

Revitalizing the E-government Model through Customer Citizenship Behaviour

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Abstract: Research on “electronic government” or “e-government” has been conducted mostly through a technological lens, concentrating on its system design, and innovation. As governments pour so much financial resources in technology, there is also an increasing stress on motivating citizens to perform such tasks that were previously managed by public employees. This shift necessitates a deeper understanding of citizens’ behavior, including factors like citizens’ satisfaction, citizens’ trust, and customer citizenship behaviour, which are vital for effectively execution of e-Government projects. The study also examined the moderating role played by usage frequency among these variables. The statistical technique used to analysis the relationship is PLS-SEM. Structured questionnaire was to collect the responses. The study offers valuable insights to the digital government service providers by examining the behavioral elements. It highlights how citizens’ satisfaction and trust emerge while using digital platforms, which motivates citizens’ to exhibit consumer citizenship behavior.

Keywords: Citizen’s satisfaction, Citizen’s trust, Customer citizenship behaviour, Usage frequency, e-Government

Introduction

Globally, the overpowering impact of “information technology” in our daily lives is inspiring the government to deploy traditional public services through the Internet. This has resulted in the development of a genre known as web enabled services or digital government services. In today’s era of e-government, building long-lasting relationships between citizens and government service providers is critical. The integration of “InfoTech” to ameliorate the actions of public organizations is referred to as “e-Government” or “digital government” (Kaur & Singh, 2015). Information technology can reap

many benefits such as public received one step ahead services, enhancing relationship with business undertaking by streamlining the business processes and empowering citizens through information access (Warkentin *et al.*, 2002). However, the utmost reason for using the technology by the government is not just to streamline the processes but to enhance citizens’ satisfaction, service quality (Zhu *et al.*, 2002) as well as stimulate awareness, trust, and engagement among stakeholders (Butt, 2018; Sharma *et al.*, 2013).

Customer satisfaction has emerged as an increasingly research trend in the fields of marketing and information technology (Dang *et al.*, 2020). It is generally viewed as the outcome of a combination of prior expectations concerning specific product or service and subsequent evaluations of its quality following an interaction (Porumbescu, 2016). According to Chang *et al.* (2009), satisfaction is the emotion of contentment or disappointment that an individual experiences at the time of comparing their expectations with the actual performance of product/ service. Citizens' satisfaction is elementary when judging the effectiveness of e-government initiatives (Anwer *et al.*, 2016).

Customer citizenship behaviour refers to voluntary behaviours on the part of customers that positively influence organization overall performance (Groth, 2005; Nguyen *et al.*, 2014). According to Balaji (2014), "customer citizenship behaviour" refers to the customer behaviours that go farther to an exchange relationship. A CCB concept has three key dimensions: *recommendations*, *helping others*, and *participation* (Yi & Gong, 2009). These behaviours are completely optional; hence, they do not form part of a customer's anticipated role script during service interactions. Because of this, they are called "customer citizenship behaviours" (Groth, 2005; van Tonder & Petzer, 2021). In general, the omission of such behaviour is not considered punishable (Paillé *et al.*, 2015). It is a matter of personal choice. The present study adopted the CCB model which includes "advocacy", "participation", and "helping behavior". Advocacy implies users recommending the product/services to others. It is just like to word-of-mouth. Helping behavior points out towards customers assisting another customer who faced some problem during service delivery. The last one is participation, which refers to providing feedback or giving suggestions to the service provider for service improvement.

The another vital component of e-government is citizens' trust (Voutinioti, 2013; Warkentin *et al.*, 2002) which also acts as a cornerstone in this

dynamic relationship. It means the alacrity of one party to be prone to actions of another as it is expected that the actions performed by other party will be vital to the trustor, nevertheless monitoring the trustor's ability (Dang *et al.*, 2020). This trust relationship exists when the trustor is confident that the trustee will fulfill their obligations morally and responsibly, regardless of the trustee's position (Gronroos, 1984). According to Mayer *et al.* (1995), the degree of trust that trustor has in trustee relies on the trustee's trustworthiness. Trustworthiness is the trustor's perceptions towards the ability, benevolence, and integrity of trustee. It is a critical concerns for the government in the path of IT development (Fakhoury & Aubert, 2015; Wang, 2014). Public trust plays a pivotal role in government functioning and serves as a key driving force behind government information technology advancement. Empirical evidence also suggests that "competence", 'honesty', and "integrity", which Mayer *et al.* (1995) contend have been significant antecedents to organisational trust, which can be applied to several e-service domains, including e-government. Thus, the present study describes trust as an individual belief system that the trustee or service provider possesses the characteristics of "ability", "benevolence", and "integrity" that are considered beneficial to them.

The growing interest in e-Government raises a critical yet underexplored dimension of usage frequency that also impacts these dynamics. Citizens who interact with services more frequently may gradually develop a positive or negative perception that affects their satisfaction and trust level, and CCB. Conversely, infrequent users may exhibit distinct patterns, driven by sporadic encounters with the system. Despite its importance, there has been limited research that has systematically examined how usage frequency moderates the relationship between citizens' satisfaction, citizens' trust, and CCB.

Review of Literature

Citizen's satisfaction and Customer citizen behaviour

Studies on CCB examined the reciprocal nature of customer satisfaction and customer citizenship behavior (Assiouras *et al.*, 2019; Ponnusamy *et al.*, 2015; Revilla-Camacho *et al.*, 2015). Ulucayli *et al.* (2023) stated that when patients are satisfied with the treatments they received from healthcare organizations, they go beyond the basic patient-provider relationship often referred to as "Patient Citizenship Behavior" (PCB). These positive relationships can encourage patients to engage in actions that contribute towards the effectiveness of the healthcare facility. As a bidirectional relationship, CCB can be viewed as both a cause and an effect of job satisfaction (Mitrega *et al.*, 2022). Ali *et al.* (2022) identified significant associations between these two constructs in context of after-sale support. Similarly, a study by Hwang and Lee (2019) also found that the affective level of customer satisfaction at green restaurants positively impacted CCB. Chen *et al.* (2015), also discovered that users satisfied with food blogs service or are more likely to take part in related CCBs. Anaza's (2013) study suggests that a favorable relationship exists between the shoppers' e-satisfaction and their interactions with e-retailers. This underscores the importance of customer satisfaction in promoting beneficial behaviors for both e-retailers and the wider online shopping ecosystem.

Citizen's trust and Customer citizen behaviour

According to Loureiro *et al.* (2018), whenever customers perceive a higher level of trustworthiness on a fashion website, they are more inclined to share positive experiences, such as recommending the site to friends and family, posting favorable reviews online, or discussing their purchases on social media platforms. Ho (2014) stated that in addition to in-role behavior, brand trust influences extra-role behavior. Rita *et al.* (2019) found that when online shoppers trust online stores, they are more likely to view those

stores favorably, resulting in recommendations. Revilla-Camacho *et al.* (2015) discovered that it also serves as an antecedent (a factor that comes before and influences) trust. This means that engaging in CCB can enhance a customer's trust in the organization. Consequently, when customers actively participate in citizenship behaviors, they have greater chance of developing a trusting relationship with the company or brand.

The moderating effect of usage frequency

As part of electronic public services, "usage frequency" refers to how often users visit and use a website to obtain information and access services provided by the government. This metric is a key component in understanding user engagement and behaviour within the digital realm. A website's frequency of use relies on factors, involving user satisfaction along with the level of trust placed in it (F. Li, 2020). As consumers engage more frequently with a product or service, their cognitive familiarity with said product or service increases, thereby mitigating the inherent uncertainty that may arise in subsequent purchase scenarios (Haque *et al.*, 2020). Electronic government is a relatively new channel for accessing public services online, leading to an influx of first-time users and creating diverse subgroups of users over time. Wang (2010) found that the number of times a customer browses an online store is a significant factor in determining whether or not they intend to remain loyal to that store. Zhang *et al.* (2017) examined the social media platform usage patterns, focusing on factors such as blog reading frequency, duration of use, commenting, and reposting. Their findings revealed that non-users had lower trust level than regular and frequent users. Commer *et al.* (2017) found that trustworthiness on social networks is an effective factor in influencing electronic word of mouth for fashion products. Li (2020) found that frequency of use acts as a significant moderator in the context of consumer behaviour studies. These studies collectively demonstrated that consumers' experiences significantly contribute

to their decision-making process (Hernández *et al.*, 2010) since they affect their perceptions, attitudes, and behaviour. Therefore, the current

study examined the act of usage frequency in moderating the relationship between citizens' satisfaction, citizens' trust, and CCB.

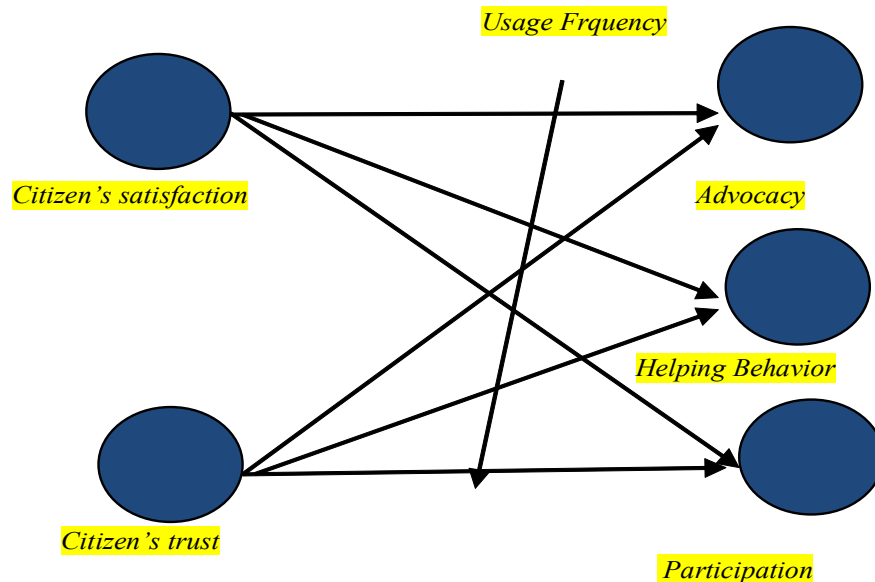


Figure1: Proposed conceptual model Showing Relationship between citizens' satisfaction, citizens' trust and Customer Citizenship Behaviour Dimensions

Objectives of the Study:

1. To examine the impact of Citizens' Satisfaction on Customer Citizenship Behaviour dimensions.
2. To study the impact of Citizens' Trust on Customer Citizenship Behaviour dimensions.
3. To examine the moderating role of usage frequency on the relationship between Citizens' Satisfaction and Customer Citizenship Behaviour dimensions.
4. To examine the moderating role of usage frequency on the relationship between Citizens' Trust and Customer Citizenship Behaviour dimensions.

Hypotheses for the Study:

The following hypotheses are developed for the study:

H1 (a): There is a positive impact of Citizens'

Satisfaction on Advocacy.

H1 (b): There is a positive impact of Citizens' Satisfaction on Helping Behaviour.

H1 (c): There is a positive impact of Citizens' Satisfaction on Participation.

H2 (a): There is a positive impact of Citizens' Trust on Advocacy.

H2 (b): There is a positive impact of Citizens' Trust on Helping Behaviour.

H2 (c): There is a positive impact of Citizens' Trust on Participation.

H3: Usage frequency moderates the relationship between citizen's satisfaction and dimensions of customer citizenship behaviour a) Advocacy, b) Helping behavior and c) Participation.

H3 (a): The impact of citizen's satisfaction on the

dimensions of customer citizenship behaviour is higher for once per month as compared to once per 3 months.

H3 (b): The impact of *citizen's satisfaction* on the *dimensions of customer citizenship behaviour* is higher for *once per month* as compared to *once per 6 months*.

H3 (c): The impact of *citizen's satisfaction* on the *dimensions of customer citizenship behaviour* is higher for *once per month* as compared to *once per year*.

H3 (d): The impact of *citizen's satisfaction* on the *dimensions of customer citizenship behaviour* is higher for *once per 3 months* as compared to *once per 6 months*.

H3 (e): The impact of *citizen's satisfaction* on the *dimensions of customer citizenship behaviour* is higher for *once per 3 months* as compared to *once in a year*.

H3 (f): The impact of *citizen's satisfaction* on the *dimensions of customer citizenship behaviour* is higher for *once per 6 months* as compared to *once in a year*.

H4: Usage frequency moderates the relationship between *citizen's trust* and *dimensions of customer citizenship behaviour* a) *Advocacy*, b) *Helping behavior* and c) *Participation*.

H4 (a): The impact of *citizen's trust* on the *dimensions of customer citizenship behaviour* is higher for *once per month* as compared to *once per 3 months*.

H4 (b): The impact of *citizen's trust* on the *dimensions of customer citizenship behaviour* is higher for *once per month* as compared to *once per 6 months*.

H4 (c): The impact of *citizen's trust* on the *dimensions of customer citizenship behaviour* is higher for *once per month* as compared to *once per year*.

H4 (d): The impact of *citizen's trust* on the di-

mensions of customer citizenship behaviour is higher for *once per 3 months* as compared to *once per 6 months*.

H4 (e): The impact of *citizen's trust* on the *dimensions of customer citizenship behaviour* is higher for *once per 3 months* as compared to *once in a year*.

H4 (f): The impact of *citizen's trust* on the *dimensions of customer citizenship behaviour* is higher for *once per 6 months* as compared to *once in a year*.

Research Methodology

Sample

In India, nearly all the states are rapidly developing citizen-centric e-government projects aimed at providing internet-based public services with higher efficiency, accessibility, and transparency in an integrated manner (N. & Diwakar, 2015). Adam (2020) stated that in Punjab, e-government initiatives are gaining more and more popularity. In addition to being one of the most progressive state of India, Punjab was also among the first to seriously consider governance reforms (Singh & Kapila, 2020). In 2009, the Government of Punjab formed Governance Reforms Commission to reorganise its administrative mechanism. In 2010, Punjab also abolished the exercise of obtaining pointless non-statutory affidavits, becoming the first Indian state to do so. For this "unique citizen-centric initiative," Punjab received the national award for "best governance practice." Punjab was the first state among the northwest states that passed the "Punjab Right to Service Act, 2011" with the aid of IT to reinforce the effectiveness of service delivery. The Act's initial coverage was for 67 services, but it was later expanded to include 206 services. The data needed to test hypotheses have been gathered from the four highly populated districts of Punjab State. In Punjab for the successful implementation of e-governance various projects has been initiated by the state government and DIT which include "Punjab State Wide Area Network" "State Portal and State Data

Centre”, “e-Districts”, “VAHAN and SARATHI”, Punjab Government Personnel Management System, “Integrated Treasuries Information System of Punjab” and “ Property Registration Information System Module”.

Since, it is practically challenging to encompass all these services under the purview of a single study. Therefore, e-District initiative has been the sole subject of the present study because:

Data collection

Structured questionnaire has been used as a tool to collect the data from respondents. The data was collected from the respondents of Punjab state who have experienced of using e-district services by visiting suwidha/sewa centers where potential e-government users are likely to appear for their physical verification. For final data analysis, 521 questionnaires were used. The data was collected from February to April 2023 by employing

i. This is a core project that includes the basic services that each citizen uses.

ii. The most e-services are included in this project than any other, making it unique.

iii. According to etaal, a platform for e-transaction statistics, this statistics was among the top five Mission Mode Projects in the previous year.

the non-probability purposive sampling technique since the research design is descriptive in nature. The study determined determine the minimum sample size requirements through G*Power software (Faul *et al.*, 2007, 2009). Response rate 281 was achieved with a power of 0.95; however, the final analysis was conducted with 521 respondents. All the constructs of the study have reliability values above 0.70.

Table 1: Measurement of statements factor loading

Construct	Item Code	Factor Loadings
Citizens' Satisfaction <i>Hujran et al. (2013); Li & Shang (2020)</i>	SAT1:I am satisfied with the technical features of e-district service	0.867
	SAT2:The information I received from e-district service has satisfied me	0.784
	SAT3:I am satisfied with the service quality of e-district portal	0.888
	SAT4:I am satisfied with the service(s) I used from the portal	0.861
	SAT5:I am in fact pleased with my past experience of using these service	0.897
	SAT6:E-district provides satisfied public services that meet my needs	0.865
Participation <i>Groth (2005)</i>	PART1:I will inform the service provider ,if i have a useful suggestion regarding improving the service	0.904
	PART2: I will post a comment when I got a positive experience from the service provider	0.887
	PART3: I will notify the service provider of any issue I encounter	0.877
	PART4:I will offer helpful feedback to customer service	0.891
	PART5:I will also offer information when surveyed by the service provider	0.914
Helping Behavior <i>Groth (2005)</i>	HB1: Help other users if they need my help	0.896
	HB2: Help others users if they seem to have problem(s)	0.878
	HB3: Guide others regarding proper service usage	0.880
	HB4: Give advice to other users.	0.918

Advocacy <i>Groth (2005)</i>	ADV1: Say positive things to others about e-district services	0.916
	ADV2: Recommend these services who seeks my advice	0.909
	ADV3: Motivate friends and relatives to use these services	0.918
Citizens' Trust <i>Gefen (2002)</i>	TR1: Service provider are honest with their users at time of offering services through e-district portal	0.875
	TR2: Service provider meet its commitments of offering e-services through e-district portal	0.833
	TR3: Service provider appears sincere and genuine at time of offering e-district services	0.836
	TR4: I believe that service provider would always act in my best interest	0.846
	TR5: If I need any help, service provider would do their best to help me	0.823
	TR6: Service provider are interested in citizens' well being not just their own well being	0.813
	TR7: Service provider are competent at serving their users through e-district portal	0.829
	TR8: Service provider performs a capable job at meeting citizens' needs through e-district portal	0.838
	TR9: I am very confident about the service provider skills of offering e-district services	0.857

Source: Authors' observations

Data Analysis

PLS-SEM was employed with "SmartPLS 3.2.8" software to look at both inner and outer models and the MGA for investigating how usage frequency affects the relationship between citizen's satisfaction, citizen's trust, and customer citizenship behaviour. PLS-SEM was used because Hair, Sarstedt, Ringle, and Gudergan (2017) found that non-parametric SEM works better for MGA. Before the MGA, however, measurement invariance needs to be proved. To do this, the measurement invariance for composite (MICOM) method was used (Md Noor et al., 2019).

Results

Demographic profile of respondents

From 521 respondents, 65 % were male while 35 % were female. In terms of age distribution, 30 % of

respondents were between 21 to 30 years old, and another 30 % were between 31 and 40 years old. Both these groups constitute the largest portions of the sample, followed by those under 20 years old at 22 percent. Regarding occupation, 27 percent identified as businessmen or self-employed, 24 percent were from the service sector, 7 percent were retired, and 6 percent were students. The demographic analyses revealed that men used more e-government services as compared to women.

Common Method Biasness

Due to the fact that the data being evaluated is self-reported, the CMB must be examined before continuing the analysis. The present study examines the common method bias through VIF technique. According to Kock (2015), the VIF values should be 3.3 or less. Table 2 showed that the

inner VIF values were below the recommended value of 3.3, suggesting that model is not subject to common method biases.

Measurement model

The measurement model evaluation includes the indicator reliability, internal reliability, convergent, and discriminant validity (Hair *et al.*, 2022). As mentioned in Table 1, the factor loading for each item was within the acceptable range i.e. above 0.70. Additionally, the internal consistency reliability of the constructs, were determined through Cronbach's alpha, rho A, and Composite reliabil-

ity, which need to be 0.70 or higher (Hair *et al.*, 2019). As mentioned in Table 2, all indicators have reliability values that were within an acceptable range. Convergent validity was assessed through AVE. According to Table 3, all the constructs had AVEs over 0.50. After that the Fornell and Larcker (1981) criterion is used to assess the discriminant validity which ensures that latent variables in a model are distinct from each other. The correlations for each construct as shown in Table 2 are lower than the square root of AVE for the indicators assessing that construct, indicating adequate discriminant validity.

Table 2: Cronbach's Alpha, Composite reliability and AVE

Construct	VIF	CA	CR (rho_a)	CR (rho_c)	AVE
Citizens' Satisfaction	1.839	0.912	0.916	0.934	0.740
Citizens' Trust	3.251	0.947	0.948	0.955	0.704
Participation	1.541	0.938	0.938	0.952	0.836
Helping Behavior	1.349	0.915	0.916	0.940	0.798
Advocacy	1.870	0.902	0.902	0.939	0.836

Source: Author's Calculations

satisfaction and citizen's trust.

Structural Model

The examination of path model begins by determining the coefficient of determination (R^2) for each endogenous latent variable. The value for advocacy is 0.710, 0.648 for helping behavior and 0.683 for participation. The value can be interpreted as 71.0%, 64.8% and 68.3% of variance in advocacy, helping behavior and participation is explained by independent variables like citizens'

The subsequent step is the hypotheses testing through bootstrapping with 521 cases and 5,000 samples. As shown in Table 3, citizens trust is having a significant positive impact on advocacy, on helping behavior and on participation. However, citizens' satisfaction is not having any significant impact on advocacy (p-value 0.259), on helping behavior (p-value 0.136) and on participation (p-value of 0.127) thereby rejecting H1a,

Table 3: Results of Hypothesized Direct Effects

Hypothesis	Hypothesized Paths	β	p-value	Results
H 1a	SAT→ADV	0.055	0.259	Not Supported
H 1b	SAT→HB	0.076	0.136	Not Supported
H 1c	SAT→PART	0.080	0.127	Not Supported
H 2a	TR→ADV	0.514	0.000***	Supported
H 2b	TR→HB	0.533	0.000***	Supported
H 2c	TR→PART	0.548	0.001**	Supported

Source: Author's Calculations

Moderating effect of usage frequency

Subsequently, the moderating effect of usage frequency among citizen satisfaction, citizen trust and dimensions of CCB was examined through PLS-MGA. However before applying PLS-MGA, it is essential to establish measurement invariance of composites. Thus, MICOM has been applied separately for four different groups, i.e., “at least once per month”, “at least once per 3 months”, “at least once per 6 months” and “at least once per year”. Table 4, reveal that the full measurement invariance was said to be established for all the constructs across the groups. Hence, the study moves towards the application of PLS-MGA test (Henseler et al., 2016). The findings of

multigroup analysis revealed non-significant p-value differences for most of the relationships across the four groups, except for *Citizen Satisfaction* and *Customer Citizenship Behaviour* relation under the group *once per 3 months* vs. *once per 6 months*. Hence, the result supports the hypothesis 3 (d). Similarly, multigroup analysis revealed significant p-value differences for most of the relationships between *Citizen Trust* and *Customer Citizenship Behaviour* under the group *once per months* vs. *once per 6 months*, *once per months* vs. *once per year* and *once per 3 months* vs. *once per 6 months*. Hence, the results supported the hypotheses 4 (b), 4 (c) and 4 (d), as illustrated in the summarised Table 5.

Table 4: Results of MICOM Analysis

Group s	Constr ucts	Configural Invariance	Compositional Invariance		Partial measure ment Invarian ce Establis hed	Equal Mean Assessment			Equal Variance Assessment			Full measu rement Invari ance establi shed
			C=I	Confidence Interval		Differ ences	Confidence Interval	Equal	Diff.	Confidence Interval	Equal	
(GA vs GB)	ADV	Yes	1.000	(1.000; 1.000)	Yes	0.053	(-0.291;0.295)	Yes	-0.081	(-1.135;0.747)	Yes	Yes
	HB	Yes	1.000	(0.999; 1.000)	Yes	0.003	(-0.316;0.300)	Yes	-0.049	(-1.032;0.723)	Yes	Yes
	PART	Yes	1.000	(1.000; 1.000)	Yes	-0.096	(-0.292;0.292)	Yes	0.060	(-1.182;0.802)	Yes	Yes
(GA vs GC)	ADV	Yes	1.000	(1.000; 1.000)	Yes	0.023	(-0.285; 0.310)	Yes	0.120	(-0.178;0.707)	Yes	Yes
	HB	Yes	1.000	(0.999; 1.000)	Yes	0.020	(-0.289; 0.301)	Yes	-0.018	(-1.245; 0.706)	Yes	Yes

(GA vs GD)	ADV	Yes	1.000	(0.999; 1.000)	Yes	0.222	(-0.308; 0.312)	Yes	0.401	(-1.409; 1.035)	Yes	Yes
	HB	Yes	0.999	(0.998; 1.000)	Yes	0.150	(-0.330; 0.323)	Yes	0.405	(-1.351; 1.031)	Yes	Yes
	PART	Yes	1.000	(0.998; 1.000)	Yes	0.172	(-0.309; 0.334)	Yes	0.741	(-1.379; 1.097)	Yes	Yes
(GA vs GE)	ADV	Yes	1.000	(1.000; 1.000)	Yes	-0.010	(-0.396; 0.358)	Yes	0.223	(-1.030; 0.978)	Yes	Yes
	HB	Yes	1.000	(0.999; 1.000)	Yes	-0.063	(-0.383; 0.362)	Yes	-0.321	(-1.037; 1.006)	Yes	Yes
	PART	Yes	1.000	(1.000; 1.000)	Yes	-0.136	(-0.391; 0.348)	Yes	-0.350	(-1.055; 1.111)	Yes	Yes
	ADV	Yes	1.000	(1.000; 1.000)	Yes	0.152	(-0.255; 0.250)	Yes	0.478	(-0.791; 0.946)	Yes	Yes

Table 5: Results of hypothesis testing

Comparison	Relationship	PLS – MGA (β Diff)	p-values	Parametric test (T values)	p-values	Supported
At least once per month vs. At least once per 3 months (GA-GB)	SAT \rightarrow ADV	0.408	0.000	2.033	0.043	Yes
	SAT \rightarrow HB	-0.176	0.191	0.628	0.218	No
	SAT \rightarrow PART	0.509	0.038	2.358	0.019	Yes
	TR \rightarrow ADV	-0.432	0.172	1.477	0.142	No
	TR \rightarrow HB	-0.206	0.610	0.570	0.569	No
	TR \rightarrow PART	-0.326	0.426	0.927	0.356	No

At least once per month vs. At least once per 6 months (GA-GC)	SAT → ADV	0.159	0.005	2.662	0.008	Yes
	SAT → HB	0.053	0.330	0.378	0.346	No
	SAT → PART	0.570	0.048	2.219	0.027	Yes
	TR → ADV	-0.732	0.008	3.149	0.002	Yes
	TR → HB	-0.722	0.020	3.026	0.003	Yes
	TR → PART	-0.475	0.001	3.637	0.000	Yes
At least once per month vs. At least once per year (GA-GD)	SAT → ADV	0.155	0.006	2.434	0.020	Yes
	SAT → HB	0.091	0.311	0.766	0.330	No
	SAT → PART	0.632	0.000	4.831	0.002	Yes
	TR → ADV	-0.342	0.000	4.409	0.013	Yes
	TR → HB	-0.249	0.022	2.142	0.033	Yes
	TR → PART	-0.235	0.027	1.972	0.050	Yes
At least once per 3 months vs. At least once 6 months (GB-GC)	SAT → ADV	0.064	0.030	2.007	0.047	Yes
	SAT → HB	0.305	0.013	2.156	0.032	Yes
	SAT → PART	0.508	0.016	2.475	0.046	Yes
	TR → ADV	0.677	0.014	3.104	0.002	Yes
	TR → HB	0.499	0.016	2.506	0.013	Yes
	TR → PART	-0.772	0.040	2.289	0.025	Yes
At least once per 3 months vs. At least once per year (GB-GD)	SAT → ADV	-0.231	0.078	1.717	0.087	No
	SAT → HB	0.264	0.183	1.655	0.100	No
	SAT → PART	-0.048	0.804	0.317	0.752	No
	TR → ADV	0.301	0.091	1.750	0.081	No
	TR → HB	0.398	0.982	0.632	0.528	No

Source: Authors' Calculation

Discussion

The present study attempts to uncover the impact of Citizens' Trust (TR), and Citizens' Satisfaction (SAT), on CCB. Additionally, the study

also investigated how frequency of usage moderates the relationship between SAT, TR, and CCB. While examining the impact of citizens' satisfaction on CCB dimensions, the results reveal that SAT does not play significantly impact on ADV,

PART and HB. This might be due to the fact that not all citizens possess the same level of willingness, confidence, or capability neither to provide constructive input to organization nor to recommend the services to others. Users may be satisfied with the e-services however, they may hesitate to allocate time or effort to promote it, provide feedback or helping others unless they perceive significant personal benefits or incentives to do so. Moreover, citizenship behaviors, on the other hand, may not be directly motivated by satisfaction alone; they can be influenced by other factors such as perceived value, trust, or social norms etc. In addition, citizenship behaviors typically require a stronger relationship and ongoing engagement with the organization. However, citizens may be satisfied with a particular transaction but may not feel a sense of attachment or obligation to the service provider beyond that specific interaction which is essential for exhibiting CCB.

The present study found a significant impact of citizens' trust on CCB. Trust has been viewed as a vital factor in encouraging citizens' participation, WOM (Chiou et al., 2002) and helping others (Dang et al., 2020). Trust fosters a sense of reciprocity between the service provider of digital services and its users. Users who found the attributes of integrity, benevolence, and competence among their service providers feel a sense of obligation to reciprocate by exhibiting citizenship behaviors. A plausible explanation is that users of e-public services exhibit citizenship behaviors, such as offering feedback, recommending service to others, when they believe the service provider acting in their best interests. Also, users who perceived that a service provider genuinely concerned about their needs and interests demonstrate citizenship behaviors as a mean of reciprocating that care. They feel a sense of obligation to support a benevolent service provider through actions such as providing positive feedback, helping others, or advocating for the services. Moreover, competence instills a sense of assurance and reduces perceived risk, which again encourages users to engage in citizenship

behaviors as a way of supporting and promoting the service provider.

Despite the literature suggest that frequency of usage is pivotal for various industries. However, there is a dearth of research that considers usage frequency as a moderating factor in demonstrating consumer citizenship behaviour. However, in the present study citizens' trust and citizens' satisfaction with e-government services are hypothesised to have a moderating effect on the customer citizenship dimensions. The study found the majority of moderating impact between citizens' satisfaction and citizens' trust on customer citizenship behaviour dimensions for group 1 (once per month). This suggest that citizens interact more frequently with e-government services, their satisfaction level and their trust in the system become more influential factors in shaping their behavior as "customers" or "users" of those services. User' experience with e-services, vary over time, rather than adherence to uniform pattern. This could mean that frequent users are more attuned to the benefits of e-government and which can inspire them actively participate in citizenship behaviors. This may be due to the fact that frequent users are mostly familiar with the services thus develop a sort of "autopilot" mode for complete the tasks. Thus, frequent users of e-government websites are more focused on accomplishing specific tasks efficiently, while infrequent users may approach transactions with more cognitive effort, because they are less familiar with the interface or the processes involved.

Conclusion

Now days, government is offering different types of online services to their citizens, understanding the role of customer citizenship behavior (CCB) is very important aspect of e-Government research. CCB is such an approach that assists the government policy makers to better form and implements policies to offer the e-Government services that fit characteristics of customers. Customer citizenship behaviour could help the government to attract the new customers through positive word of mouth. It also helps in resolving users' problems.

Moreover, citizens are also feeling motivated to interact with the government if they believe their feedback and participation are valued by the government. Thus, the government must participate in activities that improve citizen behaviour.

The study demonstrates the impact of citizen's satisfaction and citizen's trust as an antecedent on CCB. The study also explored the moderating role of usage frequency. Among these antecedents citizen's trust encourage citizens to demonstrate these behaviors. The findings support the strategies that foster citizen trust due to its positive effect on CCB. Therefore, e-government policy makers must influence this antecedent to induce CCB. In other words, it is necessary for them to invest in building citizen trust. Thus, by developing trustworthiness e-services, policy makers can influence their citizens in a positive way as the current analysis demonstrates. Improving overall ability and paying attention to benevolence and integrity motivates the citizens to actively participate in CCB. In addition, we demonstrated empirically that those citizens who interact more frequently with e-government services, their satisfaction level and their trust in the system become more influential factors in shaping their citizenship behavior. It is even, acts as a reinforcing moderator between citizen's satisfaction and customer citizenship behaviour that does not have any direct relationship.

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