



## TECHNOLOGY READINESS AND ADOPTION OF E-GOVERNANCE SERVICES IN HARYANA

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### ABSTRACT :

*In the era of information and technology, everyone is using technology-based services to save his time. It brings out a fundamental transformation in the nature of the interaction between company and customer. The use of technology is increasing in the usage of fields of work. The study analyse the various individual characteristics, namely demographics and personality, as predictors of e-Government portal use. The data were collected from 241 students by questionnaire and analyzed through factor analysis. The technology-readiness index(TRI) is constructed with the factors of enabler and inhibitor and they indicate the overall state of mind toward the use of new technology. Applying factor analysis on this model, some important factors emerged with some features are classified into the category of Technology Motivators and Technology Inhibitors. Caveat emptor is first principal of using the services. Social inclusion is the most important theme of our constitution and different directive principle of state policies.*



**KEYWORDS :** Technology Motivators, Technology Inhibitors, Social inclusion, information and technology, TRI

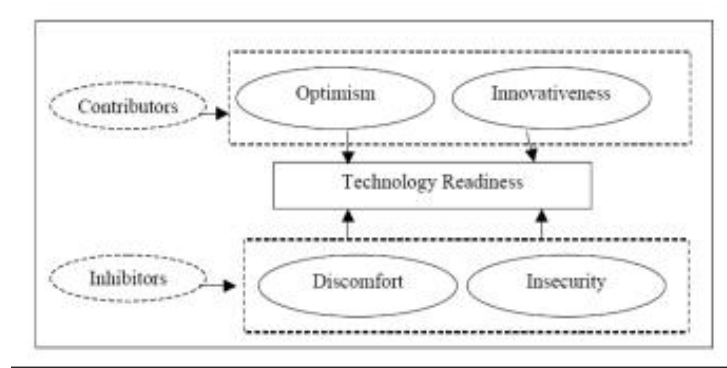
### INTRODUCTION

E-governance is important with the help of information and technology government functioning is now becoming more efficient and effective and also increasing the productivity of governance-related activity. E-governance performs the function in order to simplify, more accountable, responsive, transparent, governance system. E-governance is a new path between citizen and government. It comprises the decisional process and also helps to activity in the faith of public affairs. The main purpose of focusing governance is to improve the administrative process.

### TECHNOLOGY READINESS INDEX

"The technology-readiness construct refers to people's propensity to embrace and use new technologies for accomplishing goals in home life and at work (Parasurman, 2000). The technology-readiness index is constructed with the factors of enabler and inhibitor and they indicate the overall state of mind toward the use of new technology. In the year 1994 Kotler developed the "Triangle model" of interaction between company-customer-employee. After that, Parasurman developed the "pyramid model". In the pyramid model, the interaction between company customer-employee transforms with technology. Now in the present era, companies use technology in every stage of marketing. Likewise, customers also change their behaviour according to interaction with technology services. Widespread use technology and interaction in working environment effect on the photographic condition. It is easy

to assess with the help of technology readiness index. There has been lot of research in the past regarding technology and services but this research is mainly focused on the behaviour of consumers with regard to the same psychological factor. This psychological factor in nature is not stable. In the tri focus on the mindset of the consumer. TRI has not measured the knowledge and competence. Technology readiness has two dimensions that are motivators and two that are inhibitors.



**Figure 1: Technology Readiness Model (Parasurman, 2000).**

### **Motivator contributor**

**Optimism:** "A positive view of technology and a belief that it offers people increased control, flexibility, and efficiency in their lives"

**Innovativeness:** "A tendency to be a technology pioneer and thought leader"

### **Inhibitors**

**Discomfort:** "A perceived lack of control over technology and a feeling of being overwhelmed by it."

**Insecurity:** "Distrust of technology and scepticism about its ability to work properly"

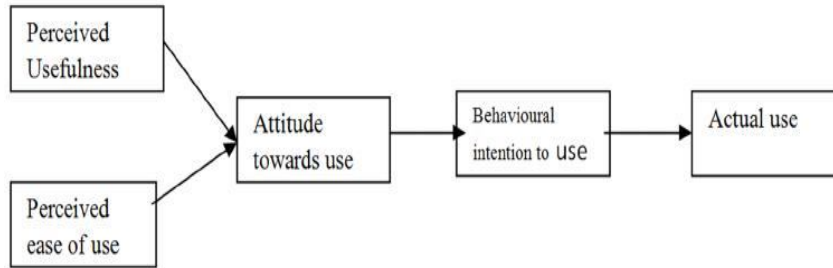
### **The Technology Acceptance Model**

Davis proposes a theory of actual system use. Actual system use depends on user motivation to use the system. Actual system of use depends on system feature and capabilities. These feature and capabilities stimulate the actual system to use

### **The Theory of Reasoned Action**

According to this theory, the actual behaviour depends on behaviour intention. Behaviour intention is concluded of subjective norm and attitude toward behaviour. The theory describes that the attitude of a person towards behaviour may be a positive or negative form, a given behaviour. Subjective norm is created with normative belief and motivation to comply.

Theory of reasoned action is useful to predict the actual behaviour of a person. Davis uses this model to develop the technology acceptance model. Davis takes changes in the theory of reasoned action. According to him, a subjective norm could not consider predicting the actual behaviour of a person because it is a least understood aspect of technology acceptance model and not have any theoretical status.



**Figure 2: Technology Acceptance Model (Davis,1989)**

Davis explained that the user is motivated by three factors: perceived usefulness, Perceived ease of use and attitude toward the system. Attitude is the main component to accepting or reject the system use. Attitude is be created by two major beliefs. First, perceived ease of use and other is perceived usefulness. Both the factor influences with system characteristics.

Perceived usefulness: "The degree to which an individual believes that using a system would enhance his or her job performance"

Perceived ease of use: "the degree to which an individual believes that using a particular system would be free of physical and mental effort"

### **E-Governance: Conceptual Framework**

E-governance refers to using information and communication technology by government to deliver public services. The e-governance activity result benefits are less corruption increased transparency, greater convenience, revenue growth, and cost reduction.

"Although there are many definitions of e-Governance, the objectives of governments are indisputable: maintaining collective security, administering justice, providing the institutional infrastructure of the economy and ensuring that vital social capital is enhanced through improvements in health and education and through strong families and communities" (Dawes et al. 1999).

"Amore comprehensive definition of e-Governance proposes changes of government in two related aspects: 1) transformation of the business of governance i.e. reducing costs, improving service delivery and renewing processes; 2) re-examination of the functions and processes of democracy itself" (Aicholzer and Schmutzer 2000).

### **Motives of e-governance**

1. Empowering people through information
2. Delivery of better public services.
3. Increasing transparency and accountability.
4. Improving efficiency in governance activities.
5. Enhancing the interface between government, citizen and other stakeholders. E-governance needs all levels of government but the most important at the local level due to being closest to general people. E-governance is an administrative reform. E-governance makes maximum impact on the citizen. It refers also construct to good governance. E-governance has to be comprehensive: it is not all about IT. Comprehensive e-governance reforms cover (1) the process, (2) preparedness and the technology (3) the people. India has 29 different states with the different level of e-readiness. So it is important to assess the readiness. Of different areas, because a uniform policy cannot be implemented in all states and also create difficulty at the last point may be failed. E-governance is not about computer and internet. Instead, it is about transforming the function of government offline to online interactive between citizen, government and other stakeholders.

**The four pillars of e-government are**

1. People
2. Process
3. Technology
4. Resource

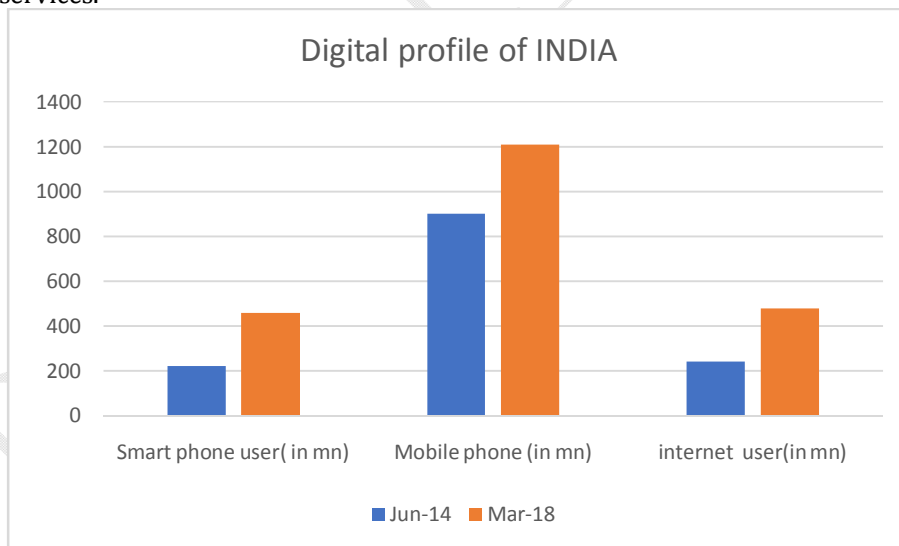
**Table: 1.1  
E-Government Imperative**

Process	Simplicity	Efficiency	Citizen Centricity	Sustainability
People	Vision	Leadership	Commitment	Competency
Technology	Architecture	Open standard	Reliability	Scalability
Resource	Holistic	Efficient	Services oriented	Cost efficient

(2005). *Second Administrative Reforms Commission (ARC)*.

**The Digital Profile of India**

It is all about the Smartphone, mobile phone connections, and internet user. India has become the second largest market of Smartphone's. It gave to India a huge potential in use of self-service technology in e-governance. The following trend describes the huge amount of consumption of digital product and services.



**Graph: 1.1 Digital profile of INDIA**

**LITERATURE REVIEW**

Parasuraman (2000) Identified a scale to measure people readiness with technology and discuss the scale psychometric properties. The study found four dimensions of technology readiness. Namely optimism, innovativeness, discomfort, and insecurity. This analytical study based on primary and secondary data. The data were collected from 1000 respondents through questionnaire and

telephone interview. The statistical tool applied were factor analysis, ANOVA. it's observed that people generally optimism about technology and also experience insecurity.

Larasti et al (2017) examined the readiness and acceptance of ERP in SMEs. The variables studied were namely perceived of usefulness, perceived ease of use, optimism, innovativeness, discomfort, and insecurity. This study was based on primary data. The questionnaire was the data source. The sample size was 222 and statistical tools were used are t-test R – square and least square. The result showed optimism influence to perceived ease of use, perceived of usefulness influence intention to use and intention to use influence significantly to actual use.

Elliott et al (2008) identified to assess technology readiness between American and Chinese students. The factors studied were culture, optimism, innovativeness, discomfort, and insecurity. The data were collected from 468 students by questionnaire. This sample area was the Chinese and American university. The statistical tool applied in the studies was t-test. The study concluded that Chinese student has low technology readiness with a comparison to American student and culture was an important factor in that.

Lin (2006) explored the relationship among Technology Readiness, perceived service quality, fulfillment and further analyzed the conduct aims in respect with SSTs. The questionnaire depends on 36-thing innovation preparation file (TRI) which was created by Parasuraman (2000) and the 20-thing SST-QUAL scale was received from Lin and Hsieh (2005) for estimating administration nature of SSTs. The final sample contained 436 usable responses. Data were analyzed through structural equation modeling (SEM). Participants included in the study were 61.5 percent of women with the overall sample age ranging from 17 to 65. Results demonstrated Technology Readiness affected apparent SST service quality and social expectations, while saw SST benefit quality positively affected consumer loyalty and behavioral intentions aims toward SSTs.

Lin (2007) analyzed the impact of technology readiness on fulfillment and social expectations toward self-benefit advances. For the estimating of customers technology readiness, the 36-thing technology readiness record (TRI) created by Parasuraman (2000) was utilized. Consumer loyalty's with (SST-SAT) was estimated with the three-thing American Customer Satisfaction Index (ACSI) scale utilized. The information was gathered through the surveys and get the reaction of 413 respondents. In respect with self-service technology a wide range incorporated into that including banks. The information was dissected with the assistance of corroborative factor examination and Cronbach alpha the outcomes demonstrate that technology readiness was an imperative driver of SST-Satisfaction and positive connection among technology readiness and SST-SAT.

Liljander( 2006) analyzed the client's attitude towards utilizing SST for aircraft registration, selection of self-benefit registration, and assessments of another self-benefit monitor the Internet. The investigation was centered around the accompanying factors specifically apparent administration quality, fulfillment, and loyalty. The data was collected through a questionnaire and from the respondents was 688. The data was analyzed through confirmatory factor analysis. the study founded about presumed that positive connection between technology readiness and clients' states of mind towards utilizing SSTs for carrier registration, and on clients' assessment of the central aircraft's Internet registration benefit.

Godoe and Johansen(2012) investigated the relationship between the dimensions of TRI (Technology Readiness Index) and the particular dimensions of TAM (Technology Acceptance Model). The information was gathered through a questionnaire and from 186 respondents. The investigation was tested is be additionally isolated into two subgroups in view of the particular technology of premium. Out of the 123 respondents utilized electronic wellbeing recorded to doctor's facility take a shot at a regular schedule, and remaining 63 respondents, they utilized a texting (IM) framework. The examination poll in view of TRI created by Parasuraman (2000) and the technology acceptance model (TAM) as presented by Davis (1989). At the last, a blend of the two models in TRAM contains an extensive view. The investigation inferred that reception of new innovations depend individual and in addition framework particular variables. As indicated by the investigation an incorporation of psychometric builds and framework related encounters was future-situated, creative, and helpful.

Venkatesh et al (2014) examined the various individual characteristics, namely demographics and personality, as predictors of e-Government portal use. The data were collected through questionnaire and the total number of respondents was 311. The data analyzed through factor and regression analyses. The study applied descriptive statistics and correlations. The results of the model were demographic characteristics and personality variables were the significant predictor of use of e-government portal but all demographic variables like age were not predict e-Government portal use. The study revealed that Big Five personality variables, namely conscientiousness, extraversion and openness to experience, and PIIT were found to predict e-Government portal use.

Rose and Fogarty(2010) investigated the readiness of mature consumers to use technologies and more specifically, online banking technologies. The various variable was studied in this study were an attitude toward specific technologies, level of technology anxiety, and consumers' capacity and willingness to adopt. The primary data was collected by questionnaires and the total number of respondent was 2076. Cluster analysis technique was applied to determine distinctive segments followed by multiple discriminant analysis to examine group differences. In this examination different statistical devices, for example, Bartlett's test and the Kaiser-Meyer-Olkin proportion of test adequacy 0.805. The discoveries from this investigation will extraordinarily help benefit gives to comprehend the likely adoption of technologies while focusing on the developing market. The develop customer showcase was heterogeneous and ought not to be seen as one market.

Lin and Chang (2011) focused on the technology and analyzed through structural equation modeling acceptance model and technology readiness model. In this paper described the gap between both models and further developing and testing of the extended version of the technology acceptance model. The data was collected through questionnaire and the total number of respondents was 410 (SEM) and hierarchical moderated regression analysis. The result comes from the study is that technology readiness factors will help in enhances perceived usefulness, perceived ease of use, attitude toward use, and intention to use and also show that technology readiness positive relationship between perceived ease of use and attitude toward using self-service technology.

Lin and Hsieh(2012) explored the recreate, refine, and cross-approve the TRI scale crosswise over settings and societies as indicated by psychometric methods to build the TRI's generalizability and appropriateness. There fined 16-thing TRI scale shows sound psychometric properties in view of discoveries from different dependability and legitimacy tests, and also scale replications utilizing a few examples. The four measurements stay stable crosswise over systems and tests, while the utility of the refined scale increments because of the simplicity of utilization. Estimation invariance examinations crosswise over statistic gatherings, ventures, and societies give additional support to the predominant solidness of the refined TRI.

Ho and ko (2008) investigated regardless of whether self-service technology (SST) would positive be able to impact on customer value and customer readiness. Moreover, it is proposed to review the impacts of customer value and customer readiness in clients' proceeded with the utilization of Internet banking. The data were gathered through the survey and the aggregate number of respondents were 771. Structural equation models (SEM) were utilized to analyze the information. SST attributes (i.e. usability, helpfulness, costs spared, and self-control) showed beneficial outcomes on customer value and customer readiness. customer readiness is positively identified with customer value. Moreover, clients will utilize Internet banking when customer value and customer readiness are high.

Curran and Meuter(2005) inspected the elements affecting the purchaser states of mind toward, and selection of self-service technologies (SSTs). The data were gathered through questionnaire and from 120 respondents add up to the number of respondents are 120. The data were analyzed through structural equation modeling. A correlation of the consequences of the model tests on the three technologies gives proof that distinctive elements impact demeanors toward every one of these technologies and offers a clarification of the shifting degrees

Massey et al (2007) examined the relationship between technology readiness and usability in an online service context. The data were collected through questionnaire from 169 respondents. The data

were analyzed through structural equation modeling. This paper tended to five primary classes of website configuration proposed to build the ease of use of online website: content, usability, made-for-the-medium, advancement, and feeling. The outcomes demonstrated that that client sections fluctuate in ease of use were prerequisites and convenience assessments of particular online administration interfaces are affected by a mind-boggling collaboration between website compose, get to technique, and technology readiness client segment.

Suki and Ramayah (2010) identified the variables impacted to clients' acceptance of e-Government services and its causal connections utilizing a theoretical model in light of the Technology Acceptance Model. The data were collected through questionnaire and the total number of respondents was 200. The data is analyzed through structural equation modeling. The results indicated that the intention to use e-Government services/system was influenced were perceived helpfulness, convenience, similarity, relational impact, outer impact, self-viability, encouraging conditions, disposition, emotional standards, behavior control, and expectation to utilize e-Government administrations/framework.

## RESEARCH METHODOLOGY

### 3.1 Objective of the study

The main objective of the study is to assess the technology readiness and adoption of e-governance services in Haryana. This is dependent on the psychometric properties of individuals. Specifically, the objectives of the study are stated as under:-

#### To study the factors leading to the acceptance of e-governance services.

The technology readiness and adoption of e-governance in the youth of Haryana is dependent upon a large number of factors. On the basis of literature, thirteen variable were identified, which include individualism and collectivism, long and short orientation, trust, perceived public value, perceived ease of use, attitude, behavior attention, optimism, innovativeness, discomfort, insecurity, satisfaction, external help. The relevant literature source of these variables are shown in table 3.

### 3.4 Sample Profile

The components of demographic profile chosen for the purpose included gender, age, education, and residence. For the purpose of the study, only four districts of north Haryana were selected. District wise sample profile is shown in the following tables: 3.5.

**Table :3.5**  
**District wise sample profile**

Area	Districts	No of respondents
North	Karnal	96
North	Kurukshetra	85
North	Panchkula	60

Discussion on these components of demographic profile based on the classification of sample respondents is given under. Table: 3.6 show the age structure of the sample respondent.

**Table: 3.6**

**Classification of respondent on the basis of age**

Age Group	Frequency	Percent
0-18	18	7.5
18-21	132	54.8
21-25	74	30.7
25-28	17	7.1
Total	241	100.0

(Source: primary data)

**Table: 3.8**  
**Classification of respondents on the basis of gender**

Gender	Frequency	Percent
MALE	79	32.8
FEMALE	162	67.2
Total	241	100.0

(Source: primary data)

As shown above, (162) 67.2% of the respondents were females while (79) 32.8 % respondents were males. It indicates that the female respondents are now a significant number to participate in the study

**Rotated Component Matrix(Factor wise)**

v.code	Factors	Loading	Cronbach alpha
	<b>Factor-1 (Core Services Delivery)</b>		.668
PPV1	Using digital platform to access government services is Now going efficient.	.682	
PPV2	In my opinion the e-government services and digital Platform is convenient to use.	.664	
PPV3	The transparency of government gets enhanced by using digital platform.	.647	
PEOU1	Getting information about how to use digital platform to access e-government services is easy for me.	.540	
TR4	In general, I think e-governance digital platform are trustworthy.	.509	
	<b>Factor-2 (User-Friendly)</b>		
PEOU3	My interaction with e-government services websites	.737	



	and apps are clear and understandable.		
	<b>Factor 3(Service Empathy)</b>		.301
OPT1	E-government apps and websites are helpful for improving quality of life.	.681	
BI2	I feel ushered to use digital platform to assess the e-government services.	.654	
	<b>Factor 4 (Technology Avoider)</b>		.596
INS2	Too much use of technology distracts people from real world which is harmful.	.749	
INS1	People are too dependent on technology to do things for them.	.730	
	<b>Factor 5 (Group Culture)</b>		.557
IC2	Achieving goal in group is more important than achieving at individual level	.726	
IC1	Individual performance is not important as much as group performance.	.624	
	<b>Factor 6(Tangible Reward)</b>		.453
LS2	Non-monetary benefits are not necessary to excel.	.647	
LS3	Non-personal attributes make little difference in target achievement	.544	
INN1	I am the first one in my group to using digital platform.	.512	
	<b>Factor 7(Modern Conservative)</b>		.431
LS1	Encourage for tradition performance	.708	
PPV4	I think the digital platform is adding value to public.	.579	
DIS1	I am not satisfied with the kind of technical assistance which are provided by the digital platform operators.	.515	
	<b>Factor 8(Operating Hesitator)</b>		.714
EX1	Do you pay money to middlemen for obtaining benefit of digital government services.	.774	

EX2	You usually take help of middlemen for operating digital platform to access government services.	.734	
	<b>Factor 9(Awareness)</b>		.01
INN3	I am aware about new e-government services of my interest.	.666	
DIS2	I have to face certain problems to identify the authorised digital platform to access e-government services.	-.657	
INN2	I can manage to use/operate e-government services without help from others.	.544	
	<b>Factor 10( Trust In E-government)</b>		.538
TR1	E-government portal and/or Ministry's website(s) are secure enough to make us feel comfortable.	.721	
TR2	The digital platform protects me from any kind of problem regarding to use the apps and website.	.629	
TR3	Digital platform are now a emerging phenomenon and safe environment to access government services.	.536	
	<b>Factor 11(Satisfaction)</b>		
SAT1	Using digital platform to access government services is fulfilling expectation.	.779	

(Source: primary data)

The study has integrated a combination of the political social economic factors to check the citizen technology readiness and adoption of e-governance services in Haryana. From the review of the related literature, various factors are identified which are relevant to the study. This research is modified with technology readiness and acceptance model. In regarding the use of technology acceptance model further modified for the objective of the study and also recommended by the literature. In this model, perceived usefulness is replaced by perceived public value and other factors are involved in the study according to previous studies. The results of this examination showed the noteworthy effect of the Technology Acceptance Model builds alongside the social, social and political attribute that is added to the model for citizen adoption of e-government services in Haryana.

## CONCLUSION

Applying factor analysis on this model, some important factors emerged with some features are classified into the category of Technology Motivators and Technology Inhibitors. In Technology Motivator, factors are good governance services delivery, User-friendly, Tangible reward, Group culture, service empathy, Modern-conservative and Trust in e-government. These factors are motivators to the citizen for the adoption of e-government services. E-governance services help to improve good governance practices. With services delivery, user-friendly and tangible rewards create

stimuli among the citizens. The study describes that respondents have Group-culture and they shared the same meaning, belief, values, and culture. Further citizens have some other feature with e-governance services like Trust in e-government. Trust in e-government is that any citizen beliefs and their expectation about e-government practices.

On the other hand, there are some factors are emerging that the inhibitors in way of adoption of e-governance services. Operating hesitator and Technology sceptics are emerging factor that they motivate to less adoption of these services. In operating hesitator, citizens have the low degree of innovativeness and Technology Sceptics have the low degree of motivation and the different view for technology.

### SUGGESTIONS FOR THE POLICY MAKER

The government takes many initiatives regarding e-governance services but the results of these initiatives are not satisfactory. It may have some causes. But this study research about psychometrics properties of the citizens. This study describes that there are some inhibitors in process of adoption of e-governance services like Operating hesitators and technology skeptics. So the policymaker must focus on these factors to achieve a satisfactory result. Policymaker should take initiative like awareness programme at grass root level with the help of Community Resource

### LIMITATION OF THE STUDY

As all the research, this study had own limitations.

1. This study is based on cross sectional.
2. In the present study age range of the respondent was 18-28 years.
3. The numbers of samples of the study are less as relative to universe.
4. The sample is collect from specific geographical location that's why this study cannot represent total Haryana population.
5. The study is based on factors of Technology readiness and adoption modal (TRAM). So, these factors are dynamic in nature. Further time to time research should be needed for worthwhile significant conclusion.
6. This present study has only nine factors consider for analysis the behaviour toward e-Governance. For more broad and significant result, the study should consider other behavioural factors.
7. This study more focuses on interpersonal factor and on the other hand, institutional factors are not so consider. Than this factor also consider for further study.
8. The present research is more emphasis on qualitative methodology of data collection and use of quantitative data is limited.
9. The study more focus on theory and its model so, further validity and reliability of study will check with other research technique.

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