

A TRIPARTITE ACCEPTANCE MODEL FOR ENTERPRISE 2.0 SYSTEMS

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ABSTRACT

An Enterprise 2.0 system refers to a Web 2.0 platform that an organization can implement in order to allow employees to produce and exchange information through interaction and collaboration. The purpose of this study is to develop and test a theoretical model to explain the factors that influence an employee's intention to use Enterprise 2.0 systems. While traditional models of usage intention have focused on the influence of cognitive factors on individual behavioral intention, this study applies the tripartite model of attitude to explain how the cognitive component, the affective component, and the behavior component have influence on the individual's intention to use an Enterprise 2.0 system. In addition, based on the expectancy-value model, this study explains how an individual's cognitive beliefs are influenced by his/her evaluations of technological attributes of the Enterprise 2.0 system. The results suggest that, in addition to the cognition factors, the affective component (i.e., perceived enjoyment) would increase an individual's intention to use an Enterprise 2.0 system. Further, an individual's cognitive beliefs are influenced by technological attributes, including technological-task compatibility and Enterprise 2.0 effectiveness. The theoretical contributions and practical implications are discussed.

Keywords: Enterprise 2.0, Web 2.0, Technology Acceptance Model, Tripartite Acceptance Model

INTRODUCTION

Web 2.0 systems refer to the community-driven web services where users are more socially connected and are able to collaborate to edit the information (Paroutis & Saleh, 2009). A Web 2.0 system is a platform that provide services to allow users to actively participate and add value to the content (Levy, 2009). Examples of Web 2.0 systems include social networking sites, weblogs, and authorships (Levy, 2009; Paroutis & Saleh, 2009). In contrast to Web 1.0 systems, where content is written, collected, and organized by content managers and content experts, Web 2.0 systems allow users to collaborate to provide content (Levy, 2009).

Based on the idea of applying Web 2.0 systems within organizations, McAfee coined the term "Enterprise 2.0" and referred an Enterprise 2.0 system as a Web 2.0 system that an organization can implement in order to allow employees to produce and exchange information through interaction and collaboration . Enterprise 2.0 systems (e.g., Microsoft SharePoint) are the implementation of Web 2.0 systems within organizations (Levy, 2009; Paroutis & Saleh, 2009). Companies can benefit from implementing Enterprise 2.0 systems (Wijaya, Spruit, Scheper, &

Versendaal, 2011) in aspects such as joint content development with customers (Wagner & Majchrzak, 2006) and knowledge management (McAfee, 2006).

The concept of Enterprise 2.0 has evolved to Enterprise 3.0 and even Enterprise 4.0. As an expansion of Web 2.0, Web 3.0 incorporates into the World Wide Web new trends of technologies including semantic technologies and mobile & location-based services (Minić, Njeguš, & Ceballos, 2014). The result is a more ubiquitous and robust Web environment. An Enterprise 3.0 system is the system that uses Web 3.0 technologies for enterprise purposes (Ahrens & Zašcerinska, 2014; Bassus, Ahrens, & Zašcerinska, 2011). In comparison with Enterprise 2.0, Enterprise 3.0 has two features: semantics and mobility (Ahrens & Zašcerinska, 2014). Web 3.0 converted from a keyword-based search technology of Web 2.0 to a semantic-based technology, which is characterized by searches with context analysis. Therefore, Enterprise 3.0 is able to provide users particular information that is relevant to their contexts/social networks such as particular e-commerce or e-health services (Ahrens & Zašcerinska, 2014; Minić et al., 2014). The mobility of Enterprise 3.0 reflects the ubiquitous feature of Web 3.0 through which information can be accessed anywhere, anytime, on any devices (Ahrens & Zašcerinska, 2014). Further, Enterprise 4.0 is a new enterprise environment of doing business that is enabled by four technologies (big data and associated analytics, cloud computing, mobile connectivity, and social media) (Moreia, Ferreira, & Seruca, 2018). Successful implementation of Enterprise 4.0 involves digital transformation of the organization to integrate technologies with business practices.

A majority of research on Web 2.0 is geared toward explaining individual behavior (e.g., shopping) in Web 2.0 (e.g., Lee, Shi, Cheung, Lim, & Sia, 2011) in non-organizational contexts, or has focused on how to facilitate knowledge sharing using Web 2.0 systems (Matschke, Moskaliuk, & Cress, 2012; Paroutis & Saleh, 2009; Pfaff & Hasan, 2011; Schneckenberg, 2009). Relatively fewer empirical studies investigate Enterprise 2.0 in an organizational context (e.g., Jia, Guo, & Barnes, 2017; Reguieg & Taghezout, 2017). For example, a recent study applies the IS continuance model to investigate the determinants of Enterprise 2.0 post-adoption (Jia et al., 2017). Their model focuses on constructs such as expectation-confirmation and perceived usefulness after adoption. However, before adoption, what makes an individual willing to use Enterprise 2.0 systems in the organizational context remains unclear. The foci of our study is to investigate how individuals in the organizational context respond to an interactive and collaborative web systems. We therefore decide to use Enterprise 2.0 as our study context. Hence, the following research question arises: *What are the factors that may influence an individual's intention to use an Enterprise 2.0 system?*

To answer the research questions, this study uses the tripartite model of attitude (Ajzen, 1984; Breckler, 1984; Eagly & Chaiken, 1993; Piderit, 2000) to identify the factors that influence an individual's intention to use an Enterprise 2.0 system. Also, this study applies the expectancy-value model (Feather, 1982; Fishbein & Ajzen, 1975) to explain how the technological attributes of an Enterprise 2.0 system influence an individual's usage intention. The remainder of this discussion is organized as follows. The next section presents the tripartite model of attitude and the expectancy-value model, both of which underlie this research and build the theoretical model. The research model and the hypotheses are then proposed, followed by the research methodology, the analyses, and a discussion of the results.

THEORY

Information systems research has long studied the factors that influence individual intention to use new information technologies. The majority of research in this area has mainly focused on the cognitive factors ,i.e., the beliefs, perceptions, thoughts, and knowledge structure of an individual (Breckler, 1984; Hong, Thong, Chasaow, & Dhillon, 2011). Several theoretical models such as theory of reasoned action (TRA), technology acceptance model (TAM), and united theory of acceptance and use of technology (UTAUT) have been developed to identify the cognition factors that can influence individual behavioral intention. Research has also categorized these cognition factors, such as perceived usefulness and perceived ease of use, as utilitarian factors (Wakefield & Whitten, 2006) and found that these utilitarian factors significantly influence individual behavior.

However, such emphasis on cognition factors in these models limits the generalizability when applying these models to new systems/contexts that emphasize hedonic value (Van der Heijden, 2004). Hedonic systems are defined as systems that aim to provide self-fulfilling value to the user (i.e., encouraging a fun experience and prolonged usage), while utilitarian systems refer to the systems that aim to provide instrumental value to the user (i.e., increasing task performance and efficiency) (Van der Heijden, 2004). Recent research shows that hedonic factors such as perceived enjoyment (Van der Heijden, 2004), playfulness (Wakefield & Whitten, 2006), and comfort with change by the system (Hong et al., 2011) also govern individual behavior when using a hedonic system. In contrast to a utilitarian information system, Enterprise 2.0 systems allow employees to be socially connected and collaborate on creating information content. We argue that Enterprise 2.0 systems can be viewed as a type of hedonic system because Enterprise 2.0 systems aim to encourage all users to interact and collaborate with each other to create information (McAfee, 2006).

In addition to utilitarian and hedonic factors, habit is another factor that our study considers as having influence on employees' usage intention toward Enterprise 2.0 systems. Prior literature suggests that when an individual has habitual behavior in the past, the individual can automate the process of the behavior and thus will tend to conduct the same behavior in the future (Aarts, Verplanken, & Knippenberg, 1998; Outlette & Wood, 1998; Verplanken & Orbell, 2003). Because Enterprise 2.0 systems are essentially the application of Web 2.0 systems in organizations, their technologies and usage experiences are similar. Thus, we are also interested in investigating how an employee's habitual usage of Web 2.0 systems will influence his or her intention to use Enterprise 2.0 systems.

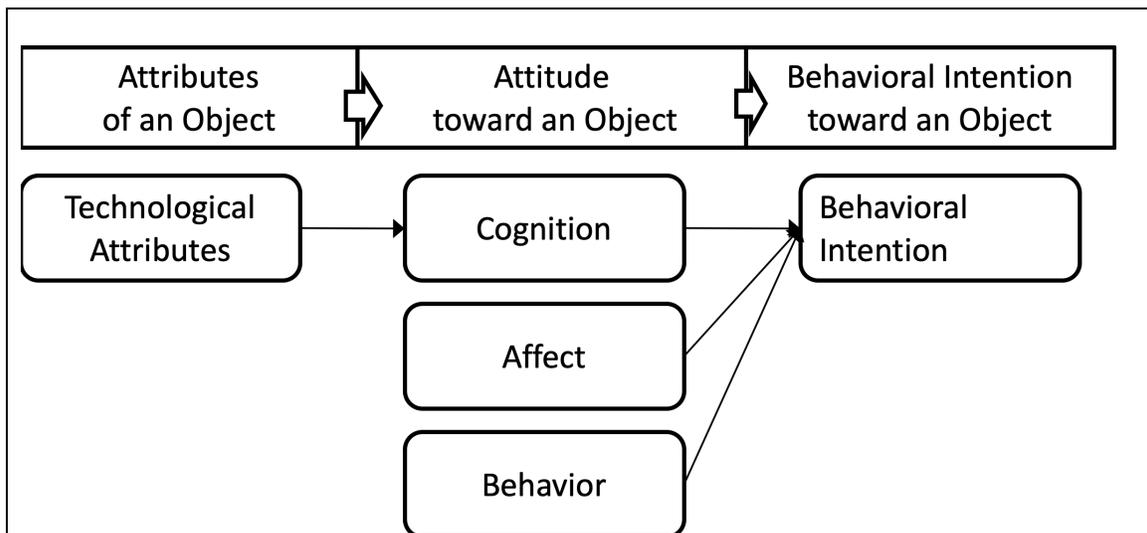
To address the research question, we apply the tripartite model of attitude. Attitude is defined as an individual subject evaluation toward an object (in this study, the Enterprise 2.0 system) (Breckler, 1984). Theoretical frameworks of attitude have proposed that attitudes are structured along three components/dimensions (i.e., the tripartite model of attitude): the cognitive, affective, and conative components (Ajzen, 1984; Eagly & Chaiken, 1993; Piderit, 2000). These three components should be modeled as causes of variation in the global attitude (Zanna & Rempel, 1988).

The cognitive component, or cognition, refers to beliefs, perceptions, thoughts, and knowledge structures of an individual about the attitude object (Breckler, 1984). Because this component considers an individual’s beliefs and knowledge of the attitude object, the cognitive component can be viewed as the utilitarian aspect of the attitude (Van der Heijden, 2002). The affective component, or affect, refers to an individual’s emotional responses, instinctive feelings, and sympathy toward the attitude object (Breckler, 1984). Literature has suggested that affective cues are potent determinants of attitude changes (Edwards, 1990; Petty & Cacioppo, 1981). The conative component refers to an individual’s evaluations that are based on past behaviors (Piderit, 2000). According to self-perception theory (Bem, 1972), an individual changes his/her attitude toward an object based on his/her evaluation of self-observed behaviors and external cues from others (Melone, 1990). The tripartite model of attitude asserts that attitude change may result from an individual’s assessment of his/her own and others’ behaviors.

Additionally, while traditional models of individual behavior (e.g., TAM, TRA, and UTAUT) provide insights about why an individual uses the system from the perspective of individual cognition, fewer empirical efforts have examined how the technological attributes of an Enterprise 2.0 system contribute to individual perceptions of the system and usage intention. Therefore, this study applies the expectancy-value model to explain how technological attributes influence an individual’s intention to use an Enterprise 2.0 system. According to the expectancy-value model, an individual evaluates attributes of an object to form his/her beliefs toward the object (Feather, 1982; Fishbein & Ajzen, 1975). An individual’s evaluation of an object’s attributes will form his/her cognitive beliefs about the object, which, based on the tripartite model of attitude, influence the individual’s global attitude toward the object.

A conceptual model of this study is depicted in Figure 1. In the model, an individual’s behavioral intention is the result of the individual’s attitude, which includes three components: cognition, affect, and behavior. Furthermore, the individual’s cognition (belief) is determined by the technological attributes of the information system (i.e., Enterprise 2.0 in our study).

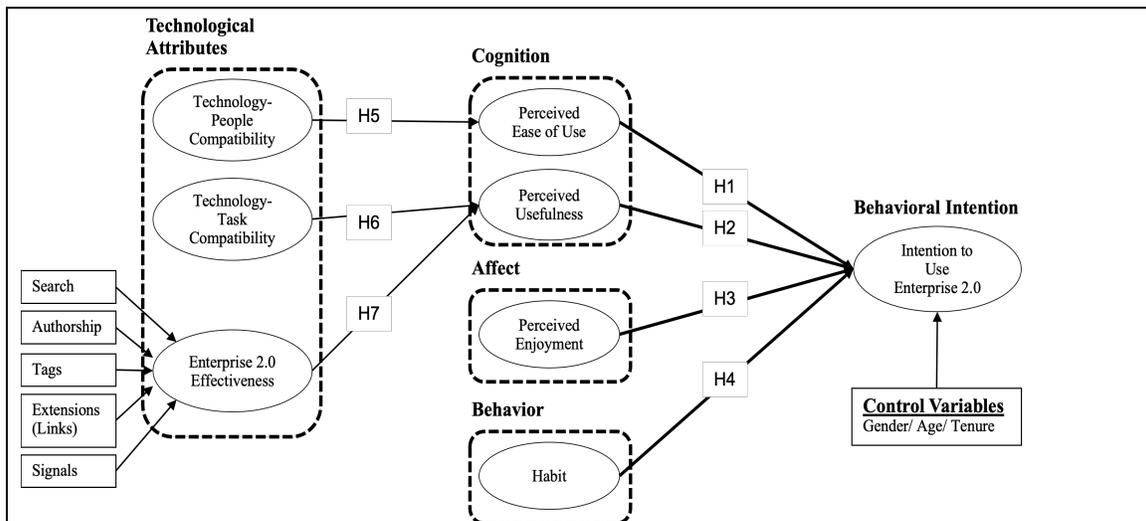
Figure 1. Conceptual Model



RESEARCH MODEL AND HYPOTHESES

Following the theoretical model, the research model is provided in Figure 2. The first factor to be discussed is cognition, which is conceptualized as perceived ease of use and perceived usefulness. The other two components of attitude, affect and behavior, are conceptualized as perceived enjoyment and habit, respectively. With regard to the antecedents of cognition, technological attributes are conceptualized as technology-people compatibility, technology-task compatibility, and Enterprise 2.0 effectiveness. Enterprise 2.0 effectiveness is further conceptualized as search, authorship, tags, extensions (links), and signals.

Figure 2. Research Model



Following the technology acceptance model (Davis, 1989), we identify perceived ease of use and perceived usefulness as the key cognitive variables. In this study, perceived ease of use refers to the degree to which an individual believes that using an Enterprise 2.0 system would be free of effort (adapted from Davis, 1989). The technology acceptance model states that the information system that is more likely to be accepted by individuals is the system that is easier to use than other systems. When less effort is required for using the system, the individual will judge that he/she can use the system well and therefore will be more willing to engage in the behavior. Therefore, we formulate the following hypothesis:

H1: An individual's perceived ease of use will positively influence his/her intention to use an Enterprise 2.0 system.

Perceived usefulness is defined in this study as the degree to which an individual believes that using an Enterprise 2.0 system would facilitate his/her job performance (adapted from Davis, 1989). The technology acceptance model states that an information system is more likely to be accepted by individuals when individuals believe that use the system would lead to higher job performance. When an individual thinks that for him/her to use an Enterprise 2.0 system would result in valuable outcomes such as enhancing his/her job performance, he/she will be more willing to use the system. Therefore, we formulate the following hypothesis:

H2: An individual's perceived usefulness will positively influence his/her intention to use an Enterprise 2.0 system.

Perceived enjoyment refers to the extent to which an individual believes that the use of the system is fun (Van der Heijden, 2004). Perceived enjoyment represents the affective component because it captures an individual's feelings and emotions toward the use of the system, apart from his/her evaluation of any performance consequences derived from the use (Kim, Chan, & Gupta, 2007). Research shows that perceived enjoyment significantly influences the intention to use (Van der Heijden, 2004) and adoption of (Kim et al., 2007) hedonic-based information systems. Therefore, we formulate the following hypothesis:

H3: An individual's perceived enjoyment will positively influence his/her intention to use an Enterprise 2.0 system.

Habit is defined in this study as the degree to which an individual's use of an Enterprise 2.0 system is automatic in the organization (adapted from Limayem, Hirt, & Cheung, 2007). An individual's intention to perform a behavior can be influenced by the behavior that he/she was accustomed to in the past (Honkanen, Olsen, & Verplanken, 2005; Honkanen et al., 2005; Limayem et al., 2007), because the individual can automate the process of the behavior with ease (Aarts et al., 1998; Outlette & Wood, 1998; Verplanken & Orbell, 2003). In a similar manner, when an individual has had the tendency to use a Web 2.0 system regularly in the past, the individual is more likely to use the system automatically with intuition. Therefore, we formulate the following hypothesis:

H4: An individual's habit (of using Web 2.0 systems) will positively influence his/her intention to use an Enterprise 2.0 system.

Compatibility is defined as the degree to which using an innovation is perceived as consistent with a potential adopter's existing values, needs, and past experiences (Rogers, 1995). Technology-people compatibility minimizes the learning and adaptation time required for users. Thus, the higher the technology-people compatibility, the more likely will users know how to reduce time and effort in using an Enterprise 2.0 system. Therefore, we formulate the following hypothesis:

H5: Task-people compatibility will positively influence perceived ease of use.

Technology-task compatibility is defined in this study as the degree to which an Enterprise 2.0 system assists an individual in performing his or her tasks (Goodhue & Thompson, 1995). In Goodhue and Thompson's work of technology-task fit (Goodhue & Thompson, 1995), they argued that an IT system will be used if, and only if, the functions available to the user support his/her activities. If compatibility exists between software tool functionality and the maintenance task activities, users will feel more satisfied with the tools they use and will be more inclined to use them. Therefore, we formulate the following hypothesis:

H6: Task-technology compatibility will positively influence perceived usefulness.

Enterprise 2.0 effectiveness is defined as the degree to which an individual perceives that an Enterprise 2.0 system can produce intended results. We argue that if an Enterprise 2.0 system is effective, a user will feel that the system will facilitate his/her working. With an effective Enterprise 2.0 system, a user can find what he/she is looking for, feel comfortable sharing information, and/or manage information. Therefore, we formulate that:

H7: Enterprise 2.0 effectiveness will positively influence an individual's perceived usefulness.

THE EMPIRICAL STUDY

Instrument Development

Except for the measure of the Enterprise 2.0 effectiveness construct, all measures were adapted from the literature. The measures for intention to use Enterprise 2.0, perceived ease of use, and perceived usefulness were adapted from Davis's (1989) measures. The measure for technology-people compatibility was adapted from Karahanna et al.'s (1999) measure, and the measure for technology-task compatibility was adapted from Goodhue and Thompson's (1995) measure. The measure for habit was adapted from Verplanken and Orbell's (2003) measure. Because there is no extant measure for Enterprise 2.0 effectiveness, we referred to McAfee's (2006) framework of Enterprise 2.0 functionalities and developed Enterprise 2.0 effectiveness as a formative second-order construct. The technology of an effective Enterprise 2.0 system includes six components (1989): search, link, authoring, tag, extension, and signal. All of the measures use a seven-item Likert type scale. The constructs, definitions, and measures are listed in Table 1.

Table 1. Key Constructs, Definitions, and Measures

Constructs/ Dimensions	Definition	Measures
Technology-people compatibility	The compatibility about which people think or feel between themselves and an Enterprise 2.0 system	Karahanna et al. (1999)
Technology-task compatibility	The degree to which an Enterprise 2.0 system assists an individual in performing his or her tasks.	Goodhue and Thompson (1995)
Enterprise 2.0 Effectiveness	The degree to which an individual perceives an Enterprise 2.0 system can produce intended results	Developed from McAfee (2006)
Search	The extent to which an Enterprise 2.0 system is able to allow a user to find what he/she is looking for	Developed from McAfee (2006)
Authoring	The degree to which an Enterprise 2.0 system is able to let users write for a broad audience	Developed from McAfee (2006)
Tag	The extent to which an Enterprise 2.0 system allows users to categorize content	Developed from McAfee (2006)
Link	The extent to which links in online content are	Developed from

	able to guide users	McAfee (2006)
Signal	The degree to which an Enterprise 2.0 system is able to actively notify users when new content of interest appears	Developed from McAfee (2006)
Perceived Ease of Use	The degree to which an individual believes that using an Enterprise 2.0 system would be free of effort	Davis (1989)
Perceived Usefulness	The degree to which an individual believes that using an Enterprise 2.0 system would facilitate his or her job performance	Davis (1989)
Perceived Enjoyment	The extent to which an individual believes the use of an Enterprise 2.0 system is fun	Van der Heijden (2004)
Habit	The degree to which an individual's use of an Enterprise 2.0 system is automatic	Verplanken and Orbell
Intention to Use Enterprise 2.0	The degree to which an individual plans to apply Enterprise 2.0 systems	(Venkatesh, Morris, Davis, & Davis, 2003)

Data Collection

The population of interest consists of employees who understand the concept of an Enterprise 2.0 system (i.e., have knowledge about an Web 2.0 systems), but do not have past experience with an Enterprise 2.0 system. Our sample consists of employees in the southern part of Taiwan (i.e., the Kaohsiung metropolitan area). We distributed the web link to our questionnaire through local professional communities.

We received a total of 225 responses. After data cleaning, 190 responses are valid for analysis. The participants are an average of 33.5 years old and have worked for an average of 7.5 years. 57.8 percent of participants are male. The majority of participants have a bachelor's (56.8 percent) or graduate (28.6 percent) degree. Of the respondents, 43 percent were from the manufacturing industry, 19.8 percent were from the information technology industry, 10 percent worked for the government, 8.3 percent were from the service industry, another 8.3 percent were faculty or staff in educational institutions, and 9.3 percent were from other industries.

Measurement Validation

The data analysis consisted of two stages, and both stages were conducted using partial least squares (PLS). PLS is appropriate for this study for two reasons. First, PLS is recommended for predictive research models that emphasize theory development (Chin & Newsted, 1999; C. Fornell & Bookstein, 1982; Jöreskog & Wold, 1982). Given that there have been no empirical studies about Enterprise 2.0 effectiveness and its influence on individual perceptions and system usage intention, using PLS in this study is appropriate. Second, because the research model in this study contains both formative and reflective constructs, using PLS to examine the model is appropriate (C. Fornell & Bookstein, 1982; Haenlein & Kaplan, 2004).

The first stage of data analysis examines the measurement model. We first conducted a factor analysis for the measurement model. For the Enterprise 2.0 effectiveness, we conducted factor analysis with items grouped under its second-order construct. Principal component analysis with varimax rotation was used for factor analysis. The tag dimension was removed from the measurement model because the items' average load on other dimensions and all of the factors' loadings of the tag dimension are lower than 0.60. A plausible explanation for this may be that most of the popular Web 2.0 systems that our participants have experience with have embedded the tag function into other functions such as the search, authorship, and link functions. After deleting the tag dimension, the factor structure was obtained as expected (see Table 2 and Table 3).

Table 2. Factor Structure, Composite Reliability, and Cronbach Alpha for Constructs

Construct	Item#	Question	Loading	CR/ α
Technology- People Compatibility	TPC4	Using the Enterprise 2.0 system goes against what I believe computers should be used for.	.639	.96/.93
	TPC5	Using the Enterprise 2.0 system runs counter to my values about how to conduct my job.	.909	
	TPC6	Using the Enterprise 2.0 system runs counter to my own values.	.890	
Technology- Task Compatibility	TTC1	The information provided by the Enterprise 2.0 system would be accurate for my work.	.793	.95/.93
	TTC2	The information provided by the Enterprise 2.0 system would be timely for my work.	.744	
	TTC3	The information provided by the Enterprise 2.0 system would be understandable for my work.	.657	
	TTC4	The information provided by the Enterprise 2.0 system would be sufficient for my work.	.686	
Perceived Ease of Use	EOU 1	Learning to use Enterprise 2.0 would be easy for me	.620	.95/.92
	EOU 2	I would find it easy to get Enterprise to do what I want it to do	.570	
	EOU 3	My interaction with Enterprise 2.0 would be clear and understandable	.661	
Perceived Usefulness	PU1	Using Enterprise 2.0 in my job would enable me to accomplish tasks more quickly	.840	.97/.96
	PU2	Using Enterprise 2.0 would improve my job performance	.869	
	PU3	Using Enterprise 2.0 in my job would increase my productivity	.812	
	PU4	Using Enterprise 2.0 would enhance my effectiveness on the job	.841	

	PU5	Using Enterprise 2.0 would make it easier to do my job	.838	
	PU6	I would find Enterprise 2.0 useful in my job	.786	
Perceived Enjoyment	PE1	I feel the use of Enterprise 2.0 is enjoyable.	.888	.97/.96
	PE2	I feel the use of Enterprise 2.0 is pleasant.	.849	
	PE3	I feel the use of Enterprise 2.0 is exciting.	.847	
	PE4	I feel the use of Enterprise 2.0 is interesting.	.787	
Habit	Hab1	I can find various ways of using Web 2.0 systems to serve my needs.	.880	.96/.94
	Hab2	To be proficient at using Web 2.0 systems is not difficult for me.	.918	
	Hab3	I feel I can use Web 2.0 systems without thinking.	.914	
Intention to Use Enterprise 2.0	IU1	I plan to use Enterprise 2.0 system in the future.	.871	.98/.97
	IU2	I intend to use Enterprise 2.0 system in the future.	.856	
	IU3	I predict I would use Enterprise 2.0 system in the future.	.867	

Table 3: Factor Structure, Composite Reliability, and Cronbach Alpha for the Enterprise 2.0 Effectiveness Construct

Construct	Item#	Question	Loading	CR/ α
Search	Sea1	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find relevant knowledge and information.	.833	.97/.96
	Sea2	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find high quality knowledge and information.	.801	
	Sea3	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find a lot of knowledge and information.	.846	
	Sea4	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find up-to-date knowledge and information.	.824	
	Sea5	Through using the search engine of Enterprise 2.0 in my work, I feel that I can easily find important knowledge and information.	.792	
	Sea6	Overall, I think that Enterprise 2.0 provides	.792	

		a very good search engine for me to use for my work.		
Authorship	Aut1	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently contribute my knowledge and information.	.785	.97/.97
	Aut2	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently share and discuss my knowledge and information with my colleagues.	.790	
	Aut3	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently collaborate with my colleagues on creating new knowledge and information.	.821	
	Aut4	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently manage documents about my knowledge and information.	.781	
	Aut5	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently build virtual community with my colleagues.	.832	
	Aut6	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently collaborate with my colleagues on work processes.	.797	
	Aut7	Through using the authorship tool of Enterprise 2.0 in my work, I feel that I can conveniently collaborate with my colleagues on managing projects.	.812	
	Aut8	Overall, I think that Enterprise 2.0 provides a very good authorship tool for me to use.	.723	
Links	Lin1	Through the recommendations mechanism of Enterprise 2.0 in my work, I feel that I can easily find relevant knowledge and information from system-generated recommendations.	.740	.97/.96
	Lin2	Through the recommendations mechanism of Enterprise 2.0 in my work, I feel that I can easily find relevant knowledge and information from my colleagues' recommendations.	.685	
	Lin3	Through the recommendation mechanism of Enterprise 2.0 in my work, I feel that I can	.712	

		easily understand my colleagues' comments and opinions toward a particular content.		
	Lin4	Through the recommendations mechanism of Enterprise 2.0 in my work, I feel that I can easily collect relevant knowledge and information.	.712	
	Lin5	Overall, I think that Enterprise 2.0 provides a very good recommendation mechanism for me to use.	.733	
Signal	Sig1	Through the RSS subscription of Enterprise 2.0 in my work, I feel that I do not need to spend a lot of time to find updated information.	.752	.96/.95
	Sig2	Through the RSS subscription of Enterprise 2.0 in my work, I feel that I will not receive irrelevant updated information.	.783	
	Sig3	Through the RSS subscription of Enterprise 2.0 in my work, I feel that I can subscribe the updated information that I like.	.773	
	Sig4	Through the RSS subscription of Enterprise 2.0 in my work, I feel that I can receive updated information in a timely manner.	.763	
	Sig5	Overall, I think that Enterprise 2.0 provides a very RSS subscription tool for me to use.	.771	

We also assess the reliability, convergent validity, and discriminant validity for all measures. Two reliability indices show that all of the measures are reliable. The Cronbach's alpha for each first-order construct is greater than .70, indicating that the scores obtained from the items of the same measure are internally consistent (Cortina, 1993). In addition, the composite reliability (Claes Fornell & Larcker, 1981) for each first-order construct is greater than .70, showing that more than half of the variance of the measure consistently captures that same concept (Bagozzi & Yi, 1988; Garver & Mentzer, 1999). The composite reliability (CR) and Cronbach's alpha for each construct are listed in Table 2 and Table 3. The average variance extracted for each first-order construct is greater than 0.50 (Claes Fornell & Larcker, 1981), suggesting the measure items for each construct are convergent in capturing the same concept (i.e., convergence in measurement; Bagozzi, 1981). The AVEs are listed in Table 4. The square roots of AVE and correlations are summarized in Table 4. The square root of AVE for the construct is greater than its correlations with other constructs (Claes Fornell & Larcker, 1981), indicating adequate discriminant validity.

Table 4: Assessment of Reliability, Convergent Validity, and Discriminant Validity

	Mean (SD)	AVE	TPC	TTC	Sea	Aut	Lin	Sig	EOU	PU	PE	Hab	IU	Gen	Age
TPC	3.75 (1.40)	.74	.86												
TTC	4.63 (1.27)	.85	.76	.92											
Sea	5.08 (1.29)	.86	.69	.71	.93										
Aut	4.97 (1.34)	.81	.65	.71	.63	.90									
Lin	4.87 (1.25)	.87	.64	.73	.74	.77	.93								
Sig	5.04 (1.30)	.85	.60	.71	.71	.71	.73	.92							
EOU	4.78 (1.34)	.87	.62	.66	.60	.55	.56	.58	.93						
PU	4.78 (1.35)	.86	.79	.31	.71	.67	.68	.61	.60	.93					
PE	4.59 (1.41)	.90	.54	.55	.66	.52	.58	.60	.64	.61	.95				
Hab	5.06 (1.39)	.90	.33	.43	.33	.43	.44	.42	.55	.31	.32	.95			
IU	4.61 (1.44)	.96	.57	.59	.56	.55	.52	.53	.49	.60	.49	.19	.97		
Gen	1.43 (0.49)	—	.00	.10	.08	.06	.13	.09	-.03	.09	.19	-.04	.11	—	
Age	3.08 (1.44)	—	.12	.02	-.05	-.02	-.02	.03	.02	.02	-.04	-.14	-.01	-.11	—
Ten	2.85 (1.78)	—	.21	.07	.04	.05	.05	.08	.04	.12	.01	-.11	.11	-.01	.72

*The shaded diagonal values are the square root of the average variance extracted for each construct.

**Constructs in this table include: Technology-People Compatibility (TPC), Technology-Task Compatibility (TTC), Search (Sea), Authorship (Aut), Links (Lin), Signal (Sig), Perceived Ease of Use (EOU), Perceived Usefulness (PU), Perceived Enjoyment (PE), Habit (Hab), Intention to Use Enterprise 2.0 (IU), Gen (Gender), Age (Age), Ten (Tenure).

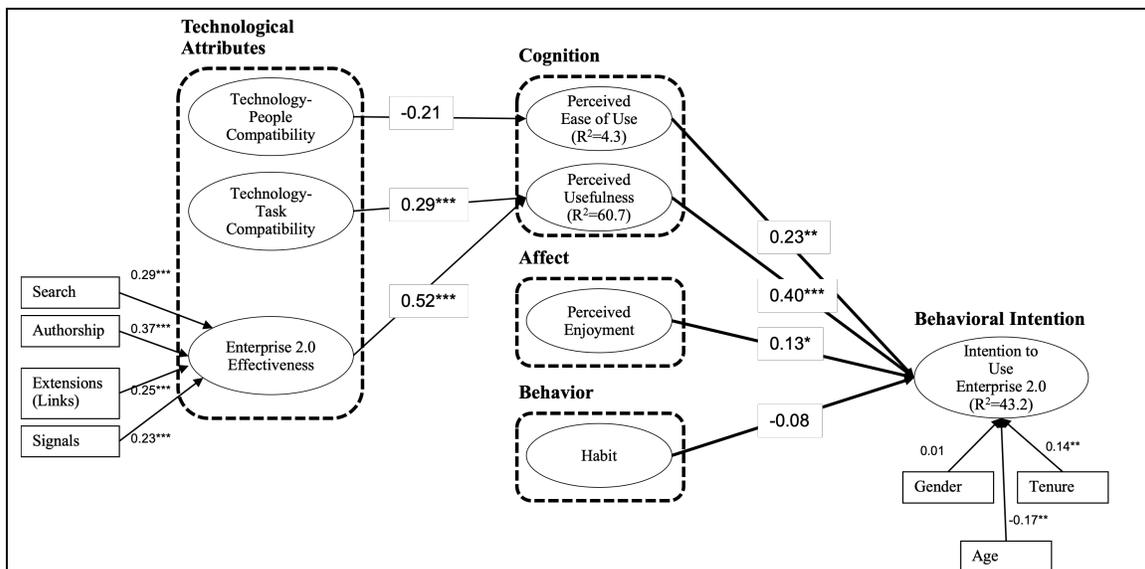
RESULTS

The second stage of analysis is to test the hypotheses. PLS assesses the significance of the hypotheses and the explanation power for validating research models (Xu, Teo, Tan, & Agarwal, 2009). A bootstrapping technique is used for examining the hypotheses (Chin, 1998). We used SmartPLS to re-estimate path coefficient and standard errors through re-sampling 1500 subsamples. The results of the research model are presented in Figure 3.

The R^2 value, or the explained variance, is used to assess the prediction power of the research model (Barclay, Higgins, & Thomson, 1995). The results indicate that 43.2 percent of the variance of intention to use Enterprise 2.0 is explained by the research model. Only 4.3 percent of the variance in perceived ease of use is explained by technology-people compatibility. Also, 60.7 percent of the variance in perceived usefulness is explained by technology-task compatibility and Enterprise 2.0 effectiveness.

The results show that perceived ease of use ($\beta=.23, p<.01$, one-tail test), perceived usefulness ($\beta=.40, p<.001$, one-tail test), and perceived enjoyment ($\beta=.13, p<.05$, one-tail test) significantly predict intention to use enterprise 2.0, providing support for H1, H2, and H3. The path from habit to intention to use enterprise 2.0 is insignificant. Therefore, H4 is not supported. The results show that technology-people compatibility does not predict perceived ease of use regarding an enterprise 2.0 system, rejecting H5. Technology-task compatibility ($\beta=.29, p<.001$) and Enterprise 2.0 effectiveness ($\beta=.52, p<.001$) significantly predict perceived usefulness, providing support for H6 and H7. Among the four control variables, age ($\beta=-.17, p<.01$, one-tail test), education ($\beta=-.14, p<.001$, one-tail test), and tenure ($\beta=.14, p<.01$, one-tail test) are significantly associated with individual intention to use Enterprise 2.0 systems.

Figure 3. Results of Path Analysis



DISCUSSION

Contributions for Research

Our study confirmed several important hypotheses related to our theoretical model of Enterprise 2.0 usage intention. Complying with the extant literature, both utilitarian factors, or the cognitive component, (i.e., perceived ease of use and perceived usefulness) increase an individual’s intention to use an Enterprise 2.0 system (H1 and H2). In addition, our study suggests that the affective component, or perceived enjoyment, would increase an individual’s intention to use an Enterprise 2.0 system (H3). However, the behavioral component (i.e., habit) has no impact on an

individual's intention to use an Enterprise 2.0 system (H4). During data collection, we seek participants who have used Web 2.0 systems but did not have usage experience of Enterprise 2.0 systems. As a result, our habit measure only examined employees' habitual behavior of using Web 2.0 systems, but not Enterprise 2.0 systems. This indeed is one limitation of this study. Based on the sample and results, we may only suggest that the habitual behavior of using Web 2.0 will not lead to the intention to use Enterprise 2.0.

With regard to the influence of technological attributes on an individual's intention to use an Enterprise 2.0 system, we found some interesting results. Our model suggests that technological-task compatibility and Enterprise 2.0 effectiveness would drive employees to perceive enterprise 2.0 systems as useful (H6 and H7). However, technological-people compatibility has no impact (H5). We suspect that the nature of our sample (no experience in Enterprise 2.0 systems) is the root cause to such result.

The results from control variables, particularly tenure in the organization, are interesting and have potential for future research. When an employee has more years of experience in an organization, the employee may be more willing to use Enterprise 2.0 systems. Probably the employees with higher tenure are more likely to expect the benefits from the use of enterprise 2.0 systems than others.

Implications for Practice

Our results also have several implications for those organizations that have implemented or are planning to adopt Enterprise 2.0 systems. Our research model helps managers to understand how the technological attributes of Enterprise 2.0 systems would motivate employees' intention to use Enterprise 2.0 through influencing employees' cognition and affection. This study has two main implications for practice.

First, as suggested by prior IS literature, perceived usefulness is still the most influential antecedent to usage intention. Further, our data shows that the main ingredients in the formulation of employees' usefulness perception include Enterprise 2.0 effectiveness and technology-task compatibility. The result suggests that the four main features of Enterprise 2.0 systems—authorship, search, link, and signal—all contribute to the effectiveness of the system to employees. As for enhancing technology-task compatibility, organizations should also maintain and manage the content available in the system to make sure that the system provides accurate, timely, and sufficient information for employees' work.

Second, besides perceived usefulness and ease of use, perceived enjoyment of the system is significantly associated with intention to use Enterprise 2.0 systems. Therefore, organizations that implement Enterprise 2.0 should consider how to make their employees enjoy their usage experience (i.e., the hedonic benefits), in addition to the utilitarian value such as useful functions and an easy-to-use interface.

Limitations and Future Research

As discussed earlier, the sample nature (i.e., respondents with no experience in Enterprise 2.0 systems) has limited our findings on H4 and H5. We suggest that future research could study the employees who have Enterprise 2.0 usage experience and investigate how their habit strength influences their continued usage behavior.

In addition to our sample nature, our data was collected at one point in time and thus cannot suggest the influence of the factors on intention to use Enterprise 2.0 in a longitudinal setting. Indeed, the “snapshot” data in our study may not be appropriate for examining the influence of the factors that need time to take effect, such as past behavior (i.e., habit). Future research may contribute to the literature by investigating the influence of habit on Enterprise 2.0 usage intention in a longitudinal time frame.

We did not assess participants’ actual usage behavior toward Enterprise 2.0 systems, although TRA has suggested that behavior intention would influence actual behavior. Finally, while this study examined the influence of the tripartite components, we did not examine the influence of individual characteristics or organizational factors on individual intention to use Enterprise 2.0 systems.

REFERENCES

- Aarts, H., Verplanken, B., & Knippenberg, A. (1998). Predicting behavior from actions in the past: Repeated decision making or a matter of habit. *Journal of Applied Social Psychology, 28*(15), 1355–1374.
- Ahrens, A., & Zašcerinska, J. (2014). Analysis of teachers’ use of web technologies: Focus on teachers’ enterprise 3.0 application. *Journal of Information Technology and Application in Education, 3*(1), 25–32.
- Ajzen, I. (1984). Attitudes. In R. J. Corsini (Ed.), *Wiley Encyclopedia of Psychology: Vol. I* (pp. 99–100). New York: Wiley.
- Bagozzi, R. P. (1981). Evaluating structural equation models with unobservable variables and measurement error: A comment. *Journal of Marketing Research, 18*(3), 375–381.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74–94.
- Barclay, D., Higgins, C., & Thomson, R. (1995). The partial least squares approach to causal modeling: Personal computer adoption and use as an illustration. *Technology Studies, 2*(2), 285–309.
- Bassus, O., Ahrens, A., & Zašcerinska, J. (2011). Clustering for the development of engineering students’ use of Enterprise 3.0. *Proceedings of the 4th International Conference of Engineering & Business Education and 1st SAFRI Journey to Excellence Conference*.

- Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 6, pp. 1–62). New York: Academic Press.
- Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*, 47(6), 1191–1205.
- Chin, W. W. (1998). The partial least square approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295–336). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Chin, W. W., & Newsted, P. R. (1999). Structural equation modeling analysis with small samples using partial least squares. In Rick Hoyle (Ed.), *Statistical Strategies for Small Sample Research* (pp. 307–341). Thousand Oaks, CA: Sage Publications.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98–104.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Eagly, A. H., & Chaiken, S. (1993). *The Psychology of Attitude*. Fort Worth, TX: Harcourt Brace Jovanovich.
- Edwards, K. (1990). The interplay of affect and cognition in attitude formation and change. *Journal of Personality and Social Psychology*, 59(2), 202–216.
- Feather, N. T. (1982). *Expectations and Actions: Expectancy-Value Models in Psychology*. Hillsdale, NJ: Lawrence Erlbaum.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Fornell, C., & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing Research*, 19(4), 440–452.
- Fornell, Claes, & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research (JMR)*, 18(1), 39–50.
- Garver, M. S., & Mentzer, J. T. (1999). Logistics research methods: Employing structural equation modeling to test for construct validity. *Journal of Business Logistics*, 20(1), 33–57.
- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS Quarterly*, 19(2), 213–236.

- Haenlein, M., & Kaplan, A. M. (2004). A beginner's guide to partial least squares analysis. *Understanding Statistics*, 3(4), 283–297.
- Hong, W., Thong, J. Y. L., Chasaow, L. C., & Dhillon, G. (2011). User acceptance of agile information systems: A model and empirical test. *Journal of Management Information Systems*, 28(1), 235–272.
- Honkanen, P., Olsen, S. O., & Verplanken, B. (2005). Intention to consume seafood - the importance of habit. *Appetite*, 45(2), 161–168.
- Jia, Q., Guo, Y., & Barnes, S. J. (2017). Enterprise 2.0 post-adoption: Extending the information system continuance model based on the technology-organization environment framework. *Computers in Human Behavior*, 67, 95–105.
- Jöreskog, K. G., & Wold, H. (1982). The ML and PLS techniques for modeling with latent variables: Historical and comparative aspects. In K. G. Jöreskog & H. Wold (Eds.), *Systems Under Indirect Observation: Causality Structure and Prediction* (Vol. 1, pp. 263–270). Amsterdam: North Holland.
- Karahanna, E., Straub, D. W., & Chervany, N. L. (1999). Information Technology Adoption Across Time: A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs. *MIS Quarterly*, 23(2), 183–213.
- Kim, H. W., Chan, H. C., & Gupta, S. (2007). Value-based Adoption of Mobile Internet: An empirical investigation. *Decision Support Systems*, 43, 111–126.
- Lee, M. K. O., Shi, N., Cheung, C. M. K., Lim, K. H., & Sia, C. L. (2011). Consumer's decision to shop online: The moderating role of positive informational social influence. *Information & Management*, 48(6), 185–191.
- Levy, M. (2009). Web 2.0 implications on knowledge management. *Journal of Knowledge Management*, 13(1), 120–134.
- Limayem, M., Hirt, S. G., & Cheung, C. H. K. (2007). How habit limits the perceived power of intention: The case of information system continuance. *MIS Quarterly*, 31(4), 705–737.
- Matschke, C., Moskaliuk, J., & Cress, U. (2012). Knowledge exchange using Web 2.0 technologies in NGOs. *Journal of Knowledge Management*, 16(1), 159–176.
- McAfee, A. P. (2006). Enterprise 2.0: The dawn of emergent collaboration. *MIT Sloan Management Review*, 47(3), 21–28.
- Melone, N. P. (1990). A theoretical assessment of the user-satisfaction construct. *Management Science*, 36(1), 76–91.

- Minić, N., Njeguš, A., & Ceballos, J. T. (2014). The impact of Web 3.0 technologies on tourism information systems. *Singidunum Journal of Applied Sciences*, 781–787.
- Moreia, F., Ferreira, Maria. J., & Seruca, I. (2018). Enterprise 4.0 – the emerging digital transformed enterprise? *Procedia Computer Science*, 138, 525–532.
- Outlette, J. A., & Wood, W. (1998). Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior. *Psychological Bulletin*, 124(1), 57–74.
- Paroutis, S., & Saleh, A. A. (2009). Determinants of knowledge sharing using Web 2.0 technologies. *Journal of Knowledge Management*, 13(4), 52–63.
- Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and Persuasion: Classic and Contemporary Approaches*. Dubuque, Iowa: W.C. Brown Co. Publishers.
- Pfaff, C. C., & Hasan, H. (2011). Wiki-based knowledge management systems for more democratic organizations. *Journal of Computer Information Systems*, 52(2), 73–82.
- Piderit, S. K. (2000). Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. *Academy of Management Review*, 25(4), 783–794.
- Reguieg, S., & Taghezout, N. (2017). Supporting multi-agent coordination and computational collective intelligence in Enterprise 2.0 platform. *International Journal of Interactive Multimedia & Artificial Intelligence*, 4(6), 70–80.
- Rogers, E. M. (1995). *Diffusion of Innovation* (Fourth). New York: The Free Press.
- Schneckenberg, D. (2009). Web 2.0 and the empowerment of the knowledge worker. *Journal of Knowledge Management*, 13(6).
- Van der Heijden, H. (2002). On the cognitive–affective structure of attitudes toward information systems. *Proceedings of the 23rd International Conference on Information Systems*, 803–806.
- Van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly*, 28(4), 695–704.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.
- Verplanken, B., & Orbell, S. (2003). Reflections on past behavior: A self-report index of habit strength. *Journal of Applied Social Psychology*, 33(6), 1313–1330.
- Wagner, C., & Majchrzak, A. (2006). Enabling customer-centricity using wikis and the wiki way. *Journal of Management Information Systems*, 23(3), 17–43.

- Wakefield, R. L., & Whitten, D. (2006). Mobile computing: a user study on hedonic/ utilitarian mobile device usage. *European Journal of Information Systems*, 15(3), 292–300.
- Wijaya, S., Spruit, M., Scheper, W., & Versendaal, J. (2011). Web 2.0-based web strategies for three different types of organizations. *Computers in Human Behavior*, 27(4), 1399–1407.
- Xu, H., Teo, H. H., Tan, B. C. Y., & Agarwal, R. (2009). The role of push-pull technology in privacy calculus: The case of location-based services. *Journal of Management Information Systems*, 26(3), 135–173.
- Zanna, M. P., & Rempel, J. K. (1988). Attitudes: A new look at an old concept. In D. Bar-Tal & A. W. Kruglanski (Eds.), *The social psychology of knowledge*: (pp. 315–334). New York: Cambridge University Press.

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