Trust in E-Government Transactional Services: A Study of Citizens' Perceptions in Mexico and the U.S.

Abstract : While the importance of trust in the online vendor and electronic channel for e-commerce transactions is well established, less is known about factors that influence trust in e-government services. Moreover, perceptions of trust depend heavily on the cultural context and thus can vary across countries. This study investigates differences in trust and consumption of public services by citizens across two settings: México and the United States. Focus groups' results were first used to develop a survey; then a total of 455 surveys from both countries collected perceptions on four e-government services. Multi-group path analysis assessed the associations and differences between trust and service utilization. Results indicate the U.S. shows higher trust and utilization compared to México. The two countries differ particularly in the impact of perceptions of the government's benevolence and competence on e-government service utilization Perceptions about the government's handling of data affects utilization only in the U.S., and the e-medium impacts utilization in both cultures. Implications for research and practice are discussed.

1. Introduction

Despite the important progress in the supply of e-government, research shows that citizens are not employing the promised benefits of e-government services, even in countries that lead the world in egovernment systems. According to the Pew Internet and American Life Project Americans are more likely to contact the government via telephone rather than through the Internet [1]. Similarly, in Europe, citizens show a higher preference (more than 50% of adults) to use government services through traditional delivery channels (face-to-face, telephone, fax and mail) [2, 3]. Research suggests that citizens perceive the convenience of time and location of online services, but individuals tend to prefer traditional ervice delivery methods when the transaction involves disclosure of personal and financial information. In less industrialized countries, little published information exists about individuals' use of e-government services. Research has mostly been conducted to understand the socio-economic factors that impact the successful development and implementation of e-government initiatives directed to citizens and businesses (e.g.political stability, budgetary regulations, legislative and regulatory frameworks, digital divide, cash culture) [4, 5]. Considerable progress has been made in the identification of factors associated with the utilization of egovernment services [1, 2, 6-9]. One important factor is trust. Trust in the agency providing the service and trust in the reliability of the service delivery medium are key elements in the citizens' decision to engage in online transactions [9-13]. Trust has a cultural component and therefore can vary across societies [14]. For example, potential customers of online businesses in risk averse countries (e.g. Latin American countries) tend to more deeply value the ability (or competence) of the online vendor, and strive for clear rules that provide a feeling of security and normality about the outcome of the online transaction (e.g. second hand information, third party securityseals, customer satisfaction ratings, etc.) [15, 16]. Similarly, e-government transactional services might be perceived with initial distrust in countries where corruption in the public service is a widespread and pervasive practice [17, 18]. However, notwithstanding the important advances in research on trust, little has been said about trust in the context of e-government transactions. Moreover, what is found generally applies to the context of a small number of countries; trust perceptions across countries. Research is needed to gain a clearer understanding of the association between trust and e-government service utilization and whether differences exist across cultural settings. E-government services have been found to improve perceptions and attitudes about the government performance, to help to decrease corruption and to increase trust in public institutions[6]. The purpose of this paper is twofold. First, this study investigates possible variations in the relationship between trust and utilization of e-government services from the point of view of citizens in two different cultural settings: México and the U.S. Second, this study examines the relationship between online shopping experience with trust and service utilization. The level of familiarity and experience with online transactions has also been identified as critical for trust and service utilization. Experienced online shoppers are usually more confident of their skills to buy online products, and therefore, they might be more likely to interact with the government through the Internet [21]. Specifically, this study addresses the following research questions:

1. Does trust in the online service delivery channel impact the utilization of e-government services across the two countries?
2. Does trust in the government agency impact the utilization of e-government services across the two
   1. countries?

2. Do expertise and familiarity with the online environment affect trust in relation to the utilization of electronic government services?

México, a society commonly characterized for resisting technological innovation [22], with a slower rate of adoption of e-commerce transactions in contrast to the U.S. [23], presents an important opportunity to identify variations that could exist in the ways citizens establish trust in e-government transactions. This study uses theoretical guidance from the e-commerce literature to extend what it is known about trust in information technologies. Specifically, this study contributes with a cross-cultural perspective that considers the perspectives of citizens in two different cultural settings.The relationships between the different elements of trust, online shopping experience and service utilization are explored across four transactional services: vehicle registration/renewal, traffic/citation payment, vital event certificates request (e.g. birth, certificates, marriage certificates, etc.), and federal income tax filing/payment services.

2. Theoretical Background

Trust in online transactions has been widely discussed in e-commerce [24-26]. However, a few studies have analyzed the role of trust plays in e-government services [7, 12, 13, 18, 27-29]. In e-government research, trust is understood as a combination of beliefs about the attributes of the government agency, and the transaction channel that supports the delivery of services (e.g. the Internet and e-government kiosks) [7]. Trust is critical for the utilization of e-government since e-government services request personal information from citizens[13]. Distrust in e-government services has been related to citizens'concerns about having less privacy, hackers breaking into government computers, and isuse of personal information by government agencies or public servants. The following subsections provide a discussion on 1) trust in the online service delivery medium, 2) trust in the government agency, 3)experience with online transactions, and 4) trust differences across countries.

2.1. Trust in the Online Service Delivery Medium

Several theories have guided the study of the effect of trust on online shopping [25, 30-32]. Some have lso been extended to the e-government context [7]. Institutional-based trust [33], a theory from Sociology, has been used in e-commerce research to understand trust in online transactions. According to institutionalbased trust, political, legal and social norms and rules of institutions are the most critical determinants of trust in society. Individuals build trust in institutions based on the belief that norms and rules promote fair and reliable behaviors (e.g. the legal system of justice in a specific country). Institutional-based trust has been equated to trust in the transaction medium (e.g. the Internet). McKnight and colleagues [30] argue that institutional based trust (seen as trust in the Internet) occurs when potential or repeat customers of online stores assess the technological and legal mechanisms that make transactions safe and trustworthy. For instance, encryption, privacy and security policies for handling personal information, third-party security seals for handling personal information, online vendor's contact information. Institution-based trust has two dimensions:

structural assurance and situational normality. Structural assurance refers to the belief that institutionalized norms and principles available for ecommerce transactions guide the behavior of online vendors [30]. For example, in an environment that lacks human interaction like the Internet, the availability of third-party security certificates (e.g. Verizon) that ensure the identity and authenticity of the web property, and the privacy and security of transactions mitigates concerns about the handling of personal and financial information (e.g. loss of privacy). Situational normality refers to the belief that the Internet is a favorable and reliable environment for transactions [30] and therefore the transaction will be a success [34].

2.2. Trust in the Government Agency

Understanding trust in the government involves exploring citizens' perceptions related to the capability, benevolence and integrity of public agencies to provide services via the Internet and kiosks [30]. For purposes of this study, capability-based trust refers the citizens' perceptions about the government's ability to efficiently provide reliable and convenient online services [7-9]. Benevolence refers to the online vendor's care and concern about the customers' needs and interests [30]. In e-government transactions, this dimension of trust refers to the citizens' perceptions about the government's commitment to act in the citizen's best interests. Citizens who trust the government's benevolence feel confident that the government will help them in case of any problem during online transactions. Integrity emphasizes trust in the online vendor's honesty with respect to the handling of personal and financial information [30]. In the context of egovernment transactions,

integrity-based trust refers to perceptions about the government's responsibility for protecting and securing citizens' financial and personal information during the processing of online transactions (add reference). Trust in the government has been found to determine the utilization of e-government services [7, 9, 13, 18].

2.3. Trust and Experience with Online Transactions
Trust has been linked to individuals who attain a certain level of familiarity with online purchases tend to be more confident about their skills to buy products online, and trust more the technological and security measures that protect online transactions [11, 21]. Research has found that Internet skills are important predictors of e-government service utilization in the U.K. [35]

2.4. Trust Differences across Countries
Trust in information technologies varies across countries. Differences on trust perceptions of the usage of information technologies have been associated with the influence of cultural values. Trust differences have been identified in online purchases transactions, Internet banking, e-voting systems, and the design of website interfaces across several countries [14, 15, 18-20, 36-38]. For instance, Gefen and colleagues [18] found that distrust in e-voting technologies is more common in societies in which cultural diversity is large. Potential users of e-voting technologies in the U.S. and South Africa, two societies characterized by a large socio-cultural diversity, are more willing to trust e-voting technologies if they perceive the public servants (or government agency) as part of their socio-cultural group. Based on social identity theory, the authors argue that people who share a group identity have similar values and beliefs, and behave in accordance with community norms. Citizens who trust the government tend to more positively assess the usefulness of the information technologies and systems that support the delivery of services.

Research also shows that weak uncertainty avoidance countries (e.g. U.S., Finland) usually have greater trust in commercial transactions that take place through the Internet [15, 36-38]. In the context of ecommerce, the impersonal nature of the transaction channel (e.g. the Internet) introduces perceptions of ambiguity and risk about the results of the online transaction [19, 30, 34]. Perceptions of risk are intensified in members of strong uncertainty avoidance cultures. For example, Latin American and Mediterranean countries. High levels of uncertainty avoidance usually lead to slow diffusion of technologies. The association between uncertainty avoidance and trust has been found mainly in the online banking and online book industries. Research also shows contradictory findings. For instance, Jarvenpaa et. al. [19] did not find important cultural differences of trust between potential customers of online stores in Israel and the U.S. The authors argue that the lack of cultural effects might be result of methodological deficiencies related to the sample selection, different conditions in the application of the survey, the use of country as a surrogate measure of culture in general and individualism-collectivism in particular, and the countervailing and situational dependent effects from different cultural dimensions on trust and risk.

3. Research Framework
The previous analysis of the literature suggests that there is an increasing concern in the scholar community for understanding the factors that impact trust in electronic transactions between countries. This study explores trust as one of the underlying factors that influence the utilization of egovernment transactional services in the two contrasting cultural settings: México and the U.S. Since previous research has identified cultural differences between Mexico and the U.S. [39, 40], perceptions of trust in relation to the utilization of online service might vary across these two countries. This study integrates this work along three dimensions. First, the institutional trust perspective [33] is used to explore trust perceptions related to the online service delivery medium. Second, the trust in online vendors' framework [30] provides guidance for exploring perceptions of the government's competence, benevolence and the government's handling of transactional data. Finally, this study adopts the egovernment use measure employed by Graafland-Essers and Ettedgui [2] to capture the citizens' preferred method for service delivery: Internet portals and e-kiosks. Trust is explored across four transactional services: vehicle registration/renewal, traffic/citation payment, vital event certificates request (e.g. birth, certificates, marriage certificates, etc.), and federal income tax filing/payment services.

4. Methodology
4.1. Survey Samples

The survey was distributed undergraduate and graduate students in México and the United States. To ensure equivalence of samples among the two groups, data were collected from individuals with similar demographics, educational, and socio-economical characteristics [41, 42]. Participants were recruited using convenience sampling. This sampling approach uses subjects who are available to the researcher [43]. A total of 455 surveys comprised the final sample for this study– 302 questionnaires from México and 153 from the U.S. In terms of gender, the group of México showed a larger participation of men (69%) than women (31%). The U.S. group did not show important gender differences, approximately 54% of the respondents were males and 46% females. The average age of the respondents was 24 years in México and 28 in the U.S. The most common educational category in the México group was undergraduate (69%) with a smaller participation of graduate students (29%). A large percentage of respondents in the U.S. were pursing a graduate degree (70%). In terms of computer usage, over 90% of respondents in both groups use computers at home and in the school. The majority of participants in the U.S. have used the Internet for more than five years (97%). The proportion was lower among Mexican participants (78%). In Mexico, about 63% participants have purchased products or services through the Internet as opposed to 99% in the U.S.

4.2. Instrument Development

This study used a sequential-mixed research design for the development of a research instrument to collect perceptions on e-government trust and use [44]. It consisted of an exploratory qualitative research phase, which employed focus group interviews to develop and validate a survey for use in México and the United States, and a subsequent quantitative phase that analyzed the results of a structured survey applied in the two countries. The construction of the survey was accomplished in three steps. First, an initial version of the instrument was prepared identifying items that have been applied in previous research [2, 7, 15, 30, 34]. Second, items were developed based on the reactions of the group of México to the themes discussed in the focus groups. The final questionnaire included a total of 39 items with scales organized on the following themes: demographics, Internet and computer experience, awareness and familiarity with e-government services and transactions, perceptions about the security and reliability of the Internet to transmit personal and financial information, and perceptions about the government's competency to process online services and transactions [2, 7, 15, 30, 34]. The final step in the development of the survey consisted of the translation of the questionnaire into Spanish followed by the application of the backtranslation technique to guarantee linguistic equivalence of items in both languages [41]. The survey is available by request from the author. Exploratory Factor Analysis (EFA) and Cronbach's alpha were used to evaluate the applicability of the survey measures across the two countries [45]. EFA groups individual measures into latent factors by identifying commonalities in the patterns of correlation without imposing any a-priori theories [45]. EFA was conducted using the Promax rotation method [45]. After rotation, item loading patterns were used to determine the structure of factors across the two groups. Items with factor loadings greater than .4 [46] were retained for further analyses. The Mplus statistical software package [47] was used to conduct the EFA. EFA produced reasonably similar results overall in both countries. In general, the research constructs showed reasonably clean loading patterns in the factor structure. A three factor solution was adopted: 1) trust in the e-government service delivery medium (TSDM), 2) trust in the government's competence and benevolence (TGCB), and 3) trust in the government's handling of transactional data (TGHD). Four items with factor loadings lower than 0.4 [46] were dropped for further analyses. Table 1. Reliability analysis, by group : The second phase of the analysis consisted in the application of the Cronbach's alpha test to examine the internal consistency of adopted factors. The variables that didn't meet the suggested .80 or higher cut-off criteria were removed from further statistical analyses [45, 46]. SPSS v. 10.0 was utilized for conducting the Cronbach's alpha test. As shown in table 1 all the factors in both country samples met the typically used cut-off criterion of 0.80 or higher [45, 46]. Figure 1 depicts the research constructs and relationships explored in this study. Figure 1. Research framework Trust in the Government Benevolence and Competence Online Shopping Experience Trust in the Government's Handling of Transactional Data Trust in the Service Delivery Medium Utilization of E- Government Transactional Services.

4.3. Data Analysis

Prior to evaluating the variables and their associations, three indicator variables were created by averaging across the items associated with each of the factors identified in EFA. A categorical variable described

citizen's exposure to each type of service.This variable takes two possible values: 1 (utilization of a specific service) or 0 (lack of exposure to a specific service). Given the large number of type of services (e.g. vehicle registration/renewal, traffic/citation payment, vital event certificates request, tax filing and payment), categorical variables were treated as a single continuous variable in the modeling stages. That is, a continuous variable was created to include a 0 to 8 scale representing the number of services utilized through two delivery channels (e.g.4x2 services to delivery medium). A multiple-group path analysis was employed to determine the extent to which the relationships between perceptions of trust, e-government service utilization, and online shopping experience differ across the U.S. and México. This approach uses a single model to estimate and compare the direct and indirect effects of independent variables on the dependent variable between groups [47]. The multi-group path technique is appropriate for the present study for two reasons: 1) to assess whether or not the trust model varies across the México and the U.S. samples, and 2) granted some variation, to identify the relationships that function differently across the two groups. The Mplus statistical software [47] was used to conduct the path analysis.

4.4. Missing Data

The initial sample of this study consisted of 305 and 155 subjects for México and the U.S. respectively. Questionnaires with incomplete responses were discarded from the samples. The final sample comprised a total of 455 surveys–302 questionnaires from México and 153 from the U.S. The suggested minimal sample size for path analysis is 100, and 10 times as many cases as parameters [45]. Eight parameters or paths were tested in this study. Therefore, the samples of both groups were appropriate for the statistical analyses conducted in this study. Participants generally completed the entire survey. However, to address potential sample reductions, the maximum likelihood estimator technique implemented in the Mplus software package [47] was employed in the in the modeling stages of path analysis. Under this estimator, attrition patterns are assumed to be missing at random; that is, the probability that a case is missing is assumed independent of the value of that variable but may be related to other variables not missing in the data set. A single covariance matrix and all theparameters in the model are estimated simultaneously using all the data available.

5. Results
5.1. Descriptive Statistics

Table 2. Means, Standard Deviations and T-Tests of Trust Factors, by Country Independent-sample t-tests were conducted to determine whether the means of trust composites are significantly different between the citizens of México and the U.S. Table 2 shows differences between participants in the two countries in terms of their perceptions of trust. Respondents in the U.S. sample show a slight higher propensity to trust in e-government transactions than respondents in México, with mean scores for the three dimensions of trust consistently over 2 on a 5-point scale (1=strongly disagree to 5=strongly agree).

5.2. Multi-group Path Model Estimation

The multi-group path analysis was conducted in three stages. First, using the indicator variables identified in the EFA, a model was first estimated representing the relationship between the constructs as depicted in Figure 1. This initial single-group model did not address differences across countries (CFI =.987 and RMSEA 0.098). For CFI, values greater than 0.90 are considered evidence of adequate fit, while RMSEA values between 0 and .1 are recommended [39, 40]. Second, a second model was estimated where the parameters were allowed to vary freely across countries—i.e. a separate path was estimated for each country. As judged by the CFI and RMSEA indices the data fit the baseline model adequately (CFI = 0.992, RMSEA = 0.060). However, because one of the associations in this baseline model was zero and not significant for the two countries, the model was reestimated by constraining this parameter (e.g. government's competence and benevolence and e-government utilization). Next, a third model was estimated with equality constraints imposed on all the path coefficients, that is, forcing the relationships between the constructs to be the same across México and the U.S. The fit of this constrained model was compared to that of the baseline model to determine whether parameters differed across countries. A chi square difference testshowed that the equality constraints significantly affected model fit $(X2(11) =36.271, p=.000)$,indicating that at least some of the relationships between constructs differed across groups (countries). Therefore,individual scaled difference chi-square tests were performed to investigate

the extent to which specific associations of interest differed for México and the U.S. These tests revealed significant differences for the following associations:

1. Trust in competence and benevolence-based trust and the handling of transactional data (X 2(4) = 10.513, p=.001)
2. Trust in the handling of transactional data and use of e-government transactional services (X 2(4) = 5.045, p=.025)
3. Online shopping experience and use of e-government services (X 2(4) = 15.429, p=.000)
4. Online shopping experience and trust in the handling of transactional data (X 2(4) = 24.875, p=.000)
5. Online shopping experience and trust in the e-government service delivery medium (X 2(4) = 32.744, p=.000)

In the third stage, a final model was estimated constraining only the three associations that were not significantly different across countries as suggested by the path models and X2 difference tests just described. This partially constrained model showed adequate fit overall (X2(5, N=455) = 8.597, p=.1260, CFI = 0.989, RMSEA = 0.056) indicating that the relationships represented in the model were a good representation of the correlations between the constructs. The path coefficients for both countries are presented in Figure 2 in next section. For each model estimated, three indices of model fit were utilized: the Chi-Square, Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). For chi square, a 1:3 ratio chi-square to degrees of freedom was used to evaluate the adequacy of model fit. For CFI, values greater than 0.90 were considered evidence of adequate model, while RMSEA values between 0 and .1 were acceptable [39, 40]. Subsequently, a T-test was used to test individual path coefficients. The t-test indicates whether or not a path coefficient differs statistically from zero (p<.05), that is, whether or not the hypothesized linear relationship holds. The Mplus statistical software [41] was used to conduct the path analysis.

5.3. Multi-Group Path Model Results

Overall, the results of the multi-group path analysis suggest that the relationships between trust, online shopping experience and e-government service utilization work differently across the México and the U.S. The path coefficients for both countries are presented in Figure 2. Dotted lines are used to depict the paths that were not significant. Figure 2. Standardized path coefficients for the research model for México and the U.S. Trust in the Service Delivery Medium Online Shopping Experience Trust in the Government Benevolence and Competence Trust in the Government's Handling of Transactional Data Utilization of E-Government Transaction al Services Table 3 presents the total direct, indirect and causal effects for each independent variable on egovernment service utilization. The total causal effect was calculated by adding the direct and indirect effects. Results suggest that competence and benevolence-based trust is not directly associated to e-government service utilization in México nor in the United States. The total causal effect of competence and benevolence is relatively larger in the U.S. sample (0.21) compared to the México sample (0.043). In both countries, the effect of competence and benevolence on service utilization is mediated by trust in the service delivery channel. That is, competence and benevolence increases trust in the delivery medium which increases service utilization. However, competence and benevolence decreases trust in the handling of transactional data which increases service utilization only in the U.S. sample.

Table 3. Total effect of independent variables on e-government service utilization, by country Note: Total causal effect is the sum of the direct effect and indirect effect In terms of trust in the service delivery medium, results show that this variable equally impacts service utilization in both countries (0.138), while trust in the handling of transactional data increases service utilization only in the U.S. sample (0.405). Differences were also observed in the relationship of online shopping experience with e-government service utilization. Online shopping experience has a higher causal effect on service utilization in the U.S. sample (2.271), in contrast to the México sample (0.566). For the direct effects, online shopping experience increases service utilization to a larger extent in the U.S. (1.037), as compared to México (0.475). In terms of the indirect effects, the effect of online shopping experience was stronger in the U.S. (0.225), compared to México (0.091). The indirect effects on e-government service utilization are moderated by trust in the service delivery medium and the handling of transactional data variables. Online shopping experience indirectly increases trust in the service delivery medium, which increases service use in both countries. However, online shopping experience shows a significantly higher effect on service utilization in the U.S. (2.271) in contrast to México (0.566).

5. General Discussion

The first goal in this study was to investigate differences in the effect of the online service delivery channel in the utilization of e-government services across the two countries. This study found that confidence in the online service delivery channel is a critical component in the utilization of e-government service. Across the two countries, citizens' perceptions about the mechanisms that make online transactions safe influence their e-government service use. The strength of the associations between trust and e-government use imply that trust is equally necessary for citizens in México and the U.S. That is, this study did not find trust differences on perceptions related to the service delivery transactional medium between both countries. In the context of the U.S. findings are consistent with the works of Graafland-Essers and Ettedgui [2] and West [6]. Previous studies have linked trust in the Internet to the reliability of the legal and technological measures that protect online transactions of hackers and informational theft. This suggests that despite government efforts to ensure the safety of online transactions, trust in the Internet is still a concern in the American society. Some measures have already been implemented to improve trust in the transactional channel. For instance, visible policy statements in web sites related to privacy and security of online transactions are mitigating concerns about the disclosure of personal information [21]. However, according to a recent study, in 2004, approximately 38% of government websites in the U.S. still did not display any kind of security and privacy policies [21].

In the case of México there is little literature to refer to. This study provides preliminary evidence about the critical role trust in the online channel plays in perceptions related to utilization of e-government services. In addition, focus group results suggest that building trust in the online channel is going to be perhaps one of the main challenges that e-government will face in México in the next years [author 2008].

While participants expressed their concerns about potential threats during online transactions, most of them were unaware of the laws and programs available for protection against identity or financial frauds.

Moreover, recent media reports about identity theft attacks using emails to acquire credit card information from online banking users (also known as phishing) are discouraging citizens to conduct online transactions [48]. In order to increase trust in the online environment, the Mexican government will need to invest in campaigns to educate and inform the population about the technological and legal mechanisms that make the provision of services over electronic channels a secure activity. The second goal in this study was to investigate differences in the associations of trust in the government agency with the utilization of e-government services across the two countries. This study identified two dimensions of trust related to the government agency: trust in integrity to handle transactional data and competence and benevolence in government. With respect to trust in the handling of transactional data results of this study are in line with Gefen & Heart (2006), McKnight et al. (2002) and Carter and Belanger (2005). Findings suggest that this dimension of trust operates differently across the two countries.

Integrity-based trust influenced service utilization in the U.S., but not in México. In terms of competence and benevolence, findings indicate that these two attributes combine to form a ingle dimension of trust that refers to the government capacity, care, and willingness to efficiently provide service via online settings. This differs from previous studies that grouped these attributes into two distinct separate constructs of trust [e.g.7, 14, 30]. This study did not find a direct association between service utilization and competence and benevolence-based trust in the México or the U.S. However, findings indicate that benevolence and competence have an indirect impact on service utilization in both countries. Additionally, benevolence and competence-based trust influenced the way citizens perceive the safety of the electronic channel, which in turn influenced service utilization in México and the U.S. No differences were detected in the strength of the relationship. With respect to the U.S., this study replicates the results reported by Carter and Belanger [10]. In México there are no previous studies into these issues. The evidence here suggests future research. Finally, competence and benevolence impacted the handling of e-government transactional data ultimately influencing the utilization of e-government services only in the U.S. The final goal was to investigate the impact of expertise and familiarity with the online environment on trust in relation to utilization of electronic government services. Experience with online shopping was found to be an important driver of e-government service utilization in México and the U.S. Citizens in both samples come from a welloff segment of the population with high levels of access to information and communication technologies. However, demographics indicated that citizens in the U.S. sample are more experienced online shoppers than the Mexican participants on average. In the México sample, experience and familiarity with online purchases had a significantly lower effect on e-government service utilization compared to the U.S. sample. Findings also indicate that experience with online transactions has an indirect effect on service utilization in both samples. In México, online shopping experience increases

trust in the handling of data which in turn influences service utilization. In both countries, trust in the e-government service delivery channel mediates the impact of online shopping on service utilization. The findings presented here agree with previous research. The effect of online shopping experience has been found to be an important predictor of e-government service utilization [35]. Online shopping experience has also been related to increased levels of trust in the technological and regulatory measures that protect confidential citizen information [2, 6].

6. Research and Practice Implications
While previous research has shown the importance for online transactions of trust in the online vendor and the online channel, these studies have been based mostly in developed countries. This study extended the applicability of institutional-based trust theory (McKnight et. al. 2002) to e-government transactions in the contexts of two contrasting cultures. In addition, a survey was adapted including measures on trust and service utilization for use in both cultures since scales have previously been validated mostly in the context of the U.S. This study demonstrated that perceptions about the reliability of the e-government service delivery channel, the handling of transactional data, and government's competence and benevolence are central components of e-government trust and service utilization in the U.S. and México, although they are differently expressed in the two nations. These findings support previous studies conducted in the context of the U.S. [2, 6, 7], and provide preliminary evidence of the mechanisms in México that impact the formation of e-government trust and consequent e-government service utilization. This study has also implications for practitioners. Three types of trust are the main drivers of egovernment perceptions in México and the U.S.: competence and benevolence, the government's handling of transactional data and electronic medium reliability. The differences observed in the trust/e-government service utilization relationships suggest that different policy strategies can to be undertaken to transform citizen trust in México and the U.S. For example, policy efforts in México need to emphasize trust in the service delivery medium to increase the utilization of electronic government services. In the U.S., governments' policy efforts need to focus on raising the levels of trust in the handling of transactional data to increase the utilization of egovernment services. E-government programs in both countries can direct their efforts to persuade the least frequent consumers of online products or services about the potential benefits of e-government services. Governments can concentrate on making e-government services more available and easier to use. For instance, some states in México are already providing services through automated kiosks to address the marked inequality in the levels of access to the Internet among the population.

6. Limitations
Caution should be used when generalizing the findings of this study to the larger Mexican and North American populations. The utilization of convenience sampling in the present study raises issues of generalizability of findings to a broader population. Participants in this study come from an educated segment of the population with high exposure to computers and the Internet. While this group can be an appropriate sample for the study of e-government services [6], other demographic profiles need to be explored before the results can be generalized more broadly.

7. Conclusions
The main conclusion to be drawn from the present study is that trust is an important aspect of the utilization of e-government services. In a cross-cultural context, the results of this study show that the mechanisms through which citizens judge the utilization of e-government services are trust in the government's competence and benevolence, the handling of transactional data and trust in the electronic service delivery medium. However, the effect of trust on the utilization of electronic government services vary depending on the cultural settings. If governments are to realize the kind of effective transformations for improving perceptions on e-government provision, attention needs to be paid to trust. However, greater knowledge and understanding is still needed in this realm. In México, e-government research and public policy efforts based on the demand side of e-government are just beginning to emerge. As for the U.S., the present study provides a foundation for continuing the quest to understand trust in e-government delivery. The cultural and individual characteristics of potential and repeated users of e-government services make trust one of the major challenges for the success of e-government service delivery initiatives around the globe.