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Assessing The Adoption Of E-Governance Services Of Local Bodies - An Empirical Study

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Abstract

This paper aims to know factors influencing the adoption of e-governance services. The study conducted based on qualitative data collected from the users of e-governance services by using a questionnaire. The study identified that trust and perceived risk are primarily concerned with the adoption of e-governance services. The findings can also provide useful recommendations for the development of practice and policymaking. Policymakers can improve strategic e-Government planning and development through trust, perceived risk, perceived ease of use, perceived usefulness, relative advantage, and intention to use the six factors that influence intention to use e-government services. So, the exchequers should focus on practical and operational issues in e-governance services for improving the efficiency of services.

Keywords: *E-governance, Citizens' Perceptions, Citizens' Satisfaction, Information, and Communication.*

Introduction

The advent of Information and Communication Technology (ICT) has provided means for faster and better communication, efficient storage and data processing and exchange. ICT provides benefits to individuals, groups, businesses, organizations or governments. It can be used to create and deliver services that are suitable for effective influence on businesses and citizens *(Godse, 2007)*. ICT is an integral part of government operations and service delivery. It is increasingly used as a strategic tool to more efficiently support any Government's priorities and programme delivery. To have a successful e-Government, the ICT solutions, which are at the very core of the e-Government infrastructure, have to be reachable by all citizens *(Reffat, 2006; Sumathy & Shaneeb, 2018)*.

The adoption of the electronic medium to enable an efficient, speedy and transparent process of spreading information to the public and other agencies, and for performing government administration activities *(Misuraca,2006; Sumathy, et al)*. e-Governance is a political issue and includes the implementation of decisions, proper leadership, public sector reforms, reforming the democratic processes; changing management and structure to provide better services to the public *(Schware & Dane, 2003; Vrana, et al 2007; Kachnowski, 2004)*. This change from passive information-giving to active citizen involvement in the decision-making process may lead to the provision of quality services to citizens, may decrease corruption, improve decentralization, accountability, and transparency, and greater public confidence in the policymaking process *(IRDC, 2009; Norris, 2009)*.

The introduction of e-Government systems and their adoption by citizens are not only technical issues, but also social ones, and many factors are involved. However, governments' investment in electronic services is usually based on their understanding of what citizens, businesses and employees, and customers of Government need and without measuring what increases their willingness to adopt e-Government services *(Luo, 2013*; *Sumathy, 2018)*. For successful implementation of e-Government, governments need to define priorities within the framework of their national goals, vision, and strategic objectives, understand the variables that influence citizens' adoption of e-Government services and consider them when delivering services online *(Al-Shafi, S. & Weerakkody, 2012)*. The facility of e-Government services is customer-driven and governments should take into consideration customers' internal and external needs, attitudes and requirements for

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developing implementation strategies for e-Government services. Security issues, trust issues, risks are the crucial factors influencing the adoption of e-government services *(Sang, et al, 2009; Venkatesh, 2008; Davis, 1980)*. With this background, the present study has been focused on the adoption of e-governance services of local bodies.

Methodology

An empirical research study was conducted to know factors influencing the adoption of e-governance services. In this regard, a survey conducted using a questionnaire. Both primary and secondary sources of data are used. The questionnaire used in this study was adopted from previous studies. Five-point Likert scales were used, ranging from strongly disagree to strongly agree. A proportionate random sampling method is employed to elicit the necessary information from the users of the e-governance services of local bodies. The sample size of 375 respondents, representing 125 in each of 3 districts of Tamilnadu namely Coimbatore, Tiruppur and Trichy has been duly selected for the study. The primary data collected from the respondents have been analyzed with the help of SPSS-AMOS. The statistical tools such as Factor Analysis and SEM have been employed to analyze and interpret the data.

Results and Discussion

This study explored the predominant factors prevailing adoption of e-governance services. Factor analysis by the principal component method is applied to the variables of adoption of e-governance services of local bodies to identify the predominant factors.

Table 1: Variables and Variable Loadings for Adoption of E-governance

Variables / Factors	Factors Loadings	Eigen value	Cronbach's Reliability Coefficient	% variation
Factor 1: Trust				
E-Government Web sites are trustworthy	.923	2.441	9.324	16.274
E-Government Web sites seem to be honest and truthful to me	.901			
E-Government Web sites can be trusted	.842			
Factor 2: Perceived Risk				
The decision of whether to use a state e-Government service is risky	.913	2.155	7.452	14.366
In general, I believe using state government services over the internet is risky	.896			
Factor 3: Perceived Ease of Use				
Learning to interact with a state government Website would be easy for me.	.652	2.057	5.984	13.712
I believe interacting with a state government Website would be a clear and understandable process.	.770			
I would find most state government Websites to be flexible to interact with.	.746			
It would be easy for me to become skillful at using a state government Website.	.841			
Factor 4: Perceived Usefulness				
Using e-Government websites enables me to do business with the government any time, and not limited to regular business hours.	.923	1.907	6.451	12.715

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Using e-Government websites enables me to accomplish tasks more quickly.	.882			
The results of using e-Government websites are apparent to me.	.864			
Using e-Government websites can cut traveling expenses.	.881			
Using e-Government websites can lower traveling and queuing time.	.553			
Factor 5: Relative advantage				
1 Using e-Government systems would enhance my efficiency in gathering information from government agencies.	.876	1.843	5.954	12.283
2 Using e-Government systems would enhance my efficiency in interacting with government agencies.	.717			
3 Using e-Government systems would make it easier to interact with government agencies.	.601			
4 Using e-Government systems would give me greater control over my interaction with government agencies.	.642			
Factor 6: Intention to use				
I would use the Web for gathering state government information.	.798	1.262	5.188	8.417
The usage of e-Government systems would be important.	.623			
The usage of e-Government systems would be relevant.	.581			
KMO Measure of Sampling Adequacy = 0.714; Bartlett's Test of Sphericity = 967.93, Sig. .000; Cumulative Percentage Rotation Sums of Squared Loadings = 77.766.				

The KMO and Bartlett's test for sampling adequacy for fifteen variables are found to be 0.714 and the chi-square value of Bartlett's test for Sphericity is 967.93. This indicated that all the variables are different and perfectly distributed in a normal distribution. This also emphasized that the factor analysis is suitable for the variables of adoption of e-governance. The factor analysis by the principal component method with varimax rotation has revealed six Eigen values such as 2.441, 2.155, 2.057, 1.907, 1.843 and 1.262. This indicated that the Eigen values more than 1 led to the existence of six major factors with 77.766 percent of the variance.

The rotated component matrix table indicated that the variable loadings in each predominant factor of the adoption of e-governance. The variables are suitably named based on the variables. They are Trust, Perceived risk, Perceived ease of use, Perceived usefulness, Relative advantage, and Intention to use.

Structural Equation Modeling (SEM)

The Structural Equation Modeling (SEM) has been used to assess the causal relationship between variables as well as verifying the compatibility of the model used. The relationship among variables of e-governance adoption (EGA) such as trust, perceived risk, perceived ease of use, perceived usefulness, relative advantage, and intention to use have been analyzed by using SEM.

The non-standardized coefficients and associated test statistics. The amount of change in the

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dependent or mediating variable for each unit change in the predicting variable which is symbolized by the standardized and non-standardized regression coefficients.

Table 2: Regression Weights

Variables			Estimate	S.E.	C.R.	P
Trust	<---	EGA	1.000			
Perceived risk	<---	EGA	4.29	7.76	.557	***
Perceived ease of use	<---	EGA	2.39	3.59	.671	***
Perceived usefulness	<---	EGA	15.49	7.41	.584	***
Relative advantage	<---	EGA	8.74	8.23	.682	***
Intention to use	<---	EGA	3.28	4.67	.751	***

It is found that the estimated values are statistically significant at 5 percent level. Hence, the result proves that the trust, perceived risk, perceived ease of use, perceived usefulness, relative advantage, and intention to use have strongly influenced the e-governance adoption.

Table 3: Standardized Regression Weights

Variables			Estimate
Trust	<---	EGA	.444
Perceived risk	<---	EGA	.352
Perceived ease of use	<---	EGA	.462
Perceived usefulness	<---	EGA	.572
Relative advantage	<---	EGA	.445
Intention to use	<---	EGA	.354

The standardized estimates for the fitted model show that the relative contributions of each predictor variable to each outcome variable can be evaluated by standardized estimates. The relationships and model fit among the variables of women empowerment indicators is presented in table 3. It helps to decide whether to accept the model or to fine-tune the model.

Table 4: Model Fit Summary

Fit Indices	Study Threshold	Acceptable Threshold	Result
Chi-square	1046.04	<0.05	Acceptable
GFI	0.86	≥ 0.80	Acceptable
AGFI	0.82	≥ 0.80	Acceptable
NFI	0.96	≥ 0.90	Acceptable
IFI	0.95	≥ 0.90	Acceptable
RMSEA	0.07	≤ 0.08	Acceptable
CFI	0.94	≥ 0.90	Acceptable
PGFI	.21	<0.5	Acceptable

The result of the Chi-square test is significant at 5 percent level (p =<0.05) which indicates that consequently this model is considered for further interpretation in the goodness of fit measures. The entire model fit indices range from 0 to 1. The results of Goodness of Fit Index (.86), Adjusted Goodness of Fit Index (.82), Normed Fit Index (.96), Incremental Fit Index (.95) are higher than its acceptable threshold. It proves that the model fit is satisfactory. The Root Mean Square Error of Approximation value of 0.07 which shows that the model is close-fitted with the reasonable error. The score of the Parsimony Goodness-of-Fit Index is 0.21 (<0.05) which proves that the model is fit to a satisfactory level. So, the SEM has a very good fit.

The study identified that the adoption of e-governance practices has influenced by trust,

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perceived risk, perceived ease of use, perceived usefulness, relative advantage, and intention to use.

Conclusion

This paper has been analyzed the adoption of e-Government services of local bodies. The study identified that trust and perceived risk are primarily concerned with the adoption of e-governance services. So, the exchequers should focus on practical and operational issues in e-governance services for improving the efficiency of services. The user has to be placed at the center of future developments. Thus, governments should take into consideration user needs, established marketing practices to promote the services and provide training to users. Training programs should stress the potential of e-Government systems and should help users to understand the relative advantage, job relevance and generally the value of them over existing bureaucratic systems. The findings can also provide useful recommendations for the development of practice and policymaking. Policymakers can improve strategic e-Government planning and development through trust, perceived risk, perceived ease of use, perceived usefulness, relative advantage, and intention to use the six factors that influence intention to use e-government services.

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