

THE INFLUENCE OF CULTURE ON CONSUMER-ORIENTED ELECTRONIC COMMERCE ADOPTION

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ABSTRACT

Consumer-oriented electronic commerce is a global phenomenon. However, while online transactions are readily accepted by consumers in some countries, in others consumers seem to be less accepting. This paper uses innovation adoption theory in combination with literature on culture and information technology to examine the question of whether culture influences consumers' intentions to purchase goods or services online. A multi-country survey was conducted to gather data in order to empirically investigate this question. Results indicate that national culture does influence intentions to purchase online. In addition to the direct impact, the influence of culture is also mediated by e-commerce beliefs.

Keywords: electronic commerce, cultural differences, adoption, trust

1. Introduction

Consumer-oriented electronic commerce is an increasingly global phenomenon as consumers worldwide turn to the Internet as a means for purchasing goods and services. While conducting transactions online is widely accepted in some countries, adoption of consumer-oriented e-commerce is lagging in others. A number of factors may contribute to this, including the impact of culture on information technology (IT) use and related beliefs regarding the technology and its use [Straub et al., 1997; Van Slyke et al., 2004].

Despite the dot-com collapse, online consumer spending continues to grow. According to a U.S. Department of Commerce report, in 2007 retail e-commerce sales amounted to over \$126 billion, which was an increase of almost \$20 billion over 2006 [Commerce 2009]. The growth of e-commerce is not limited to the United States. Other countries, both developed and developing, are seeing consumers embrace the Internet and e-commerce. For

example, Brazil currently has over 67 million Internet users, which represents a 1,200% increase from 2000 [InternetWorldStats 2009].

Despite the global growth in e-commerce, most consumer-oriented e-commerce practices and conventions were developed for use in Western cultures. If global e-commerce is to reach its potential, it is important to understand how culture impacts e-commerce use. In this paper, we use an innovation adoption perspective to investigate whether culture impacts consumer-oriented e-commerce adoption, given the impact of other factors known to influence e-commerce adoption. In addition, we consider the question of whether this impact is direct, or mediated by e-commerce beliefs, as stated in the following questions:

Does the national culture of a consumer influence his or her intentions to purchase goods or services online?

Does the national culture of a consumer influence his or her beliefs related to purchasing goods or services online?

The results of our study will confirm the usefulness of using a composite view of culture in a study of information technology-related adoption. Further, we are able to demonstrate that culture has both direct and indirect impacts on intentions to make purchases online, and we are able to demonstrate the impact of culture on a specific set of beliefs that have been shown to influence intentions to make purchases online.

2. Background and Research Model

In order to investigate the above research questions, we developed a research model shown in Figure 1. Hypothesis numbers are included in the figure. Note that we do not state formal hypotheses for some well-established paths, but we do include these paths in our analysis. The foundations for the model are innovation adoption theory and prior literature on culture's role in information technology (IT) adoption/use. Future use intention, rather than past use is employed as the dependent variable because we are interested in how current (at the time of survey administration) perceptions impact intentions to perform a behavior. The remainder of this section discusses the literature and theory underlying the model.

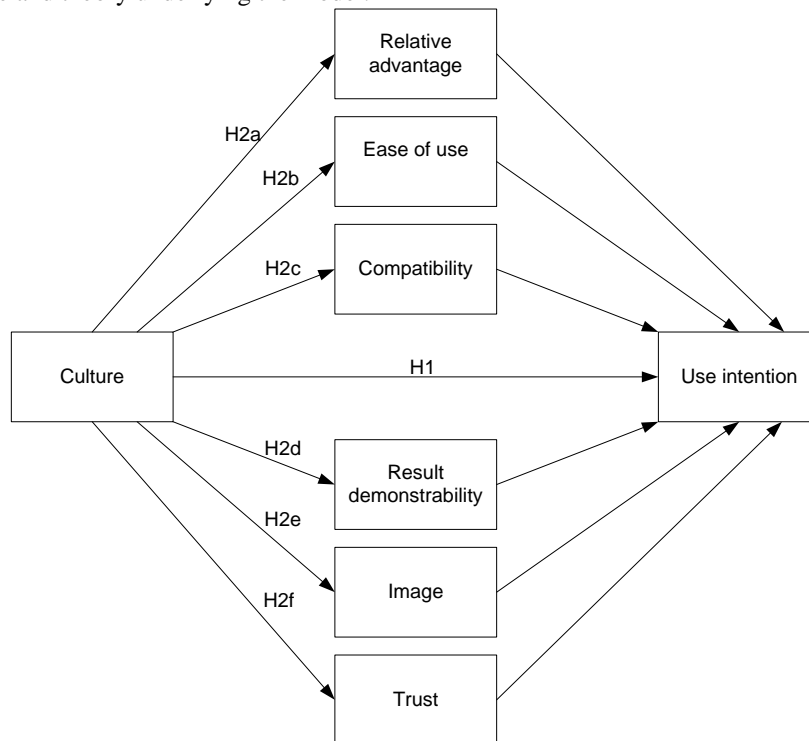


Figure 1: Research Model

2.1. Information Technology and Culture

The cultural background of users impacts perceptions of IT innovations [Jarvenpaa, Tractinsky, Saarinen and Vitale 1999, Robichaux and Cooper 1998, Straub, Keil and Brenner 1997]. While there are several different views regarding how to operationalize the notion of culture, Hofstede's dimensions of national culture are widely used in cross-cultural research [e.g. Straub, et al. 1997]. In his original conceptualization, Hofstede [1980] included four dimensions, uncertainty avoidance, individualism, masculinity, and power distance.

Table 1: Hofstede’s Four Dimensions of National Culture [Hofstede 1991]

Dimension	Definition
Uncertainty avoidance	Degree to which uncertain situations make members of a culture feel threatened.
Individualism	Degree to which a culture reinforces individual achievement and relationships.
Masculinity	Degree to which distinct social gender roles characterize cultures.
Power distance	Extent to which those with less power in the organizations of a country expect and accept unequal power distribution.

Hofstede developed index scores for each dimension using data from over forty countries. While there is still considerable debate regarding Hofstede’s approach, the index scores continue to be widely used as measures of culture in studies of culture and information technology adoption and diffusion [Leidner and Kayworth 2006, Png, Tan and Wee 2001, Straub, et al. 1997, Thatcher, Srite, Stepina and Liu 2003].

Culture-related IT adoption studies have included all of Hofstede’s dimensions, with uncertainty avoidance being the most commonly applied [Leidner and Kayworth 2006]. Typically, researchers have concluded that those in high uncertainty avoidance cultures are less accepting of IT innovations [Leidner and Kayworth 2006]. New ideas and technologies bring with them some level of risk (uncertainty) that may be less acceptable to these types of cultures. The dimension of individualism-collectivism is also thought to influence IT adoption, although the way in which adoption is influenced may be dependent on the particular IT. For example, more solitary applications (such as shopping online) may not be acceptable in collectivist cultures while community building sites may be [Zhou, Dai and Zhang 2007]. The dimension of masculinity-femininity has likewise been used to study IT adoption. Of particular interest here is Stafford et al. [2004], who found that consumers from less masculine cultures are less involved in online shopping. Similarly, Van Slyke et al. [2005] found American consumers with higher in masculinity measure more accepting of e-commerce than Indian consumers with lower masculinity. Power distance may also influence IT use. Individuals in high power distance cultures may feel that being innovative with IT is unlikely to lead to rewards. This may be because these individuals may view power and rewards as being distributed according to hierarchy, rather than individual performance [Thatcher, Srite, Stepina and Yongmei 2003]. It has also been proposed that power distance has an impact on attitudes towards IT use [Veiga, Floyd and Dechant 2001]. Given that attitudes are at least partially based on beliefs [Fishbein and Ajzen, 1975], it is reasonable to think that power distance may have an influence on IT beliefs.

While many studies have included individual cultural dimensions, these dimensions are not independent of one another. Thus it becomes important to examine the potential effect of multiple dimensions. Straub et al. [1997] offer a useful method for doing this. Through a combination of literature review and conceptual development, Straub et al. [1997] conclude that cultures high in uncertainty avoidance, power distance and masculinity and low in individualism are expected to be less accepting of computer-based media [Straub, et al. 1997]. Using this thinking, the Computer-based Media Support Index (CMSI) was developed as a means of expressing the simultaneous influence of all four dimensions on technology acceptance [Straub, et al. 1997]. The index is calculated by summing the index scores for power distance, uncertainty avoidance, and masculinity, then adding 100 minus the individualism index score. The effect of individualism on computer-based media acceptance is expected to be the opposite of that of the other dimensions. The advantage of CMSI is that it allows the cultural factors to be considered as an aggregate index, rather than factor by factor. While there are advantages to both approaches, in our case the composite view offered by CMSI seems appropriate. (See [Straub, et al. 1997] for a complete discussion of CMSI.)

The CMSI has been tested in the context of electronic mail, but to our knowledge has not yet been used in a study of consumer-oriented e-commerce. Empirical results indicate that culture, as operationalized by CMSI, did have an impact on the strength of the relationships among predictor variables and email use intentions [Straub, et al. 1997]. Based on these findings, coupled with findings related to the influence of individual dimensions on e-commerce adoption [e.g. Van Slyke, et al., 2005], we expect the findings related to e-mail to hold in the consumer e-commerce context. Because of the way in which CMSI is calculated, lower values would generally be expected to be related to more favorable views of computer-based media. Therefore in each instance, we expect CMSI to have a negative relationship with use intentions. This leads to our first hypothesis:

H1: CMSI has a negative impact on intentions to purchase goods and services online.

While we believe there is considerable evidence of culture’s impact on consumer e-commerce, it is unclear whether this is a direct effect, or if it is mediated by cultures impact on beliefs. Innovation adoption theory offers a reasonable lens through which to pursue this question.

2.2. Innovation Adoption Theory

Innovation adoption theory [Rogers 1995] provides a portion of the theoretical basis for this research. This theory concerns the process by which individuals and groups make the decision to adopt or reject an innovation. Part of this theory posits that potential adopters' perceptions of the characteristics of an innovation have a strong influence on their adoption decisions. The influence of perceived innovation characteristics on use intention has been demonstrated in a number of studies of IT-related innovations, including groupware [Van Slyke, Lou and Day 2002], smart-cards [Plouffe 2001], the Web [Agarwal and Prasad 1997], and Web-based shopping [Van Slyke, Belanger and Comunale 2004]. The innovation adoption theory is an alternative to the Technology Acceptance Model (TAM) [Davis 1989]. While the TAM perspective is widely used in studies of IT-based innovations, the innovation adoption theory provides a richer set of constructs [Plouffe 2001]. The main beliefs in TAM are perceived usefulness and ease of use. While this is a parsimonious view, it does not include other beliefs that have been found to be important in some IT adoption contexts. Innovation adoption theory considers other beliefs, such as compatibility, result demonstrability, visibility and image; these beliefs are not included in TAM.

Many different perceived innovation characteristics have been studied. Rogers Innovation Adoption Theory (1995) includes five perceived innovation characteristics: perceived relative advantage, complexity, compatibility, observability, and trialability. The first three of these have received the most consistent empirical support [Tornatzky and Klein 1982]. One reason that perceived observability has received less consistent support is that it may actually be two related constructs; perceived result demonstrability and perceived visibility [Moore and Benbasat 1991]. Result demonstrability refers to the tangibility of outcomes of the use of an innovation. In contrast, visibility pertains to the apparentness of the innovation itself [Moore and Benbasat 1991].

Two other perceptions may be particularly important in the context of consumer-oriented e-commerce. Consumers' perceptions of the trustworthiness of Web merchants influence their intentions to engage in transactions with these merchants. This finding holds in studies of individual merchants [Gefen, Karahanna and Straub 2003] and Web merchants in general [Van Slyke, et al. 2004]. Perceived image, which is the degree to which an innovation is seen as enhancing an individual's image, also influences consumers' intentions to shop online [Van Slyke, et al. 2004]. However, there is some confusion as to how image beliefs influence use intentions. Theory leads us to expect a positive relationship between perceived image and use intention.

The general notion that technology beliefs impact use intentions seems to hold across cultures. (i.e. [Al-Gahtani 2003, Anandarajan, Igbaria and Anakwe 2002, Straub, et al. 1997, Van Slyke, et al. 2005].) While the majority of these studies use TAM, the Rogers framework has also been successfully applied to IT-related adoption studies involving non-United States audiences. For example, Al-Gahtani [2003] found that the beliefs in the Rogers framework had significant correlations with IT adoption in Saudi Arabia. Van Slyke et al. [2005] applied the framework to a comparison of Indian and American consumers' e-commerce beliefs.

In order for all perceived innovation characteristics included in this study to have a positive influence on use intention, we use ease of use rather than complexity. This is also consistent with the bulk of the IT adoption literature. Table 2 provides definitions for each perceived innovation characteristics of interest in this study. Citations to representative studies of IT-related innovations are also shown. Note that these citations are not intended to be exhaustive, but rather are representative of the literature related to the characteristic.

There is empirical evidence that the beliefs listed in Table 2 influence intentions to make purchases online [Van Slyke, et al. 2004]. Given the general acceptance of the innovation adoption framework, and the empirical evidence of its efficacy in predicting online consumer purchasing, we do not state formal hypotheses related to these relationships. For completeness, we do test these paths in our analysis, however.

2.3. Culture and E-commerce Beliefs

The culture in which one exists impacts all aspects of life, including how one views information technology. There is a growing body of evidence to support this thinking. See [Leidner and Kayworth 2006] for a comprehensive review of culture and information systems. Research into culture and its impacts on ICT beliefs and adoption provides evidence of culture's impact on beliefs such as group support systems [Griffith 1998], e-commerce [Greenberg, Wong-On-Wing and Lui 2008, Jarvenpaa, Knoll and Leidner 1997, Van Slyke, et al. 2005], and email [Straub, et al. 1997].

In the remainder of this section, we develop hypotheses related to culture's impact on each e-commerce beliefs included in our model. Because of the way in which CMSI is calculated, lower values would generally be expected to be related to more favorable views of computer-based media. Therefore in each instance, we expect CMSI to have a negative relationship with the belief.

Although relative advantage is a multi-dimensional belief [Van Slyke, Johnson, Hightower and Elgarah 2008], in this paper we follow the norm in IT studies and focus on its usefulness aspect. Individuals in certain cultures may view IT, such as e-commerce, more or less useful [Straub, et al. 1997]. Perceived usefulness is in the eye of the

beholder. What is quite useful for a consumer in one culture may be less so for those in another. Further, it is important to understand that beliefs regarding innovations are made relative to existing ways of performing tasks [Rogers 1995]. The relative benefit of the capabilities of a technology will vary according to an adopter’s culture. For example, [Straub, et al. 1997] indicate that the social presence of email lead to different views of its usefulness. Shopping online is a solitary process, relative to traditional shopping. This may be seen as a disadvantage for those in collectivist cultures [Van Slyke, et al. 2005]. Similarly, the efficiency of e-commerce may be viewed as more of an advantage for individuals in masculine cultures. Following this thinking, we believe that consumers in different cultures will see various aspects of e-commerce as being more or less useful when compared to traditional shopping, leading to the following hypothesis:

H2a: CMSI will have a negative relationship with consumers’ perceptions of the relative advantage of e-commerce.

Table 2: Definitions

Characteristic	Description	References
Relative advantage	Degree to which an innovation is seen as being superior to its predecessor [Rogers 1995]	[Chin and Gopal 1995]; [Harrington and Ruppel 1999]; [Plouffe, Vandenbosch and Hulland 2000]; [Van Slyke, et al. 2002]
Ease of use	Degree to which an using and understanding an innovation is seen by the potential adopter as being relatively free from effort [Davis 1989, Rogers 1995]	[Chin and Gopal 1995]; [Van Slyke, et al. 2004]
Compatibility	Degree to which an innovation is seen to be compatible with existing values, beliefs, experiences and needs of adopters [Rogers 1995]	[Chin and Gopal 1995]; [Plouffe, et al. 2000]
Result demonstrability	Degree to which the results of using an innovation are perceived to be tangible	[Karahanna, Straub and Chervany 1999]; [Van Slyke, et al. 2002]
Visibility	The perception of the actual visibility of the innovation itself as opposed to the visibility of outputs [Moore and Benbasat 1991]	[Plouffe, et al. 2000]; [Karahanna, et al. 1999]; [Agarwal and Prasad 1997]
Image	Degree to which the use of the innovation is seen as enhancing to an individual’s image or social status [Moore and Benbasat 1991]	[Plouffe, et al. 2000]; [Van Slyke, et al. 2004]
Trust	Trustor’s expectations about the motives and behaviors of a trustee. [Doney and Cannon 1997]	[Gefen, et al. 2003]; [Van Slyke, et al. 2004]

Similarly, those in different cultures will have differing views of ease of use. Cultural factors such as uncertainty avoidance may lead to different levels of trepidation concerning using a new technology. Those in cultures with high uncertainty avoidance may feel that a new technology is more difficult to use, due to the uncertainty related to making mistakes, etc. In addition, metaphors used in IT may be more apparent in for those in some cultures than in others. For example, the common e-commerce shopping cart metaphor may not be appropriate or clear in a culture that does not commonly use shopping carts. If metaphors are unclear, ease of use will suffer. Further, e-commerce may not allow for the communication of social cues as well as traditional shopping. Those in collectivist cultures may find that the lack of social cues makes online shopping more effortful [Straub, et al. 1997, Van Slyke, et al. 2005]. Thus, we expect that culture will impact ease of use beliefs as stated below:

H2b: CMSI will have a negative relationship with consumers’ perceptions of the ease of use of e-commerce.

Compatibility beliefs are important drivers of adoption decisions, including consumers’ decisions as to whether to adopt e-commerce [Van Slyke, et al. 2004]. Although not as widely studied as relative advantage and ease of use, there is some evidence that culture impacts compatibility [Van Slyke, et al. 2005]. Culture impacts the degree to which e-commerce is seen as being compatible with existing values, beliefs and practices. For example, as noted earlier, traditional shopping is more interpersonal than online shopping. Consumers in more collectivist cultures may feel that the solitary nature of online shopping is at odds with their desire for interpersonal connections, leading to lower compatibility beliefs. Following this thinking, we state the following hypothesis:

H2c: CMSI will have a negative relationship with consumers’ perceptions of the compatibility of e-commerce.

As noted earlier, some cultures (such as individualistic cultures) place higher value on utility, rather than social aspects of tasks. These cultures are likely to be more attuned to the results of using a technology. We expect that individuals from these cultures are likely to view e-commerce as having higher result demonstrability, leading to the following hypothesis:

H2d: CMSI will have a negative relationship with consumers' perceptions of the result demonstrability of e-commerce.

The ways in which one gains status varies according to culture. For example, in more individualistic cultures, standing out from the crowd in a positive way is status-enhancing. This may not be true in more collectivist cultures. Given this, we provide the following hypothesis:

H2e: CMSI will have a negative relationship with consumers' perceptions of the image of e-commerce.

Perhaps the most complex belief in our study is trust. The relationship between culture and trust is also quite complex; understanding this relationship is especially important in the context of e-commerce [Gefen and Heart 2006]. At its core, the value of trust comes in its impact on uncertainty; trust reduces uncertainty. The relationship between trust and uncertainty avoidance is clear. It is also likely that individualism would impact trust since trust concerns how willing an individual is to be dependent upon another [Gefen and Heart 2006, Komiak, Komiak and Imhof 2008]. Those in collectivist countries may rely more on relationship factors than on site features and technologies to determine trust. Relationships are more difficult to establish and maintain online, which may lead to lower trust in Web merchants. This leads to the following hypothesis:

H2f: CMSI will have a negative relationship with consumers' trust in e-commerce merchants.

In order to test the efficacy of our research model, we conducted an empirical study. The method followed and results of this study are described in the following sections.

3. Methodology and Instrument Validation

A survey was administered to 413 consumers enrolled in university programs in seven countries, India, Hong Kong, China, Brazil, Malaysia, the Netherlands, and the United States. The sample size and CMSI for each country are shown in Table 3. Approximately 70% of the respondents were male. Respondents were relatively young, with a mean age of 28 years, but they had quite a bit of computer experience (mean = 8.6 years). A majority (56%) of the respondents reported having made purchases online.

Table 3: Countries, Sample Sizes and CMSI Values

Country	N	CMSI
Brazil	39	256
China	91	260
Hong Kong	35	229
India	96	255
Malaysia	21	264
Netherlands	7	125
United States	124	157

The instrument used previously-validated measurement scales (shown in Appendix A) taken directly from a previous study of consumer e-commerce adoption [Van Slyke, et al. 2004]. Note that the visibility scale exhibited poor reliability in the cited study, so it was not included in this study. Demographic and experiential items were measured using direct questioning.

Partial least squares (PLS) analysis performed with SmartPLS [Ringle, Wende and Will 2005] was used to test the hypotheses and to assess the validity of the measurement scales. Prior to this analysis, a preliminary analysis was conducted to see if any of the demographic or experiential variables had a significant impact on use intentions. Only computer experience and prior online purchasing were significant ($p < 0.05$). These were included as covariates in subsequent analysis.

Table 4 provides measurement model information related to the reliability and validity of the scales. In the table, italicized elements along the diagonal represent the square root of the average variance explained (AVE) and the off-diagonal elements represent inter-scale correlations. The first column shows composite reliability. For discriminant validity, diagonal elements (square root of the AVE) should be larger than off-diagonal elements (inter-scale correlations). As can be seen from the table, this is the case for all scales. Internal consistency was assessed by examining composite reliability statistics reported in SmartPLS. The composite reliability for all scales exceeds the commonly-used cutoff of 0.70 [Straub et al., 2004].

A common rule of thumb is that for acceptable convergent validity, item loadings should exceed 0.707 and the AVE for the construct should exceed 0.50 (put differently, the square root of the AVE should exceed 0.707) [Straub et al., 2004]. While the majority of items and constructs exceeded these thresholds, ease of use had two items with low loadings (0.66 and 0.65). Since these items had loading close to the heuristic, and because these items have been validated in other studies, we decided to retain the items.

Table 4: Measurement Model Statistics

	CR	UI	CMSI	RA	EOU	CT	RD	IM	TR
UI	0.945	0.992							
CMSI	N/A	-0.353	N/A						
RA	0.804	0.596	-0.188	0.760					
EOU	0.815	0.556	-0.219	0.456	0.726				
CT	0.917	0.657	-0.178	0.706	0.409	0.887			
RD	0.877	0.492	-0.225	0.358	0.500	0.301	0.839		
IM	0.847	0.037	0.262	0.176	-0.025	0.194	-0.038	0.807	
TR	0.934	0.416	-0.091	0.361	0.368	0.408	0.191	0.147	0.908

Key: UI: use intention CT: compatibility EOU: Ease of use
 IM: Image RA: Relative advantage RD: Result demonstrability TR: Trust

Having established that our measurement scales are acceptably valid, we turn our attention to the results related to the structural model.

4. Results

Results related to the structural model indicate that the overall model explains a large portion ($r^2 = 0.637$) of the variation in use intention (UI). In addition, the hypotheses were generally supported. Culture (as measured by CMSI), trust (TR), perceived relative advantage (RA), compatibility (CT), ease of use (EOU), and result demonstrability (RD) are all significant predictors of use intention (UI), while perceived image (IM) is not. Also, the covariate prior online purchasing is significant while computer experience is not. CMSI had a significant impact on all included beliefs, with the exception of trust. Results are shown in Table 5. The research model with path coefficients added is shown in Figure 2, with non-significant results shown in dashed lines.

Table 5: Model Testing Results

Path	Beta	t-value	Supported?
<i>Hypothesized Paths</i>			
H1: CMSI => UI	-0.168	3.63	Yes
H2a: CMSI => RA	-0.191	2.50	Yes
H2b: CMSI => EOU	-0.227	3.05	Yes
H2c: CMSI => CT	-0.179	2.38	Yes
H2d: CMSI => RD	-0.236	3.25	Yes
H2e: CMSI => IM	0.267	3.74	No*
H2f: CMSI => TR	-0.093	1.29	No
<i>Non-Hypothesized Paths</i>			Significant?
RA => UI	0.108	1.60	Yes**
EOU => UI	0.188	2.52	Yes
CT => UI	0.377	4.70	Yes
RD => UI	0.189	3.23	Yes
IM => UI	-0.010	0.29	No
TR => UI	0.104	2.00	Yes

Notes: *: Significant, but in the opposite direction than expected
 **: Significant at 0.10, all others significant at 0.01.

Overall, the results provide strong support for the research model, and for the notion of culture impacting e-commerce use intentions both directly and indirectly through beliefs. With the exception of image, CMSI had the hypothesized negative relationship with the other constructs. Interestingly, image was the only belief that did not have a significant impact on intentions. In the following section, we discuss and interpret these results.

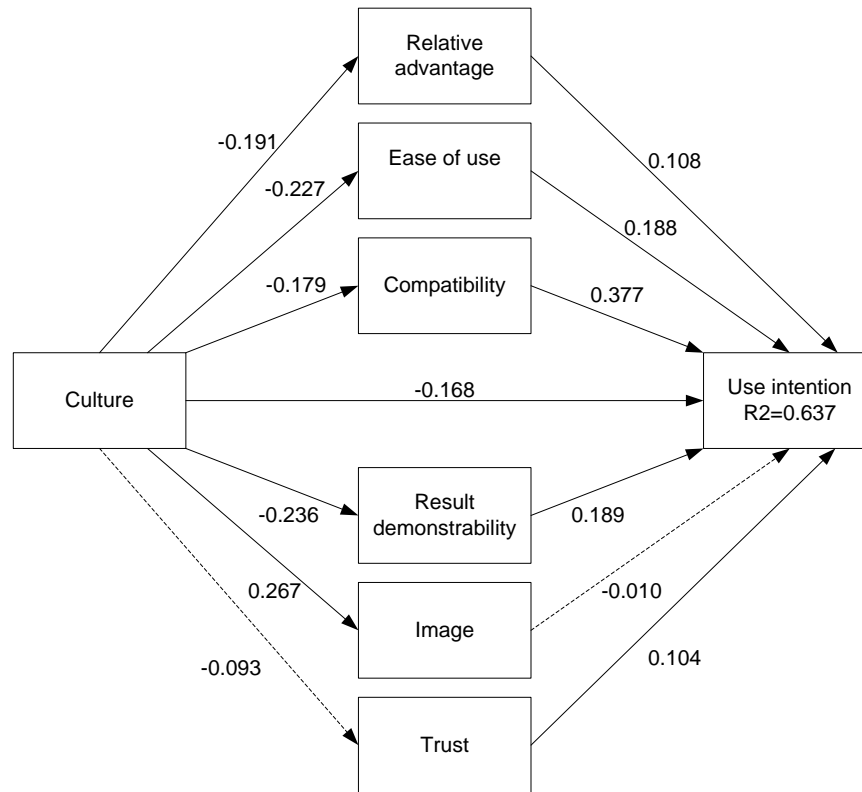


Figure 2: Research Model with Results

5. Discussion

Our results indicate that culture does have a significant impact on intentions to purchase goods or services online, both directly and through e-commerce beliefs. This is a significant finding, given the considerable empirical support for the other components of the research model. Given that we had data from individuals from 7 different countries represented in our sample, this is a rather robust finding. Further, to our knowledge, it is the most extensive test of CMSI conducted to date. In short, our results indicate that CMSI represents a useful surrogate for culture. However, as Straub et al. [1997] noted, CMSI should only be viewed as a “useful approximation.”

The findings related to CMSI serve to further establish the validity of this approach to account for culture. Not only does this research use a different target technology (e-commerce vs. electronic mail), it also employs the CMSI in a different manner than Straub et al. [1997], who used CMSI to predict whether TAM would fit in a multi-country study.

One of our most important findings is that culture seems to have a direct effect on e-commerce use intentions, even when the impacts of traditional beliefs are controlled for. This leads to an interesting question for future research. Although we included a range of well-accepted e-commerce beliefs, it is possible that there are other, less widely-studied beliefs that are important to e-commerce intentions. If so, it may be that the direct effect of culture found here is actually through some excluded belief. Identifying such beliefs is a worthy area for future studies. A good starting point for this search may be relative advantage. As stated earlier, we follow the norm in information systems research by focusing on the usefulness aspect of relative advantage. However, there are other dimensions of relative advantage (Van Slyke et al., 2008). It may be that other sources of advantage, such as enjoyment, might be important in the context of e-commerce. In any case, this finding points to the need for researchers to consider a broader view of relative advantage, especially when investigating non-work applications.

It is also noteworthy that culture seemed to have a relatively consistent impact on e-commerce beliefs. Beta coefficients were in a fairly narrow range (from -0.168 to -0.267, excluding trust). This indicates that the influence of culture is broad, rather than being limited to one or two beliefs.

Another interesting finding is that the innovation adoption framework is useful, even outside of a North American context. Our model explained a large portion of the variance in intentions, even though over two-thirds of our sample came from outside the United States. With the exception of image, all of the belief variables in our model had significant impacts on use intentions. This largely confirms the findings of Van Slyke et al. [2004].

The non-significant relationship between CMSI and trust is also interesting. One possible explanation for this finding is that in the context of e-commerce, evaluations of trust are driven more by the evaluation of Web merchants and e-commerce technologies than by cultural factors. Although the relationship between culture and trust is generally accepted, researchers have noted that there are equivocal results related to the impact of culture on trust in information technology contexts (Greenberg et al., 2008). Additional research is needed to more fully understand how culture and e-commerce trust are related.

As with any research, there are a number of weaknesses in this study. Perhaps the most significant of these is that we used a convenience sample of countries and subjects within each country, which means we cannot claim that these results will hold for a more general population. In addition, Hofstede's conceptualization of national culture has been the subject of considerable criticism. However, it remains in wide use in current cross-cultural studies. Finally, while our results clearly indicate country-based differences, it is possible that local conditions have an impact (in addition to the impact of culture).

6. Conclusion

As consumer-oriented e-commerce continues its global march, it becomes increasingly important to understand the impact of culture on consumers' intentions regarding e-commerce use. This study establishes that culture does, in fact, have a significant impact on consumers' intentions to purchase goods and services online. While more research is needed to better understand the relationship between culture and e-commerce use, this study represents a step towards achieving that goal.

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APPENDIX A: Measurement Scale Items

Notes: All items were measured on a 7-point scale (strongly disagree – strongly agree). Items were randomly ordered on the survey.

Relative Advantage

1. Using the Web enhances my effectiveness in purchasing products or services.
2. Using the Web makes it easier to purchase products or services.
3. Using the Web gives me greater control over my purchasing products or services.

Compatibility

1. I think that using the Web fits well with the way I like to purchase products or services.
2. Using the Web fits into my purchasing style.
3. Using the Web to purchase products or services is compatible with how I like to do things.

Ease of Use

1. Learning to use the Web for purchasing products or services is easy for me.
2. I believe that it is easy to get the Web to do what I want it to do.
3. Interacting with the Web to purchase products or services is clear and understandable.
4. Overall, I believe that using the Web to purchase products or services is easy

Result Demonstrability

1. I would have difficulty explaining why using the Web to purchase products or services may or may not be beneficial.
2. I would have no difficulty telling others about the results of using the Web to purchase products or services.
3. I believe I could communicate to others the consequences of using the Web to purchase products or services.
4. The results of using the Web to purchase products or services are apparent to me.

Image

1. People who use the Web to purchase products or services have a high profile.
2. People who use the Web to purchase products or services have more prestige than those who do not.
3. Purchasing products or services over the Web is a status symbol.

Trust of Web Merchants

1. I think you can trust Web merchants.
2. Web merchants can be trusted to carry out transactions faithfully.
3. In my opinion, Web merchants are trustworthy.

Use Intentions

1. I would use the Web for purchasing a product or service.
2. Buying a product or service over the Web is something I would do.
3. I could see myself using the Web to buy a product or service.