



Adopting e-governance in the healthcare sector: Country Experiences

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Abstract :

This study aims to explore the impact of e-governance on the healthcare sector, as information and communications technology (ICT) contributes to improving the quality of health services, increasing efficiency, and enhancing transparency. Despite the numerous benefits e-governance offers, many countries face significant challenges in adopting it, such as limited infrastructure, financial constraints, and digital security issues.

The study relies on case studies from various countries, such as Bangladesh, Saudi Arabia, and Kuwait, to understand their strategies for implementing e-governance in health. It also discusses the key factors contributing to the success of these initiatives, as well as the obstacles hindering their implementation.

The study concludes that the success of e-governance in health requires a strong regulatory framework, investments in digital infrastructure, and enhanced technical awareness among healthcare providers and citizens alike.

Keywords: E-Governance; Digital Healthcare; Information and Communication Technology; Electronic Health Records; Telemedicine.

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1. INTRODUCTION:

In the modern era, the healthcare sector is experiencing a profound transformation due to the integration of e-governance. E-governance in healthcare refers to the application of information and communication technologies (ICT) to improve the delivery of healthcare services, enhance efficiency, ensure transparency, and facilitate accessibility for citizens. The adoption of e-governance frameworks has played a crucial role in overcoming several challenges faced by traditional healthcare systems, particularly in developing countries. Despite its potential benefits, the implementation of e-governance in the healthcare sector faces numerous barriers, including infrastructural limitations, financial constraints, legal challenges, and technological disparities. This study seeks to explore the impact of e-governance in the healthcare sector, its challenges, and the best practices adopted globally to enhance healthcare service delivery.

1.1. Statement of the Problem

The traditional healthcare systems in many countries are plagued by inefficiencies, long waiting times, lack of access to essential services, and inequitable distribution of resources. The introduction of e-governance presents an opportunity to address these issues through digitalization, telemedicine, electronic health records, and online appointment systems. However, the slow adoption of e-governance in healthcare raises critical concerns regarding infrastructure, data security, digital literacy, and policy implementation. This study aims to investigate the challenges and opportunities of e-governance in healthcare, focusing on the factors affecting its successful implementation.

1.2. Research Questions

How does e-governance impact healthcare service delivery?

What are the key barriers to implementing e-governance in healthcare?

How can e-governance improve efficiency and accessibility in the healthcare sector?

What are the best practices from different countries in implementing e-governance in healthcare?

What policies and frameworks are necessary for successful e-governance adoption in healthcare?

1.3. Hypotheses

H1: The adoption of e-governance significantly improves healthcare service delivery and accessibility.

H2: Infrastructure and financial constraints are major barriers to the effective implementation of e-governance in healthcare.

H3: Countries with strong policy frameworks and technological advancements have higher success rates in e-governance adoption.

H4: The lack of digital literacy among healthcare professionals and patients negatively affects e-governance implementation.

1.4. Significance of the Study

This study is significant as it provides valuable insights into the role of e-governance in enhancing healthcare systems. It highlights the benefits of digital healthcare services, identifies the challenges faced by different countries, and suggests solutions for improving healthcare governance through ICT. Policymakers, healthcare administrators, and researchers can use the findings to develop strategies for successful e-governance implementation, ensuring better healthcare access and efficiency.

1.5. Objectives of the Study

- To analyze the impact of e-governance on healthcare service delivery.
- To identify the key barriers and challenges in implementing e-governance in healthcare.
- To evaluate best practices and lessons learned from different countries regarding e-governance in healthcare.
- To recommend policy measures and technological solutions for improving healthcare governance.
- To assess the role of digital literacy and infrastructure in the successful adoption of e-governance in healthcare.

1.6. Methodology of the Study

This study employs a qualitative and quantitative research approach. Data is collected through a review of existing literature, case studies, and analysis of government reports on e-governance in healthcare. A comparative analysis of different countries' experiences with e-governance is conducted to identify best practices. Surveys and interviews with healthcare professionals and policymakers are also used to gain insights into the challenges and benefits of e-governance adoption.

1.7. Previous Researches (Literature Review)

Several studies have explored the implementation of e-governance in the healthcare sector. Kumar Sharma & Prashar (2019) examined the barriers to e-governance adoption, identifying infrastructural and financial constraints as major obstacles. Fernández Da Silva et al. (2022) discussed the role of telemedicine in improving healthcare accessibility. Yusif & Soar (2014) analyzed the impact of metadata and performance evaluation in e-health systems. Sheikh et al. (2021) investigated optimization techniques in healthcare resource allocation. These studies provide a foundation for understanding the current landscape of e-governance in healthcare and its associated challenges.

1.8. Organization of the Study

This study consists of several sections. The first section introduces the study, presenting its background, problem statement, research questions, hypotheses, significance, objectives, methodology, and a review of previous research. The second

section explores the theoretical framework of e-governance in healthcare and discusses key theories and models relevant to the study. The third section identifies case studies from different countries to highlight their experiences with e-governance in healthcare. The fourth section identifies the key success factors for e-governance implementation. The fifth section discusses the barriers to e-governance implementation in the healthcare sector. The sixth section examines the impact and benefits of e-governance on healthcare service delivery. Finally, the seventh section concludes the study with a summary of the findings and recommendations for future research.

2. Theoretical Framework:

The theory of E-governance is the further development of the theories of E-government and E-services. E-government refers to all government institutions or departments at the federal, regional, and local levels, which use Information and Communication Technologies (ICTs) to deliver services to the citizens (M. Al-Khouri, 2011). One of the challenges facing e-government is that public services are not yet fully online. Online services do not provide all possible E-services, and only basic services are online, though vital services are not covered. There is also a lack of awareness regarding the availability of online services. E-health can therefore be seen as a type of E-government, where only one department or area of governance is involved, in this case, the health sector. Studies on E-health services stem primarily from the developed world, while there is a lack of such studies in developing countries (Frost & Lal, 2018). An E-health service roadmap is proposed specifically for developing countries (E-health governance framework), which is based on the country's social and economic context, which has not previously been covered in the academic literature on E-health services.

2.1 Criteria for E-health services

The criterion model for E-health services is based on E-governance research. New criteria for E-health service category modelling are therefore presented. A set of sixteen criteria for comprehensive modelling of E-health services has been derived from current E-health literature. To apply the E-health service category model to the issue examined, E-health services in Singapore are explored. E-health services are compared with the proposed E-health service category model, and the implications for local health authorities are drawn. Lessons for the industrialised world are also presented and discussed, and future research is proposed. (Bhuvana and Vasantha2022)

2.2 Conceptualizing e-governance in healthcare:

In developing countries where healthcare is usually the last focus of governance, especially in South Asian regions, efforts should be directed towards reducing bureaucratic red-tapism in the health sector. Although health governance is important for good governance, minimal attention is paid until scandals occur (Ali Noreen Mujahid,

2015). The adoption of e-governance in the healthcare sector in developing countries is fraught with challenges due to rapid changes in technology. With the integration of internet technology, the healthcare sector finds itself susceptible to unauthorized access to personal health records, misuse of databases, loss of confidentiality, absconding from accountability, and inaccurate patient records (Abdulnabi, 2024)

Digital health, particularly e-governance, is relevant to developing countries because of the massive potential to impact billions of people. It is generally argued that e-governance consists of three domains within institutional frameworks and democratic structures. E-governance as a whole refers to the use of information and communication technology (ICT) by government bodies in their internal processes, with other private sectors, and for the citizens. The need for good governance is being underscored worldwide, with a growing recognition of the importance of a simpler, transparent, and more accountable means of setup for healthy citizen-state relations to achieve meaningful development (N. Adiele, 2017). Specifically, e-governance in health can be conceptualized along with three dimensions: health governance using ICT, governance of health ICT, and the establishment of a knowledge structure for health governance.

3. Case Studies:

With the rapid advancements in technology, digital transformation has become an essential component of administrative reforms, particularly in key sectors such as healthcare, education, and public services. E-governance initiatives aim to enhance service efficiency, promote transparency, and reduce administrative barriers that hinder citizens' access to essential services.

The adoption and implementation of e-governance vary across countries, influenced by factors such as technological infrastructure, administrative capabilities, and political commitment. By examining the experiences of different countries in implementing e-governance across various sectors, valuable insights can be gained regarding the key success factors as well as the challenges that may hinder effective implementation.

In this context, this study explores the experiences of three countries (Bangladesh, Saudi Arabia, and Kuwait) in adopting e-governance, with a particular focus on its impact on service delivery. Additionally, two case studies will be analyzed to highlight both successful and unsuccessful implementations of e-governance in the healthcare sector, providing a deeper understanding of the factors that contribute to its effectiveness.

3.1. Bangladesh

Bangladesh undertook one of the above global initiatives through OSDR, which means online service delivery of more than 80 (81 as of July 2012) public services to its

citizens. Service delivery has been enhanced through the web-based monitoring mechanism known as web-based service monitoring system (WSMS). It is a web-based service monitoring system for provisioning, maintaining, and monitoring 24/7 countrywide OMRS services for more than 80 citizen services via 434 upazilla local government offices. Through WSMS all the service delivery processes are automatically recorded and stored in the database of the WSMS applications (Kumar Sharma & Prashar, 2019). So that each service platform can trace the problem from the different perspective to enhance its performance and improve the service delivery timing equation of the process by 50% within a year.

3.2. Saudi Arabia

In Saudi Arabia information and communication technologies (ICTs) are used by public social health and defense sectors presently. In the field of education, ICT in Saudi is widely used such as the introduction of electronic mark-list via online website, but scarce of such wireless technology applied for health sector. No serious application of wireless health sector development was aired in Saudi Kingdom. As a recommendation the importance of establishing WINS project after suitable modification on apps and system development to reserve the health economics of future Saudi generation (Afaq Qureshi et al., 2014).

3.3. Kuwait

Overall, the action plan that was presented to us has provided a comprehensive roadmap that covers all aspects of the development, implementation, and management of the Health Information Management (HIM) system in the hospitals of the Ministry of Health (MOH). The main objective of this action plan is to fully utilize the potential of information technology in order to revolutionize the way healthcare is delivered, with the ultimate goal of creating a more streamlined, patient-centered, and data-oriented future. This plan sets the stage for a significant leap forward in the healthcare industry, ensuring that every patient receives high-quality care and treatment while also making the healthcare services more accessible and efficient. Through the effective implementation of this action plan, the MOH hospitals will be able to enhance their overall operations, optimize clinical workflows, and improve patient outcomes. By embracing the power of technology and placing greater emphasis on data-driven decision making, healthcare providers will be empowered with the tools and resources needed to deliver the best possible care to their patients. This action plan sets the foundation for a new era in healthcare, one that places the patient at the center of all initiatives and leverages technology to improve outcomes and drive positive change. With the implementation of this comprehensive roadmap, the HIM system will be a cornerstone of the healthcare industry, enabling seamless access to medical records, enhancing information sharing between healthcare providers, and promoting a more coordinated and collaborative

approach to patient care. This transformative action plan will undoubtedly shape the future of healthcare, empowering hospitals with the necessary tools and strategies to adapt and thrive in an ever-evolving healthcare landscape (Sheikh et al.2021).

3.4. Successful Implementation

The adoption of e-governance in the healthcare sector has become a major research area in recent years. This is due to growing concerns about the optimal use of resources and rising healthcare costs. E-governance seeks to bring about administrative reforms and improve service delivery through the use of information and communications technology. This research aims, through comparative case studies, to present the experiences of selected countries in terms of the success or failure of e-governance implementation in the healthcare sector. It focuses on the factors influencing the success of e-governance adoption in the healthcare sector in Country A.

The healthcare system in these countries is characterized by a multi-payer, multi-provider system. Healthcare is delivered through public (government-owned and operated), private (not government-owned and operated), and public-private partnership (PPP) hospitals and clinics. Separate electronic medical records (EMR) systems are used to store patient health records, which are computerized in public hospitals. A few private hospitals have adopted the use of information technology (IT) for administrative purposes only. There was no EMR networking or any electronic link between hospitals and patient records. One public hospital developed a program to store patient health records, but it was never used due to a lack of IT infrastructure. Delays in implementing an EMRSS system were linked to a lack of infrastructure, frequent staff transfers, and weak management commitment (Sheikh et al. 2021).

3.5. Challenges and Lessons Learned

Country cases were selected to discuss the challenges and lessons learned in the adoption of e-governance in the healthcare sector. The purpose of selecting these countries is to understand how they faced multiple challenges in the adoption process, with the expectation of drawing valuable lessons from other countries that have followed a similar path (Samuel Bramo et al., 2023). The countries' experiences in health e-governance were studied under the following headings: facilitating factors in establishing health e-governance; e-governance initiatives in the health sector; the selected country's experience with health e-governance initiatives; and challenges faced in health e-governance initiatives (Sheikh et al., 2021).

Looking at the health sector, it appears satisfactory in terms of the availability of health facilities. There are different levels of hospitals for different levels of care. The government provides healthcare free of charge for most of its public hospitals, while patients in private hospitals must pay for services. The health sector is moving towards computerization. Many hospitals are computerized, but often use off-the-shelf or locally

developed packages, with software and data stored in a single system. Data exchange or sharing between hospitals is rare, even among hospitals within the same institution (Mohammad Shariful Islam and Tabassum, 2015).

4. Key Success Factors

The present section analyzes key success factors in adopting governance through the eHealth delivery system in the healthcare sector. Seven countries, China, Denmark, Greece, Spain, Colombia, and India, have been selected to highlight the success factors for adopting e-governance through this high ambition and successful eHealth delivery system. Countries are selected based on the duration of planning and execution of countries for their eHealth initiative. An effort has been made to assess eHealth initiatives concerning seven success factors, strategies, barriers, and precautions, which are critical for their eHealth implementation (Kumar Sharma & Prashar, 2019). These countries have been categorized into three segments on the basis of their progress regarding the awareness, vision, and adoption of eHealth services. The first segment consists of those countries where the least number of awareness initiatives was taken, no actions, and commitment were exhibited. These countries are Colombia and India. In the second segment, there are those countries that ensured various commitment initiatives but couldn't implement plans on the ground. These countries are Denmark and Greece. In this segment, one country (Spain) was specifically observed where various commitment initiatives were taken at a political level. The third segment consists of Malaysia and China countries that ensured the actions, plans, and commitment with high intensity and have joined the club of other high-income developed nations.

The countries also exhibited strategies which were based on the nature of organizations and gaps at practitioners and provider levels. The initiatives were taken by nations to overcome these gaps by setting common/ standard management model and ICT standards for easy access and exchange of information. However, the countries in this segment i.e. Malaysia and China also faced obstacles mainly concerning interoperability, information and communication technology standards, and the intention of stakeholders to follow these standards. These nations also took various precautionary measures to address and manage these obstacles and thereby these countries must be followed for policy initiatives, practices, current situation, and possible barriers in this area (Sheikh et al.2021).

4.1. Leadership and Governance

Adapting to e-governance processes can assist with the tasks of education, elevation, and enhancement along the route to national development and success. It consists of a wide range of applications used by various sectors for improvement. New thoughts, ideas, and customs that would help enhance human life and livelihood would be encouraged by state-of-the-art practices and new trends. E-governance is a

methodological paradigm of public health system administration by using state-of-the-art information technologies, principally the internet and associated technologies and new note of ITES innovations and inventions, as well as the introduction and implementation of tele-medicine in remote and far-flung areas and approaches to assist with the administration of health care services along with items like drug uptakes (N. Adiele, 2017). Healthcare services, through hospitals and healthcare facilities, currently find it hard to manage and administer human and material resources efficiently and effectively. This is primarily due to manual and traditional practices adopted for transactions, due to the enormity and widespread coverage of the activities and tasks involved. E-governance is beneficial for citizens, businesses, and government employees by extending widespread benefits like time savings, lower costs, improved safety & convenience, and superior quality of life.

E-governance is a logical and scientific approach, which needs the reengineering of administration and e-governance processes in health-care and hospital administration for achieving benefit (Kumar Sharma & Prashar, 2019). It also requires the three distinct yet linked vistas or approaches of technology, structure, and culture, which are also present in the current paper. The collective theme is the e-governance of health-care systems faculty and faculties. Under technological vistas, deliberations and discussions would be done on hardware, software, ITES, and telemedicine. Networking protocols, connectivity, database design, and associated issues would also be considered. Under structural vistas, talks would concentrate on administration and operations of hospitals and associated healthcare facilities, through the redesign and re-engineering of processes and systems. Finally, a cultural vista would focus on developing skilled and adept HR, and their quantification, motivation, strengths, and weaknesses (Sheikh et al.2021).

4.2. Infrastructure and Resources

The infrastructure and resources-related factors were selected by taking into account all the healthcare resources in the community and all these resources should be in terms of location, traversing route, time, cost required to reach there and utilization. The architecture should utilize its resources more efficiently and effectively. These resources in the healthcare sector should be carefully utilized; otherwise waste of resources may happen. In this context, the e-governance framework in healthcare can be utilized to structure all the available healthcare resources in the community and traverse to reach there. These resources were arranged according to optimization techniques to prevent all types of wastages ignoring all types of fears. This model served to achieve the goal of providing the best possible healthcare facilities for the community at a reasonable cost. (Sheikh et al.2021).

Four infrastructure and resources-related factors were discovered. They are meta-data, performance evaluation, and transportation infrastructure availability and healthcare

resources availability. The availability of transportation infrastructure is necessary in the community to fetch the healthcare resources. The meta-data is the information about the community and other resources in the community. This data should be available in the e-governance framework in healthcare for effective traversal through optimization techniques to reach the required healthcare resources in the healthcare. The performance evaluation is the knowledge about the healthcare resources possible to be traversed using a vehicle of a particular type with details errors (Yusif & Soar, 2014). These performance evaluation metrics in the e-governance framework in healthcare are required to validate its performance after the routing is found using a routing algorithm. The other two infrastructure-related factors are the availability of healthcare resources in the community and other resources. Both these factors are the preconditions for the e-governance framework in healthcare (Kumar Sharma & Prashar, 2019).

5. Barriers to Implementation

The slow pace of integration of information and communication technologies in the healthcare system is due to several barriers on the part of administrators, healthcare professionals, healthcare seekers (patients), psychologists, and other stakeholders (Kumar Sharma & Prashar, 2019). Some key barriers are outlined below.

- Cultural and ethical issues: eHealthcare may offend sacred religious, traditional, and cultural beliefs. The fear of replacement of the healthcare systems created by humans for humans with ICT prevalent moral tales may negatively impact Atkins' healthcare culture nurture. The concern of ethical values like confidentiality of healthcare-seeking consistency and trusted treatment advocacy may be harmed and raised distrust in the web in the providers and reflexes alienation from healthcare.
- Computer Literacy: The perceived skill level of current ICT involved staffers and healthcare professionals' students is insufficient to apply and use eHealth.
- Financial Issues: The issues of too considerable novelty investments in technology, staffing, customer training, and maintenance create ambiguity over the trustworthiness of indirect gains like productivity improvements to service provider and global competitiveness (in response to neighbouring countries) in return to major investments.
- Data Security: The protection and security of computerized patient records from breaches is widely debated. The American experience of several hacker attacks causing uncomfortable unpublicized losses has amplified the distortion of insurance against financial loss and patient legal conflicts with secrecy code disclosing.
- Health Infrastructure: The lack of computerized medical information in the rural healthcare providers (non-AYUSH interviewed (AYUSH- medicines based on Indian culture)) firms) and absence of reliable internet services in hilly and rural zones is a major

hurdle in eHealthcare in Tibetan Atlas' unique conformation of tribal/ steep habitations at 3000-8000 m high mountains.

- Intelligence and selfishness of healthcare distributors: Both healthcare seekers and providers in Bhutan low-interest place professionals (Ayurveda advocate healthcare since ancient orthodoxy belief oft-disparaging the time-tested West's biomedicine methodology) have improper assessments of eHealth benisons, and there is fear of loss of jobs in state healthcare firms after possible privatization of services.

5.1. Technological Challenges

The lack of technological infrastructure in the public healthcare sector has constituted one of the significant barriers to the adoption of e-governance across the globe. There is limited access to computing devices among the rural population and the poorer sections of the cities. Even in some urban areas, there is dependence on simple mobile phones instead of smart ones. In many cases where computers are available, it is either on an individual basis or concentrated on large organizations like hospitals. The large healthcare organizations have their own sophisticated IT setup, while small clinics and hospitals are away from it. There is a wide gap between the urban population having access to IT and the rural populace having limited access or none. The preconceived notion of many e-health initiatives is that portals/websites would help health seekers in rural areas to access healthcare services properly, although the reality is different. Studies have shown that people are heavily dependent on intermediaries like 'quacks' or 'vanvasis' who also run health clinics in the hinterlands and in remote locations where there is no availability of proper healthcare facilities (Kumar Sharma & Prashar, 2019).

5.2. Legal and Regulatory Issues

The Legal and Regulatory Issues emerged as the most critical barrier to the adoption of e-governance in the healthcare sector. The legal and regulatory complexities, coupled with cumbersome, complicated processes, particularly in the health sector, have severely restricted innovation and the adoption of e-governance. Hence, the suppliers of desired health services are unable to respond to the increasing demand for e-governance. The mental health policies and laws in India date from 1900 and 1871, respectively, and have no consideration for health care delivery improvements through e-governance. As the existing laws are archaic, they do not take cognizance of Mental Health by NGOs, which restricts civil society participation dramatically. Moreover, law implementation has taken a back seat. In addition to the above, the laws regarded as a support fall on the other side when it is necessary for their enforcement. For instance, the openness in Government Reasons and Procedures Act, 1997 (OGRA), and the Right to Information Act would not be of any help as the Government decisions are invariably taken in secret, there is massive and ubiquitous corruption, and information is often hidden. Moreover,

although Gram Sabhas were mandated as the lowermost units of the decentralization in the panchayat raj system, in practice the panchayati systems continued to be utterly hierarchical and devoid of any role for the Gram Sabhas. Another serious difficulty is the lack of an efficient regulatory framework to oversee the working of e-governance and to check the occurrence of abuse, misuse, and harassment (Kumar Sharma & Prashar, 2019).

6. Impact and Benefits

Results of implementing e-governance in the healthcare sector indicate positive impacts. The e-governance initiatives in healthcare have improved the quality of healthcare services nationwide (Kumar Sharma & Prashar, 2019). The effectiveness of e-governance plays a pivotal role in ensuring better healthcare services. E-governance has ensured timely delivery of citizen-centric services, resulting in transparency and accountability (N. Adiele, 2017). Introduction of with various e-governance initiatives in the healthcare sector has tremendous impact on improving the effectiveness of healthcare service delivery: reducing the waiting time at the healthcare centre for treatment of ill patients by ensuring an appointment before arrival. Introduction of an online patient record system; Indian patients can access their history from any healthcare centre, irrespective of their origin place in India. Senior citizens in the age group of 60+ years do not want to stand in long queues to get their health check-up at the healthcare centres. But there is no online appointment system. All the Quasi-Government-owned healthcare centres have started accepting e-benefits; time is saved by not queuing in bank counters. But in primary healthcare centres, patients have to wait for a long period to access the e-benefits as there is no e-system available, and e-payment system is yet to be introduced.

6.1. Improved Access to Healthcare Services

The adoption of e-governance in the healthcare sector brings a multitude of benefits. Improved access to healthcare services can be deemed as one of the prime benefits brought by the proposed e-governance mechanism. It can be said that enhancing access is perhaps one of the influential reasons behind adopting e-governance in the healthcare sector (Fernández Da Silva et al., 2022). E-governance can ensure accessible and inclusive healthcare for everyone despite geographic locations or social classes.

The proposed e-governance mechanism can help eliminate discrimination and provide equitable healthcare services to regions that lack access to healthcare facilities. Providing sustainable e-health services can be the vital tool towards ensuring health inclusiveness in large segments of the population in rural areas (Afaq Qureshi et al., 2014). Telecare technology can build a bridge towards overcoming the existing barriers and ensure that the necessary services are brought to the door-steps of the people in need.

6.2. Efficiency and Cost Savings

It is well established that one of the enhanced efficiency and cost saving advantages is to adopt e-government. E-governance provides effective & efficient framework for managing government processes, government services, managing citizen's complaint and grievances and overall citizen-government interaction in the country. It improves service delivery to the citizens, cost effective, access to information, control over the quality of services provided on the development of databases and information availability. It allows greater information and resources sharing by providing effective statistical information for linkages to other public and private sectors in the IT resources (Kumar et al., 2013). There exist many examples of countries where citizen can do business with government through an effective web-based application and regulatory agencies. Such e-governance initiatives result saving of both operational time and cost in conducting business with government and enhanced efficiency and transparency.

Since 1996, the Ministry of Information and Communication Technology (ICT) in Thailand has invested in e-government organization and technology development. The development effort has evolved from flat file based information systems to a more comprehensive e-government infrastructure consisting of one-stop shops for government services, user oriented websites, data standardization, an electronic transaction promotion committee and government network (Dhaoui, 2019). In 1996, the Thailand government promoted an establishment of National Public Access. The civil service commission established "service points" to offer public easy access to information regarding recruitment examinations, regulation and procedures for promotions, transfer and disciplinary actions. There are 800 service points country-wide. In 1998 "Government Information Technology Service (GITS)" was established to provide internet services for the Government and all Thai government agencies. In the meantime "National Telecommunications organization (NTC), one of the state enterprise, was prepared to provide public internet services. The government realized that a well-planned framework for e-government development is required to minimize duplication of effort and to improve compatibility and accordant within the government and outside agencies.

7. Conclusion

The healthcare system is one of the most sensitive sectors, as the life of an individual is fully dependent on it. In developing countries, the people hope for the government to provide the health services effectively and efficiently. However, due to conflicting interests and political pressures, it is becoming harder for the governments of developing countries to achieve their goals (Kumar Sharma & Prashar, 2019). As a result, the countries are adopting several means to make the system properly functioning. E-

governance is one of the paradigms that the governments of most developing nations are adopting, but it is experiencing several challenges in developing and utilizing the system to the fullest. However, some countries are excelling with the E-governance system, utilizing it to achieve their goals and providing services directly to the citizens. The essay focuses on the country experiences in adopting e-governance in the healthcare sector. It picks several developed and developing countries, explaining the e-governance levels of the selected countries and the healthcare facilities being provided. There are several differences in the e-governance of countries based on the contexts in which the countries are examined. However, it is clear that the country's level of development also contributes towards the investigation of the health services being provided and the ICT facilities of the service in the selected countries.

7.1. Summary of Findings

The study, "E-Governance Adoption in the Health Sector: A Critical Review of Country Experiences," attempts to examine the experiences of various countries (developed, developing, and underdeveloped) in adopting e-governance in the healthcare sector. A detailed review of a number of sample countries was conducted, and the success and failure factors, benefits, issues, challenges, and problems encountered in adopting e-governance in the healthcare sector were comprehensively analyzed. Lessons from these experiences were presented, useful for other countries considering adopting e-governance in healthcare. The findings indicate that the success factors affecting the effectiveness of e-passport adoption vary by country and region; training, user engagement, management support, and pilot testing are critical for developing countries. The main barriers to effective e-governance adoption were found to be low levels of literacy, lack of IT infrastructure, weak management strategies, and resistance to change. Countries with greater political and bureaucratic reforms generally benefited more from e-governance than countries with fewer reforms (Kumar Sharma and Prashar, 2019). The efforts of different countries in adopting e-governance have been illustrated (Mihaela Luka et al., 2021).

7.2. Recommendations for Future Research

In the realm of e-governance adoption in the healthcare sector, additional research endeavors from a multi-country perspective are proposed to explore several critical aspects. A comparative analysis of e-governance adoption might generate an understanding of the existing gap in the healthcare services delivery system of the public sector and how it is comparatively addressed in the partner countries. Additionally, the impact of the pandemic on government intervention and healthcare services delivery through telemedicine and other technologies for the divergent socio-economic backgrounds of countries needs thorough investigation. Such assessments should

consider regions with a high density of rural settlements and urban areas and their associated issues. Knowledge-sharing studies among countries regarding policies, regulations, vulnerability factors, solutions, and practices could facilitate addressing common e-health challenges at individual, organizational, and national levels (Sheikh et al.2021).

Future studies might explore a longitudinal analysis of the e-health services delivery system of the countries and provide specific recommendations for the implementation of additional healthcare-focused functional modules from the citizen's perspective. Global experiences regarding the development and implementation of comprehensive e-health legislative and regulatory frameworks at individual and organizational levels for maximizing the benefits of e-health initiatives might also be beneficial. Only by adopting a multi-country perspective of divergence in health, e-health, and socioeconomic parameters can international organizations, academic institutions, and policymakers join their strengths to address the challenges of underdeveloped and developing world countries to create a healthy and sustainable e-health environment for every citizen (Sheikh et al.2021).

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