Towards Creating an Ecosystem of Paperless Society: Unveiling Issues and Challenges in Adoption of DigiLocker

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ABSTRACT

DigiLocker, a free document storage and sharing cloud-based platform, is an e-governance project of the Indian government under its Digital India initiative. Though the government has been working to make this initiative successful, a considerable portion of the population is unaware of the service. The few aware of this initiative have yet to opt for a DigiLocker. The present study attempts to identify the issues and challenges that affect the adoption and use of these services designed to create a paperless society. The proposed framework of the study is based on the theoretical underpinning of the Technology Adoption Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Unified Model of Electronic Government Adoption (UMEGA). The study analysed the data using PLS-SEM, including the moderation impact of select variables. The study identifies various factors that act as motivators and deterrents in adopting and using DigiLocker and provides strong empirical support to frame suitable strategic interventions to sensitize people to improve further usage and adoption.

Keywords: *DigiLocker, technology adoption, e-governance, PLS-SEM*

INTRODUCTION

The Digital India Programme of the Government of India envisions making India a digitally empowered society and knowledge economy with an emphasis on digital empowerment of citizens by improving e-governance, services-on-demand, and digital infrastructure. Sustained efforts are being made to create collaborative linkages on various citizen-centric projects to transform the traditional service delivery process into a seamlessly integrated process that is available on a real-time basis to all citizens in a transparent, convenient, and secure manner. Over the years, various State and Central Government initiatives have been undertaken to navigate into an era of e-governance. Persistent efforts have been made at government and grassroots levels to improve public service delivery and simplify access to it.

The revolution of information technology has penetrated almost all domains. The increasing use of cloud platforms has provided individuals with ease of access. DigiLocker is one such scheme launched by the government of India, which provides free 1 GB cloud storage to store documents in digital form for the citizens of India. This initiative is a part of the government's Digital India initiative. Documents such as PAN cards, Passports, driving licenses, etc, can be stored in DigiLocker and carried easily by individuals. Therefore, such an initiative by the government of India has provided ease to storing all such documents in the digital locker, which is a cloud-based space for keeping documents in digital form. This initiative is widespread through newspapers and electronic media. The Central Board of Secondary Education has opened 80 lakh digital

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lockers for the students of 10th and 12th class. However, only 2,06,57,736 registered users and 116 issuer organizations of DigiLocker exist to date. Maharashtra has the highest number of registered users of DigiLocker, whereas Delhi ranks 11th, with only 2,73,658 registered users. States like Sikkim, Mizoram and Chhattisgarh have the lowest registrations to date. Therefore, there is a need to study the reasons for not adopting a free service which ensures the safe storage of documents. The present study is therefore aimed to understand the level of awareness of individuals for DigiLocker and to explore the various factors which affect the technology adoption process.

2. Objectives of the study

- To identify the motivators and inhibitors of low adoption and usage of DigiLocker.
- To analyse the impact of social, demographic, economic and geographic variation in the adoption of DigiLocker.
- To propose an empirical, evidence-based strategic framework to improve the adoption and usage of DigiLocker.
- To suggest a few measures to policymakers for widespread awareness of DigiLocker.

3. Literature Review

User Acceptance of Information Technology (UAIT) is a prerequisite for effectively implementing any information technology-based project (AlAwadhi et al., A., 2008). UAIT is the "initial decision made by the individual to interact with the technology" (Venkatesh et al., 2004).

UAIT is followed by adoption, defined as the "direct experience with the technology after an individual has decided to accept it" (Venkatesh et al., 2004).

Most of the research in the information technology acceptance field spans around the path-breaking work of Davis (1989). He proposed the TAM, the most popular model for explaining the intention and behaviour of individuals for technology acceptance. TAM theorizes that two precursors form behavioural intention: perceived usefulness and ease of use (Venkatesh & Davis, 2000). Perceived usefulness is defined as the extent to which a user perceives that technology adoption will enhance his/her performance. On the other hand, perceived ease of use revolves around minimizing efforts for using a technology. It was also proposed that perceived ease of use affects perceived usefulness since the easier a technology is, the more useful it can be (Venkatesh, 2000). The model was parsimonious and has been applied in several studies over the last three decades. It has been used to study faculty members' intention to use learning management systems (LMS) (Fathema et al., 2015), consumer acceptance of e-commerce "" and acceptance of E-learning in developing countries (Tarhini et al., 2017).

Another model that is significant in understanding technology adoption was given by Venkatesh, Morris, Davis, and Davis (2003), named the UTAUT model. It consists of four variables: effort expectancy, performance expectancy, social influence and facilitating conditions. It also captures the moderating influence of gender, age, experience, and voluntariness of use (Im et al., 2011). The UTAUT model rationalises that effort expectancy is significant in users' adoption of information technology. The model explains the 70 per cent variance, which is much higher than TAM. This model is said to be more synthesized and complete since it has merged eight different models discussed in information system literature. These models (TRA, TAM, TPB, the Motivational Model (MM) (Davis et al., 1992), the combined TAM and TPB (C-TAM-TPB) (Taylor et al., 1995), the Model of PC Utilization (MPCU) (Thompson et al., 1991) DOI and Social Cognitive Theory (SCT)) had their origins in sociology and psychology. UTAUT explains how acceptance of information technology differs across various individuals. The moderators used in the model also emphasize the differences in intention to use technology in terms of different age groups and gender.

Though digital services are provided in various countries, there are challenges in usage and adoption. Developing countries, particularly, face a lack of infrastructure, awareness and technical skills required to

adopt ICT (Sivathanu, 2018). The DigiLocker initiative results from cloud computing technology (Khandekar & Devadiga, 2016); it enables the virtual storage of various pictures and documents. This initiative is under the Digital India government scheme. It has helped to provide a digital space wherein citizens of India can store documents issued by the government and other public authorities. A top priority project of the Hon. Narendra Modi Administration, the completed Digital India initiative has specific plans aimed at restructuring the National Informatics Centre. (Petare et al., 2015).

3.1. Conceptual Model

Figure 1 below provides the proposed relationships among the dependent and independent variables. It also shows the moderating variables which have been tested for their contingent effect on the relationships among the constructs. Each relationship (arrow) in the conceptual model represents a hypothesis tested using PLS-SEM.

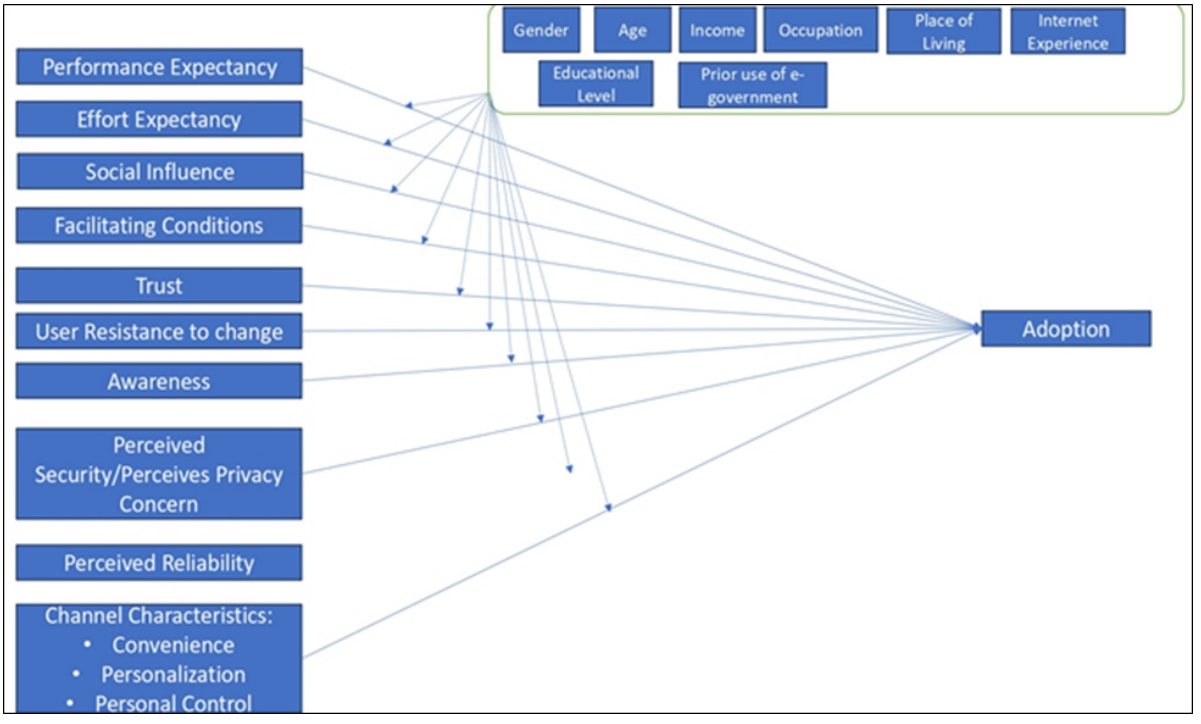

Figure 1 : Conceptual Model

4. Research Methodology

The target population for our study included Indian citizens residing within the country, aged 15 and above, who regularly used essential IT-enabled services. A Google survey form was administered across various social media platforms to collect data to ensure broad distribution and reach within the target audience. The study employs a cross-sectional descriptive research design. We have captured data at a specific time, providing a snapshot of the population's perceptions and behaviours.

This study utilised a non-probability convenience sampling technique to reach respondents easily accessible to the researchers, resulting in a final sample size of 145 participants. We analysed data using Partial Least Squares-Structural Equation Modelling (PLS-SEM), a method suitable for complex analyses with relatively smaller minor samples. Smart-PLS 4 software was employed for analysis, enabling the research team to interpret relationships and draw meaningful insights from the collected data.

5. Data Analysis

5.1. Measurement Instrument

Items were taken from extant research to maintain the validity of the content of the model. These items were modified to adopt the context of the adoption of DigiLocker. The table below displays the constructed items as well as their sources.

Table 1: Construct Items

S. No.	Factors	Citation
1.	Performance Expectancy	(AlHadid et al., 2021) (Sharma et al., 2018)
2.	Effort Expectancy	(AlHadid et al., 2021) (Sharma et al., 2018)
3.	Social Influence	(Ahmad & Khalid, 2017) (AlHadid et al., 2021) (Sharma et al., 2018)
4.	Facilitating Conditions	(AlHadid et al., 2021) (Sharma et al., 2018)
5.	Trust	(Shahzad et al., 2020) (Ahmad & Khalid, 2017) (Venkatesh et al., 2016) (Sharma et al., 2018)
6.	User Resistance to change	(Talukdar et al., 2020)
7.	Perceived Awareness	(Shareef et al., 2010) (Shahzad et al., 2020)
8.	Perceived Security	(Shareef et al., 2010)
9.	Perceived Reliability	(Shahzad et al., 2020)
10.	Channel Characteristics	
	Convenience	(Shahzad et al., 2020) (Venkatesh et al., 2016)
	Personalization Personal/Active Control	(Shahzad et al., 2020) (Venkatesh et al., 2016) (Chen et al., 2016)
11.	Prior use of e-government services	(Hou et al., 2019)
	Intention to use	(Shahzad et al., 2020)

5.2. Model assessment in Smart PLS 4

Each item's construct reliability and validity were assessed to test the measurement model. Cronbach's α, Composite Reliability (CR) and Average Variance Extracted (AVE) were computed to assess the reliability and convergent validity **(Table 2)**. We calculated the Variance Inflation Factor (VIF) to check the multicollinearity between variables. The threshold limit of Cronbach's α is 0 to 1, and values above 0.7 suggest an acceptable level of reliability. In our study, Cronbach's α varies from 0.879 to 0.962, under the threshold limit. The threshold limit of composite reliability is that the value should be greater than 0.7.

In our study, Composite Reliability varies from 0.919 to 0.969, which is under the threshold limit. We computed the AVE test to assess the convergent validity. The threshold limit for AVE is that the value should be greater than 0.5. In our study, AVE ranges from 0.714 to 0.887, under the threshold limit.

The study assessed the multi-collinearity among the constructs in the model using VIF. Many research frameworks based on OLS Regression observe multi-collinearity among two or more constructs demonstrating a linear relationship. In such cases, the values of different path coefficients may be consistent. However, the results may not be robust and reliable due to high VIF values, which indicate high muti-collinearity. A VIF value above 4 is acceptable and an indicator of low multi-collinearity. The study found the VIF values in all the relationships as per the thumb rule i,e. < 4 permitting to proceed further with the analysis.

Our study's VIF values range from 1 to 8.919, indicating varying degrees of multicollinearity between variables. In our study, some values are greater than 5 because the sample size we chose is small, and the variables are homogeneous. Several variables demonstrate high levels of multicollinearity, with PE2 showing the highest VIF at 8.919, followed closely by T5 at 7.987, PE1 at 7.7, T6 at 7.148, FC1 at 7.021, and EE4 at 7.548. A moderate level of correlation is present in several variables, including CC1, CC2, and CC3 (all around 6), A2 (5.381), PE3 (6.855), SI5 (6.034), FC2 (6.211), and T4 (5.411). All interaction terms of construct factors with daily internet usage and education level show VIF values 1, indicating no multicollinearity issues in these relationships and no correlation.

We computed the Heterotrait-Monotrait (HTMT) ratio to assess the discriminant validity. The threshold limit for the HTMT ratio is that values should be below 0.90. In our study, the HTMT values vary from 0.007 to 0.938 **(Table 3)**. To evaluate the model's fit and determine how well the model explains the observed data, we computed the R2 value. If R2 value is greater than 0.50, it indicates strong explanatory power. In our study, the R2 value is 0.801 **(Table 4)**.

Table 2: Composite Reliability

	Cronbach's α	CR (rho_c)	AVE
A	0.936	0.959	0.887
CC	0.948	0.957	0.714
EE	0.962	0.969	0.84
FC	0.879	0.919	0.742
PA	0.923	0.942	0.765
PE	0.949	0.96	0.799
PR	0.934	0.958	0.884
PS	0.939	0.956	0.846
SI	0.934	0.948	0.754
T	0.951	0.961	0.804
UR	0.901	0.93	0.77

Table 3: HTMT Ratios

	A	CC	Daily inter	EE	Education	FC	PA	PE	PR	PS	SI	T	UR
A													
CC	0.762												
Daily internet usage	0.057	0.113											
EE	0.763	0.862	0.112										
Education Level	0.045	0.073	0.014	0.031									
FC	0.889	0.868	0.133	0.946	0.031								
PA	0.735	0.893	0.115	0.864	0.04	0.865							
PE	0.857	0.813	0.113	0.839	0.066	0.901	0.808						
PR	0.739	0.904	0.144	0.81	0.076	0.801	0.902	0.756					
PS	0.767	0.895	0.154	0.834	0.012	0.87	0.916	0.815	0.933				
SI	0.776	0.911	0.098	0.882	0.076	0.86	0.939	0.83	0.89	0.889			
T	0.733	0.884	0.14	0.853	0.051	0.869	0.914	0.815	0.868	0.953	0.896		
UR	0.818	0.915	0.107	0.896	0.029	0.927	0.998	0.879	0.92	0.941	0.94	0.938	
Education Level x FC	0.095	0.179	0.056	0.18	0.049	0.224	0.243	0.177	0.146	0.177	0.266	0.199	0.225
Daily internet usage x PE	0.2	0.167	0.075	0.129	0.001	0.219	0.145	0.232	0.142	0.214	0.186	0.21	0.233
Daily internet usage x T	0.201	0.077	0.108	0.128	0.024	0.142	0.082	0.199	0.091	0.179	0.145	0.159	0.207
Education Level x UR	0.058	0.11	0.112	0.134	0.194	0.219	0.141	0.102	0.117	0.121	0.115	0.095	0.13
Daily internet usage x CC	0.112	0.053	0.215	0.058	0.089	0.103	0.024	0.139	0.032	0.099	0.045	0.064	0.091
Daily internet usage x PR	0.144	0.079	0.09	0.065	0.072	0.108	0.046	0.132	0.1	0.13	0.067	0.091	0.115
Education Level x EE	0.042	0.141	0.117	0.15	0.076	0.181	0.181	0.098	0.121	0.148	0.198	0.156	0.139
Education Level x T	0.046	0.078	0.025	0.164	0.093	0.209	0.146	0.067	0.07	0.129	0.128	0.122	0.102
Daily internet usage x FC	0.15	0.084	0.038	0.128	0.054	0.186	0.088	0.199	0.07	0.156	0.143	0.135	0.183
Daily internet usage x EE	0.145	0.072	0.141	0.093	0.119	0.147	0.08	0.127	0.04	0.142	0.084	0.135	0.102
Education Level x PR	0.039	0.086	0.078	0.122	0.161	0.15	0.17	0.056	0.161	0.108	0.09	0.066	0.118
Education Level x SI	0.034	0.11	0.129	0.194	0.172	0.261	0.131	0.113	0.083	0.112	0.118	0.117	0.113
Education Level x PA	0.055	0.177	0.154	0.19	0.141	0.254	0.171	0.101	0.177	0.154	0.148	0.147	0.155
Education Level x PE	0.074	0.083	0.001	0.09	0.138	0.17	0.09	0.042	0.052	0.072	0.108	0.059	0.101
Daily internet usage x UR	0.182	0.092	0.187	0.088	0.097	0.174	0.093	0.199	0.104	0.181	0.101	0.186	0.184
Daily internet usage x SI	0.182	0.075	0.165	0.078	0.125	0.145	0.037	0.171	0.066	0.16	0.124	0.143	0.111
Education Level x CC	0.027	0.071	0.112	0.15	0.079	0.189	0.187	0.076	0.095	0.088	0.122	0.063	0.123
Daily internet usage x PA	0.142	0.065	0.128	0.076	0.144	0.093	0.024	0.135	0.033	0.103	0.039	0.082	0.107
Daily internet usage x PS	0.167	0.102	0.077	0.123	0.017	0.155	0.094	0.188	0.122	0.193	0.153	0.165	0.186
Education Level x PS	0.032	0.092	0.02	0.157	0.097	0.186	0.151	0.073	0.113	0.119	0.119	0.13	0.13

	Education	Daily inter	Daily inter	Education	Daily inter	Daily inter	Education	Education	Daily inter	Daily inter	Education	Education	Education	Education	Daily inter	Daily inter	Education	Daily inter	Daily inter	Education Le
A																				
CC																				
Daily internet usage																				
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PR																				
PS																				
SI																				
T																				
UR																				
Education Level x FC																				
Daily internet usage x PE	0.013																			
Daily internet usage x T	0.061	0.805																		
Education Level x UR	0.729	0.066	0.013																	
Daily internet usage x CC	0.034	0.69	0.835	0.018																
Daily internet usage x PR	0.008	0.699	0.857	0.015	0.892															
Education Level x EE	0.866	0.013	0.026	0.778	0.057	0.002														
Education Level x T	0.71	0.02	0.021	0.842	0.015	0.035	0.76													
Daily internet usage x FC	0.079	0.835	0.825	0.004	0.743	0.756	0.078	0.063												
Daily internet usage x EE	0.082	0.754	0.759	0.013	0.797	0.755	0.09	0.027	0.801											
Education Level x PR	0.652	0.084	0.028	0.823	0.002	0.009	0.725	0.789	0	0.007										
Education Level x SI	0.624	0.018	0.002	0.849	0.017	0.025	0.74	0.803	0.08	0.065	0.81									
Education Level x PA	0.644	0.03	0.029	0.884	0.017	0.018	0.743	0.789	0.024	0.044	0.799	0.867								
Education Level x PE	0.778	0.041	0.012	0.783	0.049	0.074	0.758	0.753	0.018	0.017	0.696	0.705	0.697							
Daily internet usage x UR	0.006	0.781	0.855	0.027	0.876	0.892	0.011	0.014	0.8	0.816	0.017	0.042	0.047	0.052						
Daily internet usage x SI	0.074	0.743	0.854	0.043	0.915	0.894	0.057	0.01	0.766	0.849	0.029	0.022	0.056	0.019	0.907					
Education Level x CC	0.716	0.067	0.013	0.797	0.066	0.005	0.795	0.849	0.045	0.075	0.852	0.801	0.78	0.719	0.02	0.017				
Daily internet usage x PA	0.022	0.693	0.853	0.051	0.893	0.892	0.04	0.031	0.765	0.783	0.022	0.059	0.066	0.023	0.892	0.904	0.021			
Daily internet usage x PS	0.018	0.784	0.907	0.004	0.858	0.912	0.036	0.003	0.824	0.741	0.014	0.016	0.011	0.059	0.896	0.867	0.001	0.876		
Education Level x PS	0.729	0.082	0.004	0.808	0.006	0.025	0.746	0.861	0.019	0.04	0.843	0.779	0.787	0.746	0.008	0.009	0.836	0.009	0.059	

αTable 4: R-Squared Values

	R-square
A	0.801

1.1. Hypothesis testing

To check the significant relationship between variables, we run bootstrapping with 5000 samples. We look at the path coefficient (i.e. P- value) to check for a significant relation between variables. To have a significant relation between values, the p-value should be less than 0.005.

This is illustrated in **Table 5** and **Figure 2**; findings suggest that significant factors help in the Adoption of DigiLocker. We opt for education level and daily internet usage as a key moderator influencing the adoption of DigiLocker.

From the findings, we discovered that effort expectancy, facilitating conditions and performance expectancy significantly impact the adoption of DigiLocker. EE -> A (p value 0.019), **FC -> A** (p value 0) and **PE -> A** (p value 0.003). Furthermore, we also discovered that education level and daily internet usage have not moderately influenced the adoption of DigiLocker.

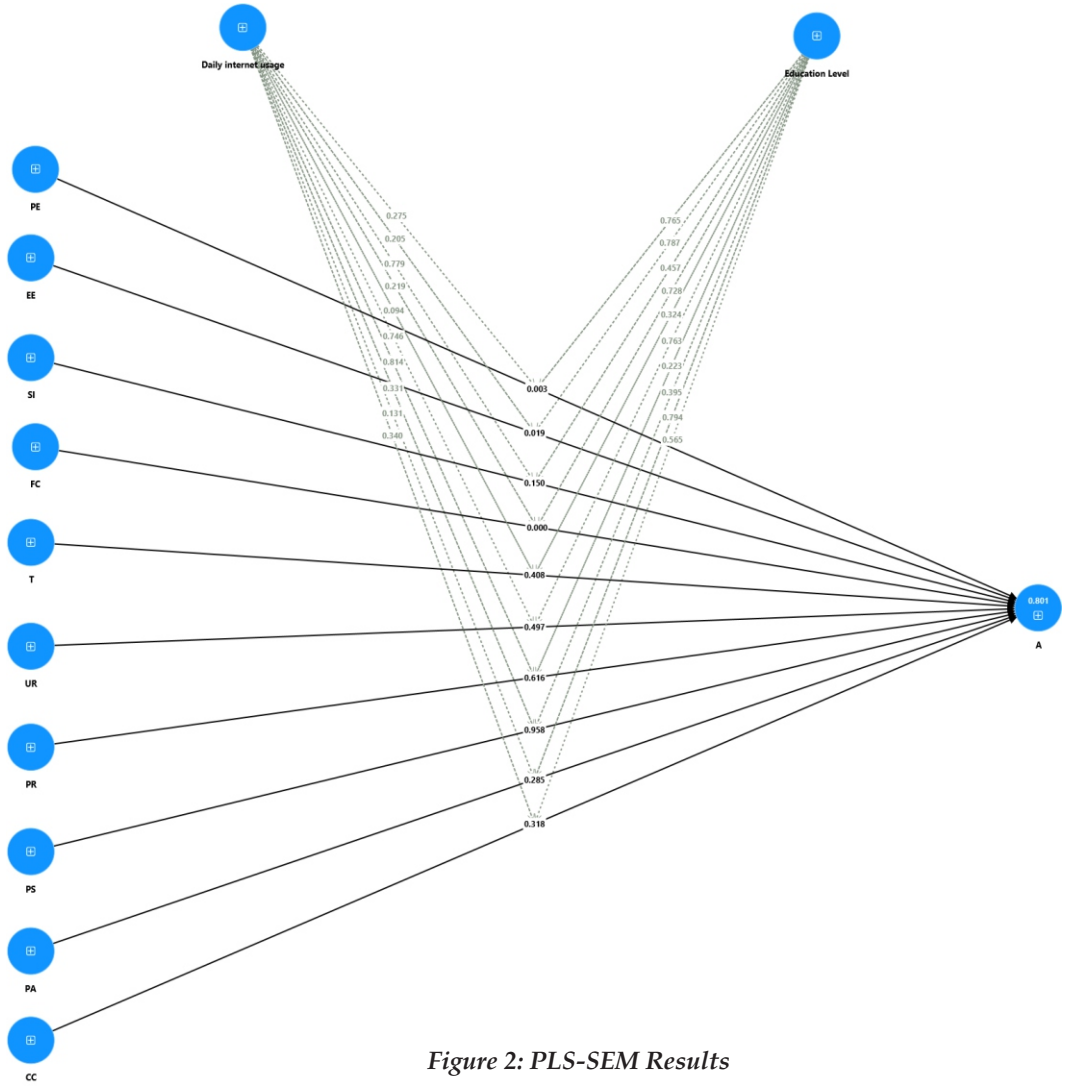

Figure 2: PLS-SEM Results

Table 5: Structural model outcomes

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
CC -> A	0.148	0.133	0.149	0.999	0.318
Daily internet usage -> A	-0.048	-0.045	0.061	0.776	0.438
EE -> A	-0.308	-0.3	0.131	2.355	0.019
Education Level -> A	-0.027	-0.024	0.068	0.399	0.69
FC -> A	0.594	0.606	0.133	4.478	0
PA -> A	-0.177	-0.188	0.165	1.07	0.285
PE -> A	0.376	0.373	0.126	2.989	0.003
PR -> A	0.093	0.092	0.185	0.502	0.616
PS -> A	0.01	0.011	0.187	0.052	0.958
SI -> A	0.245	0.255	0.17	1.441	0.15
T -> A	-0.135	-0.116	0.163	0.827	0.408
UR -> A	0.124	0.1	0.183	0.679	0.497
Education Level x FC -> A	0.051	0.03	0.146	0.348	0.728
Daily Internet usage x PE -> A	0.141	0.125	0.129	1.092	0.275
Daily Internet usage x T -> A	-0.307	-0.288	0.184	1.674	0.094
Education Level x UR -> A	0.056	0.103	0.186	0.302	0.763
Daily Internet usage x CC -> A	0.16	0.167	0.168	0.955	0.34
Daily Internet usage x PR -> A	-0.05	-0.035	0.213	0.236	0.814
Education Level x EE -> A	0.038	0.03	0.141	0.27	0.787
Education Level x T -> A	-0.192	-0.145	0.195	0.986	0.324
Daily Internet usage x FC -> A	0.171	0.132	0.139	1.229	0.219
Daily Internet usage x EE -> A	-0.169	-0.142	0.134	1.266	0.205
Education Level x PR -> A	-0.211	-0.233	0.173	1.219	0.223
Education Level x SI -> A	0.101	0.136	0.136	0.743	0.457
Education Level x PA -> A	0.045	-0.015	0.172	0.261	0.794
Education Level x PE -> A	-0.033	-0.033	0.11	0.299	0.765
Daily internet usage x UR -> A	0.057	0.053	0.175	0.324	0.746
Daily internet usage x SI -> A	-0.064	-0.035	0.228	0.281	0.779
Education Level x CC -> A	0.088	0.075	0.153	0.576	0.565
Daily internet usage x PA -> A	-0.259	-0.271	0.171	1.511	0.131
Daily internet usage x PS -> A	0.245	0.215	0.252	0.972	0.331
Education Level x PS -> A	0.194	0.187	0.228	0.85	0.395
a					

6. Managerial Implications

The study is highly relevant for policymakers since the initiative for DigiLocker is based on having more paperless transactions. However, the response to DigiLocker so far is lukewarm. Therefore, all stakeholders in this project must understand the problems individual citizens face while adopting this application, their threats and challenges. The study's findings provide input to policymakers for designing awareness campaigns to spread this initiative to various parts of the country. They also put forward the factors that affect the technology adoption process in a developing country like India. A study of such magnitude is highly relevant for society because it will serve as a barometer to understand the underlying reasons for non-acceptance of a technology-based platform despite being offered free of cost. The present study has also proposed a practical framework to harness the utility of DigiLocker. Hence, in the long run, such findings will help to create better policies for the masses in terms of improvement in IT infrastructure and other vital areas.

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BIBLIOGRAPHY:

- *AlAwadhi, S., & Morris, A. (2008, January). The use of the UTAUT model in the adoption of e-government services in Kuwait. In Proceedings of the 41st annual Hawaii International Conference on System Sciences (HICSS 2008) (pp. 219-219). Ieee.*
- *Ahmad, S. Z., & Khalid, K. (2017). The adoption of M-government services from the user's perspectives: Empirical evidence from the United Arab Emirates. International Journal of Information Management, 37(5), 367–379.*
- *AlHadid, I., Abu-Taieh, E., Alkhawaldeh, R. S., Khwaldeh, S., Masa'deh, R., Kaabneh, K., & Alrowwad, A. (2022). Predictors for E-Government Adoption of SANAD App Services Integrating UTAUT, TPB, TAM, Trust, and Perceived Risk. International Journal of Environmental Research and Public Health, 19(14), 8281.*
- *Anon. 2003. "Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model." International Journal of Electronic Commerce 7(3):101–34.*
- *Chen, Z.-J., Vogel, D., & Wang, Z.-H. (2016). How to satisfy citizens? Using mobile government to reengineer fair government processes. Decision Support Systems, 82, 47–57. https://doi.org/10.1016/j.dss.2015.11.005*
- *Davis, F. D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. MIS Quarterly, 13(3), 319–340.*
- *Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace 1. Journal of applied social psychology, 22(14), 1111-1132.*
- *Fathema, N., Shannon, D., & Ross, M. (2015). Expanding the Technology Acceptance Model (TAM) to examine faculty use of Learning Management Systems (LMSs) in higher education institutions. Journal of Online Learning & Teaching, 11(2).*
- *Hou, J. (Jove), Arpan, L., Wu, Y., Feiock, R., Ozguven, E., & Arghandeh, R. (2020). The Road toward Smart Cities: A Study of Citizens' Acceptance of Mobile Applications for City Services. Energies, 13(10), 2496*
- *Im, I., Hong, S., & Kang, M. S. (2011). An international comparison of technology adoption: Testing the UTAUT model. Information & management, 48(1), 1-8.*
- *Khandekar, C., & Devadiga, N. (2016). VoteItRight: Digital Empowerment of Citizens. International Journal of Computer Applications, 154(5).*
- *Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. International journal of electronic commerce, 7(3), 101-134.*
- *Sivathanu, B. (2018). An Empirical Study of Cloud-Based E-Governance Services Adoption in India. International Journal of Electronic Government Research (IJEGR), 14(1), 86-107.*
- *Shareef, M. A., Kumar, V., Kumar, U., & Dwivedi, Y. K. (2011). e-Government Adoption Model (GAM): Differing service maturity levels. Government Information Quarterly, 28(1), 17–35.*
- *Sharma, S. K., Al-Badi, A., Rana, N. P., & Al-Azizi, L. (2018). Mobile applications in government services (mG-App) from user's perspectives: A predictive modelling approach. Government Information Quarterly, 35(4), 557–568.*

- *Petare, P., Mohite, P., & Joshi, M. (2015). DigiLocker (Digital Locker-Ambitious Aspect of Digital India Programme.). Ge-International Journal Of Management Research, 3, 2321-1709.*
- *Tarhini, A., Hone, K., Liu, X., & Tarhini, T. (2017). Examining the moderating effect of individual-level cultural values on users' acceptance of E-learning in developing countries: a structural equation modelling of an extended technology acceptance model. Interactive Learning Environments, 25(3), 306-328.*
- *Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. Information systems research, 6(2), 144-176.*
- *Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal computing: toward a conceptual model of utilization. MIS quarterly, 125-143.*
- *Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. Information systems research, 11(4), 342-365.*
- *Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management science, 46(2), 186-204.*
- *Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS quarterly, 425-478.*
- *Venkatesh, V., Morris, M. G., Sykes, T. A., & Ackerman, P. L. (2004). Individual reactions to new technologies in the workplace: The role of gender as a psychological construct. Journal of Applied Social Psychology, 34(3), 445-467.*