduate Degree			79	25.1	79	14.7
Experience managing people	No Experience	104	46.4	1	0.3	105	19.5
	<1 Year	59	26.3	12	3.8	71	13.2
	1-5 Years	54	24.1	95	30.2	149	27.6
	6-10 Years	5	2.2	95	30.2	100	18.6
	> 10 Years	2	0.9	112	35.6	114	21.2
Experience managing corporate Purchasing	No Experience	183	81.7	52	16.5	235	43.6
	<1 Year	27	12.1	39	12.4	66	12.2
	1-5 Years	12	5.4	110	34.9	122	22.6
	6-10 Years	1	0.5	59	18.7	60	11.1
	> 10 Years	1	0.5	55	17.5	56	10.4
Minimum managing Experience	No Experience	101	45.1	1	0.3	102	18.9
	<1 Year	62	27.7	12	3.8	74	13.7
	1-5 Years	54	24.1	91	28.9	145	26.9
	6-10 Years	5	2.2	97	30.8	102	18.9
	> 10 Years	2	0.9	114	36.2	116	21.5
Total (n)		224		315		539	

As presented in Table 4.2, most respondents used social media at least once a day (92% of full study sample). There were a very few respondents who had never used social media, and the non-users of social media were not used for the data analysis as the targeted population of the study included only those who had social media experiences they are presented in the table.

Finally, when the respondents were asked if they had used social media data for decisions in the workplace, 62% of the total sample, including 51% of the student sample and 69% of the professional sample, responded "Yes" (see Table 4.2). While this question does not necessarily imply formal business analytics experience, it indicates experience in using the information in a workplace setting. Respondents who responded "I do not know" to this question were not removed from the study, as this response may reflect a lack of transparency within the organization. For the purpose of this study this response was re-coded as "No" experience of using social media data for decision in the workplace.

Table 4.2. Social Media Experience of the Sample

Item	Categories	Student Sample		Professional Sample		Full Study Total*	
		f	%	f	%	f	%
Social media	Never*	7	2.6	1	0.6		
use	Once a month	1	0.4	5	1.6	6	1.1
frequency	Once a week	4	1.7	11	3.5	15	2.8
	2-3 times a week	5	2.2	19	6.0	24	4.5
	Once a day	15	6.5	42	13.3	57	10.6
	2-3 times a day	63	27.2	77	24.4	140	26.0
	More than 3 times a day	137	59.1	160	50.6	297	55.1
	Missing*	1	0.4				
Experience	Yes	115	51.34	218	69.21	333	61.78
using	No	85	37.95	91	28.89	176	32.65
social media	I do not Know	24	10.71	6	1.90	30	5.57
data at work							
Total		224		315		539	

* Respondents were screened out of the study.

Normality and Missing Data

Table 4.3 presents the item-level statistics for the observed variables of this research. Quantity of complete responses, mean, standard deviation, skewness, kurtosis, and quantity of missing data along with percentages are reported for each measurement item. All item-level statistics in Table 4.3 were estimated using IBM SPSS (v. 23). Assessment of skewness and kurtosis statistics found all values to be under the respective thresholds of 3.0 and 10.0 (Kline, 2011; McDonald & Ho, 2002; Tabachnick & Fidell, 2006), suggesting approximate normality to our data and the appropriateness of the maximum likelihood (ML) estimation for both our measurement and structural models.

Due to the presence of missing values in our response data, a missing value analysis was conducted using Little's Missing Completely at Random (MCAR) test (Hair et al., 2010). Results of the analysis [χ^2 (311) = 321.69, p = .326] suggested that the missing data were missing completely at random, depending neither on the values present or on the pattern of values that were missing (Tabachnick & Fidell, 2006). As reported in Table 4.3, all missing value percentages were well under the 5% level noted by Tabachnick and Fidell (2006) as the threshold of potential inducement of bias in data due to missing data and methods replace them. With the study's low missing-value percentage, a regression/linear trend method was chosen and used to replace missing values in the data (Hair et al., 2010, p. 54). Further analysis of the full study data was carried out on the data with missing values substituted with the linear-trend technique.

Table 4.3. Item Level Descriptive Statistics

	n	Missing	% Missing	Min.	Max.	M	SD	Skewness	Kurtosis
SMPE_1	538	1	0.19%	1	7	4.8104	1.46382	-.723	.217
SMPE_2	539	0	0.00%	1	7	4.9814	1.41934	-.887	.578
SMPE_3	539	0	0.00%	1	7	4.8831	1.34664	-.625	.237
SMCE_1	539	0	0.00%	1	7	4.8924	1.42974	-.790	.240
SMCE_2	539	0	0.00%	1	7	5.1002	1.39342	-1.073	1.101
SMCE_3	539	0	0.00%	1	7	5.0278	1.38405	-1.000	.805
AB_1	537	2	0.37%	1	7	4.8026	1.31657	-.602	.206
AB_2	538	1	0.19%	1	7	5.0390	1.22830	-.752	.643
AB_3	539	0	0.00%	1	7	4.3525	1.47282	-.301	-.533
AI_4	537	2	0.37%	1	7	4.5698	1.19047	-.200	.229
AI_5	536	3	0.56%	1	7	4.5821	1.27550	-.331	.051
AI_6	539	0	0.00%	1	7	4.8850	1.23070	-.603	.533
AC_7	538	1	0.19%	1	7	5.0502	1.20956	-.591	.424
AC_8	539	0	0.00%	1	7	4.9963	1.30768	-.924	.989
AC_9	538	1	0.19%	1	7	5.0409	1.20451	-.810	.984
SMBAB_1	538	1	0.19%	1	7	4.8866	1.26703	-.541	.382
SMBAB_2	536	3	0.56%	1	7	5.2146	1.18110	-.955	1.727
SMBAB_3	538	1	0.19%	1	7	4.7286	1.29774	-.528	.300
SMBAC_4	538	1	0.19%	1	7	4.6468	1.32228	-.300	.050
SMBAC_5	539	0	0.00%	1	7	5.1651	1.23028	-.696	.776
SMBAC_6	539	0	0.00%	1	7	5.0594	1.19952	-.867	1.267
SMBAI_7	538	1	0.19%	1	7	4.8587	1.24418	-.546	.429
SMBAI_8	539	0	0.00%	1	7	4.6772	1.25682	-.461	.426
SMBAI_9	537	2	0.37%	1	7	4.5177	1.22328	-.256	.171
RA1	538	1	0.19%	1	7	4.6283	1.35480	-.440	.007
RA2	537	2	0.37%	1	7	4.5885	1.31300	-.439	.002
RA3	538	1	0.19%	1	7	4.7918	1.28063	-.514	.378
BI_1	539	0	0.00%	1	7	4.8961	1.44553	-.881	.474
BI_2	539	0	0.00%	1	7	5.0390	1.45450	-.981	.753
BI_3	538	1	0.19%	1	7	4.9981	1.43188	-.956	.648
PE_1	538	1	0.19%	1	7	5.2212	1.30225	-.893	.751
PE_2	539	0	0.00%	1	7	5.2672	1.26545	-.982	1.258
PE_3	539	0	0.00%	1	7	5.1317	1.28014	-.712	.584

Construct Reliability and Model Fit of Proposed Second Order Factors

A CFA was conducted on the two second-order constructs to determine if each of Cognitive Trust in Algorithms and Cognitive Trust in Social Media Business Analytics should be represented as three separate dimensions. Tables 4.4 and 4.5 present the estimation of the measurement scale properties for the proposed second-order constructs theorized in the study, as well as inter-correlations between these constructs and their squared correlations.

First, Cronbach's α reliability statistics were calculated for all first-order constructs used in the measurement instrument (Hair et al., 2010; MacKenzie et al.,2011). The Cronbach's α measures the degree to which responses are consistent across the items within a construct (Kline, 2011). The acceptable threshold values for this reliability statistic has been set at .50 (Hair et al., 2010) but has also been held to a stricter level of .70 or above (Kline, 2011). All values in this study exceeded the stricter level.

Table 4.4. Scale Properties of Cognitive Trust in Algorithms

	α	CR	AVE	Square Root of AVE and Factor Correlation[a]		
				Competence	Integrity	Benevolence
Competence	0.81	0.82	0.60	**0.77**	0.80	0.77
Integrity	0.85	0.86	0.67	0.90	**0.82**	0.84
Benevolence	0.81	0.80	0.58	0.88	0.92	**0.76**

[a] The diagonal cells indicate square roots of AVEs, and the off-diagonal cells indicate factor correlations.

Table 4.5. Scale Properties Cognitive Trust in Social Media Business Analytics

	α	CR	AVE	Square Root of AVE and Factor Correlation[a]		
				Benevolence	Competence	Integrity
Benevolence	0.86	0.86	0.67	**0.82**	0.94	0.77
Competence	0.86	0.86	0.66	0.97	**0.81**	0.86
Integrity	0.89	0.88	0.72	0.87	0.92	**0.85**

[a] The diagonal cells indicate square roots of AVEs, and the off-diagonal cells indicate factor correlations.

Next, construct reliability (CR) statistics (Bhattacherjee, 2001; Fornell & Larcker, 1981; Hair et al., 2010) were calculated for all first-order factors in the measurement model to further assess inter-construct convergence of items (Hair et al., 2010). The acceptable minimal threshold ranges from .7 (Hair et al., 2010) to .8 (Bhattacherjee, 2001). Both constructs of this study exceed the stricter level.

However, both constructs showed issues with discriminate validity and high correlations among the first-order factors, and therefore required additional examination to see if it was appropriate to represent them as second-order factors with each made up of three first-order factors. To explore how the construct should best be represented, discriminant validity among the first-order factors were further examined using the chi-square difference test method as well as the confidence intervals of the factor correlations (Torkzadeh, Koufteros, & Pflughoeft, 2003). For Cognitive Trust in Algorithms, all chi-square differences were significant, and the confidence intervals of the first-order factor correlations did not contain one, providing evidence of discriminant validity (see Table 4.6). For Cognitive Trust in Social Media Based Business Analytics, the chi-square difference test and the confidence intervals of the correlation of the competence and benevolence factors provided evidence of a lack of discriminant validity (see Table 4.7). These two factors were therefore combined.

Table 4.6 Alternative CFA Models for Cognitive Trust in Algorithms

Model	Model fit			Chi-square difference test			Factor correlation		
	χ^2	df	p	$\Delta\chi^2$	Δdf	p	Correlation	S.E.	95% C.I.
Freely Correlated	131.34	24	<.0001	NA	NA	NA	NA	NA	NA
Fully Constrained	195.01	27	<.0001	63.673	3	<.0001	NA	NA	NA
I/C Constrained	169.71	25	<.0001	38.37	1	<.0001	0.90	0.019	(.934,.858)
I/B Constrained	155.90	25	<.0001	24.559	1	<.0001	0.88	0.022	(.924,.836)
C/B Constrained	171.45	25	<.0001	40.113	1	<.0001	0.92	0.018	(.955,.883)

$n = 539$, I = Integrity B = Benevolence C = Competence

51

Table 4.7. Alternative CFA Models for Cognitive Trust in Social Media Business Analytics

Model	Model fit			Chi-square difference test			Factor correlation		
	χ^2	df	p	$\Delta\chi^2$	Δdf	p	Correlation	S.E.	95% C.I.
Freely Correlated	1737.52	27	<.0001	NA	NA	NA	NA	NA	NA
Fully Constrained	1793.20	30	<.0001	55.676	3	<.0001	NA	NA	NA
I/C Constrained	1779.42	28	<.0001	41.895	1	<.0001	0.891	0.023	(.937,.845)
I/B Constrained	1763.92	28	<.0001	26.4	1	<.0001	0.871	0.022	(.915.827)
C/B Constrained	1738.26	28	<.0001	0.737	1	0.391	0.984	0.019	(1.022,.946)

$n = 539$, I = Integrity B = Benevolence C = Competence

Table 4.8 summarizes the fit indices for the finalized CFA models of the two proposed second order factors. All chi-square tests for fit were found to be statistically significant, rejecting the hypothesis of perfect fit. However, the second-order CFA models of both constructs were found to have NFI and CFI values above .95 (Gefen et al., 2011; Hu & Bentler, 1999; Marsh et al., 2004). The RMSEA for the second order factors were between .08 and .09 indicating an acceptable fit. Figures 4.1 and 4.2 present the finalized second-order CFA models for Cognitive Trust in Algorithms and Cognitive Trust in Social Media Business Analytics, respectively.

Full Measurement Model: Construct Validity and Reliability

A CFA was run with the full measurement model with all research constructs of this study including the second-order factors of Cognitive Trust in Algorithms and Cognitive Trust in Social Media Business Analytics and first-order factors of all the remaining research constructs (see Figure 4.3). Comparative Fit Index (CFI), normed fit index (NFI), and Root Mean Square Error of Approximation (RMSEA) values were calculated as the fit indices for the full measurement model just as they were for the second-order constructs (Byrne, 2009; Hair et al., 2010; Kline, 2011). The chi-square test result was found to be statistically significant ($\chi^2 = 1128.17$, $df = 469$, $p < .001$). However, the RMSEA (90% C.I.) = .05 (.047, .055) suggested a
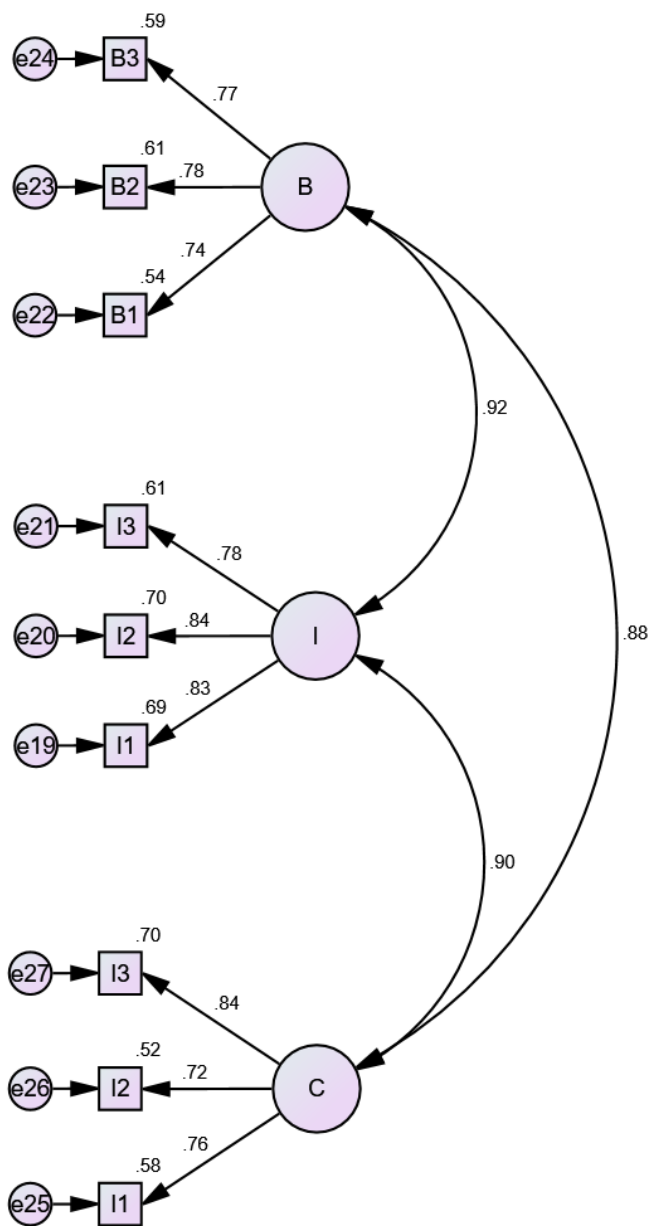
Figure 4.1. CFA Cognitive Trust in Algorithms
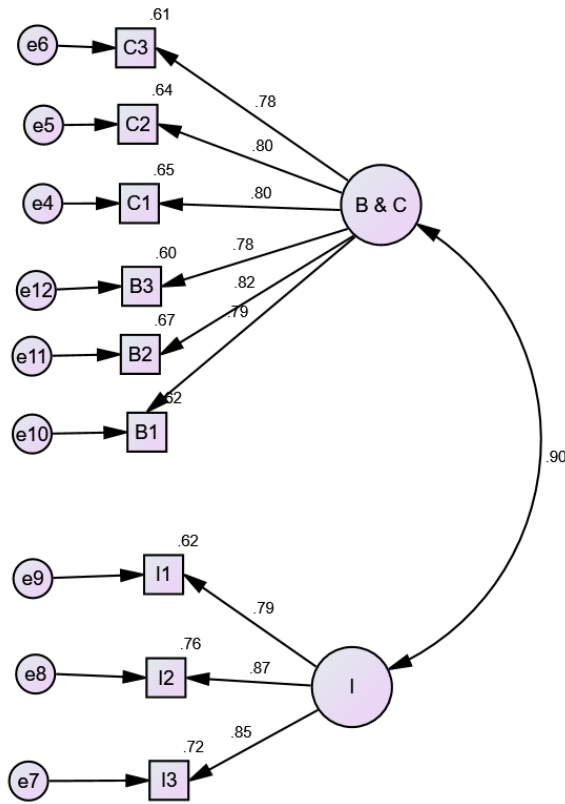
Figure 4.2. CFA Cognitive Trust in Social Media Business Analytics

Table 4.8. Fit Indices from the Finalized Second-Order CFA Models

Model	χ^2	df	p	χ^2/df	NFI	CFI	RMSEA	90% C.I.
CTA	131.34	24	<.0001	5.472	0.955	0.963	0.09	(0.076,.107)
CTSMBA	130.28	28	<.0001	4.653	0.965	0.973	0.08	(.068,0.097)

CTA= Cognitive Trust in Algorithms, CTSMBA = Cognitive Trust in Social Media Business Analytics.
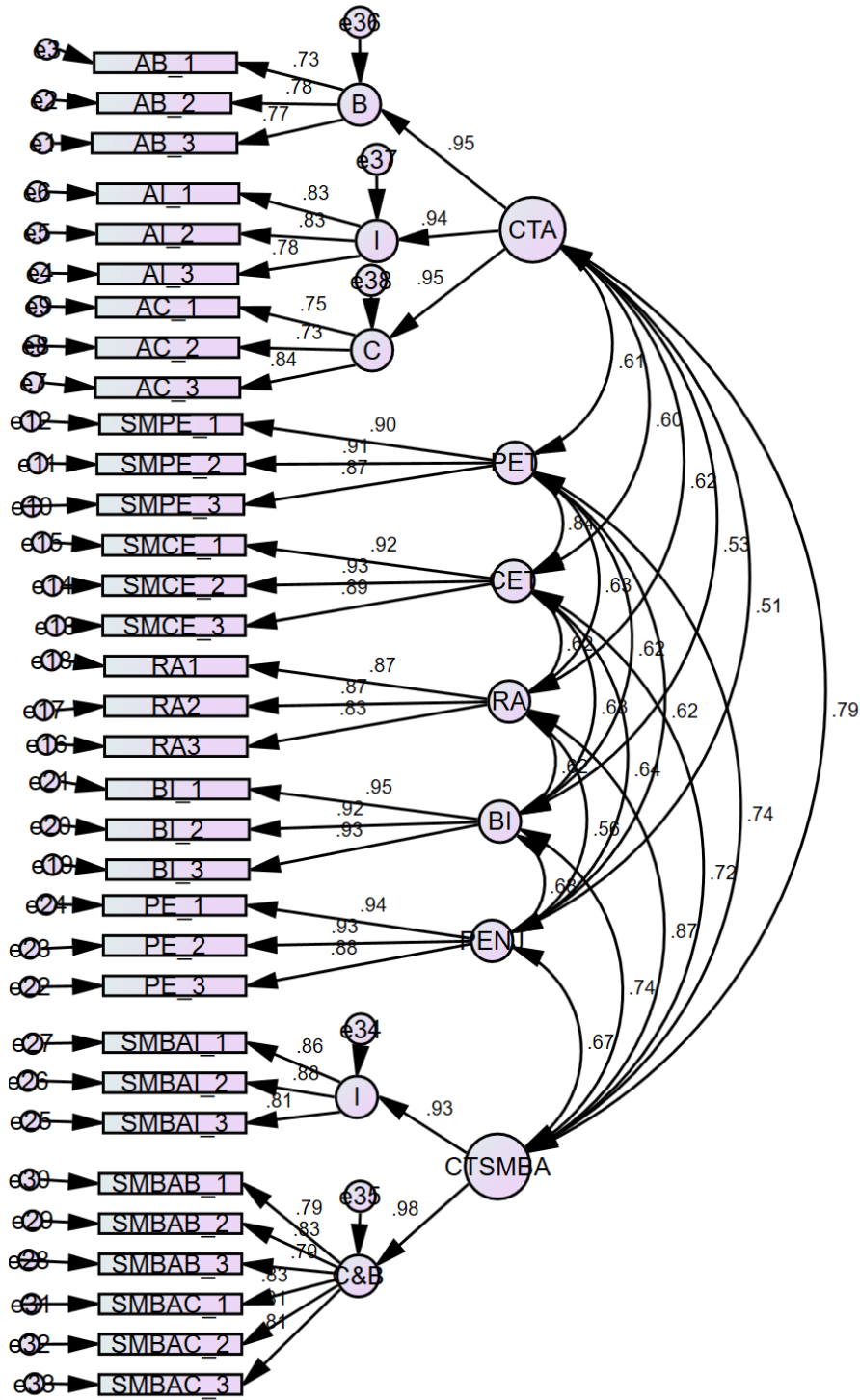
Figure 4.3 CFA Full Model

ETSMC = Emotional Trust in Social Media Communities, BI = Behavioral Intentions, CTSMBA = Cognitive Trust in Social Media Business Analytics, PE = Perceived Enjoyment, RA = Relative Advantage, CTA = Cognitive Trust in Algorithms, ETSMP = Emotional Trust in Social Media Providers.

55

good model fit. The NFI (.93) suggested an adequate model fit, and the CFI (.96) suggested a good model fit.

Table 4.9 presents the estimation of measurement scale properties for the constructs as well as inter-correlations between these constructs and their squared correlations. All factors had Cronbach's αs and CR statistics that were above the .70 threshold level. However, a potential discriminant validity concern was revealed between Cognitive Trust in Social Media Business Analytics and Relative Advantage as the square root of the AVE of Relative Advantage was less than the correlation between the two factors (Fornell & Larcker, 1981). Thus, their discriminant validity was further tested using the chi-square difference test ($\Delta\chi^2 = 3.5$, $df = 1$, $p = .06$) and the confidence interval of the factor correlation (.835, .899), both of which provided evidence of their discriminate validity.

The data were tested for common method bias using the Harmon's single factor test. A single unrotated factor was found to explain 49.9% of the variance suggesting that there is not a significant common method bias. The high amount of variance explained may be due to the use of a common Likert scale in the model as well as having the instrument record both the dependent and independent variables (Podsakoff et al., 2003). The correlation matrix was examined for any factor correlations $> = .90$ which would further suggest evidence of common method bias (Pavlou et al., 2006). No factor correlations were above .90 (the highest factor correlation was between Relative Advantage and Cognitive Trust in Social Media Business Analytics, which was .87). Overall, the results suggest a lack of influential common method bias and an adequate discriminant validity of all research constructs.

Table 4.9. Study Scale Properties

Construct	α	CR	AVE	Square Root of AVE and Factor Correlation [a]						
				ETSMC	BI	CTSMBA	PE	RA	CTA	ETSMP
ETSMC	0.94	0.94	0.83	**0.91**	0.40	0.52	0.38	0.38	0.36	0.39
BI	0.96	0.96	0.88	0.64	**0.94**	0.54	0.46	0.38	0.28	0.39
CTSMBA		0.95	0.91	0.72	0.74	**0.96**	0.44	0.75	0.63	0.55
PE	0.94	0.94	0.84	0.64	0.68	0.67	**0.92**	0.32	0.26	0.38
RA	0.89	0.89	0.73	0.62	0.62	0.87	0.56	**0.86**	0.38	0.40
CTA		0.96	0.90	0.60	0.53	0.79	0.51	0.62	**0.95**	0.37
ETSMP	0.92	0.92	0.80	0.84	0.62	0.74	0.62	0.63	0.61	**0.89**

ETSMC = Emotional Trust in Social Media Communities, BI = Behavioral Intentions, CTSMBA = Cognitive Trust in Social Media Business Analytics, PE = Perceived Enjoyment, RA = Relative Advantage, CTA = Cognitive Trust in Algorithms, ETSMP = Emotional Trust in Social Media Providers.
[a] The diagonal cells indicate square roots of AVEs, Correlations below diagonal, squared correlations above.

Next the standardized and unstandardized factor loadings, Critical Ratios, and standard error were calculated, as presented in Table 4.10. The standardized factor loadings have a commonly accepted threshold value is .5 or greater (MacKenzie et al., 2011). All the items in the measurement model exceeded this threshold.

Structural Model: Hypothesis Tests

Assessment of the full study's measurement model found evidence that suggests construct reliability, construct validity, and adequate fit of the hypothesized factors targeted. Thus, covariance-based structural equation modeling (CB-SEM) analysis was conducted, using IBM AMOS (v.23) software, with a full structural model incorporating the hypothesized structural relationships among the study constructs as well as significant control variables (see Figure 4.4).

Table 4.10. Factor Loadings from Full Measurement Model CFA

Factor	Indicators	λ	Std. λ	S.E.	C.R.	*p*
CTSMBA	SMBA C&B	1.00	.93			
	ISMBA	.99	.94	.048	20.539	<.001
CTA	IA	1.00	.80			
	BA	.97	.79	.058	16.672	<.001
	CA	.93	.83	.054	17.347	<.001
BI	BI_1	1.00	.83			
	BI_2	.98	.81	.024	41.393	<.001
	BI_3	.98	.81	.023	43.014	<.001
SMBA C&B	BSMBA _3	1.00	.86			
	BSMBA _1	.97	.88	.047	20.669	<.001
	BSMBA _2	.95	.81	.043	21.948	<.001
	CSMBA _1	1.07	.94	.048	22.135	<.001
	CSMBA _2	.97	.93	.045	21.468	<.001
	CSMBA _3	.94	.88	.044	21.272	<.001
ISMBA	ISMBA _1	1.00	.87			
	ISMBA _2	1.03	.87	.038	27.055	<.001
	ISMBA _3	.92	.83	.039	23.389	<.001
PE	PE_1	1.00	.83			
	PE_2	.96	.83	.025	38.254	<.001
	PE_3	.93	.78	.028	33.352	<.001
RA	RA1	1.00	.73			
	RA2	.97	.78	.037	26.286	<.001
	RA3	.90	.77	.037	24.017	<.001
IA	IA _1	1.00	.75			
	IA _2	1.07	.73	.048	22.488	<.001
	IA _3	.97	.93	.047	20.553	<.001
BA	BA _1	1.00	.94			
	BA _2	1.00	.80	.058	17.279	<.001
	BA _3	1.18	.79	.069	16.995	<.001
CA	CA _1	1.00	.83			
	CA _2	1.05	.83	.062	16.75	<.001
	CA _3	1.11	.81	.057	19.518	<.001
ETSMP	ETSMP _1	1.00	.81			
	ETSMP _2	.99	.86	.031	31.75	<.001
	ETSMP _3	.89	.88	.031	28.937	<.001
ETSMC	ETSMC _1	1.00	.81			
	ETSMC _2	.99	.94	.027	36.53	<.001
	ETSMC _3	.94	.93	.029	32.693	<.001

CTSMBA = Cognitive Trust in Social Media Business Analytics, CTA = Cognitive Trust in Algorithms, BI = Behavioral Intentions, SMBA C&B = Benevolence and Integrity of Social Media Business Analytics, ISMBA= Integrity of Social Media Business Analytics, PE = Perceived Enjoyment, RA = Relative Advantage, IA =Integrity of Algorithms, BA = Benevolence of Algorithms, CA = Competence of Algorithms, ETSMP = Emotional Trust in Social Media Providers, ETSMC = Emotional Trust in Social Media Communities.

First Order Factors: BA= Benevolence of Algorithms, IA=Integrity of Algorithms, CA=competence of Algorithms, SMBA C&B= Competence and Benevolence of Social Media Business Analytics, ISMBA=Integrity of Social Media Business Analytics, ETSMP=Emotional Trust in Social Media Providers, ETSMC=Emotional Trust in Social Media Communities, PE= Perceived Enjoyment, RA=Relative Advantage, BI=Behavioral Intentions.

Second Order Factors: CTSMBA= Cognitive Trust in Social Media Business Analytics, CTA= Cognitive Trust in Algorithms.

Figure 4.4. The Structural Model Used in the CB-SEM Analysis

Separate analyses were conducted on the potential demographic, managerial, and social media use control variables and the study constructs to determine which control variables to include in the SEM model for hypothesis testing. Among the demographic, managerial, and social media use characteristics variables, only two variables had significant relationships with

some of the study constructs. They included the variables, "experience in using social media data in the workplace," which had a significant positive influence on behavioral intentions (β = 2.14, t = 7.162, p < .001) and perceived enjoyment (β = .09, t = 2.58, p =.01), and "minimum managerial experience," which negatively influenced relative advantage (β = -.053, t = -1.86, p = .063), perceived enjoyment (β = -.079, t = -2.28, p = .023), and behavioral intentions (β = -.104, t = -3.43, p < .001). No demographic, managerial, or social media use controls influenced cognitive trust in social media business analytics. Therefore, the SEM model was specified with the two significant control variables to predict the aforementioned study constructs.

The study constructs were specified in the SEM model to be indicated by their measurement items and/or first-order factors in the manner that was finalized from the full CFA model presented in Figure 4.3. CB-SEM was preferred for this analysis due to its ability to more effectively test for model fit to the data (Rönkkö & Evermann, 2013). CB-SEM is a confirmatory statistical method, examining hypothesized relationships using data gathered through measures based on prior research (Gefen et al., 2011), as was performed in this study.

The examination of the fit statistics for the full SEM model suggested a good fit of the model to the study data (χ^2 = 1164.293, df = 474, p < .001; NFI = .934; CFI = .96; RMSEA (90% C.I.) = .05 (.048, .055)). The factor loadings were all significant at p < .0001; and the standardized factor loadings, squared multiple correlation coefficients, Variance Inflation Factors (VIF), and Tolerance values all revealed the validity of the measurement model used for the SEM analysis (see Table 4.11). The SMC estimates the amount of variance explained in an item by the latent construct, and the commonly accepted threshold value is .5 or greater for this statistic (MacKenzie et al., 2011). All the items in the measurement model exceeded this threshold.

Table 4.11. Measurement Model Results from the SEM Analysis

Item/1st-Order Factor	Latent Construct	Std. Factor Loading	SMC	VIF	Tolerance
SMBAC_1	SMBA C&B	0.84	0.69	3.22	0.31
SMBAC_2	SMBA C&B	0.82	0.66	2.92	0.34
SMBAC_3	SMBA C&B	0.82	0.65	2.83	0.35
SMBAB_1	SMBA C&B	0.87	0.74	3.91	0.26
SMBAB_2	SMBA C&B	0.88	0.77	4.37	0.23
SMBAB_3	SMBA C&B	0.81	0.65	2.83	0.35
PE_1	PENJ	0.94	0.88	8.00	0.13
PE_2	PENJ	0.93	0.86	6.90	0.15
PE_3	PENJ	0.88	0.77	4.33	0.23
RA1	RA	0.87	0.75	4.05	0.25
RA2	RA	0.87	0.76	4.15	0.24
RA3	RA	0.84	0.68	3.15	0.32
IA_1	IA	0.83	0.69	3.25	0.31
IA_2	IA	0.83	0.69	3.26	0.31
IA_3	IA	0.78	0.61	2.57	0.39
BA_1	BA	0.73	0.53	2.15	0.47
BA_2	BA	0.78	0.61	2.57	0.39
BA_3	BA	0.76	0.59	2.43	0.41
CA_1	CA	0.76	0.57	2.31	0.43
CA_2	CA	0.73	0.53	2.12	0.47
CA_3	CA	0.84	0.71	3.39	0.30
SMPE_1	SMPE	0.90	0.80	5.08	0.20
SMPE_2	SMPE	0.91	0.83	5.81	0.17
SMPE_3	SMPE	0.88	0.76	4.12	0.24
SMCE_1	SMPE	0.92	0.84	6.25	0.16
SMCE_2	SMPE	0.93	0.86	7.35	0.14
SMCE_3	SMPE	0.90	0.79	4.81	0.21
ISMBA _3	ISMBA	0.80	0.63	2.67	0.38
ISMBA_2	ISMBA	0.84	0.62	2.65	0.38
ISMBA 1	ISMBA	0.80	0.68	3.13	0.32
SMBA C&B	CTSMBA	0.99	0.97	35.71	0.03
ISMBA	CTSMBA	0.93	0.86	7.30	0.14
IA	CTA	0.95	0.90	9.52	0.11
BA	CTA	0.95	0.89	9.43	0.11
CA	CTA	0.95	0.91	10.87	0.09
BI_1	BI	0.95	0.89	9.17	0.11
BI_2	BI	0.92	0.84	6.17	0.16
BI_3	BI	0.94	0.86	7.30	0.14

CTSMBA = Cognitive Trust in Social Media Business Analytics, CTA = Cognitive Trust in Algorithms, BI = Behavioral Intentions, SMBA C&B = Benevolence and Integrity of Social Media Business Analytics, ISMBA= Integrity of Social Media Business Analytics, PE = Perceived Enjoyment, RA = Relative Advantage, IA =Integrity of Algorithms, BA = Benevolence of Algorithms, CA = Competence of Algorithms, ETSMP = Emotional Trust in Social Media Providers, ETSMC = Emotional Trust in Social Media Communities.

Finally, the hypothesized relationships between the study constructs were assessed using results for the regression coefficients of the structural paths between the study constructs from the SEM model (see Figure 4.5 and Table 4.12). Hypotheses 1, 2a, and 3a predict that the level of Cognitive Trust in Algorithms, Emotional Trust in Social Media Communities, and Emotional Trust in Social Media Providers will positively influence Cognitive Trust in Social Media Business Analytics, respectively. Results from the SEM analysis yielded support for Hypothesis 1 (β = .457, t = 10.82, p < .001), Hypothesis 2a (β = .111, t = 1.80, p =.07), and Hypothesis 3a (β = .228, t = 3.86, p < .001). These results suggest that as trust is built from social media use in a personal setting, this trust translates to trust in social media use in a corporate environment to make decisions. Hypothesis 2a was only marginally significant.

Hypotheses 2b and 3b predict that the levels of Emotional Trusts in Social Media Communities and Social Media Providers will have a positive relationship with the Perceived Enjoyment of Using Social Media Business Analytics, respectively. Results from the SEM analysis again supported both Hypothesis 2b (β = .415, t = 5.54, p < .001) and Hypothesis 3b (β = .254, t = 3.26, p = .001). These results suggest that trust built from social media use in a personal setting leads to perceived enjoyment of using social media data in a corporate environment to help make decisions.

Hypotheses 2c and 3c predict that the Emotional Trusts in Social Media Communities and Social Media Providers will positively explain the perception of Relative Advantage of Using Social Media Business Analytics, respectively. The SEM results failed to support both Hypothesis 2c (β = -.005, t = -.045, p = .964) and Hypothesis 3c (β = .004, t = .072, p = .943), indicating that trust built from personal use of social media may not have a direct impact on the perception of the relative advantage of using social media data to make corporate decisions.
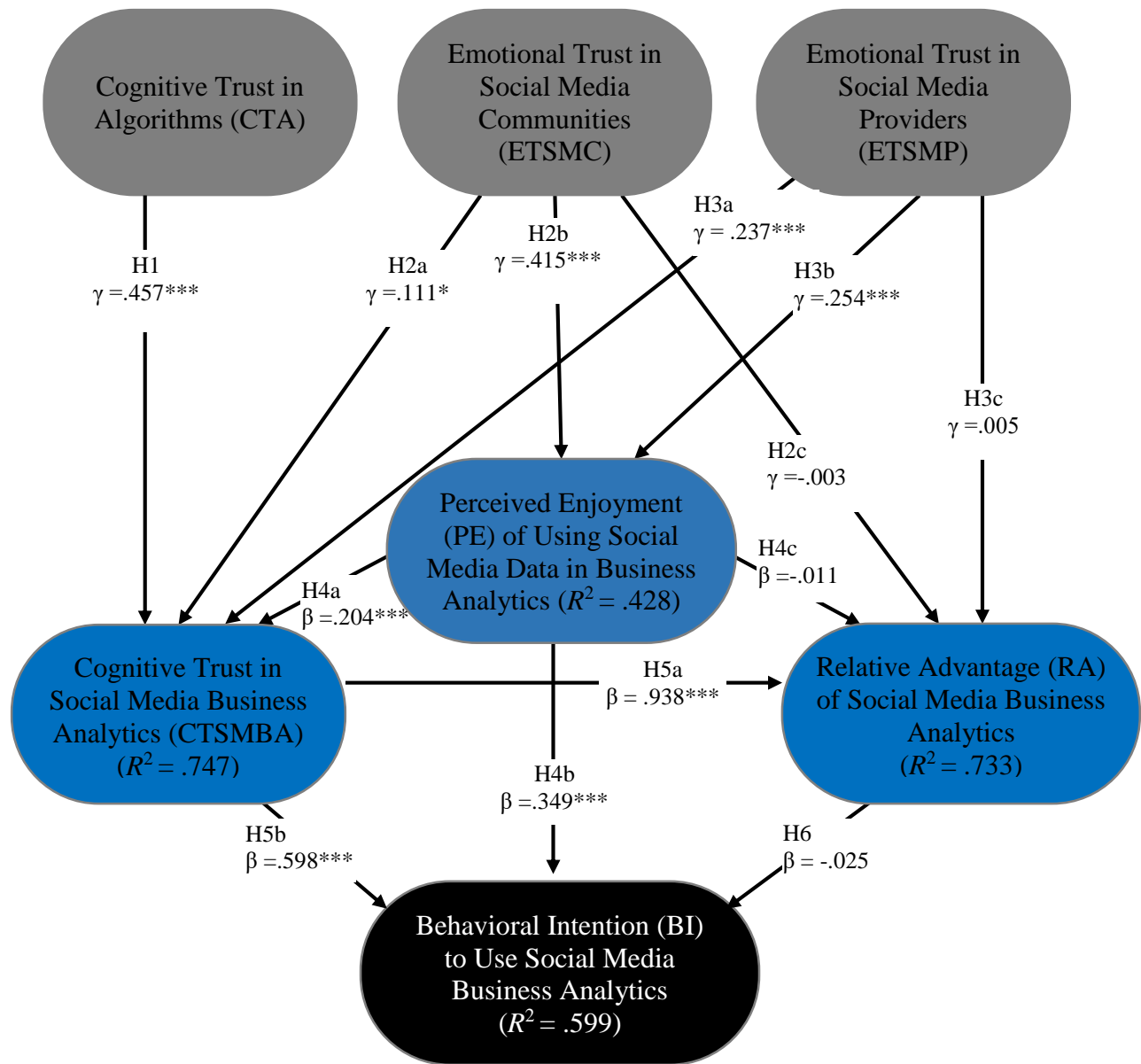
Figure 4.5. Structural Model Results.

 *** Indicates significance at *p* < .001, * Indicates significance *p* < .1. All coefficients are

standardized. Control variables are omitted from this figure.

Table 4.12. Summary of Hypothesis Test Results

Hypothesis	Results	Finding
H1: Personal cognitive trust in algorithms will positively influence trust in social media data in business analytics.	$\gamma = .457$, t = 10.82, p < .001	Supported
H2a: Emotional trust in social media communities will positively influence trust in social media data in business analytics.	$\gamma = .111$, t = 1.80, p =.07	Marginally Supported
H3a: Emotional trust in social media Providers will positively influence trust in social media data in business analytics.	$\gamma = .228$, t = 3.86, p < .001	Supported
H2b: Emotional trust in social media communities will positively influence the enjoyment of using social media data in business analytics.	$\gamma = .415$, t = 5.54, p < .001	Supported
H3b: Emotional trust in social media providers will positively influence the enjoyment of using social media data in business analytics.	$\gamma = .254$, t = 3.26, p = .001	Supported
H2c: Emotional trust in social media communities will positively influence the relative advantage of using social media data in business analytics.	$\gamma = -.005$, t = -.045, p = .964	Not Supported
H3c: Emotional trust in social media providers will positively influence the relative advantage of using social media data in business analytics.	$\gamma = .004$, t = .072, p = .943	Not Supported
H4a: Perceived enjoyment in using social media data in business analytics will positively influence trust in social media data in business analytics.	$\beta = .228$, t = 6.14, p < .001	Supported
H4b: Perceived enjoyment in using social media data in business analytics will positively influence the intention to use social media data in business analytics.	$\beta = .322$, t = 7.64, p < .001	Supported
H4c: Perceived enjoyment in using social media data in business analytics will positively influence the relative advantage of using social media data in business analytics.	$\beta = -.011$, $t = -.216$, $p = .829$	Not Supported
H5a: Trust in social media data in business analytics will positively influence the relative advantage of using social media data in business analytics.	$\beta = .859$, t = 13.41, p < .001	Supported
H5b: Trust in social media data in business analytics will positively influence the intention to use social media data in business analytics.	$\beta = .494$, t = 5.94, p < .001	Supported
H6: The relative advantage of social media data in business analytics will positively influence the intention to use social media data in business analytics.	$\beta = -.023$, t = .303, p =.762	Not Supported

Hypothesis 4a predicts that the Perceived Enjoyment of Using Social Media Business

Analytics will have a positive relationship with Cognitive Trust in Social Media Based Business

Analytics. The SEM result supported Hypothesis 4a (β = .228, t = 6.14, p < .001), suggesting that

if the user perceives that it will be enjoyable to use social media data, then they are more likely

to trust its use in a corporate environment to make decisions. Combined with the Hypotheses 2b,

3a, and H3b results, this result implies that trust built in personal use of social media may also

have indirect effects on trust in social media data use in a corporate environment.

Hypothesis 5a predicts that Cognitive Trust in Social Media Business Analytics will have

a positive relationship with Relative Advantage of Using Social Media Business Analytics. The

SEM result supported Hypothesis 5a (β = .859, t = 13.41, p < .001), indicating that as the user

places more trust in social media based business analytics, a higher level of relative advantage is

perceived.

Hypotheses 4b, 5b, and 6 predict that Perceived Enjoyment of, Cognitive Trust in, and

Relative Advantage of Social Media in Business Analytics will positively influence the

Behavioral Intentions of Using Social Media Business Analytics, respectively. Hypothesis 4b (β

= .322, t = 7.64, p < .001) and Hypothesis 5b (β = .494, t = 5.94, p < .001) were supported, but

Hypothesis 6 (β = -.023, t = .303, p =.762) was not supported based on the SEM results. These

results suggest that users' intention to use social media based business analytics is determined by

the enjoyment of and cognitive trust in using it, but not necessarily is guided by the perception of

relative advantage of using it. This suggests that the three constructs measuring cognitive trust in

algorithms, emotional trust in social media providers, and emotional trust in social media

communities have an indirect influence on behavioral intentions. But, caution is needed for the

interpretation of the non-significant result of the relative advantage construct because of its high

correlation with cognitive trust in social media business analytics. Given the potential suppressor effect that might have prevented the effect of relative advantage from appearing significant, it may be better to drop the construct from the model.

Additional Analyses

Figures 4.6 and 4.7 represent the model evaluating each phase of the full study. The model fit for the grouped model were as follows. The chi-square test result was found to be statistically significant ($\chi 2$ = 2376.43, df = 1072, p < .001). However, the RMSEA (90% C.I.) = .05 (.045, .050) suggested a good model fit. The NFI (.87) suggested a poor model fit, and the CFI (.92) suggested an adequate model fit. The two groups suggest that there are perception differences in the influence of emotional trust in social media communities as well as cognitive trust in social media based business analytics. A full multigroup analysis was not conducted as it was not the focus of this study but the difference in significance of these paths suggest that this may be a valuable area of future study.
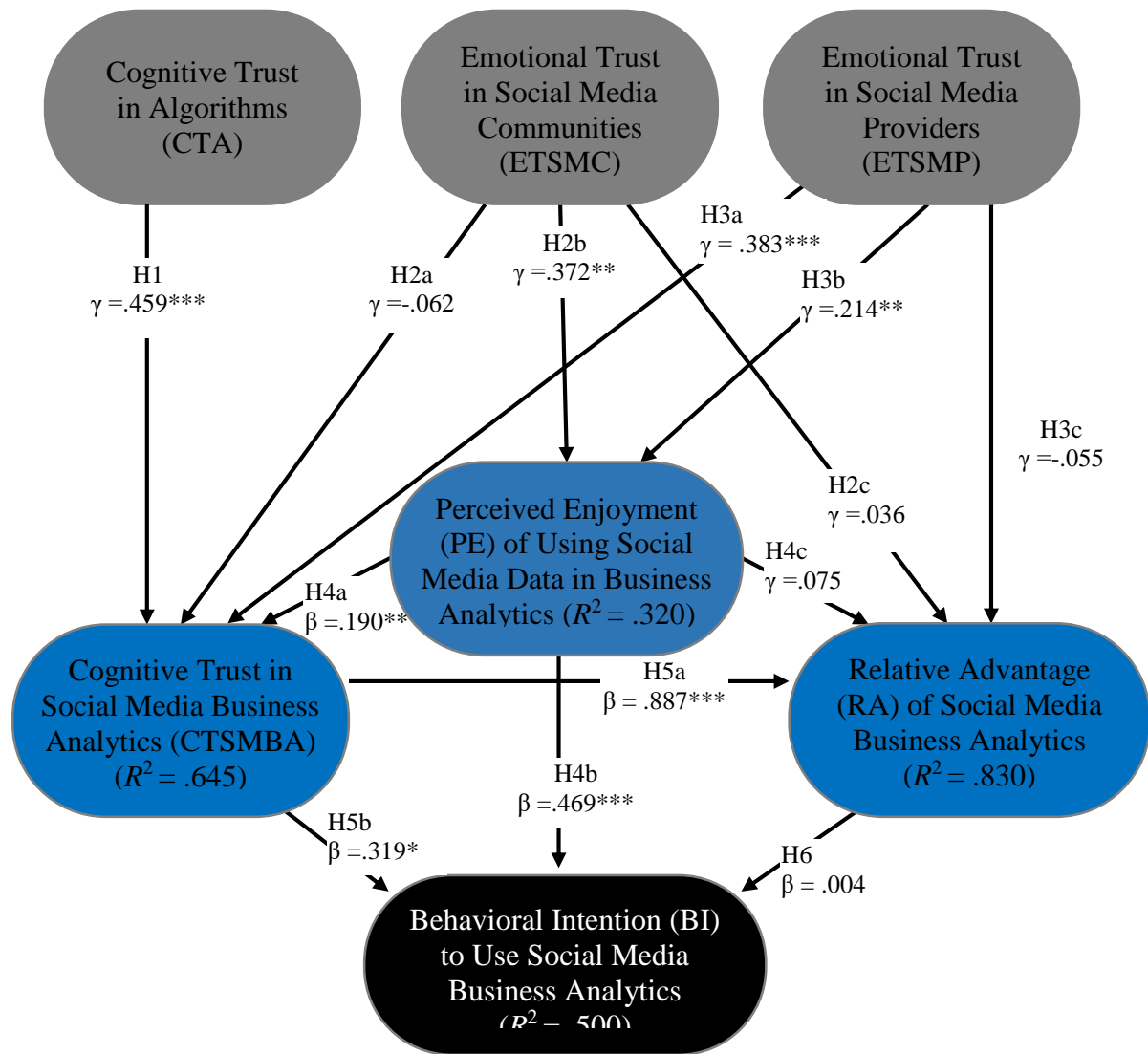
Figure 4.6. Structural Model Results Students. *** Significance at *p* < .001, ** Significance *p* < .05. * Significance at *p* < .10. All coefficients are standardized.
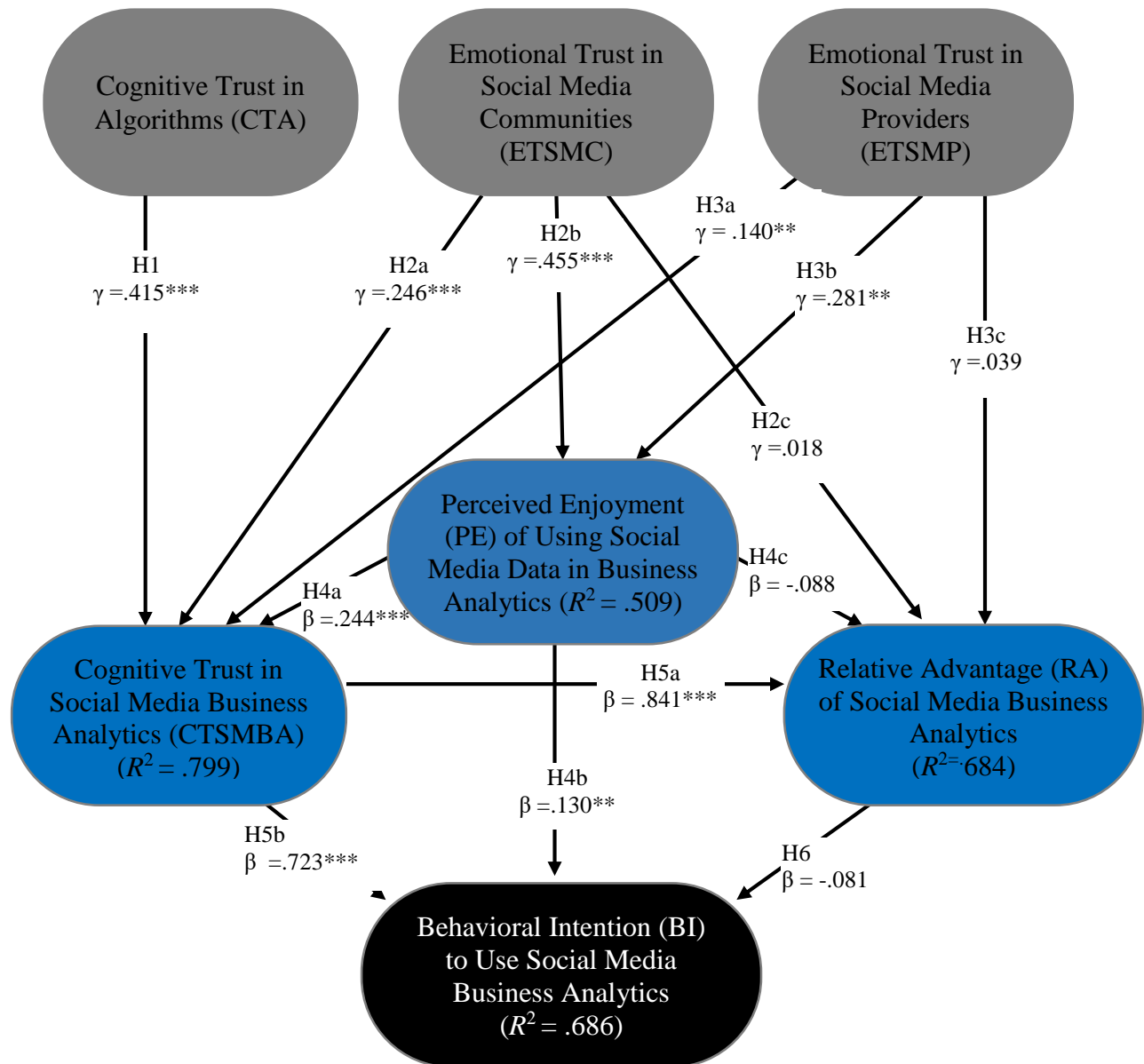
Figure 4.7. Structural Model Results Professionals.

 *** Indicates significance at $p < .001$, **Indicates significance at $p < .05$, * Indicates

significance $p < .05$. All coefficients are standardized.

Chapter 5: Discussion

Overview

      This research study was conducted in order to examine the hypothesized relationships between users' trust in social media formed from its personal use, enjoyment of, trust in, and relative advantage in using social media analytics in the workplace. Additionally, the study was designed to examine how enjoyment of, trust in, and relative advantage in using social media analytics in the workplace influence the intention to use social media data in business analytics. Through an examination of these relationships with survey data collected from a sample consisting of both college students and professionals, we gain an understanding of the impact of the trust in personal technology on the decision to use data from this technology in the workplace. Results suggested that trust built from personal use transfers to trust in the use of the technology in the workplace both directly and indirectly through enhancing the enjoyment of using it. The results also suggest that the perceived enjoyment of the social media business analytics and cognitive trust in social media business analytics influence the intention to use this type of data analytics. This chapter will first discuss the study results in detail along with the potential implications that the results have for the literature. Next, suggested courses of action for practitioners in business will be discussed based on the results of the study. Then, study limitations are presented, and potential avenues of future research are proposed. Lastly, an overall summary of the study concludes the chapter.

Discussion of Findings and Implications for Research

      The broad focus of this dissertation research was to investigate the influence of trust and enjoyment on the adoption of technology in an organization. This focus was operationalized by

examining the trust the individual had in social media in their personal lives and how this trust may transfer into trust, enjoyment, and relative advantage in social media based business analytics and ultimately into behavioral intentions. We attempted to answer five research questions with 13 hypotheses. The remaining section will discuss findings related to each research question in detail.

Research Question 1. The first research question was "Does cognitive and emotional trust formed through personal use of a technology, social media, influence trust in business analytics using that technology?" Three hypotheses (Hypotheses 1, 2a, and 3a) were used to answer this research question. Hypothesis 1 was that cognitive trust in the technology helping to power social media (algorithms) will lead to cognitive trust in social media based business analytics. The hypothesis was supported in this study, replicating the earlier findings of the pilot study (Larson et al., 2016). Similar results have been found in ecommerce research which reported that trust in the internet as a technology acted as a situation-based antecedent to trust in using ecommerce (McKnight et al., 2003) and that trust transferred from ecommerce to mobile commerce (Lin et al., 2011; Lu et al., 2011). This study provides evidence that situation-based and experience-based antecedents developed through personal use will influence trust in technologies and information used in the workplace. This finding provides support for the application of trust from personal use as an antecedent to trust in a technology used at work in studying the phenomenon of IT consumerization across various technologies.

Hypothesis 2a predicted that emotional trust in the users of social media (i.e., social media communities) would have a positive direct impact on cognitive trust in social media business analytics. The hypothesis was marginally supported by the results of the study, the results of earlier findings of the researcher's pilot study were significant however at the expense

of emotional trust in the providers (Larson et al., 2016). This implies that emotional trust formed through interactions with social media communities during non-work related interactions influence how we perceive the value of the data from these communities in the workplace. This interpretation is in line with other studies that examined how consumers perceived feedback mechanisms in ecommerce. The trust in social media based business analytics that is formed may been seen as cognition-based where the user seeks control by putting trust in trustees who have similar characteristics as themselves (Geffen et al., 2003). The user who has trust in their own social media social media communities may therefore view data gathered from social media in general as trustworthy because they believe that the data are like the communities in which they participate.

Hypothesis H3a stated that emotional trust in social media providers would positively influence cognitive trust in social media business analytics. This relationship was not significant in the pilot study but was found significant in the full study. This indicates that trust built with the companies providing the social media platform influences how much trust will be placed in the data from the social media used in business analytics. This result is consistent with findings in ecommerce where the trust in online auction sites were measured not just with the sellers but also the platform provider (Sun, 2010).

All of the findings of this study related to the first research question discussed above show that trust is a complicated subject in business analytics because there are several sources of apparent direct trust transference. Trust can be influenced by the personal perceptions of trust in the technology, the technology Provider Company, and individual users of the technology. Further, findings of this study suggest that emotional trust from personal use can transfer to

71

cognitive trust in the workplace expanding the understanding of the role of emotional trust in technology acceptance (Komiak & Benbasat, 2006).

Social media is a prevalent source of data that has the potential to be used by organizations as a sensing capability to perceive the market and discover opportunities. The process of when and how social media data are applied in business analytics is still a relatively under-researched area. Even though social media has become a prevalent technology in our society, little research has been done to understand how it is perceived in the workplace. By providing evidence of trust in the personal use of a technology transferring into the work environment, this study implies that there is a risk of bias to use social media data before it is warranted. Social media based business analytics may contain large amounts of complicated data which may make the analytical process susceptible to an automation bias. Therefore, by conceptualizing and operationalizing the three personal-level trust constructs that serve as antecedents to the corporate use of social media business analytics, this study provides a valuable framework and instruments for future research to explore potential biases related to the acceptance of social media based business analytics.

Research Question 2. The second research question asked, "Does emotional trust built through personal use of social media influence perceived enjoyment of using social-media based business analytics?" Two hypotheses (Hypotheses 2b and 3b) were used to examine this research question. Hypotheses 2b and 3b addressed whether emotional trusts in social media communities and providers positively influenced the enjoyment of using social media data in business analytics. Both hypotheses were supported, suggesting that the greater the user's emotional trust in the personal use of a technology, the greater the enjoyment that they believe they will have using data from the technology in the workplace. This result was consistent with

72

previous findings that emotional trust in providers and the community which uses the information system is an antecedent to trust in ecommerce (Sun, 2010). Understanding the antecedents to enjoyment should be of particular interest to researchers because understanding enjoyment within the workplace has valuable implications if enjoyment is managed properly. While this study uses enjoyment as an antecedent to behavioral intentions to use social media business analytics, enjoyment may also have implications for job satisfaction and the amount of time and effort that employees are willing to spend on such analytics. The investigation of enjoyment in business analytics research also provides an implication with regard to how to manage an optimal response to technology. This is because although the productivity of a technology must be the key criterion to choose the technology, hedonic motivations may cause the user to perceive enjoyment as a more valuable criterion to judge the usefulness of the technology. This study identifies emotional trust as significant antecedents to both cognitive trust and enjoyment, which are constructs requiring management in the workplace. Future research therefore should further address the influence of emotional trust and enjoyment.

Research Question 3. The third research question was "Does the emotional trust built through personal use of social media lead to the perceived relative advantage in using social media in business analytics?" This was directly explored in Hypothesis H2c and H3c which addressed whether emotional trust in social media communities or providers would positively influence the relative advantage of using social media data in business analytics. In the present full study, neither hypothesis was supported. However, during the pilot study, emotional trust in social media communities was found to have a significant direct impact on relative advantage. One of the key differences between the two studies was that in the pilot study there was a specific decision presented for the respondents to choose in accepting the use of social media

based business analytics. In the full study the decision was regarding more of generic use of the data. This may have led to the high correlation between cognitive trust in social media business analytics and another cognitive construct, relative advantage. Hypothesis 5a which predicted that higher cognitive trust in social media based business analytics would lead to higher relative advantage was supported with a very high regression coefficient ($\beta = .95$), providing evidence for this explanation. The contradictory results in the full study and the pilot study may imply that in specific uses there may be a significant direct impact of emotional trust in personal use and relative advantage. Further investigation of group differences is also warranted because the pilot study sample was comprised of all undergraduate students whereas the full study sample consisted of both student and professional respondents.

Research Question 4. The forth research question addressed "Does the perceived enjoyment act as a mediator for the influence of emotional trust in social media from personal use on trust in social media based business analytics and the relative advantage perceived in social media based business analytics?" This research question was answered by looking at the correlations between the constructs and then by looking at the respective direct and indirect paths. First, the significant

Two hypotheses, Hypotheses 4a and 4c, examined the influence of perceived enjoyment on cognitive trust in and relative advantage of social media data in business analytics, respectively. The results reveal that perceived enjoyment significantly influences cognitive trust but does not have a direct impact on relative advantage of social media business analytics. As discussed earlier, emotional trusts in social media providers and communities had significant influences on perceived enjoyment and significant and marginally significant effects, respectively, on cognitive trust in social media business analytics. Combined, these results imply

74

that emotional trust in social media communities and providers both have indirect influences on cognitive trust in business analytics through their impact on perceived enjoyment. On the other hand, these results along with the aforementioned close relationship between cognitive trust and relative advantage imply that the indirect effect of emotional trust on relative advantage is rather through enhancing cognitive trust in social media business analytics than through perceived enjoyment.

Research Question 5. The final research question was "Do the perceived enjoyment of, trust in, and relative advantage of social media business analytics influence the behavioral intention of using social media based business analytics?" Three hypotheses (Hypotheses 4b, 5b, and 6) were formed to explore this research question. Results reveal that perceived enjoyment of (Hypothesis 4b) and cognitive trust (Hypothesis 5b) in social media business analytics positively influence the intention to use social media data in business analytics, suggesting that the use of social media business analytics can be driven by both cognitive and hedonic motivations. The significant relationship between cognitive trust and behavioral intention is consistent with the finding from other studies demonstrating trust as an antecedent to adoption (Geffen et al., 2003, McNight et al., 2002). Besides, previous studies have looked at IT consumerization using enjoyment as a key antecedent to the phenomenon of employees bringing their own device. We have expanded this concept to include the idea of data and technology from our personal lives acting to create a hedonic motivation (enjoyment) into the workplace, which in turn leads to intentions to use the technology in the workplace. Hedonic motivations can be seen as an additional key component of continued use (Sun, 2010). By demonstrating that intention to use social media business analytics is influenced by both cognitive trust and enjoyment, this study implicates that the interactions with technology in our personal lives influence workplace

perceptions and behavior as both cognitive trust and perceived enjoyment are influenced by trust that is built in personal technology use.

On the other hand, Hypothesis 6 which predicted the effect of the relative advantage of social media data in business analytics on the intention to use social media data in business analytics was not supported. Relative advantage is seen as an important construct in the diffusion of innovations (Rogers, 2010). This study may point to the need for developing a more proper measurement for relative advantage so that it would be a more distinct construct from cognitive trust in social media business analytics, to which it had a high correlation. Relative advantage has been depicted as a multi-dimensional construct (Choudhury & Karahanna, 2008), and this may be a better way of depicting the construct in order to examine both its antecedents and its consequences.

In sum, by showing that trust in technology built for personal use transfers to the perceived trust and enjoyment and therefore the intention to use, this research provides a valuable framework to examine the complex relationship between personal technologies and how they influence use in the workplace. This framework can be applied to further understand the impact of pervasive technologies on perceptions in the workplace. This study also increases the understanding of how emotions impact the use of information systems, which is important because sometimes research has not addressed the emotional problems caused by information systems (Argyris, 1971).

Practical Implications

Big data and social media based analytics is a popular area of interest in practice partly because of a shortage of talent in the workplace as companies try and harvest data to improve strategic decisions. Big data also face challenges in implementation because the sheer amount of

data makes it hard for users to select the proper data that will not waste the resources and time. Trust and enjoyment are two key constructs in understanding the use, acceptance, and continued use of technologies. These constructs also are potential sources of bias and thus need to be managed.

Automation bias occurs when the user has more confidence in the automation than their own abilities and is influenced by factors such as complexity of the task and the workload of the user. In facing a complicated task and high workloads in the environment of a talent shortage, business analytics will be susceptible to bias in of the results provided by social media based business analytics. At the same time, external sources may be attempting to provide misleading data, or there may be insufficient resources for the providers to ensure the validity of the data. This situation can lead to a potential to make decisions based on invalid data and implies a risk in overly elevated trust which can make the user accept the information in decision support regardless of its validity. Trust, therefore, should be evaluated to try and optimize its level as social media is in a turbulent environment in which the organization may have limited control in validating the data.

By understanding the impact of how trust in personal technology influences trust in information technology and systems at workplace, organizations can better predict the level of trust that the user will have in the data gathered from social media and therefore can select an individual based on the level of trust that is desired. In selection of teams, which are necessary in many big data projects, selecting individuals with different levels of trust help to alleviate group thinking.

Hedonic concepts such as perceived enjoyment have been suggested to influence the length of time and effort that the user will work with the technology (). But, being guided by

hedonic motivations may also imply a bias away from actual usefulness of the technology and may give the user a feel of increased ease of use. Managers of information systems often do not take into account emotions (Argyris, 1971). However, cognitive processes alone do not sufficiently account for how a system is used, and therefore a greater understanding is required. This study provides an understanding of how emotional trust influences cognitive trust in technology through enjoyment. This emotion can better be managed. In some cases employees may be dictated to use a certain type of technology based upon the organization and the position. Understanding that emotional trust will increase the desire to use the technology may help organizations decide upon a more ideal candidate. Alternatively, if the user is required to decide between technologies, a bias for enjoyment in a given technology may not lead to an ideal conclusion. Enjoyment as an antecedent to a decision is not always negative, but organizations and employees should guard against unwarranted hedonic bias in decisions.

Limitations

The results of this study need to be interpreted with caution in light of several limitations. First, this study was a one-time, online, self-report of trust, enjoyment, relative advantage, and behavioral intentions. Because these data are self-reported, they can be susceptible to both social desirability bias and mono-method bias.

Second, the high correlation and VIF between relative advantage of and cognitive trust in social media business analytics indicates a possibility of multicollinearity, which may reduce the ability to properly interpret the results (Grewal, Cote, & Baumgartner, 2004). Future research is recommended to develop measurements for relative advantage of social media business analytics that ensure higher discriminant validity from the cognitive trust measure.

Next, although the professional sample was recruited nationally, the student sample consisted of students at a single university in the Southeastern United States. Therefore, this sampling procedure of this study poses a potential limitation in the generalizability of the findings.

Finally, some of the instruments used in this study were limited in scope and clarity. For example, the questions related to use of social media data in the workplace should have been specifically designed to capture experience using social media business analytics. The questions as written may have been seen as using social media data for personal decisions or using social media trends that were not necessarily compiled using formal business analytics. Further, by using a traditional business intentions construct in the full study, the respondents may have a wider range of ideas of the application of social media data.

Recommendations for Future Research

While the base model of this study provides valuable insights into trust, enjoyment, and behavioral intentions, a number of potential paths to expand upon this research are recommended. First, this research model can be used to examine whether there are key differences in how trust, enjoyment, and behavioral intentions work between groups. Demographic variables such as education, experience, nationality, and gender have been areas that have been studied in the past. They, however, should not be the only group differences evaluated because there are many other potential factors that may aid in the personalization of data. Culture has been suggested to influence variables such as risk perception in technology adoption (Lowry, Zhang, Zhou, & Fu, 2010, Sia, Lim, K., Huang, & Benbasat, 2009). Effects of culture, social presence, and group composition on trust in technology-supported decision-making groups. But differences can exist in risk propensity, perceptions of risk, or awareness of

difficulties even among groups of individuals within a single culture. By examining the role of these specific individual characteristic constructs in the phenomenon of personal trust transfer to professional trust in a technology, an understanding can be made at a more personalized level than just at a national culture level. These individual characteristics may allow to capture individual differences in decision styles used to make decisions related to the use of social media business analytics. Although not reported in the current dissertation, this study instrument included several individual characteristics measures in order to expand upon the base model. These results will be reported in future papers.

Second, the research model may be expanded upon or constructs substituted using other technology adoption models. While this study focused on transferring of trust from personal use to professional use and approached the trust concept from a hedonic as well as cognitive perspective due to the nature of social media, this study focus is by no means inclusive of all factors. Expansion of the model with additional factors such as societal pressure seems appropriate when researching pervasive technology. Further, research is needed on how the prevalent rise of business analytics in academia influences the acceptance of business analytics among recent graduates and current students.

Next, alternative research methods need to be undertaken. While this study provides evidence of the value of the study constructs, it is still a relatively new area of study. As addressed in the limitations, this study was conducted using a self-reported instrument only. Therefore, triangulation from additional research from interviews, longitudinal studies, and experiments is recommended to reduce potential method bias.

Finally, both trust and enjoyment in the workplace are variables that should be managed to try and improve performance. Research is needed to use these variables to predict users'

performance in business analytics. For example, case studies evaluating the relationship between

employees' trust and enjoyment and their performance can provide a greater understanding of

the extent of influence of these constructs on performance. Further, the current study model may

be used as a framework in examining interventions to manage trust and enjoyment to acceptable

levels. For example, one way to manage trust and enjoyment may be to select teams made up of

individuals with different levels of trust and perceived enjoyment. By evaluating the teams'

differential performances, an insight into an acceptable level of trust and enjoyment may be

achieved. Additionally, longitudinal studies examining the influence of awareness training and

educational interventions on users' trust, enjoyment, and performance with regard to business

analytics may be another potential avenue to expand upon the present study.

Conclusion

Big data and social media based business analytics are a popular trending area in both

industry and academia. The need to research and improve upon practices will be an important

area of study for years to come, including the training and selection of talent as a shortage exists

of talent needed to fill the growing demand. This study is designed to help understand how the

prevalence of the social media technology in individuals' personal lives as consumers impacts

the way they perceive and adopt this technology in the workplace. Because social media is

viewed as a hedonic information system, both trust and enjoyment were the main constructs used

in this study.

This study investigated at an individual level how trust formed by the personal use of

social media influences cognitive trust, enjoyment, relative advantage, and behavioral intentions

of using social media data in business analytics. The study demonstrated that cognitive trust and

enjoyment of social media based business analytics were both positively impacted by trust built

during the personal use of social media. Trust in and perceived enjoyment of using social media based business analytics were both positive influencers of the intentions to use social media data. While this area had not been specifically studied before, it is in line with similar results in evaluating complex systems such as online auctions.

By demonstrating a connection in trust built through personal use of social media and professional use of social media, this study provides evidence that perceptions built through consumer use also influence professional perception of the data. Trust and enjoyment, which are antecedents to business intentions, are significantly influenced by trust built through personal use. This indicates that by measuring trust in algorithms, social media providers, and social media communities, users' tendencies towards trust in and enjoyment of the use of social media business analytics may be estimated and that therefore intentions of the use of social media based business analytics may be predicted. Trust and enjoyment are potentially beneficial because they indicate the propensity and desire to use the technology more than alternative methods. However, excess trust or enjoyment may lead to biases in decision making, and therefore trust and enjoyment represent risks and require management. By understanding antecedents to these constructs, business analytics teams may be selected to constitute members with diverse levels of trust and enjoyment, and interventions may be explored to raise or lower the user's level of trust or enjoyment to an optimal level.

REFERENCES

Abrahams, A. S., Jiao, J., Wang, G. A., & Fan, W. (2012). Vehicle defect discovery from social media. *Decision Support Systems, 54*(1), 87-97.

Abrahams, A. S., Jiao, J., Fan, W., Wang, G. A., & Zhang, Z. (2013). What's buzzing in the blizzard of buzz? Automotive component isolation in social media postings. *Decision Support Systems, 55*(4), 871-882.

Argyris, C. (1971). Management information systems: The challenge to rationality and emotionality. *Management Science*, *17*(6), B275-B292.

Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *MIS Quarterly*, *24*(4), 665-694.

Al-Gahtani, S. S., & King, M. (1999). Attitudes, satisfaction and usage: factors contributing to each in the acceptance of information technology. *Behaviour & Information Technology, 18*(4), 277-297.

Awad, N. F., & Ragowsky, A. (2008). Establishing trust in electronic commerce through online word of mouth: An examination across genders. *Journal of Management Information Systems, 24*(4), 101-121.

Ba, S., & Pavlou, P. A. (2002). Evidence of the effect of trust building technology in electronic markets: Price premiums and buyer behavior. *MIS Quarterly, 26*(3), 243-268.

Benlian, A., Titah, R., & Hess, T. (2012). Differential effects of provider recommendations and consumer reviews in e-commerce transactions: An experimental study. *Journal of Management Information Systems, 29*(1), 237-272.

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: Toward a next generation of insights. *MIS Quarterly, 37*(2), 471-482.

Bhattacherjee, A. (2002). Individual trust in online firms: Scale development and test. *Journal of Management Information Systems, 19*(1), 211-242.

Bollier, D., & Firestone, C. M. (2010). *The promise and peril of big data*. Washington, DC, USA: Aspen Institute, Communications and Society Program.

Byrne, B. M. (2009). *Structural equation modeling with AMOS: Basic concepts, applications and programming* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Buettner, R. (2015, August). Towards a new personal information Technology Acceptance Model: Conceptualization and empirical evidence from a bring your own device dataset. Proceedings of the Twenty-First Americas Conference on Information Systems, Puerto Rico. Retrieved from aisel.aisnet.org/cgi/viewcontent.cgi?article=1131&context=amcis2015.

Bulgurcu, B., Cavusoglu, H., & Benbasat, I. (2010). Information security policy compliance: An empirical study of rationality-based beliefs and information security awareness. *MIS Quarterly, 34(3),* 523-548.

Carter, L., & Bélanger, F. (2005). The utilization of e-government services: Citizen trust, innovation and acceptance factors. *Information Systems Journal, 15*(1), 5-25.

Choudhury, V., & Karahanna, E. (2008). The relative advantage of electronic channels: A multidimensional view. *MIS Quarterly, 32*(1), 179-200.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20*(1), 37–46.

Cyr, D. (2008). Modeling web site design across cultures: Relationships to trust, satisfaction, and e-loyalty. *Journal of Management Information Systems, 24*(4), 47-72.

Cyr, D., Head, M., Larios, H., & Pan, B. (2009). Exploring human images in website design across cultures: A multi-method approach. *MIS Quarterly*, *33*(3), 539-566.

Davenport, T. H., & Patil, D. J. (2012). Data scientist: The sexiest job of the 21st century. *Harvard Business Review, 90*(10), 70-76.

De Cristofaro, E., Friedman, A., Jourjon, G., Kaafar, M. A., & Shafiq, M. Z. (2014). Paying for likes?: Understanding Facebook like fraud using honeypots. In *Proceedings of the 2014 Conference on Internet Measurement* (pp. 129-136). ACM.

Dimoka, A. (2010). What does the brain tell us about trust and distrust? Evidence from a functional neuroimaging study. *MIS Quarterly*, *34*(2), 373-396.

Facebook. (2015). *Statistics*. Retrieved October 30, 2015, from http://newsroom.fb.com/company-info/

El Sawy, O. (2007). Redesigning IT-enabled customer support processes for dynamic environments. In V. Grover & L. Markus (Eds.), *Business process transformation, Advances in management information systems* (pp. 136-167). M.E. Sharpe Publishers.

Evans, J. R., & Lindner, C. H. (2012). Business analytics: the next frontier for decision sciences. *Decision Line, 43*(2), 4-6.

Fan, W., & Gordon, M. D. (2014). The power of social media analytics. *Communications of the ACM, 57*(6), 74-81.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Gefen, D. (2004). What makes an ERP implementation relationship worthwhile: Linking trust mechanisms and ERP usefulness. *Journal of Management Information Systems, 21*(1), 263-288.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly, 27*(1), 51-90.

Gefen, D., & Pavlou, P. A. (2012). The boundaries of trust and risk: The quadratic moderating role of institutional structures. *Information Systems Research, 23*(3-part-2), 940-959.

Gefen, D., Straub, D. W., & Rigdon, E. E. (2011). An update and extension to SEM guidelines for administrative and social science research. *Management Information Systems Quarterly, 35*(2), 3-14.

Gens, F., Levitas, D., & Segal, R. (2011). 2011 *Consumerization of IT Study: Closing the "consumerization gap".* Framingham, MI: International Data Corporation (IDC).

Goddard, K., Roudsari, A., & Wyatt, J. C. (2012). Automation bias: A systematic review of frequency, effect mediators, and mitigators. *Journal of the American Medical Informatics Association, 19*(1), 121-127.

Goh, S., & Wasko, M. (2012). The effects of leader-member exchange on member performance in virtual world teams. *Journal of the Association for Information Systems, 13*(10), 861-885.

Goo, J., Kishore, R., Rao, H. R., & Nam, K. (2009). The role of service level agreements in relational management of information technology outsourcing: An empirical study. *MIS Quarterly, 33*(1), 119-145.

Grewal, R., Cote, J. A., & Baumgartner, H. (2004). Multicollinearity and measurement error in structural equation models: Implications for theory testing. *Marketing Science, 23*(4), 519-529.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2010). *Multivariate data: Analysis with readings*. New York, New York Prentice-Hall.

Hart, P. J., & Saunders, C. S. (1998). Emerging electronic partnerships: Antecedents and dimensions of EDI use from the supplier's perspective. *Journal of Management Information Systems, 14*(4), 87-111.

Harford, T. (2014). Big data: A big mistake?. *Significance, 11*(5), 14-19.

Haustein, S., Bowman, T. D., Holmberg, K., Tsou, A., Sugimoto, C. R., & Larivière, V. (2015). Tweets as impact indicators: Examining the implications of automated "bot" accounts on Twitter. *Journal of the Association for Information Science and Technology, 67*(1), 232-238.

Holsapple, C., Lee-Post, A., & Pakath, R. (2014). A unified foundation for business analytics. *Decision Support Systems, 64*, 130-141.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53-59.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55.

Huang, Q., Davison, R. M., & Gu, J. (2011). The impact of trust, guanxi orientation and face on the intention of Chinese employees and managers to engage in peer-to-peer tacit and explicit knowledge sharing. *Information Systems Journal, 21*(6), 557-577.

Kanawattanachai, P., & Yoo, Y. (2007). The impact of knowledge coordination on virtual team performance over time. *MIS Quarterly, 31*(4), 783-808.

Keil, M., Wallace, L., Turk, D., Dixon-Randall, G., & Nulden, U. (2000). An investigation of risk perception and risk propensity on the decision to continue a software development project. *Journal of Systems and Software, 53*(2), 145-157.

Kim, D. J. (2008). Self-perception-based versus transference-based trust determinants in

computer-mediated transactions: A cross-cultural comparison study. *Journal of*

Management Information Systems, 24(4), 13-45.

Kim, D., & Benbasat, I. (2009). Trust-assuring arguments in B2C e-commerce: Impact of

content, source, and price on trust. *Journal of Management Information Systems, 26*(3),

175-206.

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2009). Trust and satisfaction, two stepping stones for

successful e-commerce relationships: A longitudinal exploration. *Information Systems*

Research, 20(2), 237-257.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New

York, NY: The Guilford Press.

Komiak, S. Y., & Benbasat, I. (2006). The effects of personalization and familiarity on trust and

adoption of recommendation agents. *MIS Quarterly, 30*(4), 941-960.

Larson, B., Cegielski C., Ezell, J., & Hall, D. (2016). *Relative trust advantage in the face of*

uncertainty: How it consumerization influences initial perceived relative advantage in

business analytics. Unpublished manuscript.

Lewis, J. D., & Weigert, A. (1985). Trust as a social reality. *Social Forces, 63*(4), 967-985.

Li, X., Hess, T. J., & Valacich, J. S. (2008). Why do we trust new technology? A study of trust

formation with organizational information systems. *The Journal of Strategic Information*

Systems, 17(1), 39-71.

Lim, K. H., Sia, C. L., Lee, M. K., & Benbasat, I. (2006). Do I trust you online, and if so, will I

buy? An empirical study of two trust-building strategies. *Journal of Management*

Information Systems, 23(2), 233-266.

Lin, J., Lu, Y., Wang, B., & Wei, K. K. (2011). The role of inter-channel trust transfer in establishing mobile commerce trust. *Electronic Commerce Research and Applications, 10*(6), 615-625.

Liu, B. Q., & Goodhue, D. L. (2012). Two worlds of trust for potential e-commerce users: Humans as cognitive misers. *Information Systems Research, 23*(4), 1246-1262.

Liu, L., Li, C., & Zhu, D. (2012). A new approach to testing nomological validity and its application to a second-order measurement model of trust. *Journal of the Association for Information Systems, 13*(12), 950-975.

Loose, M., Weeger, A., & Gewald, H. (2013, August). BYOD–The next big thing in recruiting? Examining the determinants of BYOD service adoption behavior from the perspective of future employees. *Proceedings of the Nineteenth Americas Conference on Information Systems*, Chicago, IL. Retrieved from *aisel.aisnet.org/cgi/viewcontent.cgi?article=1427&context=amcis2013*.

Lowry, P. B., Vance, A., Moody, G., Beckman, B., & Read, A. (2008). Explaining and predicting the impact of branding alliances and web site quality on consumer trust of e-commerce web sites. *Journal of Management Information Systems, 24*(4), 199-224.

Lowry, P. B., Gaskin, J., Twyman, N., Hammer, B., & Roberts, T. (2012). Taking 'fun and games' seriously: Proposing the hedonic-motivation system adoption model (HMSAM). *Journal of the Association for Information Systems, 14*(11), 617-671.

Lowry, P. B., Zhang, D., Zhou, L., & Fu, X. (2010). Effects of culture, social presence, and group composition on trust in technology-supported decision-making groups. *Information Systems Journal, 20(3),* 297-315.

Lu, Y., Yang, S., Chau, P. Y., & Cao, Y. (2011). Dynamics between the trust transfer process

and intention to use mobile payment services: A cross-environment perspective.

Information & Management, 48(8), 393-403.

MacKenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011). Construct measurement and

validation procedures in MIS and behavioral research: Integrating new and existing

techniques. *MIS Quarterly, 35*(2), 293-334.

Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on

hypothesistesting approaches to setting cutoff values for fit indexes and dangers in

overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11*(3),

320-341.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational

trust. *Academy of Management Review, 20*(3), 709- 734

McDonald, R. P., & Ho, M. H. R. (2002). Principles and practice in reporting structural equation

analyses. *Psychological Methods, 7*(1), 64-82.

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust

measures for e-commerce: An integrative typology. *Information Systems Research, 13*(3),

334-359.

Miller, S. (2014). Collaborative approaches needed to close the big data skills gap. *Journal of

Organization Design, 3*(1), 26-30.

Montoya, M. M., Massey, A. P., & Khatri, V. (2010). Connecting IT services operations to

services marketing practices. *Journal of Management Information Systems, 26*(4), 65-85.

Nan, N. (2011). Capturing bottom-up information technology use processes: A complex adaptive

systems model. *MIS Quarterly, 35*(2), 505-532.

Nicolaou, A. I., & McKnight, D. H. (2006). Perceived information quality in data exchanges: Effects on risk, trust, and intention to use. *Information Systems Research, 17*(4), 332-351.

Parasuraman, R., & Riley, V. (1997). Humans and automation: Use, misuse, disuse, abuse. *Human Factors, 39*(2), 230-253.

Pavlou, P. A., & Dimoka, A. (2006). The nature and role of feedback text comments in online marketplaces: Implications for trust building, price premiums, and seller differentiation. *Information Systems Research, 17*(4), 392-414.

Pavlou, P. A., & Fygenson, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly, 1*, 115-143.

Pavlou, P. A., & Gefen, D. (2005). Psychological contract violation in online marketplaces: Antecedents, consequences, and moderating role. *Information Systems Research, 16*(4), 372-399.

Pavlou, P. A., & Gefen, D. (2004). Building effective online marketplaces with institution-based trust. *Information Systems Research, 15*(1), 37-59.

Piccoli, G., & Ives, B. (2003). Trust and the unintended effects of behavior control in virtual teams. *MIS Quarterly, 27*(3), 365-395.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Riedl, R., Hubert, M., & Kenning, P. (2010). Are there neural gender differences in online trust? An fMRI study on the perceived trustworthiness of eBay offers. *MIS Quarterly, 34*(2), 397-428.

Robbins S. (2004). *Decide and conquer.* Upper Saddle River, NJ: Prentice Hall.

Robert, L. P., Denis, A. R., & Hung, Y. T. C. (2009). Individual swift trust and knowledge-based trust in face-to-face and virtual team members. *Journal of Management Information Systems, 26*(2), 241-279.

Rogers, E. M. (2010). *Diffusion of innovations*. New York, New York: Simon & Schuster.

Rönkkö, M., & Evermann, J. (2013). A critical examination of common beliefs about partial least squares path modeling. *Organizational Research Methods, 16*(3), 425-448.

Rosen, P., & Sherman, P. (2006). Hedonic information systems: Acceptance of social networking websites. *AMCIS 2006 Proceedings*, Retrieved from http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1710&context=amcis2006&sei-redir=1&referer=http%3A%2F%2Fwww.bing.com%2Fsearch%3Fq%3DHedonic%2Binformation%2Bsystems%253A%2BAcceptance%2Bof%2Bsocial%2Bnetworking%2Bwebsites%26src%3DIE-TopResult%26FORM%3DIETR02%26conversationid%3D#search=%22Hedonic%20information%20systems%3A%20Acceptance%20social%20networking%20websites%22

Scott, S. G., & Bruce, R. A. (1995). Decision-making style: The development and assessment of a new measure. *Educational and Psychological Measurement, 55(5),* 818-831.

Sharma, R., Reynolds, P., Scheepers, R., Seddon, P. B., & Shanks, G. G. (2010). Business analytics and competitive advantage: A review and a research agenda. *Frontiers in Artificial Intelligence and Applications, 212*, 187-198.

Singh, N. (2012). BYOD genie is out of the bottle–"Devil or angel". *Journal of Business Management & Social Sciences Research, 1*(3), 1-12.

Sia, C. L., Lim, K. H., Leung, K., Lee, M. K., Huang, W. W., & Benbasat, I. (2009). Web strategies to promote internet shopping: Is cultural-customization needed?. *Mis Quarterly*, *33(3),* 491-512.

Stewart, K. J. (2003). Trust transfer on the world wide web. *Organization Science, 14*(1), 5-17.

Stewart, K. J., & Gosain, S. (2006). The impact of ideology on effectiveness in open source software development teams. *MIS Quarterly, 30*(2), 291-314.

Sun, H. (2010). Sellers' trust and continued use of online marketplaces. *Journal of the Association for Information Systems, 11*(4), 182-211.

Tabachnick, B. G., & Fidell, L. S. (2006). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon.

Thomas, O. (2013). How Twitter knows so much about you before you've even signed up. *Business Insider*. Retrieved from http://www.businessinsider.com/twitter-newusers-2013-3.

Tung, F. C., Chang, S. C., & Chou, C. M. (2008). An extension of trust and TAM model with IDT in the adoption of the electronic logistics information system in HIS in the medical industry. *International Journal of Medical Informatics, 77*(5), 324-335.

Turel, O., Serenko, A., & Bontis, N. (2010). User acceptance of hedonic digital artifacts: A theory of consumption values perspective. *Information & Management, 47*(1), 53-59.

Van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly, 28*(4), 695-704.

Van Slyke, C., Shim, J. T., Johnson, R., & Jiang, J. (2006). Concern for information privacy and online consumer purchasing. *Journal of the Association for Information Systems, 7*(6), 415-444.

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research, 11*(4), 342-365.

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences, 39*(2), 273-315.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36*(1), 157-178.

Wang, W., & Benbasat, I. (2008). Attributions of trust in decision support technologies: A study of recommendation agents for e-commerce. *Journal of Management Information Systems, 24*(4), 249-273.

Wang, W., & Benbasat, I. (2007). Recommendation agents for electronic commerce: Effects of explanation facilities on trusting beliefs. *Journal of Management Information Systems, 23*(4), 217-246.

Yoon, T. E., Ghosh, B., & Jeong, B. K. (2014, January). User acceptance of business intelligence (BI) application: Technology, individual difference, social influence, and situational constraints. In *Proceedings of System Sciences (HICSS), 47th Hawaii International Conference* (pp. 3758-3766). IEEE. Retrieved from http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6759069

Yu, J., Ha, I., Choi, M., & Rho, J. (2005). Extending the TAM for a t-commerce. *Information & Management, 42*(7), 965-976.

Zahedi, F. M., & Song, J. (2008). Dynamics of trust revision: Using health infomediaries. *Journal of Management Information Systems, 24*(4), 225-248.

Zaheer, A., McEvily, B., & Perrone, V. (1998). Does trust matter? Exploring the effects of

interorganizational and interpersonal trust on performance. *Organization Science, 9*(2),

141-159.

Appendix A: IRB Approval and Instruments

RAYMOND J. HARBERT

COLLEGE OF BUSINESS

DEPARTMENT OF AVIATION & SUPPLY CHAIN MANAGEMENT

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL
INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS
DOCUMENT.)

INFORMATION LETTER
for a Research Study entitled
"From Personal Trust to Professional Behavior: A Study of the Impact of
Trust and Enjoyment on Behavior Intentions in Business Analytics"

You are invited to participate in a research study to explore trust in social
media. The study is being conducted by Benjamin Larson, doctoral candidate,
under the direction of Dr. Casey Cegielski, Professor of Information Systems
Management in the Auburn University Department of Aviation & Supply
Chain Management. You were selected as a possible participant in this study
because you are currently employed in a management position and you are of
19 years of age or older.

What will be involved if you participate? Your participation is completely
voluntary. If you decide to participate in this research study, you will be
asked to complete an online survey. Your total time commitment will be
approximately 20 minutes.

Are there any risks or discomforts? There are no risks or discomfort
associated with participation in the study. Keep in mind that you can withdraw
from this study at any time.

Are there any benefits to yourself or others? There are no personal benefits
associated with participation in this study. However, the data you provide may
help enhance the understanding of people's use of social media in business
analytics.

Will you receive compensation for participating? There is no compensation
for participating in the study.

Are there any costs? There are no anticipated costs associated with
participation in this study.

If you change your mind about participating, you may withdraw from this
study at any time. Your participation is completely voluntary.

403 LOWDER HALL

AUBURN, AL 36849-5247

TELEPHONE:

(334)844-6908

FAX:

(334)844-6927

www.auburn.edu

R AYMOND J. H ARBERT

C OLLEGE OF B USINESS

D EPARTMENT OF A VIATION & S UPPLY C HAIN M ANAGEMENT

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

INFORMATION LETTER
for a Research Study entitled
"From Personal Trust to Professional Behavior: A Study of the Impact of Trust and Enjoyment on Behavior Intentions in Business Analytics"

You are invited to participate in a research study to explore trust in social media. The study is being conducted by Benjamin Larson, doctoral candidate, under the direction of Dr. Casey Cegielski, Professor of Information Systems Management in the Auburn University Department of Aviation & Supply Chain Management. You were selected as a possible participant in this study because you are currently employed in a management position and you are of 19 years of age or older.

What will be involved if you participate? Your participation is completely voluntary.   If you decide to participate in this research study, you will be asked to complete an online survey. Your total time commitment will be approximately 20 minutes.

Are there any risks or discomforts? There are no risks or discomfort associated with participation in the study. Keep in mind that you can withdraw from this study at any time.

Are there any benefits to yourself or others? There are no personal benefits associated with participation in this study. However, the data you provide may help enhance the understanding of people's use of social media in business analytics.

Will you receive compensation for participating? There is no compensation for participating in the study.

Are there any costs? There are no anticipated costs associated with participation in this study.

If you change your mind about participating, you may withdraw from this study at any time. Your participation is completely voluntary.

403 L OWDER H ALL

A UBURN, AL 36849-5247

T ELEPHONE:

(334) 844-4908

F AX:

(334) 844-4927

www.auburn.edu

Add this approval information in sentence form to your electronic information letter!

RAYMOND J. HARBERT
COLLEGE OF BUSINESS
DEPARTMENT OF AVIATION & SUPPLY CHAIN MANAGEMENT

All data collected as part of this study will be completely anonymous. We will protect your privacy and the data you provide by not collecting any personally identifiable information from you. The data collected in this study may be used in a publication in an academic journal and/or presentation at a professional conference.

If you have any questions about this study, please contact Benjamin Larson at 334-844-6537 or BZL0011@auburn.edu, or contact Dr. Casey Cegielski at 334-844-6542 or cegieca@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE "<u>NEXT</u>" BUTTON BELOW. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

_____
Investigator   Date

_____
Co-Investigator   Date

The Auburn University Institutional Review Board has approved this document for use from _____ to _____. Protocol #_____.

NEXT

For Information or help contact **THE OFFICE OF RESEARCH COMPLIANCE (ORC),** 115 Ramsay Hall, Auburn University
Phone: 334-844-5966   **e-mail:** IRBAdmin@auburn.edu   **Web Address:** http://www.auburn.edu/research/vpr/ohs/index.htm

Revised 2.1.2014   **Submit completed form to IRBsubmit@auburn.edu or 115 Ramsay Hall, Auburn University 36849.**

Form must be populated using Adobe Acrobat / Pro 9 or greater standalone program (do not fill out in browser). Hand written forms will not be accepted.

1. **PROPOSED START DATE of STUDY:** 01/15/2016

PROPOSED REVIEW CATEGORY (Check one): ☐ **FULL BOARD**   ☑ **EXPEDITED**

SUBMISSION STATUS (Check one): ☑ **NEW**   ☐ **REVISIONS (to address IRB Review Comments)**

2. **PROJECT TITLE:** From Personal Trust to Professional Behavior: A Study of the Impact of Trust and Enjoyment on Behavior Intentions in Business Analytics

3. Benjamin Everett Larson   Doctoral Candidate   Aviation & Supply Chain   bzl0011@auburn.edu
   PRINCIPAL INVESTIGATOR   **TITLE**   **DEPT**   **AU E-MAIL**

   403 Lowder Business Building, 405 W. Magnolia Av.   334-844-6537   larsonb2835@bellsouth.net
   MAILING ADDRESS   **PHONE**   **ALTERNATE E-MAIL**

4. **FUNDING SUPPORT:** ☑ N/A ☐ Internal ☐ External Agency: _____   ☐ Pending ☐ Received

For federal funding, list agency and grant number (if available). _____

5a. **List any contractors, sub-contractors, other entities associated with this project:**

   Qualtrics

b. **List any other IRBs associated with this project (including Reviewed, Deferred, Determination, etc.):**

PROTOCOL PACKET CHECKLIST

All protocols must include the following items:

☑ **Research Protocol Review Form** (All signatures included and all sections completed)
   (Examples of appended documents are found on the OHSR website: http://www.auburn.edu/research/vpr/ohs/sample.htm)

☑ **CITI Training Certificates** for all Key Personnel.

☑ **Consent Form or Information Letter** and any Releases (audio, video or photo) that the participant will sign.

☑ **Appendix A,** "Reference List"

☐ **Appendix B** if e-mails, flyers, advertisements, generalized announcements or scripts, etc., are used to recruit participants.

☑ **Appendix C** if data collection sheets, surveys, tests, other recording instruments, interview scripts, etc. will be used for data collection. Be sure to attach them in the order in which they are listed in # 13c.

☐ **Appendix D** if you will be using a debriefing form or include emergency plans/procedures and medical referral lists (A referral list may be attached to the consent document).

☐ **Appendix E** if research is being conducted at sites other than Auburn University or in cooperation with other entities. A **permission letter** from the site / program director must be included indicating their cooperation or involvement in the project. NOTE: If the proposed research is a multi-site project, involving investigators or participants at other academic institutions, hospitals or private research organizations, a letter of **IRB approval** from each entity is required prior to initiating the project.

☐ **Appendix F** - Written evidence of acceptance by the host country if research is conducted outside the United States.

FOR ORC OFFICE USE ONLY

DATE RECEIVED IN ORC:_____ by_____ PROTOCOL #_____

DATE OF IRB REVIEW:_____ by_____ APPROVAL CATEGOR

DATE OF IRB APPROVAL:_____ by_____ INTERVAL

COMMENTS:

The Auburn University Institutional Review Board has approved this Document for use from __01/19/16__ to __01/18/17__

Protocol # __16-014 EP 1601__

99

6. GENERAL RESEARCH PROJECT CHARACTERISTICS

6A. Research Methodology

Please check all descriptors that best apply to the research methodology.

Data Source(s): ☑ New Data ☐ Existing Data

Will recorded data directly or indirectly identify participants?
☐ Yes ☑ No

Data collection will involve the use of:

☐ Educational Tests (cognitive diagnostic, aptitude, etc.)
☐ Interview
☐ Observation
☐ Location or Tracking Measures
☐ Physical / Physiological Measures or Specimens (see Section 6E.)
☑ Surveys / Questionnaires

☑ Internet / Electronic
☐ Audio
☐ Video
☐ Photos
☐ Digital images
☐ Private records or files

Other: _____

6B. Participant Information

Please check all descriptors that apply to the target population.

☑ Males ☑ Females ☐ AU students

Vulnerable Populations
☐ Pregnant Women/Fetuses ☐ Prisoners ☐ Institutionalized

☐ Children and/or Adolescents (under age 19 in AL)

Persons with:

☐ Economic Disadvantages ☐ Physical Disabilities

☐ Educational Disadvantages ☐ Intellectual Disabilities

Do you plan to compensate your participants? ☐ Yes ☑ No

6C. Risks to Participants

Please identify all risks that participants might encounter in this research.

☐ Breach of Confidentiality* ☐ Coercion
☐ Deception ☐ Physical
☐ Psychological ☐ Social
☑ None

Other:

*Note that if the investigator is using or accessing confidential or identifiable data, breach of confidentiality is always a risk.

6D. Corresponding Approval/Oversight

- **Do you need IBC Approval for this study?**
  ☐ Yes ☑ No

  If yes, BUA #_____ Expiration date_____

- **Do you need IACUC Approval for this study?**
  ☐ Yes ☑ No

  If yes, PRN #_____ Expiration date_____

- **Does this study involve the Auburn University MRI Center?**
  ☐ Yes ☑ No

  Which MRI(s) will be used for this project? (Check all that apply)
  ☐ 3T ☐ 7T

  Does any portion of this project require review by the MRI Safety Advisory Council?
  ☐ Yes ☑ No

  Signature of MRI Center Representative: _____
  Required for all projects involving the AU MRI Center

  Appropriate MRI Center Representatives:
      Dr. Thomas S. Denney, Director AU MRI Center
      Dr. Ron Beyers, MR Safety Officer

7. PROJECT ASSURANCES From Personal Trust to Professional Behavior: A Study of the Impact of Trust and Enjoyment on Behavior Intentions in Business Analytics

A. PRINCIPAL INVESTIGATOR'S ASSSURANCES

1. I certify that all information provided in this application is complete and correct.
2. I understand that, as Principal Investigator, I have ultimate responsibility for the conduct of this study, the ethical performance this project, the protection of the rights and welfare of human subjects, and strict adherence to any stipulations imposed by the Auburn University IRB.
3. I certify that all individuals involved with the conduct of this project are qualified to carry out their specified roles and responsibilities and are in compliance with Auburn University policies regarding the collection and analysis of the research data.
4. I agree to comply with all Auburn policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection of human subjects, including, but not limited to the following:
    a. Conducting the project by qualified personnel according to the approved protocol
    b. Implementing no changes in the approved protocol or consent form without prior approval from the Office of Research Compliance
    c. Obtaining the legally effective informed consent from each participant or their legally responsible representative prior to their participation in this project using only the currently approved, stamped consent form
    d. Promptly reporting significant adverse events and/or effects to the Office of Research Compliance in writing within 5 working days of the occurrence.
5. If I will be unavailable to direct this research personally, I will arrange for a co-investigator to assume direct responsibility in my absence. This person has been named as co-investigator in this application, or I will advise ORC, by letter, in advance of such arrangements.
6. I agree to conduct this study only during the period approved by the Auburn University IRB.
7. I will prepare and submit a renewal request and supply all supporting documents to the Office of Research Compliance before the approval period has expired if it is necessary to continue the research project beyond the time period approved by the Auburn University IRB.
8. I will prepare and submit a final report upon completion of this research project.

My signature indicates that I have read, understand and agree to conduct this research project in accordance with the assurances listed above.

Benjamin Everett Larson	Benjamin Larson *Digitally signed by Benjamin Larson. DN: cn=Benjamin Larson, o, ou, email=bzl0011@auburn.edu, c=US Date: 2015.12.17 16:03:41 -06'00'*	12/17/2015
Printed name of Principal Investigator	**Principal Investigator's Signature**	**Date**

B. FACULTY ADVISOR/SPONSOR'S ASSURANCES

1. I have read the protocol submitted for this project for content, clarity, and methodology.
2. By my signature as faculty advisor/sponsor on this research application, I certify that the student or guest investigator is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study in accord with the approved protocol.
3. I agree to meet with the investigator on a regular basis to monitor study progress. Should problems arise during the course of the study, I agree to be available, personally, to supervise the investigator in solving them.
4. I assure that the investigator will promptly report significant incidents and/or adverse events and/or effects to the ORC in writing within 5 working days of the occurrence.
5. If I will be unavailable, I will arrange for an alternate faculty sponsor to assume responsibility during my absence, and I will advise the ORC by letter of such arrangements.   <u>If the investigator is unable to fulfill requirements for submission of renewals, modifications or the final report, I will assume that responsibility.</u>

Dr. Casey Cegielski	Casey G. Cegielski *Digitally signed by Casey G. Cegielski. DN: cn=Casey G. Cegielski, o=Auburn University, ou=Harbert College of Business, email=cegieca@auburn.edu, c=US Date: 2016.01.06 14:05:53 -06'00'*	
Printed name of Faculty Advisor / Sponsor	**Faculty Advisor's Signature**	**Date**

C. DEPARTMENT HEAD'S ASSSURANCE

By my signature as department head, I certify that I will cooperate with the administration in the application and enforcement of all Auburn University policies and procedures, as well as all applicable federal, state, and local laws regarding the protection and ethical treatment of human participants by researchers in my department.

Dr. David Paradice	David B. Paradice *Digitally signed by David B. Paradice. DN: cn=David B. Paradice, o=Harbert College of Business, ou=Auburn University, email=dparadice@auburn.edu, c=US Date: 2016.01.12 11:03:15 -06'00'*	
Printed name of Department Head	**Department Head's Signature**	**Date**

101

8. **PROJECT OVERVIEW: Prepare an abstract that includes:**
   (**350** word maximum, in language understandable to someone who is not familiar with your area of study):

   a) **A summary of relevant research findings leading to this research proposal:**
      (*Cite sources; include a "Reference List" as* *Appendix A.)*
   b) **A brief description of the methodology, including design, population, and variables of interest**

This research has the potential to impact research in statistics, business intelligence, and information systems literature. Information systems (IS) have become increasingly complex, and how, when, and where an individual interacts with technology has been evolving rapidly. Current research is unclear how interactions with personal technology influences workplace decisions and how the increasing complexity of IS is influencing important adoption constructs. While trust in IS has been studied in the workplace, there is a need to discover additional external antecedents to trust in the workplace (Li, Hess, & Valacich, 2008). In response to this need, this study will explore these issues by examining whether trust in personal technology (i.e., social media) influences the decisions made in the workplace.

Although trust transfer has been examined in IS as a cognitive process (Lin et al., 2011; Lu, et al., 2011), little has been done to examine how emotional trust transfers from one environment to another. Emotional trust has examined as a significant component of e-commerce (Sun, 2010). Little research has been done in regards to how emotional trust influences information use in the workplace. Some researchers have suggested the need for more research on the role of emotional trust and emotions in technology acceptance in general (Komiak & Benbasat, 2006). Addressing this research need can be a contribution to adoption of a technology as well as a discovery of an area of risk as emotions arguably should not be used in business transactions (Geffen et al., 2003). Information has been seen as increasingly valuable. However, with big data such as social media data, there is a danger of not only investing time and money to get irrelevant data but also making decisions using the wrong information due to a biased perception.

We will conduct survey-based research using items adapted from research literature in the fields mentioned above. Variables of interest will be "Emotional Trust in Social Media Providers, "Emotional Trust in Social Media Communities", "Cognitive Trust in Algorithms", "Relative Advantage", "Perceived Enjoyment", "Behavioral Intentions", and "Cognitive Trust in Business Analytics Using Social Media". Control variables will include "Social Norms", "Trusting Stance", "Risk Propensity", "Competence Belief in Social Media Providers", "Industry", "Gender" , "Awareness", "Perceived Risk", "Perceived Usefulness", and "Intuitive/Rational". Population of interest will be professionals.

9. **PURPOSE.**
   a. **Clearly state the purpose of this project and all research questions, or aims.**

Research Questions:
1. Does cognitive and emotional trust formed through personal use of a technology, social media, influence trust in business analytics using that technology?
2. Does emotional trust built through personal use of social media influence perceived enjoyment of using social-media based business analytics?
3. Does emotional trust built through personal use of social media lead to a perceived relative advantage in using social media in business analytics?
4. Does the perceived enjoyment act as a mediator for the influence of emotional trust in social media from personal use on trust in social media based business analytics and the relative advantage perceived about social media based business analytics?
5. Do the perceived enjoyment of, initial trust in, and relative advantage of social media business analytics influence the behavioral intention of using social media based business analytics?

   b. **How will the results of this project be used? (e.g., Presentation? Publication? Thesis? Dissertation?)**

The study will be used for Dissertation Research

10. KEY PERSONNEL. Describe responsibilities. Include information on research <u>training or certifications</u> related to this project. **CITI is required. Be as specific as possible.** (Include additional personnel in an attachment.) *All key personnel must **attach CITI certificates of completion.***

Principle Investigator Benjamin Everett Larson   **Title:** Doctoral Candidate **E-mail address** bzl0011@auburn.edu

Dept / Affiliation: Aviation & Supply Chain

<u>Roles / Responsibilities</u>:

1. Develop Protocol.   4. Analyze Data
2. Design Study   5. Develop Conclusions
3. Manage Data set   6. Prepare dissertation manuscript

Individual: Dr. Casey Cegielski   **Title:** Professor   **E-mail address** cegieca@auburn.edu

Dept / Affiliation: Aviation & Supply Chain

<u>Roles / Responsibilities</u>:

1. Develop Protocol.   4. Analyze Data
2. Design Study   5. Develop Conclusions
3. Manage Data set

Individual: _____ **Title:** _____ **E-mail address** _____

Dept / Affiliation: _____

<u>Roles / Responsibilities</u>:

Individual: _____ **Title:** _____ **E-mail address** _____

Dept / Affiliation: _____

<u>Roles / Responsibilities</u>:

Individual: _____ **Title:** _____ **E-mail address** _____

Dept / Affiliation: _____

<u>Roles / Responsibilities</u>:

Individual: _____ **Title:** _____ **E-mail address** _____

Dept / Affiliation: _____

<u>Roles / Responsibilities</u>:

11. LOCATION OF RESEARCH. List all locations where data collection will take place. (School systems, organizations, businesses, buildings and room numbers, servers for web surveys, etc.) **Be as specific as possible. Attach permission letters in Appendix E.**
(See sample letters at http://www.auburn.edu/research/vpr/ohs/sample.htm)

Web survey for the research will be hosted on the Auburn University Qualtrics server at https://auburn.qualtrics.com/

12. PARTICIPANTS.

    a. **Describe the participant population you have chosen for this project including inclusion or exclusion criteria for participant selection.**

        ☐ **Check here if using existing data, describe the population from whom data was collected, & include the # of data files.**

Survey will be administered to Professionals currently employed in their fields located domestically.

All potential participants will be 19 years of age or older.

Potential participants will be recruited using by pruchasing Qualtrics Panels. The panels will screen for basic business analytics knowledge and years of managment experience.

    b. **Describe, step-by-step, in layman's terms, all procedures you will use to recruit participants.** *Include in **Appendix B** a copy of all e-mails, flyers, advertisements, recruiting scripts, invitations, etc., that will be used to invite people to participate. (See sample documents at http://www.auburn.edu/research/vpr/ohs/sample.htm.)*

1. Participants will be recruited using by pruchasing Qualtrics Panels. The panels will screen for basic business analytics knowledge and years of work experience. The survey will beging with an invitation that contains a link to the Information Letter (containing information on protecting their privacy, purpose of study, and investigator contact information).

    c. **What is the minimum number of participants you need to validate the study?**   200

        How many participants do you expect to recruit?   400

        Is there a limit on the number of participants you will include in the study?   ☐ **No**   ☑ **Yes – the # is**   200

    d. **Describe the type, amount and method of compensation and/or incentives for participants.**

        (If no compensation will be given, check here: ☑)

        Select the type of compensation: ☐ Monetary   ☐ Incentives

                                ☐ Raffle or Drawing incentive (Include the chances of winning.)

                                ☐ Extra Credit (State the value)

                                ☐ Other

        Description:

13. **PROJECT DESIGN & METHODS.**

    a.   Describe, <u>step-by-step</u>, all procedures and methods that will be used to <u>consent</u> participants. If a waiver is being requested, check each waiver you are requesting, describe how the project meets the criteria for the waiver.

        ☐   **Waiver of Consent (including using existing data)**

        ☑   **Waiver of Documentation of Consent (use of Information Letter)**

        ☐   **Waiver of Parental Permission (for college students)**

1. The survey will begin by stating that participation is completely voluntary, that their identity will be protected by ensuring the anonymity of their responses, and providing a link to the information letter. Potential respondents will be informed that they may withdraw from the study at any time.

    b.   **Describe the research design and methods you will use to address your purpose. Include a <u>clear description</u> of when, where and how you will collect all data for this project.** Include specific information about the participants' time and effort commitment. (*NOTE: Use language that would be understandable to someone who is not familiar with your area of study. Without a complete description of all procedures, the Auburn University IRB will not be able to review this protocol.* **If additional space is needed for this section, save the information as a .PDF file and insert after page 7 of this form.**)

1. Participants will be recruited using by pruchasing Qualtrics Panels. The panels will screen for basic business analytics knowledge and years of work experience.

2. Participants will complete the web-based survey as hosted on the Auburn Qualtrics server, at http://auburn.qualtrics.com. Responses are anonymous and researcher will ensure the privacy of respondents and security of the data collected.

The researchers anticipate that the participant will need no more than 10 - 20 minutes in order to complete the survey.

3. After the data has been collected, no further particpation from respondents is necessary, and the survey-part of the study will have ended.

4. The researcher will analyze the data collected.

The information provided, emails, and survey instrument can be found in appendix C.

13. **PROJECT DESIGN & METHODS.** *Continued*

    c. **List all data collection instruments used in this project, in the order they appear in Appendix C.**
    (e.g., surveys and questionnaires **in the format that will be presented to participants**, educational tests, data collection sheets, interview questions, audio/video taping methods etc.)

      1. Survey Instrument

    d. **Data analysis: Explain how the data will be analyzed.**

      1. Missing Value analysis and Statistical assumption testing will first occur to ensure the viability of the collected data for further statistical analysis.
      2. The researcher will employ Structural Equation Modeling to test the statistical relationship between the study variables.

14. **RISKS & DISCOMFORTS: List and describe all of the risks that participants might encounter in this research.** ***If you are using deception in this study, please justify the use of deception and be sure to attach a copy of the debriefing form you plan to use in*** ***Appendix D.*** *(Examples of possible risks are in section #6D on page 2)*

    Participants will not encounter any risks or discomforts. Data for the study will be collected anonymously.

15. **PRECAUTIONS.** Identify and describe all precautions you have taken to eliminate or reduce risks as listed in #14. If the participants can be classified as a "vulnerable" population, please describe additional safeguards that you will use to assure the ethical treatment of these individuals. ***Provide a copy of any emergency plans/procedures and medical referral lists in*** Appendix D. ***(Samples can be found online at http://www.auburn.edu/research/vpr/ohs/sample.htm#precautions)***

No risks were listed.

If using the Internet or other electronic means to collect data, what confidentiality or security precautions are in place to protect (or not collect) identifiable data? Include protections used during both the collection and transfer of data.

Qualtrics.com complies with the U.S. and E.U. Safe Harbor Framework and the U.S. and Swiss Safe Harbor Framework as set forth by the U.S. Department of Commerce regarding the collection, use and retention of personal information from European Union member countries and Switzerland. Qualtrics has certified that it adheres to the Safe Harbor Privacy Principles of notice, choice, onward transfer, security, data integrity, access, and enforcement.

Qualtrics has SAS 70 Certification and meets the rigorous privacy standards imposed on health care records by the Health Insurance Portability and Accountability Act (HIPAA). All Qualtrics accounts are hidden behind passwords and all data is protected with real-time data replication.

Qualtrics protects the identities of survey respondents by hiding any identifiable information regarding which ones complete the survey and which ones do not respond. Research study investigators will have no identifiable information about those respondents who complete the survey and who do not.

16. **BENEFITS.**
    a. **List all realistic direct benefits participants can expect by participating in this specific study.**
       (Do not include "compensation" listed in #12d.)   Check here if there are no direct benefits to participants. ☑

    b. **List all realistic benefits for the general population that may be generated from this study.**

    This research will help to further the body of knowledge related to organizational trust and enjoyment, within the context of the adoption of technology. This study, as with other studies in this area, have the potential to lead to newer practices that improve the manner in which firms adopt technology and data for the use of business analytics.

17. **PROTECTION OF DATA.**

    a. **Data are collected:**

        ☑ **Anonymously with no direct or indirect coding, link, or awareness of who participated in the study (Skip to e)**

        ☐ **Confidentially, but without a link of participant's data to any identifying information (collected as "confidential" but recorded and analyzed as "anonymous") (Skip to e)**

        ☐ **Confidentially with collection and protection of linkages to identifiable information**

    b. **If data are collected with identifiers or as coded or linked to identifying information, describe the identifiers collected and how they are linked to the participant's data.**

    c. **Justify your need to code participants' data or link the data with identifying information.**

    d. **Describe how and where identifying data and/or code lists will be stored.** (Building, room number?) **Describe how the location where data is stored will be secured in your absence. For electronic data, describe security. If applicable, state specifically where any IRB-approved and participant-signed consent documents will be kept on campus for 3 years after the study ends.**

    e. **Describe how and where the data will be stored** (e.g., hard copy, audio cassette, electronic data, etc.)**, and how the location where data is stored is separated from identifying data and will be secured in your absence. For electronic data, describe security**

       Data will be stored in electronic format on the researchers' computers' hard drives. It will be encrypted and password protected.

    f. **Who will have access to participants' data?**
       (*The faculty advisor should have full access and be able to produce the data in the case of a federal or institutional audit*.)

       Only the researchers and the faculty advisor will have access to the participants' responses.

    g. **When is the latest date that identifying information or links will be retained and how will that information or links be destroyed?**
       (Check here if only anonymous data will be retained ☑)

       No confidential data will be collected.

Appendix A – References

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly, 27*(1), 51-90.

Komiak, S. Y., & Benbasat, I. (2006). The effects of personalization and familiarity on trust and adoption of recommendation agents. *MIS Quarterly, 30*(4), 941-960.

Li, X., Hess, T. J., & Valacich, J. S. (2008). Why do we trust new technology? A study of initial trust formation with organizational information systems. The Journal of Strategic Information Systems, 17(1), 39-71.

Lin, J., Lu, Y., Wang, B., & Wei, K. K. (2011). The role of inter-channel trust transfer in establishing mobile commerce trust. Electronic Commerce Research and Applications, 10(6), 615-625.

Lu, Y., Yang, S., Chau, P. Y., & Cao, Y. (2011). Dynamics between the trust transfer process and intention to use mobile payment services: A cross-environment perspective. Information & Management, 48(8), 393-403.

Sun, H. (2010). Sellers' trust and continued use of online marketplaces. Journal of the Association for Information Systems, 11(4), Article 2.

Intro

Thank you for taking the time to participate in our survey!

Please click the "Next" button below to begin.
Your total time commitment to finish the survey is estimated to be 10-20 minutes.

If you wish, you may review the Information Letter for this study here (Opens in new window/tab).

Your participation is voluntary and all data collected will remain completely anonymous.

Benjamin Larson   - BZL0011@auburn.edu
Dr. Casey Cegielski - cegieca@auburn.edu

Raymond J. Harbert College of Business
Auburn University

General

I understand that business analytics transforms data into information which decision makers may use.

○ Yes

○ No

○ I do not know.

What is your age?

[   ]

What is your level of managerial experience (managing people)?

No experience	< 1 year	1-5 years	6-10 years	>10 Years
○	○	○	○	○

What is your level of managerial experience (purchasing corporate resources)?

No experience	< 1 year	1-5 years	6-10 years	>10 Years
○	○	○	○	○

How often do you use social media?

Never	Once a Month	Once a Week	2-3 Times a Week	Once a day	2-3 Times a Day	More than 3 times a day
○	○	○	○	○	○	○

What is your country of origin?

[⌄]

What is your gender?

○ Male

○ Female

In which industry are you currently employed?

[⌄]

Please describe the industry you are in.

[ ]

What is your highest level of education?

○ High school degree or less

○ Some college

○

College degree

○ Some graduate school

○ Graduate degree

Which of the following ranges includes your family's total annual household income?

[▽]

I have used social media data for decisions in the workplace.

○ Yes

○ No

○ I do not know.

What is your level of work experience using social media data?

○ < 1 year

○ 1-3 years

○ 4-5 years

○ >5 Years

I currently use social media data in business decisions.

○ Yes

○ No

Trust in Social Media Providers (Facebook, Twitter, Foursquare, etc....)

Please rate your level of agreement with each of the following statements about social media providers (Facebook, Twitter, Foursquare, etc....).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
I feel comfortable about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
I feel content about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
Social Media Providers are competent and effective in providing information.	○	○	○	○	○	○	○
Social Media Providers perform the role of allowing people to freely communicate very well.	○	○	○	○	○	○	○
Overall, Social Media Providers are capable and proficient at allowing communication and providing the most relevant information.	○	○	○	○	○	○	○
In general, Social Media Providers are very knowledgeable about giving me the information that I want to see.	○	○	○	○	○	○	○

Social Media Communities (Users within social media that post responses)

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○
I feel comfortable about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○
I feel content about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○

Algorithms (Search engines, automated product recommendations...)

Imagine you are looking to purchase a product or locate specific information. Please rate your level of agreement with each of the following statements related to algorithms (step by step procedures used to program software) which can be represented by automated recommendations provided as suggested products or as search results.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I believe algorithms that recommend products are created in good faith.	○	○	○	○	○	○	○
If I required help, Internet searches based on algorithms will provide me with results in my best interest.	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Recommended sites and posts provided by algorithms are interested in my well-being.	○	○	○	○	○	○	○
Algorithm recommendations are truthful.	○	○	○	○	○	○	○
I would characterize Algorithm recommendations as honest.	○	○	○	○	○	○	○
Algorithms provide the information I ask for.	○	○	○	○	○	○	○
It is possible through rules and mathematical calculations to provide me with the best recommendations possible.	○	○	○	○	○	○	○
Recommendations driven by my Internet activity provide me with relevant information.	○	○	○	○	○	○	○
Overall, algorithms are capable and proficient at providing product advice.	○	○	○	○	○	○	○

Trust in Social Media Business Analytics (Big data social media information)

Imagine that you are employed as a purchasing manager. How would you feel about analytical recommendations influenced by data collected from social media?"

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Using business analytics that include social media would be in my best interest.	○	○	○	○	○	○	○
Business analytics that include social media would provide me information that will help me	○	○	○	○	○	○	○
Information from business analytics that includes social media would be provided to facilitate my well-being as an employee.	○	○	○	○	○	○	○
Business analytics that include social media provide the best recommendations possible.	○	○	○	○	○	○	○
Including social media data in business analytics will provide me with relevant information.	○	○	○	○	○	○	○
Overall, business analytics that include social media are capable and proficient at providing product purchase information.	○	○	○	○	○	○	○
Business analytics that include social media data are valid.	○	○	○	○	○	○	○
Business analytics that include social media are reliable.	○	○	○	○	○	○	○
Please select somewhat disagree for this line to demonstrate you are paying attention.	○	○	○	○	○	○	○
Business analytics that include social media data are truthful.	○	○	○	○	○	○	○
I would trust the recommendations of business analytics that include social media data more than the recommendations without social media data.	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I would trust the validity of a recommendation using social media more than a recommendation without a social media component.	○	○	○	○	○	○	○
I would find a more optimal amount to purchase using analytics including social media than I would through analytics without a social media component.	○	○	○	○	○	○	○

Behavioral Intentions/Enjoyment

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I intend to use social media data as a component in making business decisions.	○	○	○	○	○	○	○
I predict I will use social media data as a component in making business decisions.	○	○	○	○	○	○	○
I plan to use social media data as a component in making business decisions.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I believe using information from social media would be enjoyable.	○	○	○	○	○	○	○
I believe using information from social media would be fun.	○	○	○	○	○	○	○
I believe the process of using information from social media would be pleasant.	○	○	○	○	○	○	○

Use/Risk

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
There is a considerable risk in using social media data in business analytics.	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
There is a high potential for loss in using social media data in business analytics.	○	○	○	○	○	○	○
The decision to use social media data in business analytics is risky.	○	○	○	○	○	○	○
Social media data improves the performance of business analytics.	○	○	○	○	○	○	○
Social media data enables business analytics to perform better.	○	○	○	○	○	○	○
Social media data enhances business analytics results.	○	○	○	○	○	○	○
Social media data increases the productivity of business analytics.	○	○	○	○	○	○	○

Social Norms

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
People who influence my behavior think that business analytics should include social media as key component.	○	○	○	○	○	○	○
People who are important to me think that business analytics should include social media as key component.	○	○	○	○	○	○	○
In general, organizations I work with or learn from think that business analytics should include social media as key component.	○	○	○	○	○	○	○

Trusting Stance

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I usually trust new technology until it gives me a reason not to.	○	○	○	○	○	○	○
I generally give technology the benefit of the doubt when I first use it.	○	○	○	○	○	○	○
My typical approach is to trust new technollogy until it proves I should not.	○	○	○	○	○	○	○

Intuitive/Rational

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When making decisions, I rely upon my instincts.	○	○	○	○	○	○	○
I double-check my information sources to be sure I have the right facts before making a decision.	○	○	○	○	○	○	○
When I make a decision, I trust my inner feelings and reactions.	○	○	○	○	○	○	○
I make decisions in a logical and systematic manner.	○	○	○	○	○	○	○
I generally make decisions that feel right to me.	○	○	○	○	○	○	○
When I make a decision, it is more important to me to feel the decision is right than to have a rational reason for it.	○	○	○	○	○	○	○
When making a decision, I consider various options in terms of a specific goal.	○	○	○	○	○	○	○
My decision-making requires careful thought.	○	○	○	○	○	○	○
Please select strongly agree for this line.	○	○	○	○	○	○	○

Risk Taker

Imagine that you have been diagnosed with a severe heart ailment. A medical procedure, if successful, will cure you, but it may also be fatal. What is the lowest acceptable probability you would need to agree to the procedure?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that the big football game is almost over; the home team is losing. Should the last play be an attempt to tie that would almost definitely be successful, or a risky play that, if successful, would ensure victory? What is the lowest acceptable probability you would need to agree to the risky play?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○

7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that you are a successful businessperson who has been approached as a potential congressional candidate by a minority party. Running would be a financial strain and would be a difficult race. You would like to hold the office, however. hat is the lowest acceptable probability you would need to agree to run?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that you are a research scientist trying to plan the next five years. You can work on a project that, if successful, would solve difficult scientific issues. If unsuccessful, however, you will have difficulty finding a job. Instead, you could work on a series of short term but less important projects. What is the lowest acceptable probability you would need to decide to work on the long-term project?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Awareness

In the following items <u>deceptive</u> means that the data may be made intentionally misleading. Please rate the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Overall, I am aware that Social Media Data may contain <u>deceptive</u> data.	○	○	○	○	○	○	○
I have sufficient knowledge about potentially <u>deceptive</u> social media data.	○	○	○	○	○	○	○
I understand the concerns regarding the ability to determine <u>deceptive</u> information in social media data.	○	○	○	○	○	○	○

Please rate the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Overall, I am aware that Social Media Data may contain <u>inaccurate</u> data.	○	○	○	○	○	○	○
I have sufficient knowledge about potentially <u>inaccurate</u> social media data.	○	○	○	○	○	○	○
I understand the concerns regarding the ability to determine the <u>accuracy</u> of social media data.	○	○	○	○	○	○	○

40_
AUBURN, AL 36849-5247

TELEPHONE:

(334) 844-4908

FAX:

(334) 844-4927

www.auburn.edu

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

INFORMATION LETTER
for a Research Study entitled
"From Personal Trust to Professional Behavior: A Study of the Impact of Trust and Enjoyment on Behavior Intentions in Business Analytics"

You are invited to participate in a research study to explore trust in social media. The study is being conducted by Benjamin Larson, doctoral candidate, under the direction of Dr. Casey Cegielski, Professor of Information Systems Management in the Auburn University Department of Aviation & Supply Chain Management. You are invited to participate because you are a student at Auburn University and are 19 or older.

What will be involved if you participate? Your participation is completely voluntary.   If you decide to participate in this research study, you will be asked to complete an online survey. Your total time commitment will be approximately 20 minutes.

Are there any risks or discomforts? There are no risks or discomfort associated with participation in the study. Keep in mind that you can withdraw from this study at any time.

Are there any benefits to yourself or others? There are no personal benefits associated with participation in this study. However, the data you provide may help enhance the understanding of people's use of social media in business analytics.

Will you receive compensation for participating? If you participate in this study, the instructor who invited you may award you extra credit for your course. Please check with your instructor about the possibility and amount of extra credit associated with participation in this study. In case your instructor awards extra credit to participants in this study, you may prove your participation in this study by printing the thank-you page that will appear upon submission of your survey responses and submitting it to your instructor.

 Are there any costs? There are no anticipated costs associated with

participation in this study.   120

RAYMOND J. HARBERT
COLLEGE OF BUSINESS
DEPARTMENT OF AVIATION & SUPPLY CHAIN MANAGEMENT

If you change your mind about participating, you may withdraw from this study at any time. Your participation is completely voluntary.

All data collected as part of this study will be completely anonymous. We will protect your privacy and the data you provide by not collecting any personally identifiable information from you that is attached to your responses. The data collected in this study may be used in a publication in an academic journal and/or presentation at a professional conference.

If you have any questions about this study, please contact Benjamin Larson at 334-844-6468 or BZL0011@auburn.edu, or contact Dr. Casey Cegielski at 334-844-6542 or cegieca@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE "NEXT" BUTTON BELOW. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

_____
Investigator   Date

> The Auburn University Institutional Review Board has approved this Document for use from ___01/19/16___ to ___01/18/17___
> Protocol # ___16-012 EP 1601___

Add this approval information in sentence form to your electronic information letter!

_____
Co-Investigator   Date

The Auburn University Institutional Review Board has approved this document for use from _____ to _____. Protocol #_____.

403 LOWDER HALL

AUBURN, AL 36849-5247

TELEPHONE:

(334) 844-4908

FAX:

(334) 844-4927

NEXT

AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS
R E S E A R C H   P R O T O C O L   R E V I E W   F O R M
F U L L   B O A R D   o r   E X P E D I T E D

For Information or help contact **THE OFFICE OF RESEARCH COMPLIANCE (ORC),** 115 Ramsay Hall, Auburn University
Phone: 334-844-5966   **e-mail:** IRBAdmin@auburn.edu **Web Address:** http://www.auburn.edu/research/vpr/ohs/index.htm

Revised 2.1.2014   **Submit completed form to IRBsubmit@auburn.edu or 115 Ramsay Hall, Auburn University 36849.**

Form must be populated using Adobe Acrobat / Pro 9 or greater standalone program (do not fill out in browser). Hand written forms will not be accepted.

1. **PROPOSED START DATE of STUDY**: 01/15/2016

PROPOSED REVIEW CATEGORY (Check one): ☐ **FULL BOARD**   ☑ **EXPEDITED**

SUBMISSION STATUS (Check one):   ☑ **NEW**   ☐ **REVISIONS (to address IRB Review Comments)**

2. **PROJECT TITLE:** From Personal Trust to Professional Behavior: A Study of the Impact of Trust and Enjoyment on Behavior Intentions in Business Analytics

3. <u>Benjamin Everett Larson</u>   <u>Doctoral Candidate</u>   <u>Aviation & Supply Chain</u>   <u>bzl0011@auburn.edu</u>
   PRINCIPAL INVESTIGATOR   **TITLE**   **DEPT**   **AU E-MAIL**

   <u>403 Lowder Business Building, 405 W. Magnolia Av.</u>   <u>334-844-6537</u>   <u>larsonb2835@bellsouth.net</u>
   MAILING ADDRESS   **PHONE**   **ALTERNATE E-MAIL**

4. **FUNDING SUPPORT:** ☑ N/A ☐ Internal ☐ External Agency: _____   ☐ Pending ☐ Received

For federal funding, list agency and grant number (if available). _____

5a. **List any contractors, sub-contractors, other entities associated with this project:**

   Qualtrics

b. **List any other IRBs associated with this project (including Reviewed, Deferred, Determination, etc.):**

_____

PROTOCOL PACKET CHECKLIST

All protocols must include the following items:

☑ **Research Protocol Review Form** (All signatures included and all sections completed)
   (Examples of appended documents are found on the OHSR website: http://www.auburn.edu/research/vpr/ohs/sample.htm)

☑ **CITI Training Certificates** for all Key Personnel.

☑ **Consent Form or Information Letter** and any Releases (audio, video or photo) that the participant will sign.

☑ **Appendix A**, "Reference List"

☑ **Appendix B** if e-mails, flyers, advertisements, generalized announcements or scripts, etc., are used to recruit participants.

☑ **Appendix C** if data collection sheets, surveys, tests, other recording instruments, interview scripts, etc. will be used for data collection. Be sure to attach them in the order in which they are listed in # 13c.

☐ **Appendix D** if you will be using a debriefing form or include emergency plans/procedures and medical referral lists
   (A referral list may be attached to the consent document).

☐ **Appendix E** if research is being conducted at sites other than Auburn University or in cooperation with other entities. A **permission letter** from the site / program director must be included indicating their cooperation or involvement in the project. NOTE: If the proposed research is a multi-site project, involving investigators or participants at other academic institutions, hospitals or private research organizations, a letter of **IRB approval** from each entity is required prior to initiating the project.

☐ **Appendix F** - Written evidence of acceptance by the host country if research is conducted outside the United States.

122

6. **GENERAL RESEARCH PROJECT CHARACTERISTICS**

6A. Research Methodology

Please check all descriptors that best apply to the research methodology.

Data Source(s): ☑ New Data ☐ Existing Data

Will recorded data directly or indirectly identify participants?
☐ Yes   ☑ No

Data collection will involve the use of:

Educational Tests (cognitive diagnostic, aptitude, etc.)
Interview
Observation
Location or Tracking Measures
Physical / Physiological Measures or Specimens (see Section 6E.)
✓ Surveys / Questionnaires

✓ Internet / Electronic
Audio
Video
Photos
Digital images
Private records or files

Other: _____

6B. Participant Information

Please check all descriptors that apply to the target population.
☑ Males   ☑ Females   ☑ AU students

Vulnerable Populations
☐ Pregnant Women/Fetuses   ☐ Prisoners   ☐ Institutionalized
☐ Children and/or Adolescents (under age 19 in AL)

Persons with:
☐ Economic Disadvantages   ☐ Physical Disabilities
☐ Educational Disadvantages   ☐ Intellectual Disabilities

Do you plan to compensate your participants? ☑ Yes ☐ No

6C. Risks to Participants

Please identify all risks that participants might encounter in this research.

☐ Breach of Confidentiality*   ☐ Coercion
☐ Deception   ☐ Physical
☐ Psychological   ☐ Social
☑ None
☐ Other:

*Note that if the investigator is using or accessing confidential or identifiable data, breach of confidentiality is always a risk.

6D. Corresponding Approval/Oversight

- Do you need IBC Approval for this study?
  ☐ Yes   ☑ No

  If yes, BUA #_____ Expiration date _____

- Do you need IACUC Approval for this study?
  ☐ Yes   ☑ No

  If yes, PRN #_____ Expiration date _____

- Does this study involve the Auburn University MRI Center?
  ☐ Yes   ☑ No

  Which MRI(s) will be used for this project? (Check all that apply)
  ☐ 3T   ☐ 7T

  Does any portion of this project require review by the MRI Safety Advisory Council?
  ☐ Yes   ☑ No

  Signature of MRI Center Representative: _____
  Required for all projects involving the AU MRI Center

  Appropriate MRI Center Representatives:
     Dr. Thomas S. Denney, Director AU MRI Center
     Dr. Ron Beyers, MR Safety Officer

2

7. PROJECT ASSURANCES From Personal Trust to Professional Behavior: A Study of the Impact of Trust and Enjoyment on Behavior Intentions in Business Analytics

A. PRINCIPAL INVESTIGATOR'S ASSSURANCES

1. I certify that all information provided in this application is complete and correct.
2. I understand that, as Principal Investigator, I have ultimate responsibility for the conduct of this study, the ethical performance this project, the protection of the rights and welfare of human subjects, and strict adherence to any stipulations imposed by the Auburn University IRB.
3. I certify that all individuals involved with the conduct of this project are qualified to carry out their specified roles and responsibilities and are in compliance with Auburn University policies regarding the collection and analysis of the research data.
4. I agree to comply with all Auburn policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection of human subjects, including, but not limited to the following:
   a. Conducting the project by qualified personnel according to the approved protocol
   b. Implementing no changes in the approved protocol or consent form without prior approval from the Office of Research Compliance
   c. Obtaining the legally effective informed consent from each participant or their legally responsible representative prior to their participation in this project using only the currently approved, stamped consent form
   d. Promptly reporting significant adverse events and/or effects to the Office of Research Compliance in writing within 5 working days of the occurrence.
5. If I will be unavailable to direct this research personally, I will arrange for a co-investigator to assume direct responsibility in my absence. This person has been named as co-investigator in this application, or I will advise ORC, by letter, in advance of such arrangements.
6. I agree to conduct this study only during the period approved by the Auburn University IRB.
7. I will prepare and submit a renewal request and supply all supporting documents to the Office of Research Compliance before the approval period has expired if it is necessary to continue the research project beyond the time period approved by the Auburn University IRB.
8. I will prepare and submit a final report upon completion of this research project.

My signature indicates that I have read, understand and agree to conduct this research project in accordance with the assurances listed above.

Benjamin Everett Larson	Benjamin Larson _Digitally signed by Benjamin Larson DN: cn=Benjamin Larson, o, ou, email=bzl0011@auburn.edu, c=US Date: 2015.12.17 16:11:09 -06'00'_	12/17/2015
Printed name of Principal Investigator	**Principal Investigator's Signature**	**Date**

B. FACULTY ADVISOR/SPONSOR'S ASSURANCES

1. I have read the protocol submitted for this project for content, clarity, and methodology.
2. By my signature as faculty advisor/sponsor on this research application, I certify that the student or guest investigator is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study in accord with the approved protocol.
3. I agree to meet with the investigator on a regular basis to monitor study progress. Should problems arise during the course of the study, I agree to be available, personally, to supervise the investigator in solving them.
4. I assure that the investigator will promptly report significant incidents and/or adverse events and/or effects to the ORC in writing within 5 working days of the occurrence.
5. If I will be unavailable, I will arrange for an alternate faculty sponsor to assume responsibility during my absence, and I will advise the ORC by letter of such arrangements. If the investigator is unable to fulfill requirements for submission of renewals, modifications or the final report, I will assume that responsibility.

Dr. Casey Cegielski	Casey G. Cegielski _Digitally signed by Casey G. Cegielski DN: cn=Casey G. Cegielski, o=Auburn University, ou=Harbert College of Business, email=cegieca@auburn.edu, c=US Date: 2016.01.06 14:06:21 -06'00'_	
Printed name of Faculty Advisor / Sponsor	**Faculty Advisor's Signature**	**Date**

C. DEPARTMENT HEAD'S ASSSURANCE

By my signature as department head, I certify that I will cooperate with the administration in the application and enforcement of all Auburn University policies and procedures, as well as all applicable federal, state, and local laws regarding the protection and ethical treatment of human participants by researchers in my department.

Dr. David Paradice	David B. Paradice _Digitally signed by David B. Paradice DN: cn=David B. Paradice, o=Harbert College of Business, ou=Auburn University, email=dparadice@auburn.edu, c=US Date: 2016.01.12 11:04:02 -06'00'_	
Printed name of Department Head	**Department Head's Signature**	**Date**

8. **PROJECT OVERVIEW: Prepare an abstract that includes:**
   (350 word maximum, in language understandable to someone who is not familiar with your area of study)**:**

   a) **A summary of relevant research findings leading to this research proposal:**
      (*Cite sources; include a "Reference List" as Appendix A.*)
   b) **A brief description of the methodology, including design, population, and variables of interest**

This research has the potential to impact research in statistics, business intelligence, and information systems literature. Information systems (IS) have become increasingly complex, and how, when, and where an individual interacts with technology has been evolving rapidly. Current research is unclear how interactions with personal technology influences workplace decisions and how the increasing complexity of IS is influencing important adoption constructs. While trust in IS has been studied in the workplace, there is a need to discover additional external antecedents to trust in the workplace (Li, Hess, & Valacich, 2008). In response to this need, this study will explore these issues by examining whether trust in personal technology (i.e., social media) influences the decisions made in the workplace.

Although trust transfer has been examined in IS as a cognitive process (Lin et al., 2011; Lu, et al., 2011), little has been done to examine how emotional trust transfers from one environment to another. Emotional trust has examined as a significant component of e-commerce (Sun, 2010). Little research has been done in regards to how emotional trust influences information use in the workplace. Some researchers have suggested the need for more research on the role of emotional trust and emotions in technology acceptance in general (Komiak & Benbasat, 2006). Addressing this research need can be a contribution to adoption of a technology as well as a discovery of an area of risk as emotions arguably should not be used in business transactions (Geffen et al., 2003). Information has been seen as increasingly valuable. However, with big data such as social media data, there is a danger of not only investing time and money to get irrelevant data but also making decisions using the wrong information due to a biased perception.

We will conduct survey-based research using items adapted from research literature in the fields mentioned above. Variables of interest will be "Emotional Trust in Social Media Providers," "Emotional Trust in Social Media Communities", "Cognitive Trust in Algorithms", "Relative Advantage", "Perceived Enjoyment", "Behavioral Intentions", and "Cognitive Trust in Business Analytics Using Social Media". Control variables will include "Social Norms", "Trusting Stance", "Risk Propensity", "Competence Belief in Social Media Providers", "Industry", "Gender" , "Awareness", "Perceived Risk", "Perceived Usefulness", and "Intuitive/Rational". Population of interest will be professionals.

9. **PURPOSE.**
   a. **Clearly state the purpose of this project and all research questions, or aims.**

Research Questions:
1. Does cognitive and emotional trust formed through personal use of a technology, social media, influence trust in business analytics using that technology?
2. Does emotional trust built through personal use of social media influence perceived enjoyment of using social-media based business analytics?
3. Does emotional trust built through personal use of social media lead to a perceived relative advantage in using social media in business analytics?
4. Does the perceived enjoyment act as a mediator for the influence of emotional trust in social media from personal use on trust in social media based business analytics and the relative advantage perceived about social media based business analytics?
5. Do the perceived enjoyment of, initial trust in, and relative advantage of social media business analytics influence the behavioral intention of using social media based business analytics?

   b. **How will the results of this project be used? (e.g., Presentation? Publication? Thesis? Dissertation?)**

The study will be used for Dissertation Research

10. **KEY PERSONNEL.** Describe responsibilities. Include information on research <u>training or certifications</u> related to this project. **CITI is required.** **Be as specific as possible.** (Include additional personnel in an attachment.) *All key personnel must attach CITI certificates of completion.*

Principle Investigator __Benjamin Everett Larson__ Title: __Doctoral Candidate__ E-mail address __bzl0011@auburn.edu__

Dept / Affiliation: __Aviation & Supply Chain__

Roles / Responsibilities:

1. Develop Protocol.   4. Analyze Data
2. Design Study   5. Develop Conclusions
3. Manage Data set   6. Prepare dissertation manuscript

Individual: __Dr. Casey Cegielski__ Title: __Professor__ E-mail address __cegieca@auburn.edu__

Dept / Affiliation: __Aviation & Supply Chain__

Roles / Responsibilities:

1. Develop Protocol.   4. Analyze Data
2. Design Study   5. Develop Conclusions
3. Manage Data set

Individual: _____ Title: _____ E-mail address _____

Dept / Affiliation: _____

Roles / Responsibilities:

Individual: _____ Title: _____ E-mail address _____

Dept / Affiliation: _____

Roles / Responsibilities:

Individual: _____ Title: _____ E-mail address _____

Dept / Affiliation: _____

Roles / Responsibilities:

Individual: _____ Title: _____ E-mail address _____

Dept / Affiliation: _____

Roles / Responsibilities:

11. **LOCATION OF RESEARCH. List all locations where data collection will take place.** (School systems, organizations, businesses, buildings and room numbers, servers for web surveys, etc.) **Be as specific as possible. Attach permission letters in** Appendix E.
(See sample letters at http://www.auburn.edu/research/vpr/ohs/sample.htm)

Web survey for the research will be hosted on the Auburn University Qualtrics server at https://auburn.qualtrics.com/

12. PARTICIPANTS.

    a.   Describe the participant population you have chosen for this project including inclusion or exclusion criteria for participant selection.

        ☐ Check here if using existing data, describe the population from whom data was collected, & include the # of data files.

Auburn University students who are 19 years old and older who are recruited from the courses whose instructors give permission to the investigators to invite their students to participate in this study.

    b.   Describe, step-by-step, in layman's terms, all procedures you will use to recruit participants. *Include in Appendix B a copy of all e-mails, flyers, advertisements, recruiting scripts, invitations, etc., that will be used to invite people to participate. (See sample documents at http://www.auburn.edu/research/vpr/ohs/sample.htm.)*

Given the course instructor's permission, potential participants will receive an invitation email to participate in this study. The email will contain a link to the Information Letter. After reading the letter, those who want to participate will click on the "next" button at the bottom of the letter, which will direct them to the survey page.

    c.   What is the minimum number of participants you need to validate the study?   100

        How many participants do you expect to recruit?   200

        Is there a limit on the number of participants you will include in the study?   ☐ No ☑ Yes – the # is   100

    d.   Describe the type, amount and method of compensation and/or incentives for participants.

        (If no compensation will be given, check here: ☐)

        Select the type of compensation: ☐ Monetary ☐ Incentives
                                      ☐ Raffle or Drawing incentive (Include the chances of winning.)
                                      ☑ Extra Credit (State the value)
                                      ☐ Other

        Description:

Extra credit determined by instructor.

13. PROJECT DESIGN & METHODS.

    a.   Describe, <u>step-by-step</u>, all procedures and methods that will be used to <u>consent</u> participants. If a waiver is being requested, check each waiver you are requesting, describe how the project meets the criteria for the waiver.

        ☐ Waiver of Consent (including using existing data)

        ☑ Waiver of Documentation of Consent (use of Information Letter)

        ☐ Waiver of Parental Permission (for college students)

The survey will begin by stating that participation is completely voluntary, that their identity will be protected by ensuring the anonymity of their responses, and providing a link to the information letter. Potential respondents will be informed that they may withdraw from the study at any time. Upon completion the student will be directed to a seperate area to record their information in order to receive credit for participation. No attachement will be made between the participation and the responses.

    b.   Describe the research design and methods you will use to address your purpose. Include a <u>clear description </u>of when, where and how you will collect all data for this project. Include specific information about the participants' time and effort commitment. (*NOTE: Use language that would be understandable to someone who is not familiar with your area of study. Without a complete description of all procedures, the Auburn University IRB will not be able to review this protocol. If additional space is needed for this section, save the information as a .PDF file and insert after page 7 of this form.*)

1. Auburn University students who are 19 years old and older who are recruited from the courses whose instructors give permission to the investigators to invite their students to participate in this study.

2. Participants will complete the web-based survey as hosted on the Auburn Qualtrics server, at http://auburn.qualtrics.com. Responses are anonymous and researcher will ensure the privacy of respondents and security of the data collected.

The researchers anticipate that the participant will need no more than 10 - 20 minutes in order to complete the survey.

3. After the data has been collected, no further particpation from respondents is necessary, and the survey-part of the study will have ended. The particpipant will be asked to identify themselves as having completed the survey to their instructor in a seperate area that is not attached to the survey.

4. The researcher will analyze the data collected.

The information provided, emails, and survey instrument can be found in Appendicies B and C.

13. **PROJECT DESIGN & METHODS**. *Continued*

    c.   **List all data collection instruments used in this project, in the order they appear in** Appendix C.
        (e.g., surveys and questionnaires **in the format that will be presented to participants**, educational tests, data collection sheets, interview questions, audio/video taping methods etc.)

      1. Survey Instrument

    d.   Data analysis: **Explain how the data will be analyzed.**

      1. Missing Value analysis and Statistical assumption testing will first occur to ensure the viability of the collected data for further statistical analysis.
      2. The researcher will employ Structural Equation Modeling to test the statistical relationship between the study variables.

14. **RISKS & DISCOMFORTS:** List and describe all of the risks that participants might encounter in this research. *If you are using deception in this study, please justify the use of deception and be sure to attach a copy of the debriefing form you plan to use in Appendix D.* *(Examples of possible risks are in section #6D on page 2)*

    Participants will not encounter any risks or discomforts. Data for the study will be collected anonymously.

15. PRECAUTIONS. Identify and describe all precautions you have taken to eliminate or reduce risks as listed in #14. If the participants can be classified as a "vulnerable" population, please describe additional safeguards that you will use to assure the ethical treatment of these individuals. *__Provide a copy of any emergency plans/procedures and medical referral lists in Appendix D.__ (Samples can be found online at http://www.auburn.edu/research/vpr/ohs/sample.htm#precautions)*

No risks were listed.

If using the Internet or other electronic means to collect data, what confidentiality or security precautions are in place to protect (or not collect) identifiable data? Include protections used during both the collection and transfer of data.

Qualtrics.com complies with the U.S. and E.U. Safe Harbor Framework and the U.S. and Swiss Safe Harbor Framework as set forth by the U.S. Department of Commerce regarding the collection, use and retention of personal information from European Union member countries and Switzerland. Qualtrics has certified that it adheres to the Safe Harbor Privacy Principles of notice, choice, onward transfer, security, data integrity, access, and enforcement.

Qualtrics has SAS 70 Certification and meets the rigorous privacy standards imposed on health care records by the Health Insurance Portability and Accountability Act (HIPAA). All Qualtrics accounts are hidden behind passwords and all data is protected with real-time data replication.

Qualtrics protects the identities of survey respondents by hiding any identifiable information regarding which ones complete the survey and which ones do not respond. Research study investigators will have no identifiable information about those respondents who complete the survey and who do not.

16. BENEFITS.
    a. **List all realistic direct benefits participants can expect by participating in this specific study.**
        (Do not include "compensation" listed in #12d.)   Check here if there are no direct benefits to participants. ☐

    Students may be awared extra credit by their instructors.

    b. **List all realistic benefits for the general population that may be generated from this study.**

    This research will help to further the body of knowledge related to organizational trust and enjoyment, within the context of the adoption of technology. This study, as with other studies in this area, have the potential to lead to newer practices that improve the manner in which firms adopt technology and data for the use of business analytics.

17. PROTECTION OF DATA.

    a. Data are collected:

        ☑ Anonymously with no direct or indirect coding, link, or awareness of who participated in the study (Skip to e)

        ☐ Confidentially, but without a link of participant's data to any identifying information (collected as "confidential" but recorded and analyzed as "anonymous") (Skip to e)

        ☐ Confidentially with collection and protection of linkages to identifiable information

    b. If data are collected with identifiers or as coded or linked to identifying information, describe the identifiers collected and how they are linked to the participant's data.

    c. Justify your need to code participants' data or link the data with identifying information.

    d. Describe how and where identifying data and/or code lists will be stored. (Building, room number?) Describe how the location where data is stored will be secured in your absence. For electronic data, describe security. If applicable, state specifically where any IRB-approved and participant-signed consent documents will be kept on campus for 3 years after the study ends.

    e. Describe how and where the data will be stored (e.g., hard copy, audio cassette, electronic data, etc.), and how the location where data is stored is separated from identifying data and will be secured in your absence. For electronic data, describe security

       Data will be stored in electronic format on the researchers' computers' hard drives. It will be encrypted and password protected.

    f. Who will have access to participants' data?
       (*The faculty advisor should have full access and be able to produce the data in the case of a federal or institutional audit.*)

       Only the researchers and the faculty advisor will have access to the participants' responses.

    g. When is the latest date that identifying information or links will be retained and how will that information or links be destroyed?
       (Check here if only anonymous data will be retained ☑)

       No confidential data will be linked to responses or retained. The students may proceed to fill in information for their instructors to receive extra credit.

Appendix A – References

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An

integrated model. *MIS Quarterly, 27*(1), 51-90.

Komiak, S. Y., & Benbasat, I. (2006). The effects of personalization and familiarity on trust and

adoption of recommendation agents. *MIS Quarterly, 30*(4), 941-960.

Li, X., Hess, T. J., & Valacich, J. S. (2008). Why do we trust new technology? A study of initial

trust formation with organizational information systems. The Journal of Strategic

Information Systems, 17(1), 39-71.

Lin, J., Lu, Y., Wang, B., & Wei, K. K. (2011). The role of inter-channel trust transfer in

establishing mobile commerce trust. Electronic Commerce Research and Applications,

10(6), 615-625.

Lu, Y., Yang, S., Chau, P. Y., & Cao, Y. (2011). Dynamics between the trust transfer process

and intention to use mobile payment services: A cross-environment perspective.

Information & Management, 48(8), 393-403.

Sun, H. (2010). Sellers' trust and continued use of online marketplaces. Journal of the

Association for Information Systems, 11(4), Article 2.

Dear Auburn University students,

I would like to invite you to participate in my research study that investigates trust in business analytics. You may participate if you are 19 years old or older.

If you decide to participate, you will be asked to complete an online survey, which will take approximately 20 minutes.

If you would like to know more about this study, an information letter can be obtained by clicking on the following link: [URL link to letter]

If you decide to participate after reading the letter, you can access the survey by clicking on the link provided in the letter.

To thank you for your time, participants may be given extra credit. The number of extra credit points will be determined by your class instructor.

If you have any questions about this study, please contact Benjamin Larson at 334-844-6468 or BZL0011@auburn.edu, or contact Dr. Casey Cegielski at 334-844-6542 or cegieca@auburn.edu.

Thank you in advance for your participation.

Sincerely,

_____

Benjamin Larson

Doctoral Candidate

Department of Supply Chain and Aviation Management

College of Business

220 Lowder Hall

bzl0011@auburn.edu

334-844-6537

Intro

<u>Thank you for taking the time to participate in our survey!</u>

<u>Please click the "Next" button below to begin.</u>
Your total time commitment to finish the survey is estimated to be 10-20 minutes.

If you wish, you may review the Information Letter for this study <u>here</u> (Opens in new window/tab).

Your participation is <u>voluntary</u> and all data collected will remain <u>completely anonymous</u>.

Benjamin Larson   - <u>BZL0011@auburn.edu</u>
Dr. Casey Cegielski - <u>cegieca@auburn.edu</u>

Raymond J. Harbert College of Business
Auburn University

General

I understand that business analytics transforms data to information which decision makers may use.

○ Yes

○ No

○ I do not know.

What is your age?

[   ]

How often do you use social media? (Facebook, Twitter, Foursquare, etc....)

Never	Once a Month	Once a Week	2-3 Times a Week	Once a day	2-3 Times a Day	More than 3 times a day
○	○	○	○	○	○	○

What is your level of managerial experience (managing people)?

No experience	< 1 year	1-5 years	6-10 years	>10 Years
○	○	○	○	○

What is your level of managerial experience (purchasing corporate resources)?

No experience	< 1 year	1-5 years	6-10 years	>10 Years
○	○	○	○	○

What is your country of origin?

[⌄]

What is your gender?

○ Male

○ Female

Under which of the following colleges/schools does your major fall? (If you have multiple majors, choose the most central one)

[⌄]

In which industry are you currently employed?

[⌄]

Please describe the industry you are in.

[ ]

What is your class standing?

○ FRESHMAN

○ SOPHOMORE

○ JUNIOR

○ SENIOR

○ GRADUATE STUDENT

Which of the following ranges includes your family's total annual household income?

[⌄]

I have used social media data for decisions in the workplace.

○ Yes

○ No

○ I do not know.

What is your level of work experience using social media data?

○ < 1 year

○ 1-3 years

○ 4-5 years

○ >5 Years

I currently use social media data in business decisions.

○ Yes

○ No

Trust in Social Media Providers (Facebook, Twitter, Foursquare, etc....)

Please rate your level of agreement with each of the following statements about social media providers (Facebook, Twitter, Foursquare, etc....).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
In general, Social Media Providers are very knowledgeable about giving me the information that I want to see.	○	○	○	○	○	○	○
I feel comfortable about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
Social Media Providers perform the role of allowing people to freely communicate very well.	○	○	○	○	○	○	○
I feel content about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
Social Media Providers are competent and effective in providing information.	○	○	○	○	○	○	○
Overall, Social Media Providers are capable and proficient at allowing communication and providing the most relevant information.	○	○	○	○	○	○	○

Social Media Communities (Users within social media that post responses)

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel comfortable about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○
I feel secure about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○
I feel content about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○

Algorithms (Search engines, automated product recommendations...)

Imagine you are looking to purchase a product or locate specific information. Please rate your level of agreement with each of the following statements related to algorithms (step by step procedures used to program software) which can be represented by automated recommendations provided as suggested products or as search results.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Recommended sites and posts provided by algorithms are interested in my well-being.	○	○	○	○	○	○	○
Algorithms provide the information I ask for.	○	○	○	○	○	○	○
It is possible through rules and mathematical calculations to provide me with the best recommendations possible.	○	○	○	○	○	○	○
I believe algorithms that recommend products are created in good faith.	○	○	○	○	○	○	○
If I required help, Internet searches based on algorithms will provide me with results in my best interest.	○	○	○	○	○	○	○
Algorithm recommendations are truthful.	○	○	○	○	○	○	○
Overall, algorithms are capable and proficient at providing product advice.	○	○	○	○	○	○	○
I would characterize Algorithm recommendations as honest.	○	○	○	○	○	○	○
Recommendations driven by my Internet activity provide me with relevant information.	○	○	○	○	○	○	○

Trust in Social Media Business Analytics (Big data social media information)

Imagine that you are employed as a purchasing manager. How would you feel about analytical recommendations influenced by data collected from social media?"

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Information from business analytics that includes social media would be provided to facilitate my well-being as an employee.	○	○	○	○	○	○	○
Using business analytics that include social media would be in my best interest.	○	○	○	○	○	○	○
Business analytics that include social media would provide me information that will help me	○	○	○	○	○	○	○
I would find a more optimal amount to purchase using analytics including social media than I would through analytics without a social media component.	○	○	○	○	○	○	○
Overall, business analytics that include social media are capable and proficient at providing product purchase information.	○	○	○	○	○	○	○
Business analytics that include social media provide the best recommendations possible.	○	○	○	○	○	○	○
Business analytics that include social media data are truthful.	○	○	○	○	○	○	○
I would trust the validity of a recommendation using social media more than a recommendation without a social media component.	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Including social media data in business analytics will provide me with relevant information.	○	○	○	○	○	○	○
Business analytics that include social media are reliable.	○	○	○	○	○	○	○
Business analytics that include social media data are valid.	○	○	○	○	○	○	○
I would trust the recommendations of business analytics that include social media data more than the recommendations without social media data.	○	○	○	○	○	○	○

Behavioral Intentions/Enjoyment

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I predict I will use social media data as a component in making business decisions.	○	○	○	○	○	○	○
I intend to use social media data as a component in making business decisions.	○	○	○	○	○	○	○
I plan to use social media data as a component in making business decisions.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I believe using information from social media would be enjoyable.	○	○	○	○	○	○	○
I believe the process of using information from social media would be pleasant.	○	○	○	○	○	○	○
I believe using information from social media would be fun.	○	○	○	○	○	○	○

Use/Risk

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Social media data improves the performance of business analytics.	○	○	○	○	○	○	○
The decision to use social media data in business analytics is risky.	○	○	○	○	○	○	○
There is a considerable risk in using social media data in business analytics.	○	○	○	○	○	○	○
Social media data enhances business analytics results.	○	○	○	○	○	○	○
Social media data enables business analytics to perform better.	○	○	○	○	○	○	○
There is a high potential for loss in using social media data in business analytics.	○	○	○	○	○	○	○
Social media data increases the productivity of business analytics.	○	○	○	○	○	○	○

Social Norms

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
People who are important to me think that business analytics should include social media as key component.	○	○	○	○	○	○	○
In general, organizations I work with or learn from think that business analytics should include social media as key component.	○	○	○	○	○	○	○
People who influence my behavior think that business analytics should include social media as key component.	○	○	○	○	○	○	○

Trusting Stance

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My typical approach is to trust new technollogy until it proves I should not.	○	○	○	○	○	○	○
I usually trust new technology until it gives me a reason not to.	○	○	○	○	○	○	○
I generally give technology the benefit of the doubt when I first use it.	○	○	○	○	○	○	○

Intuitive/Rational

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When I make a decision, I trust my inner feelings and reactions.	○	○	○	○	○	○	○
I double-check my information sources to be sure I have the right facts before making a decision.	○	○	○	○	○	○	○
My decision-making requires careful thought.	○	○	○	○	○	○	○
I generally make decisions that feel right to me.	○	○	○	○	○	○	○
When I make a decision, it is more important to me to feel the decision is right than to have a rational reason for it.	○	○	○	○	○	○	○
When making decisions, I rely upon my instincts.	○	○	○	○	○	○	○
I make decisions in a logical and systematic manner.	○	○	○	○	○	○	○
When making a decision, I consider various options in terms of a specific goal.	○	○	○	○	○	○	○

Risk Taker

Imagine that you have been diagnosed with a severe heart ailment. A medical procedure, if successful, will cure you, but it may also be fatal. What is the lowest acceptable probability you would need to agree to the procedure?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that the big football game is almost over; the home team is losing. Should the last play be an attempt to tie that would almost definitely be successful, or a risky play that, if successful, would ensure victory? What is the lowest acceptable probability you would need to agree to the risky play?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that you are a successful businessperson who has been approached as a potential congressional candidate by a minority party. Running would be a financial strain and would be a difficult race. You would like to hold the office, however. What is the lowest acceptable probability you would need to agree to run?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that you are a research scientist trying to plan the next five years. You can work on a project that, if successful, would solve difficult scientific issues. If unsuccessful, however, you will have difficulty finding a job. Instead, you could work on a series of short term but less important projects. What is the lowest acceptable probability you would need to decide to work on the long-term project?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Awareness

In the following items, <u>deceptive</u> means that the data may be made intentionally misleading. Please rate the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Overall, I am aware that social media data may contain <u>deceptive</u> data.	○	○	○	○	○	○	○
I understand the concerns regarding the ability to determine <u>deceptive</u> information in social media data.	○	○	○	○	○	○	○
I have sufficient knowledge about potentially <u>deceptive</u> social media data.	○	○	○	○	○	○	○

Please rate the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Overall, I am aware that social media data may contain <u>inaccurate</u> data.	○	○	○	○	○	○	○
I understand the concerns regarding the ability to determine the <u>accuracy</u> of social media data.	○	○	○	○	○	○	○
I have sufficient knowledge about potentially <u>inaccurate</u> social media data.	○	○	○	○	○	○	○

Intro

Thank you for taking the time to participate in our survey!

Please click the "Next" button below to begin.
Your total time commitment to finish the survey is estimated to be 10-20 minutes.

If you wish, you may review the Information Letter for this study here (Opens in new window/tab).

Your participation is voluntary and all data collected will remain completely anonymous.

Benjamin Larson   - BZL0011@auburn.edu
Dr. Casey Cegielski - cegieca@auburn.edu

Raymond J. Harbert College of Business
Auburn University

General

I understand that business analytics transforms data to information which decision makers may use.

○ Yes

○ No

○ I do not know.

What is your age?

[   ]

How often do you use social media? (Facebook, Twitter, Foursquare, etc....)

Never	Once a Month	Once a Week	2-3 Times a Week	Once a day	2-3 Times a Day	More than 3 times a day
○	○	○	○	○	○	○

What is your level of managerial experience (managing people)?

No experience	< 1 year	1-5 years	6-10 years	>10 Years
○	○	○	○	○

What is your level of managerial experience (purchasing corporate resources)?

No experience	< 1 year	1-5 years	6-10 years	>10 Years
○	○	○	○	○

What is your country of origin?

[⌄]

What is your gender?

○ Male

○ Female

Under which of the following colleges/schools does your major fall? (If you have multiple majors, choose the most central one)

[⌄]

In which industry are you currently employed?

[⌄]

Please describe the industry you are in.

[   ]

Are you enrolled in the online program?

○ Yes

○ No

Which of the following ranges includes your family's total annual household income?

[⌄]

I have used social media data for decisions in the workplace.

○ Yes

○ No

○ I do not know.

What is your level of work experience using social media data?

○ < 1 year

○ 1-3 years

○ 4-5 years

○ >5 Years

I currently use social media data in business decisions.

○ Yes

○ No

Trust in Social Media Providers (Facebook, Twitter, Foursquare, etc....)

Please rate your level of agreement with each of the following statements about social media providers (Facebook, Twitter, Foursquare, etc....).

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
Social Media Providers are competent and effective in providing information.	○	○	○	○	○	○	○
Overall, Social Media Providers are capable and proficient at allowing communication and providing the most relevant information.	○	○	○	○	○	○	○
I feel comfortable about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
I feel content about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
In general, Social Media Providers are very knowledgeable about giving me the information that I want to see.	○	○	○	○	○	○	○
Social Media Providers perform the role of allowing people to freely communicate very well.	○	○	○	○	○	○	○

Social Media Communities (Users within social media that post responses)

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○
I feel content about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○
I feel comfortable about relying on the Social Media Community for product recommendations.	○	○	○	○	○	○	○

Algorithms (Search engines, automated product recommendations...)

Imagine you are looking to purchase a product or locate specific information. Please rate your level of agreement with each of the following statements related to algorithms (step by step procedures used to program software) which can be represented by automated recommendations provided as suggested products or as search results.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Algorithm recommendations are truthful.	○	○	○	○	○	○	○
Recommendations driven by my Internet activity provide me with relevant information.	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Algorithms provide the information I ask for.	○	○	○	○	○	○	○
Overall, algorithms are capable and proficient at providing product advice.	○	○	○	○	○	○	○
I would characterize Algorithm recommendations as honest.	○	○	○	○	○	○	○
If I required help, Internet searches based on algorithms will provide me with results in my best interest.	○	○	○	○	○	○	○
It is possible through rules and mathematical calculations to provide me with the best recommendations possible.	○	○	○	○	○	○	○
Recommended sites and posts provided by algorithms are interested in my well-being.	○	○	○	○	○	○	○
I believe algorithms that recommend products are created in good faith.	○	○	○	○	○	○	○

Trust in Social Media Business Analytics (Big data social media information)

Imagine that you are employed as a purchasing manager. How would you feel about analytical recommendations influenced by data collected from social media?"

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I would trust the validity of a recommendation using social media more than a recommendation without a social media component.	○	○	○	○	○	○	○
Business analytics that include social media data are valid.	○	○	○	○	○	○	○
I would trust the recommendations of business analytics that include social media data more than the recommendations without social media data.	○	○	○	○	○	○	○
Including social media data in business analytics will provide me with relevant information.	○	○	○	○	○	○	○
Using business analytics that include social media would be in my best interest.	○	○	○	○	○	○	○
Overall, business analytics that include social media are capable and proficient at providing product purchase information.	○	○	○	○	○	○	○
Business analytics that include social media data are truthful.	○	○	○	○	○	○	○
Information from business analytics that includes social media would be provided to facilitate my well-being as an employee.	○	○	○	○	○	○	○
I would find a more optimal amount to purchase using analytics including social media than I would through analytics without a social media component.	○	○	○	○	○	○	○
Business analytics that include social media are reliable.	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Business analytics that include social media provide the best recommendations possible.	○	○	○	○	○	○	○
Business analytics that include social media would provide me information that will help me	○	○	○	○	○	○	○

Behavioral Intentions/Enjoyment

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I predict I will use social media data as a component in making business decisions.	○	○	○	○	○	○	○
I plan to use social media data as a component in making business decisions.	○	○	○	○	○	○	○
I intend to use social media data as a component in making business decisions.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I believe using information from social media would be fun.	○	○	○	○	○	○	○
I believe the process of using information from social media would be pleasant.	○	○	○	○	○	○	○
I believe using information from social media would be enjoyable.	○	○	○	○	○	○	○

Use/Risk

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The decision to use social media data in business analytics is risky.	○	○	○	○	○	○	○
Social media data increases the productivity of business analytics.	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Social media data enhances business analytics results.	○	○	○	○	○	○	○
Social media data enables business analytics to perform better.	○	○	○	○	○	○	○
There is a considerable risk in using social media data in business analytics.	○	○	○	○	○	○	○
There is a high potential for loss in using social media data in business analytics.	○	○	○	○	○	○	○
Social media data improves the performance of business analytics.	○	○	○	○	○	○	○

Social Norms

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
People who influence my behavior think that business analytics should include social media as key component.	○	○	○	○	○	○	○
People who are important to me think that business analytics should include social media as key component.	○	○	○	○	○	○	○
In general, organizations I work with or learn from think that business analytics should include social media as key component.	○	○	○	○	○	○	○

Trusting Stance

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I usually trust new technology until it gives me a reason not to.	○	○	○	○	○	○	○
I generally give technology the benefit of the doubt when I first use it.	○	○	○	○	○	○	○
My typical approach is to trust new technollogy until it proves I should not.	○	○	○	○	○	○	○

Intuitive/Rational

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When making decisions, I rely upon my instincts.	○	○	○	○	○	○	○
I double-check my information sources to be sure I have the right facts before making a decision.	○	○	○	○	○	○	○
When making a decision, I consider various options in terms of a specific goal.	○	○	○	○	○	○	○
I make decisions in a logical and systematic manner.	○	○	○	○	○	○	○
When I make a decision, it is more important to me to feel the decision is right than to have a rational reason for it.	○	○	○	○	○	○	○
When I make a decision, I trust my inner feelings and reactions.	○	○	○	○	○	○	○
My decision-making requires careful thought.	○	○	○	○	○	○	○
I generally make decisions that feel right to me.	○	○	○	○	○	○	○

Risk Taker

Imagine that you have been diagnosed with a severe heart ailment. A medical procedure, if successful, will cure you, but it may also be fatal. What is the lowest acceptable probability you would need to agree to the procedure?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that the big football game is almost over; the home team is losing. Should the last play be an attempt to tie that would almost definitely be successful, or a risky play that, if successful, would ensure victory? What is the lowest acceptable probability you would need to agree to the risky play?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that you are a successful businessperson who has been approached as a potential congressional candidate by a minority party. Running would be a financial strain and would be a difficult race. You would like to hold the office, however. What is the lowest acceptable probability you would need to agree to run?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Imagine that you are a research scientist trying to plan the next five years. You can work on a project that, if successful, would solve difficult scientific issues. If unsuccessful, however, you will have difficulty finding a job. Instead, you could work on a series of short term but less important projects. What is the lowest acceptable probability you would need to decide to work on the long-term project?

○ No acceptable probability

○ 9 in 10 that the procedure will be successful

○ 7 in 10 that the procedure will be successful

○ 5 in 10 that the procedure will be successful

○ 3 in 10 that the procedure will be successful

○ 1 in 10 that the procedure will be successful

Awareness

In the following items, <u>deceptive</u> means that the data may be made intentionally misleading. Please rate the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I understand the concerns regarding the ability to determine <u>deceptive</u> information in social media data.	○	○	○	○	○	○	○
	○	○	○	○	○	○	○

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I have sufficient knowledge about potentially <u>deceptive</u> social media data.							
Overall, I am aware that social media data may contain <u>deceptive</u> data.	○	○	○	○	○	○	○

Please rate the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Overall, I am aware that social media data may contain <u>inaccurate</u> data.	○	○	○	○	○	○	○
I have sufficient knowledge about potentially <u>inaccurate</u> social media data.	○	○	○	○	○	○	○
I understand the concerns regarding the ability to determine the <u>accuracy</u> of social media data.	○	○	○	○	○	○	○

AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS
REQUEST FOR EXEMPT CATEGORY RESEARCH

For Information or help completing this form, contact: **THE OFFICE OF RESEARCH COMPLIANCE**, 115 Ramsay Hall
Phone: 334-844-5966   **e-mail:** IRBAdmin@auburn.edu **Web Address:** http://www.auburn.edu/research/vpr/ohs/index.htm

Revised 2/1/2014 **Submit completed form to IRBsubmit@auburn.edu or 115 Ramsay Hall, Auburn University 36849.**

Form must be populated using Adobe Acrobat / Pro 9 or greater standalone program (do not fill out in browser). Hand written forms will not be accepted.

Project activities may not begin until you have received approval from the Auburn University IRB.

1. PROJECT PERSONNEL & TRAINING

PRINCIPAL INVESTIGATOR (PI):

Name Benjamin Larson   Title doctoral student   Dept./School AVSC

Address 227 Lowder Business Building   AU Email BZL0011@auburn.edu

Phone 844-6468   Dept. Head Dr. Joe Hanna

FACULTY ADVISOR (if applicable):

Name Dr. Casey Cegielski   Title Professor   Dept./School AVSC

Address 421 Lowder Business Building

Phone 844-6542   AU Email cegieca@auburn.edu

KEY PERSONNEL: List Key Personnel (other than PI and FA). Additional personnel may be listed in an attachment.

Name	Title	Institution	Responsibilities

> The Auburn University Institutional Review Board has approved this document for use from
> 11/9/14 to 11/8/17
> Protocol # 14-478 EX 1411
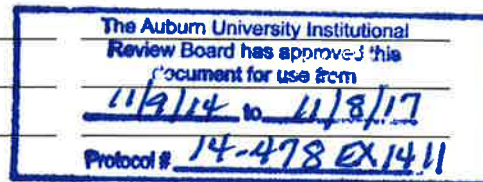
KEY PERSONNEL TRAINING: Have all Key Personnel completed CITI Human Research Training (including elective modules related to this research) within the last 3 years? ☑ YES ☐ NO
TRAINING CERTIFICATES: Please attach CITI completion certificates for all Key Personnel.

2. PROJECT INFORMATION

Title: Personal to Professional Trust Transference in Social Media

Source of Funding: ☑ Investigator   ☐ Internal   ☐ External

List External Agency & Grant Number: _____

List any contractors, sub-contractors, or other entities associate with this project.

List any other IRBs associated with this project (including those involved with reviewing, deferring, or determinations).

3. **PROJECT SUMMARY**
   a. Does the research involve any special populations?

   ☐ YES ☑ NO   Minors (under age 19)

   ☐ YES ☑ NO   Pregnant women, fetuses, or any products of conception

   ☐ YES ☑ NO   Prisoners or Wards

   ☐ YES ☑ NO   Individuals with compromised autonomy and/or decisional capacity

   b. Does the research pose more than minimal risk to participants?   ☐YES   ☑NO

   Minimal risk means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. 42 CFR 46.102(i)

   c. Does the study involve any of the following?

   ☐ YES ☑ NO   **Procedures subject to FDA Regulation** Ex. Drugs, biological products, medical devices, etc.

   ☐ YES ☑ NO   Use of school records of identifiable students or information from instructors about specific students

   ☐ YES ☑ NO   Protected health or medical information when there is a direct or indirect link that could identify the participant

   ☐ YES ☑ NO   Collection of sensitive aspects of the participant's own behavior, such as illegal conduct, drug use, sexual behavior or use of alcohol

   ☐ YES ☑ NO   Deception of participants

   If you checked "YES" to any response in Question #3 STOP. It is likely that your study does not meet the "EXEMPT" requirements. Please complete a PROTOCOL FORM for Expedited or Full Board Review.
   You may contact IRB Administration for more information. (Phone: 334-844-5966 or Email: IRBAdmin@auburn.edu)

4. **PROJECT DESCRIPTION**
   a. **Subject Population** (Describe, include age, special population characteristics, etc.)

   Auburn University students who are 19 years old and older who are recruited from the courses whose instructors give permission to the investigators to invite their students to participate in this study. ==ISMN 3140 and CADS 3850 have been identified as the courses that the study will initially target.==

   b. Describe, <u>step by step</u>, all procedures and methods that will be used to <u>consent</u> participants.

   ☐   **N/A (Existing data will be used)**

   Given the course instructor's permission, potential participants will receive an invitation email to participate in this study. The email will contain a link to the Information Letter. After reading the letter, those who want to participate will click on the "next" button at the bottom of the letter, which will direct them to the survey page. After one week, a reminder invitation email will be sent to potential participants.

c. **Brief summary of project.** (Include the research question(s) and a brief description of the methodology, including recruitment and how data will be collected and protected.)

Purpose: Trust is a widely studied concept in terms of the use of technologies. A systematic review of the trust literature in information systems has found several key gaps in the existing literature this study proposes to examine the transference of trust from our personal lives to professional lives.

Research Questions: Does trust in personal social media use for product recommendations transfer to trust in instruments presented with big data product recommendations?

What is the appropriate model to examine trust beliefs in social media when looking at the community, providers, and artifacts of technology such as algorithms? (Will benevolence or other constructs be the same across the separate trusting relationships?)

What are the key differences in individuals who have a high vs low propensity to risk in the model?

What aspects of trust impact the relative advantage and use of social media big data?

Will a perceived relative advantage in social media big data translate to added use of the recommendation?

Data Collection: Course instructors have or will be approached to recruit students in the relevant courses including the possibility of assigning extra credit. The students will be emailed an invitation to the survey which contains a link to the information letter. After reading the information letter, those who decide to participate in the study will click on the "Next" button at the bottom of the letter, which will direct them to the survey page. The survey will be created using Qualtrics. No identifiable information of participants will be collected.

d. **Waivers. Check any waivers that apply and describe how the project meets the criteria for the waiver.**

☐ **Waiver of Consent (Including existing de-identified data)**

☑ **Waiver of Documentation of Consent (Use of Information Letter)**

☐ **Waiver of Parental Permission (for college students)**

e. **Attachments.** Please attach Informed Consents, Information Letters, data collection instrument(s), advertisements/recruiting materials, or permission letters/site authorizations as appropriate.

Signature of Investigator Benjamin Larson	Digitally signed by Benjamin Larson DN: cn=Benjamin Larson, o, ou, email=bzl0011@auburn.edu, c=US Date: 2014.10.04 09:36:15 -05'00'	Date 10/4/2014
Signature of Faculty Advisor Casey G. Cegielski	Digitally signed by Casey G. Cegielski DN: cn=Casey G. Cegielski, o=Auburn University, ou=Harbert College of Business, email=cegieca@auburn.edu, c=US Date: 2014.10.06 09:26:51 -05'00'	Date 10/6/2014
Signature of Department Head Joe B. Hanna	Digitally signed by Joe B. Hanna DN: cn=Joe B. Hanna, o=Dean's Office, ou=HCoB, email=hannajb@auburn.edu, c=US Date: 2014.10.06 13:08:16 -05'00'	Date 10/6/2014
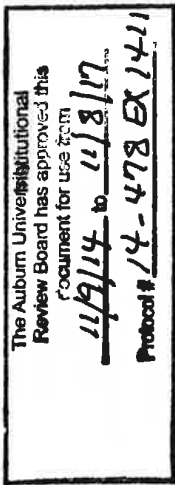
RAYMOND J. HARBERT
COLLEGE OF BUSINESS
DEPARTMENT OF AVIATION & SUPPLY CHAIN MANAGEMENT

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

INFORMATION LETTER
for a Research Study entitled
"Personal to Professional Trust Transference in Social Media."

You are invited to participate in a research study to explore trust in social media. The study is being conducted by Benjamin Larson, doctoral student, under the direction of Dr. Casey Cegielski, Professor of Information Systems Management in the Auburn University Department of Aviation & Supply Chain Management. You are invited to participate because you are a student at Auburn University and are 19 or older.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete an online survey. Your total time commitment will be approximately 20 minutes.

Are there any risks or discomforts? There are no risks or discomfort associated with participation in the study. Keep in mind that you can withdraw from this study at any time.

Are there any benefits to yourself or others? There is no direct benefit of participation to you. However, the data you provide may help enhance the industry's understanding of people's use of social media data.

Will you receive compensation for participating? If you participate in this study, the instructor who invited you may award you extra credit for your course. Please check with your instructor about the possibility and amount of extra credit associated with participation in this study. In case your instructor awards extra credit to participants in this study, you may prove your participation in this study by printing the thank-you page that will appear upon submission of your survey responses and submitting it to your instructor.

Are there any costs? There are no anticipated costs associated with participation in this study.

If you change your mind about participating, you may withdraw from this study at any time. Your participation is completely voluntary.

157

RAYMOND J. HARBERT
COLLEGE OF BUSINESS
DEPARTMENT OF AVIATION & SUPPLY CHAIN MANAGEMENT

All data collected as part of this study will be completely anonymous. We will protect your privacy and the data you provide by not collecting any personally identifiable information from you. The data collected in this study may be used in a publication in an academic journal and/or presentation at a professional conference.

If you have any questions about this study, please contact Benjamin Larson at 334-844-6468 or BZL0011@auburn.edu, or contact Dr. Casey Cegielski at 334-844-6542 or cegieca@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE "NEXT" BUTTON BELOW. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

<u>Benjamin Larson</u>   10/4/2014
Investigator   Date

<u>Dr. Casey Cegielski</u>   10/4/2014
Co-Investigator   Date

The Auburn University Institutional Review Board has approved this document for use from   to   . Protocol #

The Auburn University Institutional Review Board has approved this document for use from November 9, 2014 to November 8, 2017. Protocol #14-478 EX 1411."

NEXT

Dear Auburn University students,

I would like to invite you to participate in my research study that investigates trust in business analytics. You may participate if you are 19 years old or older.

If you decide to participate, you will be asked to complete an online survey, which will take approximately 20 minutes.

If you would like to know more about this study, an information letter can be obtained by clicking on the following link: [URL link to letter]

If you decide to participate after reading the letter, you can access the survey by clicking on the link provided in the letter.

To thank you for your time, participants may be given extra credit. The number of extra credit points will be determined by your class instructor.

If you have any questions about this study, please contact Benjamin Larson at 334-844-6468 or BZL0011@auburn.edu, or contact Dr. Casey Cegielski at 334-844-6542 or cegieca@auburn.edu.

Thank you in advance for your participation.

Sincerely,

_____
Benjamin Larson
Doctoral Student
Department of Supply Chain and Aviation Management
College of Business
227 Lowder Hall
bzl0011@auburn.edu
334-844-6468

Block 7

Thank you for taking the time to participate in our survey!

Please click the "Next" button below to begin.
Your total time commitment to finish the survey is estimated to be 10-20 minutes *or less!*

If you wish, you may review the Information Letter for this study here (Opens in new window/tab).

Your participation is voluntary and all data collected will remain completely anonymous.

Benjamin Larson   - BZL0011@auburn.edu
Dr. Casey Cegielski - cegieca@auburn.edu

Raymond J. Harbert College of Business
Auburn University

General

What is your age?

☐

What is your level of work experience?

No experience	1 year or less	1-5 years	5-10 years	>10 Years
○	○	○	○	○

How often do you use social media?

Never	Once a Month	Once a Week	2-3 Times a Week	Once a day	2-3 Times a Day	I am constantly connected
○	○	○	○	○	○	○

What is your region of origin?

○ North America

○ Asia

○ Europe

○ Central America

○ South America

○ Africa

○ Australia

What is your gender?

○ Male

○ Female

Under which of the following colleges/schools does your major fall? (If you have multiple majors, choose the most central one)

[▼]

What is your class standing?

○ FRESHMAN

○ SOPHOMORE

○ JUNIOR

○ SENIOR

○ GRADUATE STUDENT

Which of the following ranges includes your family's total annual household income?

[▼]

Trust in Social Media Providers (Facebook, Twitter, Foursquare, etc....)

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I believe that Social Media Providers act in my best interest.	○	○	○	○	○	○	○
If I required help, Social Media Providers do their best to help me.	○	○	○	○	○	○	○
Social Media Providers are interested in my well-being, not just their own.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Social Media Providers are truthful in their dealings with me.	○	○	○	○	○	○	○
I would characterize Social Media Providers as honest.	○	○	○	○	○	○	○
Social Media Providers keep their commitments.	○	○	○	○	○	○	○
Social Media Providers are sincere and genuine.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Social Media Providers are competent and effective in providing information.	○	○	○	○	○	○	○
Social Media Providers perform the role of allowing people to freely communicate very well.	○	○	○	○	○	○	○
Overall, Social Media Providers are capable and proficient at allowing communication and providing the most relevant information.	○	○	○	○	○	○	○
In general, Social Media Providers are very knowledgeable about giving me the information that I want to see.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
I feel comfortable about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○
I feel content about relying on Social Media Providers to interact with others about product recommendations.	○	○	○	○	○	○	○

Social Media Communities (Users within social media that post responses)

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I believe that in general people using social media act in each other's best interest.	○	○	○	○	○	○	○
If I required advice on a product purchases, people in the social media would do their best to help me.	○	○	○	○	○	○	○
Other Social Media Users are interested in my well-being, not just their own.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Social Media Users are truthful in their dealings with me.	○	○	○	○	○	○	○
I would characterize Social Media users as honest.	○	○	○	○	○	○	○
Social Media Users are sincere and genuine.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Social Media Users are competent and effective in providing product information.	○	○	○	○	○	○	○
Social Media Users are able to clearly state their opinions of products.	○	○	○	○	○	○	○
In general, Social Media users are very knowledgeable about the products that I have searched for.	○	○	○	○	○	○	○
Overall, Social Media Users are capable and proficient source for product information.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on the Social Media Social Media Community for product recommendations.	○	○	○	○	○	○	○
I feel comfortable about relying on the Social Media Social Media Community for product recommendations.	○	○	○	○	○	○	○
I feel content about relying on the Social Media Social Media Community for product recommendations.	○	○	○	○	○	○	○

Algorithms (Search engines, automated product recommendations...)

Placing yourself in the hypothetical situation where you are looking to purchase a product or locate specific information. Please rate your level of agreement with each of the following statements related to algorithms (Step by step procedures used to program software) which can represented by automated recommendations provided as suggested products or as search results.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I believe algorithms that recommend products are created in good faith.	○	○	○	○	○
If I required help Internet searches based on algorithms will provide me with results in my best interest.	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Recommended sites and posts provided by algorithms are interested in my well-being.	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Algorithms are mathematically based and therefore truthful.	○	○	○	○	○
I would characterize Algorithm recommendations as honest.	○	○	○	○	○
Algorithms provide the information I ask for.	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
It is possible through rules and mathematical calculations to provide me with the best recommendations possible.	○	○	○	○	○	○	○
Recommendations driven by my Internet activity provide me with relevant information.	○	○	○	○	○	○	○
Overall, algorithms are capable and proficient at providing product advice.	○	○	○	○	○	○	○

Please rate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on Algorithms for product recommendations.	○	○	○	○	○	○	○
I feel comfortable about relying on Algorithms for product recommendations.	○	○	○	○	○	○	○
I feel content about relying on Algorithms for product recommendations.	○	○	○	○	○	○	○

Trust in Social Media Business Analytics (Big data social media information)

Placing yourself in the hypothetical situation that you are employed as a purchasing manager rate the following statements in terms of how you would feel about analytical recommendations that have been influenced by data collected from social media.

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I believe that if I were a purchasing manager Big Data Analytics that include social media would be in my best interest.	○	○	○	○	○	○	○
Big Data Analytics that include social media provides me information that will help me personally as an employee if I had to make purchasing decisions.	○	○	○	○	○	○	○
Information from Big Data Analytics that includes social media would be provided to facilitate my well-being as an employee.	○	○	○	○	○	○	○

Placing yourself in the hypothetical situation that you are employed as a purchasing manager rate the following statements in terms of how you would feel about analytical recommendations that have been influenced by data collected from social media.

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Big Data Analytics that include social media data are valid.	○	○	○	○	○	○	○
Big Data Analytics that include social media is reliable.	○	○	○	○	○	○	○
Big Data Analytics that include social media data are truthful.	○	○	○	○	○	○	○

Placing yourself in the hypothetical situation that you are employed as a purchasing manager rate the following statements in terms of how you would feel about analytical recommendations that have been influenced by data collected from social media.

Please rate your level of agreement with each of the following.

166

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Big Data Analytics that include social media provides the best recommendations possible.	○	○	○	○	○	○	○
Including social media data in Big Data Analytics will provide me with relevant information.	○	○	○	○	○	○	○
Overall, Big Data Analytics that include social media is capable and proficient at providing product purchase information.	○	○	○	○	○	○	○

Placing yourself in the hypothetical situation that you are employed as a purchasing manager rate the following statements in terms of how you would feel about analytical recommendations that have been influenced by data collected from social media.

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel secure about relying on Big Data Analytics that include social media for quantity product purchase recommendations.	○	○	○	○	○	○	○
I feel content about relying on Big Data Analytics that include social media for quantity product purchase recommendations.	○	○	○	○	○	○	○
I feel comfortable about relying on Big Data Analytics that include social media for quantity product purchase recommendations.	○	○	○	○	○	○	○

Relative Advantage (Trust of analytics with social media vs without)

Please rate your level of agreement with each of the following.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I would trust the recommendations that include social media as a variable more than the recommendations without with regard to the appropriate level of products to purchase for corporate needs.	○	○	○	○	○	○	○
I would trust the validity of a recommendation using social	○	○	○	○	○	○	○

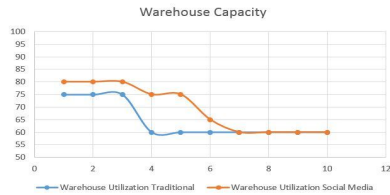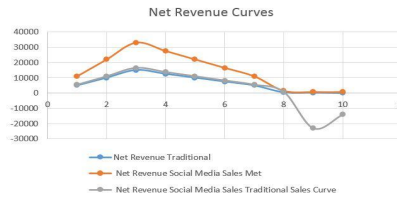|	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
media more than a recommendation without a social media component.							
I would find a more optimal amount to purchase using analytics including social media than I would through analytics without a social media component.	○	○	○	○	○	○	○

Risk Propensity and Final

Mr. S. is the president of a small software company that develops information systems for local and regional banks. Recently, his largest customer - a major banking company - has asked him to develop a communications program that would allow customers to pay bills, check account balances, apply for loans, and perform other services from home. This would be a windows-based product designed to run on PCs. Mr. S's development team has no prior experience in developing windows-based applications. Mr. S. knows that his team will eventually have to gain expertise in developing windows-based applications, but he is hesitant about committing to such a project when his developers lack experience in this area. If he turns down the project, the short-term implications would be slight, though negative. If he accepts the project and it is successful, this customer would almost certainly send more projects his way, and his company could adapt the software for other banks, thereby increasing revenues substantially. However, if the project fails, then Mr. S. believes that the bank will blame his company and he will lose his biggest customer. Imagine that you are advising Mr. S. Listed below are several probabilities or odds that the windows-based project would be successful. Please check the lowest probability that you would consider acceptable for Mr. S. to accept the windows-based project.

○ The chances are 1 in 10 that the windows-based project would be successful.

○ The chances are 3 in 10 that the windows-based project would be successful.

○ The chances are 5 in 10 that the windows-based project would be successful.

○ The chances are 7 in 10 that the windows-based project would be successful.

○ The chances are 9 in 10 that the windows-based project would be successful.

○ Mr. S. should not attempt to complete the window-based project, no matter what the probabilities.

Your company is considering hiring an Analytics Firm to provide insight generation regarding customer demand for your product. The firm has stated it has little prior experience in using social media for its analytical methods. They have provided a Social Media prediction model that you have combined with your traditional model for consideration purposes. Because of order sizes you have to determine to purchase entirely from the social media influenced recommendation or using your existing model.

Purchase Support

Projected Unit Sales

Traditional   Social Media

Net Revenue Curves

Net Revenue Traditional
Net Revenue Social Media Sales Met
Net Revenue Social Media Sales Traditional Sales Curve

Warehouse Capacity

Warehouse Utilization Traditional   Warehouse Utilization Social Media

	Social Media Recommendation	Traditional Recommendation
Recommended Amount	2800	1400
Cost Per Unit	$45	$50
Revenue Under Social Media Predicted Demand	$136,250	$85,750
Revenue Under Traditionally predicted Demand	$35,250	$85,750

○ Purchase based on social media recommendation

○ Purchase without social media recommendation

Appendix B: Constructs of Interest Items

Likert Scale Measurement Strongly Disagree to Strongly Agree

Construct:	Dimension:	Item:
Emotional Trust in Social Media Providers		1. I feel secure about relying on Social Media Providers to interact with others about product recommendations.
		2. I feel comfortable about relying on Social Media Providers to interact with others about product recommendations.
		3. I feel content about relying on Social Media Providers to interact with others about product recommendations.
Emotional Trust in Social Media Communities		1. I feel secure about relying on the Social Media Social Media Community for product recommendations.
		2. I feel comfortable about relying on the Social Media Social Media Community for product recommendations.
		3. I feel content about relying on the Social Media Social Media Community for product recommendations.

Placing yourself in the hypothetical situation where you are looking to purchase a product or locate specific information. Please rate your level of agreement with each of the following statements related to algorithms (Step by step procedures used to program software) which can represented by automated recommendations provided as suggested products or as search results.		
Cognitive Trust in Algorithms	Benevolence	1. I believe algorithms that recommend products are created in good faith.
		2. If I required help Internet searches based on algorithms will provide me with results in my best interest.
		3. Recommended sites and posts provided by algorithms are interested in my well-being.
	Integrity	1. Algorithms are mathematically based and therefore truthful.
		2. I would characterize Algorithm recommendations as honest.
		3. Algorithms provide the information I ask for.

	Competence	1. It is possible through rules and mathematical calculations to provide me with the best recommendations possible.
		2. Recommendations driven by my Internet activity provide me with relevant information.
		3. Overall, algorithms are capable and proficient at providing product advice.

Placing yourself in the hypothetical situation that you are employed as a purchasing manager rate the following statements in terms of how you would feel about analytical recommendations that have been influenced by data collected from social media.

Cognitive Trust in Business Analytics Using Social Media	Benevolence	1. I believe that if I were a purchasing manager Business Analytics that include social media would be in my best interest.
		2. Business Analytics that include social media provides me information that will help me personally as an employee if I had to make purchasing decisions.
		3. Information from Business Analytics that includes social media would be provided to facilitate my well-being as an employee.

	Integrity	1. Business Analytics that include social media data are valid.
		2. Business Analytics that include social media is reliable.
		3. Business Analytics that include social media data are truthful.
	Competence	1. Business Analytics that include social media provides the best recommendations possible.
		2. Including social media data in Business Analytics will provide me with relevant information.
		3. Overall, Business Analytics that include social media is capable and proficient at providing product purchase information.
Relative Advantage		1. I would trust the recommendations that include social media as a variable more than the recommendations without with regard to the appropriate level of products to purchase for corporate needs.

		2. I would trust the validity of a recommendation using social media more than a recommendation without a social media component.
		3. I would find a more optimal amount to purchase using analytics including social media than I would through analytics without a social media component.
Perceived Enjoyment		1. I believe using information from social media would be enjoyable.
		2. I believe using information from social media would be fun.
		3. I believe the process of using information from social media would be pleasant.
Behavioral Intentions		1. I intend to use social media data as a component in making business decisions.
		2. I predict I will use social media data as a component in making business decisions.
		3. I plan to use social media data as a component in making business decisions.