



**Understanding E-Government Adoption in Developing Countries: Evidence
from Pakistan's Land Management E-System**

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Abstract:

The study was conducted to address two fundamental questions such as how it is possible to successfully implement the land record management information system (LRMIS) that is a pilot project initiated by the government of Pakistan in Mardan which is a city in Khyber Pakhtunkhwa province of Pakistan and what are the drivers and barriers for the adoption of e-government solutions in Mardan. To address the study questions, qualitative method was chosen., the study utilized semi-structured survey instrument to examine the drivers that supports and barriers that impedes the e-governance initiative. The instrument was semi-structured as it mainly included “wh” questions. Apparently, the reason behind utilizing semi-structured survey instrument was that it helps in time saving and less resources are required compared to conducting a survey using open ended questions. For this purpose, data from thirty citizens of Mardan via focus group discussions (FGDs) and nine employees of LRMS has been collected. Citizens were interviewed because citizens of Mardan are the ultimate beneficiaries of the LRMIS. Once all the data has been collected, template analysis approach using NVIVO software package was utilized to analyze the data. During the process of findings, first initial codes has been devised followed by sub themes and finally themes and categories.

From the findings of the study, it was observed that there are several drivers and barriers that influences the e-governance initiative in LRMIS, Mardan. Most of the studies confirmed that those are the economical, sociocultural, technological, and



administrative drivers and barriers that impedes the development of e-governance initiative

Keywords: Driver and Barriers, E-Governance, Record Management System, Developing Nations.

1. Introduction

Electronic government (e-gov) is a new popular trend in the current era that assure connectivity for various services in diverse fields of life. According to (Al-Ghamdi et al., 2011; Azab et al., 2009; Becker et al., 2004), the e-gov focuses on the initiative of coordination for public through a connected administration system. The Concept of E-government is defined using of latest technological tools for delivering services to public for a nation or other territory (Cham, 2022).

Studies confirmed the technological implementations and exploitation that means overcoming the inefficiency, enabling the government to achieve objectives, and technology provides opportunities for NGOs, small and large businesses, and other government institutions to be more transparent and efficient in their decision-making process (Saparniene, 2013). In the past, the industrial revolutions changed the social and economic growth of the world, but innovations in terms of e-gov increased the level of efficiency in service delivery systems (Schuppan, 2009). In today's fast phase of technological advancements, the uses of e-gov through ICTs promote coordination in various sectors (Jovanovic et al., 2017; Schuppan, 2009).

E-government implementation in developing countries is challenging to implement and achieve the desired results. As a developing country, Pakistan is facing resource scarcity and other challenges to implementing e-Government, and these are disrupting to achieving the desired outcomes through an integrated e-Governance system (Haider et al., 2017). The common purpose of the government project is to increase the culture of transparency, integrations, and accountability of every institution in Pakistan (Rehman et al., 2016). It is observed that most of the e-gov projects in Pakistan are not successfully implemented due to social and technological basic operational knowledge of the citizens, and political involvement (Alryalat et al., 2013). The record shows that 15% of the e-gov projects were initiated successfully, but 35% of the projects were not



successfully initiated to the public; the rest of the 50% of e-gov projects were not reached a satisfactory level in both private and public sectors (Othman et al., 2012).

In recent years, Pakistan has launched one project, the (LRMIS) E-Land Record Management Information System, which has been affected by socio-technological issues during the implementation and adaptation process. Similarly, other technology, such as the GIS (Geographic information system) project, lacks facility of LRMIS due to insufficient budget and bureaucratic and political involvement (Haider et al., 2017). Therefore, stemming from literature and various other published sources, it is confirmed that Pakistan, as a developing country, is striving to establish an interconnected system for e-governance backed by ICTs to various facilitated fields of life, including land record management systems. For this reason, practical measures and contributing initiatives are taken by the government in different functional and contributing steps. Such as the role of the LMS and LRMIS are important influencers of the technological drivers.

1.1 Problem Formulation

Continuous rapid growth in technology development had deeply affected our way of living, adaptation, and behavior, especially in the way we communicate and how services is delivered. (Hazineh, Eleyan., & Alkhateeb, 2022). E-governance plays a crucial role in governing and establishing an appropriate structure for the development and routine and short- and long-term goals for the welfare of the public and economy. Thus, its roles are constructive and facilitative to accomplish positive outcomes. On the other hand, it is challenging to the lack of support structure, scarcity of resources, and lack of awareness to achieve in the developing world (Haider et al., 2017). Pakistan is one of the fast-growing countries in terms of population, with more than 22 million people facing challenges to establish an active, responsive and facilitative e-governance system (Haider et al., 2017). For this reason, it is essential to study and understand the constraints confronted by the e-governance system and achieve developmental and facilitative goals for the welfare of the public. Thus, the study focused on examining the drivers and barriers of e-governance for the e-solutions such as LRMIS in the undeveloped region of KP, i.e., District Mardan. Several governments in developing countries, especially Pakistan, face the same challenges that affected mostly previous



e-gov projects to accomplish e-gov implementations and adaptation; it is necessary to control specific forces that affect the process (Wang & Shih, 2009). Though, there is a consensus on the benefits of using Information, Communication Technology (ICT) in public service delivery, on the other hand there are quite considerations and obstacles in setting e-government in developing countries which limit its potentials and applicability (Samsor, 2022). Therefore, it is vital to establish a theoretical framework and conceptual parts that reflect the forces and barriers influencing the implementation and adaptation of e-gov. Similarly, the study will determine citizens' willingness to adopt and use e-gov services.

1.2 Research Objective

To examine the successful implementation of e-governance in District Mardan by identifying the key drivers and barriers that influence the adoption of e-governance solutions.

2. Literature Review

2.1 Socio-technical system (STS) and e-gov solutions

The STS is developed by Tavistock Institute of Human Relation London (Haider et al., 2017). The STS system direct organization or institution and any subs system and subpart for integration and interaction to employee workforce with capabilities and integrate them with goals. This process of integration and staying them to follow defined processes using technology within their domains comply with the cultural norms and values. Its core idea is that the performance of any organization is uplifted when both social (the norms and values) and technology sides or aspects consider interdependent and compulsory parts of the whole working system (Haider et al., 2017). Social readiness for the e-governance initiative is an essential tool supporting the implementation process's success (Sahai & Singh, 2017). Increasing technological enhancements and dependencies made it possible to establish accessible, workable, and sustainable e-governance systems that promote common interests. It is essential to encourage society's readiness to promote an e-governance based system for society's welfare within society (Chima & Enoch, 2022).

2.2 Technological Drivers and E-Gov

In the context of business transactions between business stakeholders, the e-gov ease in doing business and faster the electronic communication between parties and at the same time, data and documents are easily exchanged electronically that are saving time and reduce the level of cost. This approach is not efficient in developing countries, especially for the citizens to use the latest ICT applications to communicate with the public entities and as a result, still in developing countries facing the traditional working pattern due to lack of knowledge and usage of ICT applications (Pandey, 2018).

The Interior Ministry aims to utilize modern tools and machines efficiently and effectively to modernize the e-gov activities and reduce the work burden and volume of the manual files to improve the productivity and delivery system for citizens' facilitation. The importance of the e-gov study is to enhance the public services for the social and economic welfare of the citizens (Petrov, 2020).

The shifting of the traditional administrative structure to a digital system is still considered an obstacle to innovating the conventional hierarchical system with digitalization development. Lack of finance, residents' low level of skills with information technology, and difficulty in operating data for service delivery are still regarded hurdles in developing countries (Almaiah et al., 2020). In the transition system, the vision and goals play a vital role in terms of creativity and innovation because it has impact on the organization long term performance and can establish the new trend of the usage of technology and increase the level of competencies of the staff and citizens (Tang et al., 2021).

The e-governance is a critical instrument in the 21st-century world of increasing development and growth. A substantial and constructive demand is placed with planned techniques to enhance operation, combine parts, and develop effective management and citizen facilitation in numerous domains. e-gov is an internet or connectivity-based technique or instrument to provide successful public and corporate services (Guston, 2000). According to another study, the implementation of e-governance is among the significant challenges for various countries to establish institutional arrangements and provide a profound technological base. The same is also challenging at upper for developing countries (Joshi et al., 2017). In most developing countries, some of the



factors regarding the adaptation of the e-gov are; the lack of understanding of the citizens' requirements, demand, and specific problems to focus more specifically on that context to engage it with e-gov initiatives has been ignored. Since 2010, for example, in Pakistan, most of the e-gov portals and other official websites are dormant and not accessible for the citizens (UN, 2012).

2.3 Societal Drivers and E-Gov

Societal needs and growing populations require day-to-day communication. Increasing competition and dependencies on technology make it impossible to stay out of contact or without information. Therefore, societal drivers are excelling the needs and emphasis to implement the constructive uses of e-gov. The e-gov within the society makes it fast, connected, and productive to bring various parts of society from individuals to organizational level integrated and fulfill multiple needs (Kumar, 2007).

Society and individuals within the community require integration, and the presence and applicative structure of e-services promote connectivity. The roles of societies are important in constructing patterns of behaviors and distinguishing between acceptable unacceptable practices represent norms of the community (Briggs, 2014). According to the current literature, understanding the dimensions of the societal electronic-readiness is vital for the long-term sustainable e-services; the dimensions of the societal e-readiness mean the presence of the robust ICT infrastructure, basic knowledge of the technology, and understanding the operational functions of the new techno-based structure along with the social network can adapt the e-governance (Kurzweil, 2005; Sahai & Singh, 2017).

The literacy rate is essential for e-gov implementations; citizens should understand the primary use of the internet and common languages (Qureshi, 2019). The Government of Pakistan launched a new citizen's portal through which citizens can approach the institutions and concerned officials, and as a result, more than one million citizens are using the citizen's portal (Qureshi, 2019). According to Wirtz & Kurtz (2017), there is limited proof for effective e-governance initiatives; therefore, it is essential to understand those primary factors that increase the level of adaptability of the e-governance initiative before launching the large-scale application of the policy.

2.4 Societal drivers and e-services

Individuals within society are experiencing various forms of changes, barriers, development, and environmental factors. The role of society is essential in shaping the individual's actions and mindset. Therefore, societal drivers play a crucial role in various macro and micro factors and their connection (Al-Ghamdi et al., 2011). Therefore, society drivers also relate e-services where they are significant and productive to their outcomes within society. The need for e-services is a reality, and the drivers of society focus its implication on bringing at its best within the society due to increasing digitization and IT development. But its implementation and practical involvement also require the right amount of information sharing, understanding, literacy at the institutional level, and others to bring a positive return and ensure facilitation with positive outcomes (Petrov, 2020).

Societal drivers are influential and directional to implement and adopt the productive outcomes of the e-services and establish directions for the facilitation of the citizens (Rowley, 2006). Therefore, society itself needs to implement it in favor of the businesses and citizens' needs in various fields such as database management, health record, marketing, sales and services, security purposes, population control, regional policies, and land record, all backed by e-services (Rahman, 2010).

2.6 Technological & societal drivers and barriers in the context of Pakistan

Any country's demands are society and technological growth, and developing countries need time. Pakistan is a developing country with increasing population pressure and growth concerns. Promoting ICTs in diverse fields is one of the development initiatives. As a result, the government of Pakistan provides numerous online apps backed by ICTs for e-services to help public companies advance and meet global competitive needs (Okeleke, 2019). Therefore, Pakistan is struggling for and bringing comparatively to slower phases in urban areas faster than rural areas and regions (Haider et al., 2017).

For various fields of life, Pakistan is promoting ICTs, and among them, one of the online facilitation systems is implemented that faces barriers and implementation constraints in forms (Haider et al., 2016). The role of e-services for land management is a mandatory and supportive part of digitization to impose a connective structure and promote ease and facilitation for citizens and commercial purposes. The process is



researched and found comparatively slow and challenging with the scarcity of resources, public readiness, awareness, and education and usage responses (Hameed et al., 2012). Therefore, mainly confronted with slower implementations mainly in rural areas of Pakistan. E-services for land management system in Pakistan based on ICT LRS (Land Record System). The first LRS system was initiated between the thirteen and fourteen centuries, and further, it is modified by the sheer shah Suri, the ruler of the Indian sub-continent in 1540-1545, and later the Mughal empire king Akbar restructured the measurement of the land according to the crop. The land record system and measurement aim are to establish a system that accounts for the revenue and tax assessment in the continent, such as agriculture tax and their collection process (Qazi, 2006).

During the British colonial time (1757-1948), made the land reforms through a substantial cadastral survey, such as the land demarcation of the owner in the record system. The other related issues of the land have been improved; the British system developed the "Patwari system," the term "patwari" means the collection officer of the agriculture tax on their revenue. The patwari has sole authority to take care of the land record system through his manual book called "BASTA" (Haider et al., 2017). After 1947 the government of Pakistan adopted the same Land record system and brought modifications according to the new updated tools (Qazi, 2007).

2.7 E-governance and STS

The role of e-governance in a public institution is productive and supportive for transparent activities that ensure accountability (Haider et al., 2017). Its role and contributions for the citizen are to promote the effectiveness of its usage. On the other hand, its usage and inclination of the citizen require various variables such as trust on the government (Bélanger & Carter, 2008), the citizen's psychological predisposition, civic-mindedness and available information channels, and many others (Haider et al., 2016). The second group of researchers confirmed that various factors are important for the citizens to use effectively e-governance such as required skills and knowledge (Othman et al., 2012), the trust on the government (Bélanger & Carter, 2008), ease of use to achieve perceived usefulness the output quality and performance expectancy and the information channel (Haider et al., 2017). Apart from the e-governance, the STS

determines that the positive outcomes of the e-governance in integrating the societal side, technological sides, and the employees within the organization for the inside and outside the organization with positive and connected outcomes (Haider et al., 2017). STS Theory is relevant to address these barriers, initiate workable and attainable digitalization for e-governance and maintain it for the valued outcomes. Because it focuses on both technological and social systems (society and organization) for transformation, it supports integration through an emphasis on mutual understanding and formation of coalitions with corresponding parts in addition with modern technical and social systems with the alignment of the workforce through learning and development that uplift work tasks through enhanced technology (Haider et al., 2017). Thus, the socio-technical system theory plays a vital role in increasing positive outcomes for technology, employees, organizations, and society (Haider et al., 2017).

2.8 E-gov in the context of other (developing) countries

The Table 1 shows the technological and societal factors of e-gov for different developing countries. All these countries (shown in Table 1) are using STS and adopted e-governance for the betterment of e-services/operations. Moreover, some relevant information is not given in the corresponding paper so that's why a symbol "N/A" is used in Table 1.

Table 1: Technological Factors in Developing Economies

Country	Name of the variable	Reference
Jordan	Lack of operational skills	(Kvasnicova et al., 2016)
	Shifting the manual system to digitals but need modern ICT structure	
Bulgaria	Lack of modern technology for smart delivery services	(Petrov, 2020)
India	Weak ICT infrastructure & electronic communication Errors in delivery services from the system	(Pandey, 2018)
Jordan & Saudi Arabia	Need to apply modern technological tools	(Almaiah et al., 2020)

Data operating and
security issues

2.9 Technological & societal factors in context of Pakistan

Table 2 reflects the name of variables and references of different studies already conducted in Pakistan. Overall, the studies talk about STS in that it focuses on the strategic consideration of both the social and technical components of an organization, considering these two characteristics to be linked.

Table 2: Technological and Societal Factors in the Context of Pakistan

Technological factors		Societal factors	
Name of the variable	Reference	Name of the variable	Reference
E-governance related survey	(UN, 2012)	Organizational culture and product innovativeness	(Rehman et al., 2015)
E-governance	(Qaisar & Khan, 2010)	Digitization and society	(Khan, 2020)
E-services in local government	(Qaisar & Khan, 2010)	Land administrative system in Pakistan	(Hameed et al., 2012)
Pakistan citizen portal	(Qureshi, 2019)	Societal readiness for e-governance	(Sahai & Singh, 2017)

2.9 Barriers in the way of e-governance & STS approach

The e-governance plays an important role, and its contributions are essential to align positive outcomes with integration and positive outcomes. The lack of citizen operational skills towards advanced technology and lack of limited awareness to get e-services are the limitations. These are creating challenging situation to maintain the e-governance solutions (Tang et al., 2021). According to Tang et al. (2021), previous e-governance solutions, software management with timely backups & supportive usage, interruptions, and multitasking abilities are some additional limitations.



Concerning (Pandey, 2018), barriers disrupt the operations, raise time pressure, increase workload. Therefore, organizations and employees need to be equipped with vital skills and information through training and development.

3. Methodology

The study focused on the case of citizens dealing in ownership and transfer of lands via land record management information system (LRMIS) to investigate the drivers and barriers to e-governance in district Mardan, KP, Pakistan. To address the study's questions such as how to successfully implement the e-government initiative, qualitative research method was opted. The fundamental reason behind utilizing qualitative study is to interpret and describe phenomena or problem systematically from individual or population viewpoint which is under consideration of this study and to develop novel theories and concepts (Joshi et al., 2017). One strength of case study is to deal with complete evidence such as interviews, observations, documents and artifacts beyond what is presumable available in a traditional past study (Haider et al., 2017).

This study investigated the drivers and barriers to e-government and future solutions in the context of land record management information system (LRMIS) of district Mardan, more specific the citizens facing problems in ownership and transfer of land dealing with the land management system (LMS). The reason for selecting citizens of district Mardan is because of the initiation of the pilot project in land management office (Patwar Khana) named as land record management information system (LRMIS). Due to lack of thorough studies on e-governance in Pakistan as a part of digitalization, the study considered the LMS in Mardan.

The study is fundamentally based on primary sources of data. To address the objectives of the study, a semi-structured data collection instrument was designed or the collection of primary data, in which open ended statements are placed.

The study performed five focus group discussions and nine face to face interviews. The population for the sample group was the overall citizens of Mardan and those dealt with the land management system of Mardan. A total of 30 respondents in five groups with six participants in each group from different territories of Mardan were interviewed. The FGDs included a citizen from different backgrounds. The interviewed citizens were

from tehsil Mardan, Takht Bhai, Katlang, Rustam and Garhi Kapura. The FGDs were held at the citizens Hujra's and rest house since it was convenient for the respondent and set at several times. Both the FGDs and online interviews has been transcribed for data analysis. The study also performed online interviews from five employees of the land record management information system providers who were representative of the land record management system.

After reviewing the literature comprehensively, it was observed that template analysis (King, 1998) would be more precise in addressing the study's objective. To develop themes and codes, NVivo qualitative software has been utilized to analyze the data, since deriving themes manually is difficult and time consuming. In developing codes and themes, the STS theory was used as a base for the coding. The study has opted template analysis approach to examine the gathered data.

4. Findings and Discussion

4.1 Drivers of E-Governance

The drivers of the e-governance have been considered since it supports the progression of e-governance in LRMS initiative. Four major categories (namely economical, sociocultural, technological and administrative) have been identified based on STS theory. The below section explains each of them in detail.

It has been observed that the economic motivation is amongst the drivers supporting the development of e-governance in Mardan.

The government of Khyber Pakhtunkhwa (KP) declares that the e-governance initiative contributes to the improvement of KP due to several reasons such as improved transparency, gradual increase in the proportion of transaction in rural areas of KP and reduced fraudulent activities. Due to these economic reasons, it is expected that investment in Mardan, KP also increases. Additionally, it has been observed that automation will help in encouraging more investors in capitalizing on simplified and modern electronic procedures which the LRMS offers. As one of the interviewees stated: *"It is well known fact that individuals were previously fearful of capitalizing in real estate due to fraudulent activities though with the introduction of e-governance in LRMS, Mardan, since the process became transparent and free from errors, people nowadays are taking interest in investing in Mardan"*.



Another interviewee (employee of the LRMIS, Mardan) stated that

“Due to the introduction automation in LRMS, the process of transaction became easy and quicker than before”

- **Sociocultural**

This category considered social and cultural factors as the drivers of improving e-governance. It is an understood phenomenon that education level increases an individual's level of awareness. Hence an educated person is more likely to have the ease in using the software than those who are not educated. The efforts of government in arranging awareness campaigns have helped in changing the conventional mindsets of citizens to greater extent. As one of the respondents stated that:

“In my opinion the key to success of e-governance is based on an educated society. Having skillful employees in department eases the way of doing things thereby providing benefits to individuals and entire society.”

- **Administrative**

This theme is associated with the driving elements that encourage e-government and other institutional experts to execute the e-governance.

The evolution of e-governance caused a rapid change in the present models of government, thus, government administrators need to figure out methods to direct the process of change. Executive and top management need to be capable of guiding their employees during the whole process of transformation so to adopt the electronic environment (Guston, 2000).

Several respondents presumed the change management as a crucial factor for successful execution of the e-governance in LRMS, Mardan. As an interviewee responded:

“E-Governance means transforming into a new environment and changing the way we work and think. In my opinion, change management is an essential factor for the success of the e-government project”.

4.2 Barriers to E-Governance

The barriers to e-governance have been considered since it impeded the progression of e-governance in LRMS, Mardan. Four major categories (namely economical, sociocultural, technological and administrative) have been identified. The below section explains each of them in detail.



- **Economical**

Economic impediment has been considered as the key barrier that adversely influences the e-governance initiative in LRMS, Mardan. One major and significant them has been identified from the empirical investigation.

- **High Cost of Computers and Internet Connections**

High cost of computers and internet connection is another impediment that impedes the development of e-governance in LRMS, Mardan. The internet connections in urban regions of Mardan is negligible due to which it was observed as an impeding factor. As one of the respondents stated that:

“Honestly speaking, I am a belonging of urban territory of Mardan and when I have to buy or sell something online, I have to travel miles so to have the 4G connectivity.”

On the other hand, it was observed that the high cost of computers is due to the recent inflation which caused a drastic upsurge in the prices of electronics in the overall market. As one of the employees of LRMS stated that:

“Currently we are unable to install or acquire any new electronic equipment because of two major reasons, initially because of that we are waiting for the government’s budget and secondly due to inflated rates of electronic equipment in the market which is now almost 200% of the previous prices when we asked for quotations from the market”

4.3 Sociocultural

This theme includes social and cultural aspects impeding the development of e-governance in LRMS, Mardan. Based on the findings of the study, sociocultural aspect in the context of e-governance in LRMS, Mardan is categorized into one major theme namely Lack of Ownership.

- **Lack of Ownership**

It was observed that several public sector organizations lack the ownership feeling in the context of e-government program. It was evident through several interviews that participants were when asked with the e-government project, they started either talking sarcastically or laughing at it. In the meantime, few others among them become hostile towards the officials and starts blaming for that it is an unsuccessful project. Actually, employees working in the institution are of the strong belief that the uniform



implementation of the e-governance on provincial level entirely depends on the government of KP while when they are asked with their part in the system, they refuse about uniform implementation, that it is not our job and duty. As one of the participants stated that:

“GoKP (Government of Khyber Pakhtunkhwa) is responsible for the uniform implementation of e-governance of LRMS in Mardan. Therefore, they are the only entity that can make the e-government program succeed or fail in Mardan.”

- **Change Resistance**

Change reluctance is one of the substantial factors the impedes the implementation of e-governance. All the respondents stressed the significance of this problem and considered the change reluctance as a key barrier impeding the development of e-governance. Respondents agreed that employee's reluctance to change is very important due to its direct and severe impact on e-government initiative like halting or delaying the planned project. As one of the respondents stated that:

“We had a project that was suspended for 3.5 years because of an officer resistance to it, and when that officer resigned, the project was executed”

4.4 Technological

Technological barriers differ. The technological factor in this study is categorized into digital divide.

- **Digital Divide**

It is significant that all the citizens of Mardan need to reach the appropriate standard level of technological, financial and educational advancement which allows the citizens to interact and afford with the novel technologies. This will provide the citizens the opportunity to utilize the matured services that the e-governance provides. From the above statement it can be observed that active involvement of all the citizens and officials in digital activities is required to be done otherwise the government officials would be there to only work on it which means directed from sole segment. As one of the participants stated that:

“What good is it to have e-government that caters only to certain group of people and leaves out large number of citizens? I think GoKP have spent millions of Pakistan on



the e-government project that would serve a limited number of citizens who have computer knowledge and trust the use of technologies.”

4.5 Administrative

Administrative barriers have been referred to as amongst the barriers impeding the development of e-governance. Based on the findings of the study, administrative force has been segmented into one category namely lack gradual change.

- **Lack of Gradual Change**

It has been observed that bureaucracy is present in almost all public sector organizations in both developing and developed economies of distinct scales. Just like developed economies which initiated their e-governance from the very prime efficient bureaucratic systems, Pakistan as a developing economy has started revolution towards e-governance from an inadequate, difficult and obsolete bureaucratic system which already have several issues related to organization, administrative and technological. Hence these challenges need to be reformed first.

Several participants stressed the significance of reforming present system prior to going online. E-governance is not only the transformation of the present conventional and inefficient practices but also the electronic formats and efficient utilization of technology (Haider et al., 2017). Respondents also stressed that the placement of incompetent and incompatible neither decrease nor simplify the employee's workload.

5. Discussion

The research study examined economical, technological, sociocultural and administrative drivers and barriers in mediation with e-governance towards e-services. A society based on online services is productive in communication, sharing information, and facilitating people and institutions within that particular society. Integration is bridged through online services and today with the advancement of and connectivity of various functions. Therefore, with the increasing digitization and digitalization, it is essential to understand the role of e-services through technological drivers, societal drivers, and e-governance and e-services. Pakistan is the sixth fast-growing populous country with increasing pressures regarding scarcity of resources and alignment for challenging productive outcomes. In addition, societal barriers and awareness through



education and technological services for digitization and digitalization are essential to contribute to productive outcomes.

5.1 Conclusion

The main objective of the study was to examine the key drivers and barriers to e-governance in LRMS, Mardan. To address the study's objective, using qualitative case study method, the study utilized semi-structured survey instrument to examine the drivers that supports and barriers that impedes the e-governance initiative. For this purpose, data from thirty citizens of Mardan via FGD and nine employees of LRMS has been collected. Once all the data has been collected, template analysis approach using NVIVO software package was utilized to analyze the data. During the process of findings, initially initial codes has been devised followed by sub themes and finally themes and categories.

From the findings of the study, it was observed that there are several drivers and barriers that influences the e-governance initiative in LRMS, Mardan. Most of the studies confirmed that those are the economical, sociocultural, technological and administrative drivers and barriers that impedes the development of e-governance initiative.

The fundamental contributions of this study are twofold. Initially, it serves as a novel reference in the literature of e-government especially in the context of Pakistan. Second it developed a conceptual framework that should be utilized as elements to know the drivers and barriers that influences the development of e-governance.

5.2 Future Research Directions

This research study was carried out in the district Mardan and digitization, and electronic-based services. Therefore, its growth and developmental areas and researchers are working on exploring and examining in-depth and bringing its contributions to the welfare of electronic services and society. Therefore, future research needs to cover and carry on this research to examine this topic in-depth with more variables and different cities of KP.

This study was carried in the Land Record Management department, which uses LRMIS for land management purposes, but e-services and digitalization are also used in banking, medicine, health, digital marketing. These need to examine this topic



require a much more challenging and sophisticated procedure with multiple time intervals to understand this phenomenon.

References

- Abdul Mateen Samsor. (10 February 2020) Published in *International Trade, Politics and Development*. Published by *Emerald Publishing Limited*. e-ISSN: 2632-122X p-ISSN: 2586-3932
- Ahmed, F., Ismail, F., & Jan, M. F. (2018). Nexus between corruption and macroeconomic indicators in lower developing countries. *Asia Proceedings of Social Sciences*, 2(2), 89-93.
- Akram, H., Raza, M., Jan, M. F., Aslam, S., & Nivin-Vargas, L. (2024). Identified leadership practices and teachers' professional development in Karachi, Pakistan: the moderation effect of training. *Education 3-13*, 52(8), 1309-1326.
- Al-Ghamdi, R., Drew, S. and Alshehri, M., 2011, September. Strategic government initiatives to promote diffusion of online retailing in Saudi Arabia. In *2011 Sixth International Conference on Digital Information Management* (pp. 217-222). IEEE.
- Ali, L., Ullah, W., Urooge, S., & Jan, M. F. (2020). Evaluating the Mediating Role of Strategic Change between the Relationship of Gender Diversity in Senior Management and Firm Performance in Pakistan. *Stratejik Yönetim Araştırmaları Dergisi*, 3(1), 69-84.
- Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. *Education and information technologies*, 25(6), 5261-5280.
- Alryalat, M., Dwivedi, Y.K. and Williams, M.D., 2013. An analysis of electronic government research from the perspective of developing countries. *International Journal of Indian Culture and Business Management*, 7(4), pp.461-527.
- Azab, N.A., Kamel, S. and Dafoulas, G., 2009. A suggested framework for assessing electronic government readiness in Egypt. *Electronic Journal of e-Government*, 7(1), pp.11-28.
- Becker, J., Niehaves, B., Algermissen, L., Delfmann, P. and Falk, T., 2004, August. E-government success factors. In *International Conference on Electronic Government* (pp. 503-506). Springer, Berlin, Heidelberg.
- Bélanger, F. and Carter, L., 2008. Trust and risk in e-government adoption. *The journal of strategic information systems*, 17(2), pp.165-176.
- Bilal, A., Ahmad, W., Jan, M. F., Huseynov, R., & Nagy, H. (2025). How women's transformational leadership induces employees' innovative behaviour through trust and connectivity: A sequential mediation model. *Global Business Review*, 26(1), 240-255.
- Briggs, A., 2014. *The age of improvement, 1783-1867*. Routledge.
- Cham, D. (2022). Exploring the efficacy of e-government models through information systems management-case of The Gambia.
- Chima, P., & Enoch, A. O. (2022). Inhibitors to E-governance Adoption and Implementation and the Impact on the Performance of University of



- Abuja, Nigeria: An Empirical Investigation. *Journal of Social Sciences and Management Studies*, 1(3), 79-90.
- Chaoudhary, H. S., Azam, K., & Jan, M. F. (2025). ROLE OF AI BASED MEDIA AWARENESS IN HAZARD VULNERABILITY AND RISK ANALYSIS. *Policy Journal of Social Science Review*, 3(9), 390-406.
- Ellahi, A., Jan, M. F., & Khan, M. (2026). Generative AI in Business Education Transforming Teaching and Learning. In *Integrating AI and Machine Learning into Business and Management Education* (pp. 53-72). IGI Global Scientific Publishing.
- Ellahi, A., Javed, Y., Jan, M. F., & Sultan, Z. (2024). Determining the Effect of Software Project Managers' Skills on Work Performance. *International journal of information technology project management*, 15(1), 1.
- Guston, D.H., 2000. Between politics and science: Assuring the integrity and productivity of research.
- Haider, Z., Shah, A. and Chachar, A.A., 2017. Citizens' Adoption Of Electronic Government In Pakistan By Improving Technology Acceptance Model. *The Government-Annual Research Journal of Political Science.*, 5(5).
- Haider, Z., Shuwen, C. and Burdey, M.B., 2016. E-government project obstacles in Pakistan. *International Journal of Computer Theory and Engineering*, 8(5), p.362.
- Hameed, F., Abbas, H., Pasha, M. and Yngström, L., 2012. Feasibility analysis for deploying a centralized information exchange infrastructure in Pakistan. In *Proc. SIG Globdev 5th Annual Conference*.
- Hassan, S., Jan, M. F., & Hassan, M. (2026). PERCEIVED TRANSPARENCY AND SUSTAINABLE UNBOXING EXPERIENCES AS DRIVERS OF BRAND AUTHENTICITY IN EMERGING MARKETS. *Policy Journal of Social Science Review*, 4(3), 390-399.
- Hazineh, S. A., Eleyan, D., & Alkhateeb, M. E-Government: Limitations And Challenges: A General Framework For To Consider In Both Developed And Developing Countries.
- Jan, M. F., Imran, A., Mazhar, U., Batool, B., Noor, A., Malik, S., ... & Ullah, A. (2026). Impact of Student Learning Strategies on Academic Development and Psychological Well-Being among Children with Autism Spectrum Disorder. *International Journal of Special Education*, 41(7s), 458-473.
- Jan, M. F., Khan, I., Kamal, A., & Khan, P. (2026). The impact of corporate social responsibility (CSR) initiatives on employee attraction and retention. *Advance Journal of Econometrics and Finance*, 4(2), 1-7.
- Jan, M. F., Khan, T., Khan, P., & Zeb, F. (2026). Buffering the dark side of leadership: The role of green human resource management practices in mitigating exploitative leadership and fostering employee green innovative behavior. *Policy Journal of Social Science Review*, 4(1), 144-155.
- Jan, M. F., ÖZYER, K., Jan, M. F., Akram, H., Safdar, M. Z., & Azizoglu, O. (2022). The Effect of Big Five Personality Traits on Leader Member Exchange and Organization Citizenship Behavior in Khyber Pakhtunkhwa Universities. *Central European Management Journal*, 30(3), 131-155.



- Jan, M. F., Essa, S., & Ahmed, W. (2021). From Resources To Performance: Work Engagement And Resources. *City University Research Journal (CURJ)*, 11(1), 194.
- Joshi, A., Deshpande, V. and Pawar, P., 2017. An application of TOPSIS for selection of appropriate e-Governance practices to improve customer satisfaction. *Journal of Project Management*, 2(3), pp.93-106.
- Jovanovic, M., Rakicevic, J., Jaksic, M.L., Petkovic, J. and Marinkovic, S., 2017. Composite indices in technology management: A critical approach. In *Emerging Trends in the Development and Application of Composite Indicators* (pp. 38-71). IGI Global.
- Khan, T. A., Khan, M. M., Jan, M. F., & Safdar, M. Z. (2026). MEDIATING ROLE OF EMOTIONAL REGULATION BEHAVIORS IN THE RELATIONSHIP BETWEEN TRANSFORMATIONAL LEADERSHIP AND PROJECT SUCCESS. *Journal of Business and Management Research*, 5(1), 877-893.
- KHATTAK, A., IMRAN, A., JAMAL, S., JAN, M. F., ELLAHI, A., HASSAN, M., ... & FARAZ, A. A. (2025). MANAGING HUMANS AND ALGORITHMS: THE INTERSECTION OF ESG, GREEN HRM PRACTICES, AND AI IN DRIVING FIRM PERFORMANCE. *TPM-Testing, Psychometrics, Methodology in Applied Psychology*, 32(S7 (2025): Posted 10 October), 1723-1734.
- Khan, K. N., Jan, M. F., Wazir, K., Khan, Z., & Safdar, M. Z. (2022). Leading with happiness; analysing the effect of leaders' humour styles on employees' creativity. *Webology*, 19(3).
- Khan, Q. S., Adnan, A. A., Jan, M. F., & Jamal, W. (2020). The Effect of Explicit Knowledge Sharing on Human Resource Performance Efficiency: Moderating Role of Human Capacity Development. *Abasyn University Journal of Social Sciences*, 13(2), 524.
- Khan, W., Amin, K., & Jan, F. (2019). Role of Service Fairness in Brand Attachment and Brand Citizenship Behaviors. *City University Research Journal (CURJ)*, 9(4), 770.
- Kumar, V., Mukerji, B., Butt, I. and Persaud, A., 2007. Factors for successful e-government adoption: A conceptual framework. *Electronic Journal of E-government*, 5(1).
- Majid, A., Ahmed, S., Rahman, A., Khan, T., & Jan, M. F. (2025). MODERATING ROLE OF PERCEIVED PROJECT VALUE IN THE RELATIONSHIP BETWEEN PERCEIVED SERVICE QUALITY AND CUSTOMER SATISFACTION IN PAKISTAN'S HOSPITALITY INDUSTRY. *Pakistan Journal of Social Science Review*, 4(6), 111-137.
- Mkude, C.G. and Wimmer, M.A., 2013, September. Strategic framework for designing e-government in developing countries. In *International Conference on Electronic Government* (pp. 148-162). Springer, Berlin, Heidelberg.
- Naeem, M., & Jan, M. F. (2025). Artificial intelligence-augmented decision-making in educational leadership: A state-of-the-art synthesis of cognitive automation and strategic human oversight. *Sarhad Journal of Management Sciences*, 11(2), 103-120.



- Nagy, H., Sana, S., Ahmad, W., Huseynov, R., Jan, M. F., & Bielik, P. (2021). Factors affecting fast food restaurant image in Peshawar: Moderating role of customer personality traits. *AGRIS on-line Papers in Economics and Informatics*, 13(1), 105-119.
- Okeleke, K., 2019. The power of mobile to accelerate digital transformation in Pakistan. *GSMA Report*.
- Othman, M.K., Yasin, N.M. and Samelan, N.A., 2012. Factors Influencing the Adoption of E-Services in Malaysia. *ISSIT 2012*, 1(1), pp.59-66.
- Pandey, M.Y.N., 2018. Electronic resource management is flow to system: in present scenario. *Retrieved March, 1*, p.2021.
- Petrov, K., 2020. Problem Aspects of E-Governance and E-Learning Management in Bulgaria. *European Journal of Business and Management Research*, 5(6).
- Qazi, M.U., 2006. Computerization of land records in Pakistan. *Islamabad, LEAD International*.
- Qureshi, Z. (2019). 1m register on 'Pakistan Citizen Portal'. GULF NEWS. Retrieved from: <https://gulfnews.com/world/asia/pakistan/1m-register-on-pakistan-citizen-portal1.64703881>
- Rahman, S., Khan, T., Jan, M. F., & Zeb, F. (2026). Expanding the TQM Customer Satisfaction Model: The Role of Leadership and External Factors in Pakistan's Public and Private Hospitals. *Policy Journal of Social Science Review*, 4(2), 351-365.
- Rahman, H., 2010. Framework of e-governance at the local government level. In *Comparative e-government* (pp. 23-47). Springer, New York, NY.
- Rahman, S. U., Jan, M. F., & Iqbal, K. (2018). Determinants of profitability in Life and Non-life insurance sector of Pakistan: An endogenous and exogenous evaluation. *JISR management and social sciences & economics*, 16(2), 97-106.
- Rowley, J., 2006. An analysis of the e-service literature: towards a research agenda. *Internet research*.
- Sahai, S. and Singh, G., 2017. Assessment of societal e-readiness for good governance through e-governance. *International Journal of Research in Management, Economics and Commerce*, 384(07), pp.24-28.
- Saparniene, D., 2013. From e-Government to e-Governance: e-Initiatives in Europe. *Access on*, 24(10), p.2016.
- Schuppan, T., 2009. E-Government in developing countries: Experiences from sub-Saharan Africa. *Government information quarterly*, 26(1), pp.118-127.
- Shah, M. U., & Jan, M. F. (2021). Connecting corporate social responsibility (CSR) to customer loyalty: A mediation analysis in hoteling industry of Pakistan. *Sage Open*, 11(4), 21582440211067233.
- Tang, T., Hou, J., Fay, D.L. and Annis, C., 2021. Revisit the drivers and barriers to e-governance in the mobile age: A case study on the adoption of city management mobile apps for smart urban governance. *Journal of Urban Affairs*, 43(4), pp.563-585.
- UN (2012), E-govt Survey, E-govt for People, United Nation, New York, NY.
- Wang, Y.S. and Shih, Y.W., 2009. Why do people use information kiosks? A validation of the Unified Theory of Acceptance and Use of Technology. *Government information quarterly*, 26(1), pp.158-165.



- Waleed, A., Ahmad, W., Jan, M., Ali, S., Khattak, A., & Nadeem, A. (2021). The effect of team value diversity on team performance: The mediating role of relationship conflict and the moderating effects of organization citizenship behavior and leader-member exchange quality. *Management Science Letters*, 11(8), 2185-2194.
- Wirtz, B.W. and Kurtz, O.T., 2017. Determinants of citizen usage intentions in E-government: An empirical analysis. *Public Organization Review*, 17(3), pp.353-372.
- Zainab, E., Azam, K., & Jan, M. F. (2025). The impact of influencer advertising on consumer purchase behavior towards products. *Policy Journal of Social Science Review*, 3(11), 389-401.