

Moderating Effect of Online Shopping Experience on Adoption of e-Governance in Rural India

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ABSTRACT

Technology acceptance is one of the most popular research areas. Rapid developments in technology are making human life more comfortable. However, still most of the rural area has been deprived of benefits of technological advancement. Seventy percent population of India resides in rural area. Leveraging the improved penetration of the internet; mobile friendly population in rural India has been increasingly shopping online in the last few years. e-Governance is one of the important vehicles to provide efficient services to the citizens by Governments. One major obstacle is acceptance of e-Governance platforms by the citizens. Considering the increasing trend of using e-Commerce in rural area, this paper attempts to investigate moderating effect of online shopping experience on intention to use e-Governance portals. We surveyed 365 villagers across Maharashtra: one of the leading states in India. The result confirmed online shopping experience moderates the relationship between: '*perceived security & privacy*' and '*attitude*'; '*perceived security & privacy*' and '*intention to use*'; '*Perceived usefulness*' and '*attitude*'; and, '*attitude*' and '*intention to use*'. In this study definition of moderating variable 'experience' is unique and different than most of the popular studies. We defined experience as: 'prior use of any application of technology similar to the target application of technology'. Whereas prior studies considered experience as prior experience with target application of the technology.

Keywords: Adoption of Technology, Combined TAM-TPB, e-Governance, Rural India, Technology Acceptance Model (TAM)

I . Introduction

Technology acceptance is one of the most popular research areas. Rapid developments in technology are making human life more comfortable. We are

surrounded by a lot of utility gazettes. Technology innovators, business managers and researchers have always been interested in understanding how users adopt and use the new technologies. Technologies have been embracing almost all the corners of human

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life. e-Governance is one such application of technology gaining popularity in recent years.

Various scholars attempted to define e-governance in different ways, however all have a single notion at its core, that is; “presenting government systems using information and communication technology (ICT) to serve citizens better” (Evans and Yen, 2006; Muir and Oppenheim, 2002; Norris et al., 2001; Reddick, 2006; Shareef et al., 2010). Ray and Mukherjee (2007), offered an elaborate definition of e-Governance. According to them, e-Governance is “the method of using ICT to automate both the internal operations as well as external interactions with the government, citizens, businesses and other governments. Automation of internal operations reduces operating cost, improves response time, optimizes resource utilization and at the same time allows government processes to be more sophisticated and effective to citizens thus identifying insufficiency quickly” (Ray and Mukherjee, 2007, pp. 466-467). This study is an attempt to extend the knowledge about adoption of e-Governance application.

According to Census 2011, 68.86% of total population resides in rural India (CensusInfo India 2011, n.d.). The internet penetration in rural India is expected to reach 45% in 2021 (Rural eCommerce: The untapped potential, 2018). Govt. of India has been taking efforts to reduce the digital divide through various initiatives. One of such initiatives, launched in 2017; is ‘Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)’. The objective of PMGDISHA is to make at least one person from every rural family e-literate (Overview of PMGDISHA, 2021). Leveraging the improved penetration of the internet; mobile friendly population in rural India has been increasingly shopping online in the last few years. As a result, e-commerce in rural India has been on the rise. (HindRise Social Welfare Foundation, 2021).

The area of technology acceptance and behaviour has been of interest amongst the scholarly cohort. Various models have been proposed like: Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Combined TAM & TPB (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). Based on these models, Venkatesh et al. (2003), proposed the unified theory of acceptance and use of technology (UTAUT). UTAUT identified four key determinants (i.e., performance expectancy, effort expectancy, social influence, and facilitating conditions) of intention to use and four moderators (i.e., age, gender, experience, and voluntariness).

Based on aforementioned theories researchers have studied behavioral intention to adopt various technologies including e-Governance. A very few significant studies are available which investigated moderating effect of experience on adoption of e-Governance. Al-Shafi et al. (2009), noted internet experience significantly impact on behavioral use of e-government services in Qatar. Whereas, Chawla and Joshi (2018), reported that experience has a moderating effect on attitude towards use of mobile banking.

‘*Aaple Sarkar*’ is e-Governance portal of Maharashtra; one of the leading states in India. Through this portal 37 departments of Government of Maharashtra offers total 389 services to citizens (Dashboard: Aaple Sarkar, 2021). The implementers of e-Governance in Maharashtra argued that “if people can use online shopping apps, they can use e-Governance portals as well”. According to them both are similar and on probing listed the similarities presented in <Table 1>. This expression was observed to be pervasive among the implementing authorities and thus trig-

<Table 1> Similarities Between e-Commerce and e-Governance Portals

Parameters	Portals	
	e-Commerce	e-Governance
Login required	✓	✓
Authentication	✓	✓
Details of available products/services	✓	✓
Payments	✓	✓
Tracking/Status	✓	✓
Delivery	✓(Home Delivery)	✓(Downloading)

Note: authors observations based on visit to the portals and interviews with e-Governance implementers

gered this research study. We confirmed the similarities from user perspective by analyzing popular online shopping sites (*Amazon* and *Flipkart*) and e-Governance portal (*Aaple Sarkar*). Online shopping and e-Governance, both of them are applications of ICT. Though not exactly identical, they have a lot of similarities apparently from users’ perceptive <Table 1>. Therefore, the argument sounds logical. The purpose of this study thus was to investigate, whether experience of using any application similar to target application of technology influence acceptance of the target application of technology. In this study, e-Governance portals are target application of technology and Online shopping platforms are application of technology similar to target application of technology i.e., e-Governance portals.

II. Theory and Hypothesis Development

Research on e-Government has begun since 2000 (Venkatesh et al., 2014). Various studies attempted to find out factors influencing adoption of e-Governance <Table 2>. Venkatesh et al., (2014) studied use of e-Government portals in India using a “theoretical lens, based on demography and personality”. As the research in the e-Government context was in the nascent state, they could not theorize or explore moderating effects. Thus they advocated future work should consider alternative theoretical models, such as the Technology Acceptance Model (TAM), the unified theory of acceptance and use of technology (UTAUT) etc. (Vankatesh et al., 2014).

<Table 2> Major Factors Influencing Adoption of e-Governance

Major Factors	Source
Performance Expectancy	Ahmad et al. (2013); Rana et al. (2016)
Effort Expectancy	
Social Influence	Ahmad et al. (2013); Ahmad and Khalid (2017)
Security	Rehman et al. (2012); Shareef et al. (2010); Shareef et al. (2011); Sharma (2015)
Awareness	Rehman et al. (2012); Shareef et al. (2011); Undale and Patil (2021)
Perceived Ease of Use	Al Hujran et al. (2013); Carter and Belanger (2005), Kumar et al. (2007); Rehman et al. (2012); Undale and Patil (2021)
Perceived Usefulness	
Service Quality	Al Hujran et al. (2013); Kumar et al. (2007)

In the extant literature on adoption of e-Governance, TAM or extended TAM is most widely used by scholars from developing countries as compare to other technology acceptance models like AlBar and Hoque (2019), Alhashmi et al. (2019), Bamufleh et al. (2021), Hoque et al. (2016). Further, e-Governance and e-Commerce applications involve financial transactions. Therefore, for this study we have used extended TAM ('perceived security and privacy' as an extension) tested in banking and financial domain.

UTAUT considered experience as 'experience with the same (target) application of technology' and established that the experience moderates the behavioral intention to use the technology. Previous studies proved that effect of; "ease of use" (TAM2, IDT), "subjective norm" (TRA, TPB, C-TAM-TPB), "social factor" (MPCE), "complexity" (MPCE), "visibility" (IDT), "image" (IDT), and "perceived behavioral control" (C-TAM-TPB) on "intention to use" decreases with increasing experience with target technology (Venkatesh et al., 2003). We argue that previous experience (EXP) with any similar (to target) application of technology can also moderate adoption of the target application of technology. Online shopping is an application of Information Communication Technology (ICT) and e-Governance is also an application of ICT. Therefore, there is reason to believe experience of online shopping influence the adoption of e-Governance. Online shopping is an interactive platform where consumers buy the products or services. Similarly, on e-Governance platforms citizens avail government services. We argue both online shopping platforms and e-Governance portals are similar in terms of their interaction with users (Consumers and Citizens respectively). These similarities are presented in <Table 1>.

Intention to use (ITU) is a function of attitude

(ATT) and perceived usefulness (PU). Attitude toward using technology is defined as "an individual's overall affective reaction to using a system" (Venkatesh et al., 2003). Whereas, perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989). Attitude is determined by perceived usefulness (PU) and perceived ease of use (PEOU) (Taylor and Todd, 1995). Perceived ease of use (PEOU) is defined as "the degree to which a person believes that using a system would be a free of effort" (Davis, 1989; Venkatesh et al., 2003).

Users' intention to use the new technology is formed based upon users' previous experience with the technology (Ajzen and Fishbein, 1980; Bagozzi, 1981; Bentler and Speckart, 1979; Fishbein and Ajzen, 1975; Triandis, 1979). Taylor and Todd (1995) observed that experienced users exhibit a significant relationship between behavioral intention and behavior. Several studies have reported that experience significantly moderate relationship between attitude and intention to use (Campo and Breugelmans, 2015; Chin and Goh, 2017; Lu et al., 2011; Saw et al., 2015). Thus, we hypothesize:

H1: Experience with online shopping moderate relationship between attitude and intention to use e-Governance

Perceived usefulness is root construct of performance expectancy (Dwivedi et al., 2017; Vankatesh et al., 2003). It is well established that performance expectancy predicts behavioral intention to use technology (Kim and Lee, 2020; Miller and Khera, 2010; Ramirez-Correa et al., 2014).

Vaittinen and Nenonen (2018) formed composite construct 'worthiness' by combining PEOU and PU.

They reported experience with related service moderate relationship between ‘worthiness’ and intention to use. Tavitiyaman et al. (2020), found that experienced tourist exhibits stronger influence of PU of hotel technologies on the behavioral intention (BI) than that of inexperienced tourist. Further, Choi et al. (2010) and Lim et al. (2011), observed that prior experience moderate relationship between PU and BI. Thus, we hypothesize:

H2: Experience with online shopping moderate the relationship between perceived usefulness and intention to use e-Governance

Perceived ease of use is one of the components of effort expectancy (Dwivedi et al., 2017; Vankatesh et al., 2003). Venkatesh et al. (2003), observed that ‘experience’ moderate relationship between effort expectancy and behavioral intention. They reported that the effect was stronger for women and those with limited experience. Relationship between PEOU and intention to use found to be moderated by experience. (Choi et al., 2010; Gifen, 2003; Lim et al., 2011; Vakatesh et al., 2003; Venkatesh and Davis, 2000). Thus, we hypothesize:

H3: Experience with online shopping moderate the relationship between perceived ease of use and intention to use e-Governance

Kim and Wang (2020), reported that there is positive impact of privacy concerns on intention to use social media privacy. Perceived security and privacy (PSP) is defined as “users’ perception of protection against security threats and control of their personal data information in an online environment” (Lallmahamood, 2007). Karunasena and Deng (2012) observed that security threats affect creating public

value through e-Government in Sri Lanka. Robinson (2000) reported that experienced users would not become active users in regards of online banking services. Lallmahamood (2007) observed that perceived security and privacy (PSP) has significant relationship with intention to use internet banking. Rehman et al. (2012), revealed that perceived risk influences citizens’ trust in, and intention to use e-government. Several studies hypothesize the issues of security and privacy as significant technical risks influencing citizens’ trust in e-government. Trust further significantly correlated with intention to use (Ayyash et al., 2013; Beldad et al., 2012; Colesca, 2009). Alzahrani et al. (2018), found that internet experience moderate relationship between security and privacy (termed as technical risk) and intention to use e-Governance services. Therefore, we hypothesize:

H4: Experience with online shopping moderate relationship between perceived security & privacy and intention to use e-Governance

Experience with an object has significant correlation with belief and attitude (Eagly and Chaiken, 1993; Fazio and Zanna, 1978; Regan and Fazio, 1977). This suggests a stronger influence of perceived usefulness and attitude for experienced users (Taylor and Todd, 1995). Kim et al. (2018), reported that experience moderate relationship between perceived usefulness and attitude. Thus, we hypothesize:

H5: Experience with online shopping moderate relationship between perceived usefulness and attitude towards adopting e-Governance

Taylor and Todd (1995) confirmed that ease of use is an important predictor of attitude for inexperienced users. Kim et al. (2018), argued that experi-

enced users acquire sufficient knowledge through prior use, and hence PEOU is less important for them. Similar findings reported by Sun and Zhang (2006). Gao and Huang (2019), reported that experience moderate relationship between perceived ease of use and attitude. They found the relationship is significant for inexperienced users. Thus, we hypothesize:

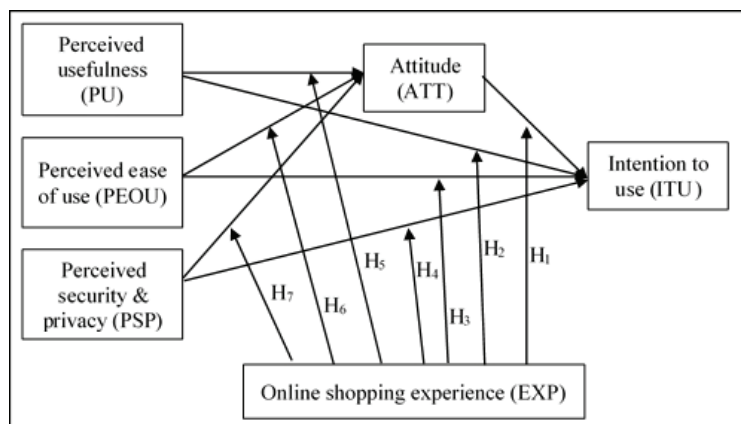
H6: Experience with online shopping moderate relationship between ease of Use and attitude towards adopting e-Governance

Pramatari and Theotokis, (2009) reported ‘technology anxiety’ and ‘information privacy concern’ influence consumer attitude towards technology. Previous several studies hypothesize the issues of security and privacy as significant technical risks influencing citizens’ trust in e-government. (Ayyash et al., 2013; Beldad et al., 2012; Colesca, 2009). Moryson and Moeser (2016), posited experience would moderate relationship between perceived security and perceived trust. They found significant effect of trust on attitude for experienced users. Therefore, we hypothesize:

H7: Experience with online shopping moderate relationship between perceived security & privacy and attitude towards adopting e-Governance

III. Research Methodology

The purpose of this study was to understand whether experience of online shopping influence acceptance of e-Governance application by villagers. To have in-depth understanding about e-Governance applications we interviewed four implementers of e-Governance in Maharashtra. Our target population was villagers in Maharashtra which is one of the leading states in India. Maharashtra is third largest state by area in the country. It has 38 districts and more than 60,000 villages. Out of these, ten districts were randomly selected. The participants were screened on two parameters: a) availed e-Governance service recently (within last six months) and, b) own smartphone. Out of 703 villagers we approached, 383 agreed and participated in our survey. This has yielded response rate of 54.5%. Total 365 responses after removing incomplete responses were used for data analysis. IBM SPSS Statistics version 22 was



<Figure 1> Research Model

used for descriptive analysis. In addition, PLS-PM package of R studio was used to perform Partial Least Squares Modeling. PLS-PM has an added advantage of estimating the measurement model (Hair et al., 2017) and is best suited for the multi-group analysis. The moderation effect was tested using multi-group analysis. Venkatesh et al. (2003), observed that ‘experience’ moderate relationship between effort expectancy (perceived ease of use is root construct of effort expectancy) and behavioral intention. They reported that the effect was stronger for women therefore the ‘gender’ was included in the model as a control variable.

3.1. Measures

Scales for this study were adapted from previous researchers’ work like Cegarra-Navarro et al. (2014), Lallmahamood (2007), and Lim and Ting (2012). Five constructs were used in this study: *perceived usefulness, perceived ease of use, perceived security and privacy, attitude, and intention to use*. The details of the items used and their respective sources are presented in <Table 3>.

All the scales measured on five point Likert scale where scale point labels were as follows: *strongly agree, agree, neutral (neither agree nor disagree), disagree and, strongly disagree*.

<Table 3> Details of Questionnaire Items

Construct	Items	Sources (adapted from)
Perceived Usefulness (PU)	Using the e-governance services made it easier for me to get my required documents	Lallmahamood (2007)
	I am able to save money when I use e-governance services	Lim and Ting (2012)
	I am able to save time when I use e-governance services	Lim and Ting (2012)
Perceived Ease Of Use (PEOU)	Interacting with the e governance services does not require a lot of mental effort	Cegarra-Navarro et al. (2014)
	Finding the e-governance services easy to use	Cegarra-Navarro et al. (2014)
	Learning to use e-governance services is easy for me	Lallmahamood (2007)
Attitude (ATT)	In my opinion, it is desirable to use the e-governance services	Cegarra-Navarro et al. (2014)
	I think it is good for me to use the e-governance services	Cegarra-Navarro et al. (2014)
	I like to get documents what I need from e-governance services	Lim and Ting (2012)
Intention to use (ITU)	I intend to continue to get required documents from e-governance services in the future	Lim and Ting (2012)
	I would likely use e-governance services for my document needs	Lim and Ting (2012)
	I will strongly recommend others to use e-governance services	Lallmahamood (2007)
Perceived Security and Privacy (PSP)	Using e-governance services is secure	Lallmahamood (2007)
	I trust the ability of e-governance services to protect my privacy	Lallmahamood (2007)
	I feel safe when I release personal information to the e-governance services	Lallmahamood (2007)

IV. Data Analysis and Results

4.1. Reliability and Validity of Scales

Composite Reliability values <Table 5> for all the measures are greater than the recommended threshold value of .7 (Nunnally and Bernstein, 1994). Thus, the reliability of all scales was established. Convergent validity was assessed using composite reliability (CR) and average variance extracted (AVE). As show in <Table 5>, CR values and AVE values of all scales are greater than recommended value of .7 (Nunnally and Bernstein, 1994) and .5 (Hair et al., 2017) respectively. Further, square root of respective AVE (DV) values are greater than its correlation with other latent variables which provide the sufficient evidence for discriminant validity. (Hair et al., 2017).

<Table 4> Descriptive Details of Respondents

Demographic Variables	Online shopping experience		Total
	No	Yes	
Gender			
Female	63	35	98
Male	114	153	267
Age (years)			
18 to 25	36	49	85
26 to 35	74	50	124
36 to 45	46	70	116
46 to 55	21	19	40
Total	177	188	365

<Table 5> Reliability and Validity Analysis

	CR	AVE	PSP	PU	PEOU	ITU	ATT
PSP	0.825	0.610	0.781				
PU	0.850	0.655	0.690	0.809			
PEOU	0.786	0.557	0.613	0.669	0.746		
ITU	0.782	0.549	0.505	0.241	0.289	0.741	
ATT	0.807	0.590	0.482	0.523	0.735	0.343	0.768

(Discriminant Values (DV) are on diagonal)

4.2. Test of Measurement Invariance

Measurement invariance test is must step before conducting multi-group analysis (MGA). The purpose of establishing measurement invariance, is to ensure that “dissimilar group-specific model estimations do not result from distinctive content and the meanings of the latent variables across groups” (Henseler et al., 2016a). Three data sets were used to test the measurement invariance; a) Total (n = 365), b) Online shoppers (n = 177) and, c) Non-online shoppers (n = 188). The grouping variable used was ‘experience with online shopping’. <Table 6> presents the result of measurement invariance test. The change in chi square values ($\Delta\chi^2$) were insignificant ($p>.05$) for configural and metric invariance, however, $\Delta\chi^2$ for scalar invariance is significant ($p < .05$). Thus, partial measurement invariance of scales was established and the data qualified for multi-group analysis (Henseler et al., 2016a, Hair et al., 2017).

4.3. Assessment of Model Fit

The value of Standardized Root Mean Square Residual (SRMR) should be $< .08$, to satisfy the requirements for goodness-of-fit for PLS-SEM (Henseler et al., 2016b; Hu and Bentler, 1999). The SRMR values show a good fit for all three datasets: a) Total (.055), b) Online shoppers (.074) and, c) Non online shoppers (.063) <Table 7>.

<Table 6> Measurement Invariance Test

	χ^2	df	$\Delta\chi^2$	Δdf	p-Value
Base Model	282.164	80			
Configural Invariance	348.39	160	66.226	80	0.865
Metric Invariance	357.983	175	9.593	15	0.845
Scalar Invariance	395.48	190	37.497	15	0.001

<Table 7> Model Fit

Data set	SRMR
Total (n = 365)	0.0552
Online shoppers (n = 177)	0.0744
Non online shoppers (n = 188)	0.0634

Note: ≤ 0.08 suggested by Henseler et al. (2016b), Hu and Bentler (1999).

4.4. PLS Moderation Analysis Result

Improvement in r^2 values for both endogenous variable ‘intention to use’ and ‘attitude’ is observed in both subsamples (online shoppers and non-online shoppers) as compare to r^2 values of total sample <Table 8>. Overall, this improvement confirms the presence of moderating effect of ‘experience with online shopping’. Moderating effect on individual paths (H1-H7) are discussed below:

H1: Experience with online shopping moderate relationship between Attitude and Intention to use e-Governance

Attitude (ATT) is significant predictor of intention to use in total sample ($\beta = .164, p < 0.05$) and in subsample of non-online shoppers ($\beta_2 = .369, p < 0.001$) whereas, it is non-significant in subsample of online shoppers ($\beta_1 = -.095, p > 0.05$). The difference in coefficient of online shoppers and non-online shoppers is significant ($d (\beta_1 - \beta_2) = -.464, p < .001$). This supports the first hypothesis (H1) that *experience with online shopping moderate relationship between attitude and intention to use e-Governance*.

H2: Experience with online shopping moderate the relationship between perceived usefulness and intention to use e-Governance

Perceived Usefulness is not influencing intention to use in all three datasets (total ($\beta = -.090, p > 0.05$), online shoppers ($\beta_1 = -.108, p > 0.05$), non-online shoppers ($\beta_2 = .085, p > 0.05$)). This result does not support the second hypothesis (H2) that *experience with online shopping moderate the relationship*

<Table 8> PLS Model and Moderation Result

Model	Total Samples (n = 365)	Exp. (Yes) (n = 188)	Exp. (No) (n = 177)	Moderation Result
<i>Dependent variable: ITU</i>	$r^2 = 0.209^{**}$	$r^2 = 0.373^{**}$	$r^2 = 0.219^{**}$	
	β	β_1	β_2	<i>Difference</i> $d = \beta_1 - \beta_2$
Gender (CV)	0.0866*	0.045	0.040	
ATT (H_1)	0.164**	-0.095	0.369***	-0.464***
PU (H_2)	-0.090	-0.108	0.085	
PEOU (H_3)	0.039	-0.079	0.086	
PSP (H_4)	0.391***	0.694***	-0.006	0.700***
<i>Dependent variable: ATT</i>	$r^2 = 0.391^{**}$	$r^2 = 0.459^{**}$	$r^2 = 0.363^{**}$	
Gender (CV)	0.062	0.036	0.034	
PU (H_5)	0.195***	0.372***	0.021	0.351**
PEOU (H_6)	0.480***	0.458***	0.473***	-0.015
PSP (H_7)	0.017	-0.128*	0.174**	-0.302**

Note: * $p < .1$, ** $p < .05$, *** $p < .001$, β = Path Coefficient, CV = Control Variable, Exp= Experience with online shopping.

between perceived usefulness and intention to use e-Governance.

H3: Experience with online shopping moderate the relationship between perceived ease of use and intention to use e-Governance

Perceived ease of use is not influencing intention to use in all three datasets (total ($\beta = .039, p > 0.05$), online shoppers ($\beta_1 = -.079, p > 0.05$), non-online shoppers ($\beta_2 = .086, p > 0.05$)). This result does not support the third hypothesis (H3) that *experience with online shopping moderate the relationship between perceived ease of use and intention to use e-Governance*.

H4: Experience with online shopping moderate relationship between perceived security & privacy and intention to use e-Governance

Perceived security and privacy (PSP) is found to be significant predictor of intention to use in two datasets; total sample ($\beta = .391, p < 0.001$) and in subsample of online shoppers ($\beta_1 = .694, p < 0.001$) whereas, it is non-significant in subsample of non-online shoppers ($\beta_2 = -.006, p > 0.05$). The difference in coefficient of online shoppers and non-online shoppers is significant ($d(\beta_1 - \beta_2) = .700, p < .001$). This supports the fourth hypothesis (H4) that *experience with online shopping moderate relationship between perceived security & privacy and Intention to use e-Governance*.

H5: Experience with online shopping moderate relationship between perceived usefulness and attitude towards adopting e-Governance

Perceived usefulness is found to be significant pre-

dictor of attitude in two datasets; total sample ($\beta = .195, p < 0.001$) and in subsample of online shoppers ($\beta_1 = .372, p < 0.001$) whereas, it is non-significant in subsample of non-online shoppers ($\beta_2 = .021, p > 0.05$). The difference in coefficient of online shoppers and non-online shoppers is significant ($d(\beta_1 - \beta_2) = .351, p < .05$). This supports the fifth hypothesis (H5) that *experience with online shopping moderate relationship between perceived usefulness and attitude to use e-Governance*.

H6: Experience with online shopping moderate relationship between perceived ease of Use and attitude towards adopting e-Governance

Perceived ease of use is significant predictor of attitude in all three datasets (total ($\beta = .480, p < .001$), online shoppers ($\beta_1 = .458, p < .001$), and non-online shoppers ($\beta_2 = .473, p < .001$)). However, the difference in coefficients of online shoppers and non-online shoppers is not significant ($d(\beta_1 - \beta_2) = -.015, p > .05$). This does not support the sixth hypothesis (H6) that *experience with online shopping moderate the relationship between perceived ease of use and attitude to use e-Governance*.

H7: Experience with online shopping moderate relationship between perceived security & privacy and attitude towards adopting e-Governance

Perceived security and privacy is found to be significant predictor of attitude in two datasets; subsample of online shoppers ($\beta_1 = -.128, p < 0.1$) and, in subsample of non-online shoppers ($\beta_2 = .174, p < 0.05$). Whereas, it is non-significant in total sample ($\beta = .017, p > .05$). The difference in coefficient of online shoppers and non-online shoppers is significant ($d(\beta_1 - \beta_2) = -.302, p < .05$). This supports

the seventh hypothesis (H7) that *experience with online shopping moderate relationship between perceived security and privacy and attitude to use e-Governance*.

V. Discussion

This study was an attempt to investigate moderating effect of experience (similar to target application of the technology) on attitude and intention to use target application of the technology. This study is first, in our knowledge which have considered experience as experience with similar to target application of the technology and not with the target application of the technology per se. For theorizing, we used three models: extended TAM (Lallmahamood, 2007), C-TAM-TPB and UTAUT. The findings of our study partially support these theories and some other researchers' work.

We found experience significantly moderate relationship between attitude and intention to use e-Governance (H1). The effect is significant for non-users (inexperienced) of online shopping and insignificant for online shoppers (experienced). This is contradicting with the findings of Karahanna et al. (1999) who reported that "for potential adopters (inexperience), attitude does not have a significant effect on intention to adopt Windows (target technology)". However, our results support most of the recent findings by Chin and Goh (2017), Lu et al. (2011), Soto-Acosta et al. (2014), and Tong (2010).

Our finding, experience with online shopping does not moderate the relationship between perceived usefulness and intention to use e-Governance (H2), corroborate with the findings of Venkatesh et al. (2003) who established in their popular UTAUT theory, that experience does not moderate relationship between performance expectancy (perceived usefulness

is root construct of performance expectancy) and behavioral intention. Similarly, Ma (2021), found that experience does not moderate relationship between perceived usefulness and intention to use. However, the result does not support the findings of Choi et al. (2010) and Lim et al. (2011), Tavitiyaman et al. (2020) who reported that the influence of perceived usefulness is greater for experienced users than inexperienced users. Nevertheless, perceived usefulness found to affect intention indirectly through 'attitude' as perceived usefulness is positively associated with 'attitude' (read discussion on H5)

The finding of the study does not support the hypothesis, experience with online shopping moderate the relationship between perceived ease of use and intention to use e-Governance (H3). This finding is partially consistent with Venkatesh et al. (2003) who reported that limited experience significantly moderates relationship between ease of use and behavioral intention. However, the study result is not agreeing to the findings of some previous studies (Choi et al., 2010; Gefen, 2003; Lim et al., 2011; Venkatesh and Davis, 2000) which reported that perceived ease of use has stronger influence on intention to use in inexperienced users. Although, this study could not confirm the moderating effect of experience, we found perceived ease of use indirectly affect intention to use through 'attitude', as perceived ease of use is positively associated with 'attitude' (read discussion on H6).

The result, PSP has significant influence on intention to use (H4), supports the findings of Lallmahamood (2007) and Robinson (2000). The effect is significant for experienced users (online shoppers) supporting the hypothesis: experience with online shopping moderate relationship between perceived security & privacy and intention to use e-Governance. This finding is consistent with

Alzahrani et al. (2018) and Colesca (2009).

We found Experience with online shopping moderate relationship between perceived usefulness and attitude towards adopting e-Governance (H5). This corroborates the findings of Taylor and Todd (1995) and Kim et al. (2018), who reported experience influence relationship between perceived usefulness and attitude. The relationship is stronger with experienced users than inexperienced users.

We found that perceived ease of use is significant predictor of attitude in all three data sets (total, online shoppers and, non-online shoppers). However, the result revealed that experience with online shopping does not moderate relationship between ease of use and attitude towards adopting e-Governance (H6). This is partially consistent with the findings of Taylor and Todd (1995) who noted that for inexperienced users ease of use is important predictor of attitude. Further, the result of moderation does not support findings of Kim et al. (2018), Sun and Zhang (2006), Gao and Huang (2019), who reported influence of ease of use on attitude is more among inexperienced users than experienced users. Overall, perceived ease of use is significant irrespective of level of experience. This essentially indicate that perceived ease of use assumes utmost importance for acceptance of technology by users.

We found experience with online shopping moderate relationship between perceived security & privacy and attitude towards adopting e-Governance (H7). This is consistent with findings of Moryson and Moeser (2016). Similarly, with Pramatarari and Theotokis (2009) who reported 'technology anxiety' and 'information privacy concern' influence consumer attitude towards technology. The significant negative value of coefficient indicates that the experienced users have less concern about security and privacy than non-experienced users.

VI. Conclusions and Implications

6.1. Research Implications

In this study, definition of moderating variable 'experience' is unique. In most of the previous studies including popular and widely accepted UTAUT and combined TAM and TPB model, experience is considered as 'prior experience with target application of the technology' where as in our study we defined experience as: 'prior use of any application of the technology similar to the target application of the technology'. The study successfully demonstrated that experience significantly moderates relationship between: '*perceived security & privacy*' and '*attitude*'; '*perceived security & privacy*' and '*intention to use*'; '*Perceived usefulness*' and '*attitude*'; and '*attitude*' and '*intention to use*'. These findings are significant. Most of the researchers believe that the technology acceptance models such as TAM, C-TAM-TPB, UTAUT etc. has reached to their saturation level explaining individual technology acceptance (Venkatesh et al., 2016). However, we believe that our study has opened new stream in technology acceptance research. This will encourage researchers to test the technological models in diversified contexts using modified moderator 'experience (with similar to target application of technology)'.

6.2. Practical Implications

Governments have been spending considerable amount of money to develop the e-Governance applications. One of the indicators of effective e-Governance implementation is adoption of applications by users (citizens). This study demonstrated that experience with online shopping moderate attitude and behavioral intention to use e-Governance

applications.

From citizens' perspective e-Governance services have utilitarian motivation. The construct perceived usefulness capture utilitarian motivation (Davis et al., 1989; Davis et al., 1992; Venkatesh and Davis, 2000; Venkatesh and Speier, 2000). Whereas, hedonic motivation is not significant for public services as it is not a business activity and hence preferred to exclude in the context of e-Governance (Syamsudin et al., 2018). Therefore, implementers of e-Governance can target the segment of citizens who are shopping online with utilitarian motive to increase use of e-Governance platforms. The study successfully demonstrated that experienced users' attitude and inexperienced users' intention to use is influenced by perceived security and privacy of online portals. Therefore, the results may encourage software developers to design such applications which offers highest security and privacy to the users. Moreover, developers can design user interface of e-Governance portals similar to popular online shopping sites like Amazon and Flipkart. Mobile applications of online shopping sites are popular and widely used (Udayan, 2020). This indicates that user friendly mobile application of e-Governance portals would also gain wider acceptance. Therefore, developers should develop user friendly mobile applications of e-Governance. We suggest that Governments should focus more on m-Governance (mobile Governance) as there is likely to be a significant shift from e-Governance to m-Governance in coming years.

VII. Limitations and Future Research

We posited experience with similar to target application of the technology (online shopping) would moderate intention to use the target application of

the technology (e-Governance). Although the results were statistically significant, the study is not free from limitations. We adapted the established scales used in previous studies but in the different context. The impact of change in context was ignored.

The study was primarily based on extended TAM, C-TPB-TAM and UTAUT. Thus, this study was not exact replica of UTAUT. A further study using constructs form UTAUT is required to strengthen the findings of this study.

The study assumed online shopping experience over smartphone. Therefore, findings will be applicable to smartphone users. Both e-Commerce websites and e-Governance websites are mobile friendly (Contribution of Smartphones to Digital Governance in India, 2021) which can be accessed using smartphone browser. The study has not attempted to understand the influence of mobile applications on adoption of e-Governance applications. Therefore, future studies should try to investigate the same.

We controlled effect of one demographic variable i.e., gender. Other demographic variables may also have effect on the adoption of e-Governance applications. Therefore, a separate study including additional variables like, age, income, make of smartphones, kinds of the tasks performed etc. is recommended.

The respondents were from rural areas of Maharashtra (one of the states in India). Therefore, generalizing the results to rural areas from other states and urban population has to be done cautiously. Further, the sample lacked true representation as the data were collected from available respondents at the time of survey. This was a cross sectional study and could capture a snapshot of effect. A longitudinal research is required to measure the effect over a period of time.

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