Transactions on Replication Research

Open Data ISSN 2473-3458

Open Data Discourse: Consumer Acceptance of Personal Cloud: Integrating Trust and Risk with the Technology Acceptance Model

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Abstract:

This paper provides the data used to analyze the conceptual replication of Pavlou (2003) by Moqbel and Bartelt (2015) which studied factors that impacted consumer's behavioral intentions to make online transactions by integrating trust and perceived risk with the technology acceptance model (TAM). We provide a detailed description of the data so it meets the open data standards. In particular, we explain the structure of the data so that other researchers can easily analyze the same dataset to come to the same results and conclusions. Our dataset consists of 240 observations which includes the following constructs: perceived trust, perceived risk, perceived usefulness, perceived ease of use, satisfaction, and perceived familiarity. Control variables include age, sex, educational level, race/ethnicity, employment status, and work experience. Future studies are encouraged to follow the footsteps of this study in providing open data to support the body of knowledge in the IS field.

Keywords: replication, open data, trust, perceived risk, ease of use, usefulness, familiarity, satisfaction

1 Measurement instrument

We collected data from undergraduate and graduate university students in the southwestern region of Texas. All constructs were adopted or adapted from existing literature. The measures for perceived ease of use and usefulness were adopted from validated prior studies (Venkatesh & Morris, 2000; Wu & Wang, 2005). The scales for trust, perceived risk, and familiarity were adapted from Gefen, Karahanna, and Straub (2003). The intention to use scales were adopted from Agarwal and Karahanna (2000) and Davis et al. (1992). Satisfaction with personal cloud scales were adapted from Bhattacherjee (2001).

All latent variables, except for satisfaction, in the research instrument used seven-point Likert scale ranging from 1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = moderately agree, to 7 = strongly agree.

2 Construct description

All constructs in our study were modeled as having reflective indicators. To address missing values, we used the mean imputation method to replace the missing values with the arithmetic mean of each column. Perceived trust, perceived risk, and satisfaction constructs consisted of four indicators each. Perceived familiarity, perceived ease of use, intention to use, and perceived familiarity constructs were each measured with three indicators, while perceived usefulness consisted of five indicators.

3 Control variables description

A total of 240 completed questionnaires were obtained from the students. The following control variables were collected: age, sex, educational level, race, employment status, and work experience. Females contributed 55.8% of the responses. The average age of the respondents was 23.7 years, with a standard deviation of 8.44 years. The majority of respondents were Hispanic (65%), followed by white (26%), and other (9%). In terms of educational level, 18.75% of the respondents had only completed high school, 20.42% had a 2-year college degree, 51.25% had a 4-year college degree, 5% had a master's degree, 2% had or were still working on a doctoral degree, and 2.5% were missing. In terms of employment status, 20% of the respondents were employed full time, 49% were employed on a part-time basis, and 31.3% were unemployed and other. The average work experience was 5.6 years.

4 Raw data

Raw data along with a data dictionary are available in this paper in MS Excel file format. The first sheet titled "Raw Data" includes all items used to measure each of the variables in this paper in the same order they appear in Appendix A. For example, column A contains answer values related to TRUST1 item/question of the trust construct. We also provided another MS Excel sheet titled "Data Dictionary" that contains the variables' names along with the questions statements used to measure them. The "Data Dictionary" also provides more details about the numeric value codes presented in the "Raw Data" sheet. For example, gender was coded 1 and 0 in which the code 1 refers to males.

5 Data analysis description

We analyzed the data using partial least squares structural equation modeling. More specifically, we used WarpPLS 5.0 to assess the measurement and the structural models (Kock, 2015). The outer model was analyzed using the PLS regression algorithm while the inner model was analyzed utilizing the linear algorithm. To validate the measurement model, we assessed the measurement reliability (Cronbach's alpha and composite reliability (Gefen, Straub, & Boudreau, 2000; Nunnally & Bernstein, 1994)) and validity (convergent validity (Hair, Black, Babin, & Anderson, 2010; Kock, 2015) through confirmatory factor analysis item loadings and discriminant validity (Fornell & Larcker, 1981) via comparing the square root of the average variance extracted for every construct with the correlations with other constructs). The structural model was estimated using a bootstrap resampling method with 100 resamples. We reported standardized path coefficients related to each proposed hypothesis, significance of the path coefficients, and the variance explained (R^2) by the exogenous variables.

Appendix A: Measurement instrument

The questions below were answered on a Likert-type scale ranging from “1 = strongly disagree” to “7 = strongly agree”. The intervening points were also anchored.

Trust

TRUST1: Based on my experience, personal cloud computing companies are honest
TRUST2: Based on my experience, personal cloud computing companies care about their customers
TRUST3: Based on my experience, personal cloud computing companies provide good service
TRUST4: Based on my experience, personal cloud computing companies are trustworthy

Perceived Familiarity

FAM1: I am familiar with personal cloud computing (such as Dropbox).
FAM2: I know personal cloud computing because I use it.
FAM1: I am aware of cloud computing.

Perceived Risk

RISK1: In general, it would be risky to keep my personal information on personal cloud
RISK2: There would be high potential for loss associated with keeping personal information on personal cloud
RISK3: There would be too much uncertainty associated with keeping personal information on personal cloud
RISK4: Keeping my personal information on personal cloud would involve many unexpected problems

Intention to Use

INTENT1: I intend to continue keeping my personal information on personal cloud
INTENT2: I plan continuing to use personal cloud to keep my files
INTENT3: I expect my keeping of personal information in the personal cloud to continue in the future

Perceived Ease of Use

PEOU1: I think learning to use personal cloud computing tools is easy
PEOU2: I think becoming skillful at using personal cloud computing tools is easy
PEOU3: I think using personal cloud computing tools is easy

Perceived Usefulness

PU1: Using personal cloud computing tools would improve my performance
PU2: Using personal cloud computing tools would increase my productivity
PU3: Using personal cloud computing tools would enhance my effectiveness
PU4: Using personal cloud computing tools would make it easier for me to do my work
PU5: I think using personal cloud computing tools is very useful for me

Satisfaction

The question “How do you feel about your overall experience with personal cloud computing tools' use?” was provided, based on differing Likert-type scales ranging from:

SAT1: “1 = Very dissatisfied” to “7 = Very satisfied”
SAT2: “1 = Very displeased” to “7 = Very pleased”
SAT3: “1 = Very frustrated” to “7 = Very contented”
SAT4: “1 = Absolutely terrible” to “7 = Absolutely delighted”

The additional questions below were not answered on a Likert-type scales.

- Age: Years
- Ethnicity: (White, Hispanic [Hisp], Asian [Asia], African American [Afric] - dummy variables were created for each group where the existence of the variable = 1 and the absence = 0)
- Gender: (Male = 1/Female = 0)

- Education: (High School, 2-year college, 4-year college, Master, Doctorate)
- Years of Work Experience [Exper]: Years
- Job Type: (Full-time [FulTim]/Part-time [PartTim]/Unemployed [NoWork]- dummy variables were created for each group where the existence of the variable = 1 and the absence = 0)

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Murad Moqbel is Assistant Professor of Health Information Management and Health Informatics at the University of Kansas Medical Center. He holds a Ph.D. degree in International Business Administration and Management Information Systems from Texas A&M International University. He received both a B.S. degree with honors in Business Administration and Computer Information Systems and a MBA with Information Systems concentration from Emporia State University. He is in the editorial board of the *International Journal of e-Collaboration* and *Information Processing & Management Journal*. He won best student paper award at the *Southwest Decision Science Conference* 2012. He has authored and co-authored several papers that appeared in: *IEEE Transactions on Professional Communication Journal, Journal of Systems and Information Technology, Information Technology and People, AIS Transaction on Replication Research, International Journal of Virtual Communities and Social Networking,* the proceedings of the *International Conference in Information Systems (ICIS),* and *Americas Conference on Information Systems (AMCIS).* His research interests focus on the interaction between human behavior and information technologies including social media, emerging technologies and Health IT, information security and privacy, and international business.

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