

E-Governance Success Model For Higher Educational Institutes Of Pakistan: A Comprehensive Framework Development

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Abstract

The execution of e-governance in higher educational institutions in Pakistan has been a topic of apprehension in contemporary ages. Somehow in some institutions the available IT systems is underuse because of lack of training, of staff, while in other funding are not sufficient to get such equipment therefore, implementation of IT based system or e-governance has become a challenge for HEIs. To address these defies, based on research a comprehensive model for e-governance success in HEIs of Pakistan has been proposed. Various factors that influence the success of e-governance, including adequate funding, sufficient and well-trained IT staff, well-designed IT systems and infrastructure, effective governance and management processes, strong leadership, clear policies and standards, user-friendly technology, continuous training and support, and data security and privacy are given due consideration. A systematic and multi-disciplinary approach has been adopted and numerous consistent components are given due consideration. For the purpose previously published reports, research papers and research dissertations were critically reviewed to assess the factors or challenges faced by the universities in obtaining the formulated objectives.

The model comprises a chain of variables and aspects that are pertinent to the achievement of e-governance in HEIs of Pakistan. These variables and factors are linked to each other rationally and articulately, creating a network of interconnections that determination the achievement of e-governance. The model is also useful in monitoring and evaluating the progress of e-governance initiatives and in identifying areas for improvement. The study has important implications for policymakers, IT managers, and other stakeholders involved in the implementation of e-governance in HEIs of Pakistan, as the model provides a practical guide for implementing e-governance in HEIs of Pakistan and can help in fulfilling the specific needs and requirements of each HEI.

Keywords: e-governance, higher educational institutions, comprehensive framework and development.

Introduction

E-governance in higher educational institutes plays a essential part in converting traditional managerial procedures into competent, transparent, and technology-driven systems. In Pakistan, where the education segment is swiftly evolving, the application of an actual e-governance framework is vital for increasing convenience, liability, and excellence in higher education. As emphasized by Khan (2020), e-governance includes a range of digital tools and podiums that expedite communication, decision-making, and service distribution within educational institutions. So, this study aims to cultivate an inclusive e-governance success model exactly personalized for higher educational institutes in Pakistan, taking into justification the exceptional encounters and opportunities within the country's educational landscape.

As the world converts further technology focused, the higher education segment has also comprised the procedure of technology to recover various features of the educational procedure. The incorporation of information and communication technologies (ICTs) has transformed the method that higher educational institutions (HEIs) operate, from student employment and registration to course distribution and assessment. The implementation of e-governance practices has become an important feature in ensuring the success of HEIs, chiefly in the present era where there is a collective demand for access to quality education and the need to maintain high levels of accountability and transparency (Fakhruzzaman, 2019). Pakistan is no elimination to this propensity and has made remarkable funds in the growth of ICTs and e-governance systems in its higher education segment. But, nevertheless these efforts, the underutilization of IT governance systems in HEIs remains a test. This problem is frequently validated to a blend of factors, including small budget and imperfectly trained IT staff (Kajuna, 2015). To sermon these competitions, a model for e-governance success for HEIs in Pakistan must be developed. This model should thoughtful the important issues that are essential for the productive request of e-governance systems, counting acceptable funding, adequate and well-trained IT staff, well-designed IT systems and infrastructure, active

governance and management measures, robust leadership, vibrant policies and principles, user-friendly technology, nonstop preparation and care, and data security and confidentiality (Nokele & Mukonza, 2021).

Literature Review

The use of e-governance in Higher Education Institutions (HEIs) has converted a thoughtful feature in indorsing the success and sustainability of these organizations. Literature on e-governance in HEIs climaxes the impact of numerous factors that indorse to the achievement of e-governance application. One of the important matters is adequate funding for e-governance reasons, which is vibrant to safeguard that the vital capitals are available to support the application process (Bianchi, Sousa, & Pereira, 2021). A new important feature is the convenience of adequate and well-trained IT staff. The IT workforce should have the vital abilities and info to design and tool e-governance systems and guarantee their smooth operation (Das and Adhikary 2022). Besides, well-designed IT systems and organization are also serious components of e-governance success. A robust IT infrastructure delivers a foundation for the effective application of e-governance initiatives and assistances to ensure that these systems are dependable and available to users (Hajdin, 2016).

Stakeholder participation is vital for effective e-governance application in higher education institutions (HEIs). The contribution of faculty members, students, and administrators ensures that e-governance creativities are associated with the institution's and users' desires and necessities. Real governance and management procedures, robust leadership, and strong policies and values are also crucial components of successful e-governance implementation (Apleni & Smuts, 2020).

Satisfactory funding is also a serious factor in confirming successful IT governance in HEIs, Rajput, (2017) originate that institutions with adequate funding are additional likely to have improved IT systems and infrastructure, as well as skilled IT staff. Inadequate funding may consequence in outmoded systems, untaught staff, and limited resources, making it stimulating to meet stakeholders' desires and confirm proper IT system operative (Butt et. al, 2020). According to Veeramootoo, Nunkoo and Dwivedi (2018) with adequate trained IT support staff success of IT governance in higher educational institutions is not possible, further they have found that as the time is changing along with the change in the technology the HEIs administration to need to arrange training of the staff according to equipment available in the market, otherwise the untrained staff will spoil the equipment and the money. Moreover, training is also essential for safety of the personnel's and the system as well.

Operative governance and management procedures, stakeholder contribution, strong leadership, clear policies and principles, user-friendly technology, unceasing training and provision, and data security and privacy are all vital issues for the success of IT governance in higher education institutions (HEIs), according to various studies (Bianchi & Sousa, 2016). To launch a cost-effective e-governance system in public sector universities in Pakistan, it is vital to rank budget, IT infrastructure, online services, human resources, and technical support, as these issues are codependent and must be related to cost-effectively attaining e-governance goals (Mahmoodi & Nojehdeh, 2016). A well-trained IT staff must support IT organization and online services, and technical care must be provided to safeguard best system functionality (Butt, 2022).

E-governance implementation in Higher Education Institutions (HEIs)

To launch a cost-effective e-governance system in minor, average, and big public sector universities in Pakistan, it is essential to rank the factors complicated. Figure 1 summaries the link between dynamics:

- **Budget:** The accessibility of financial resources is the most vital factor that defines the application of an e-governance system. An economical e-governance model can only be attained if a satisfactory budget is allotted for IT infrastructure and support (Titova and Shutov, 2014).
- **IT Infrastructure:** The readiness of dependable and high-speed connectivity is essential to care online services, data storing, and communication. The IT infrastructure comprises hardware, software, and network systems that must be preserved and upgraded frequently (Kang & Park, 2017).
- **Online Services:** A diversity of online services such as student thresholds, email services, and digital libraries must be obtainable to support the day-to-day operations of the university. Dilanchiev et al (2022) has concluded that online services available should be user friendly otherwise everything will end in smoke.
- **Human Resources:** Well-trained IT staff is essential for managing and maintaining the e-governance system in any of the HEI. Xin et al. (2022) write that the significance of IT well-trained support staff for achievement of goals and objectives.

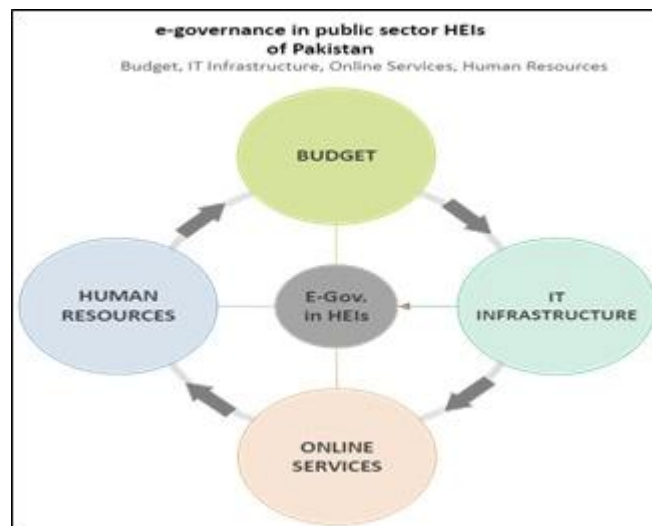


Figure 1: Key factors of e-governance

Methodology

Qualitative content analysis research approach was adopted to research the conclusion or to solve the problem, it is way where researchers critically analyze the research papers, reports and policy documents to reach the conclusions. In the present research study HEC policies for HEIs, HEIs annual reports regarding their IT infrastructure and reports published in the newspapers and journals were critically analyzed

Potential Factors for e-governance Success in HEIs

The execution methodology for the model considering e-governance success for HEIs in Pakistan includes several crucial steps. Figure 2 defines the significant factors for e-governance achievement:

- **IT infrastructure:** IT infrastructure comprises hardware, software, and network facilities. The quality and quantity of these facilities play a vital role in the success of e-governance in higher education institutes. High-quality infrastructure confirms that all facilities are delivered in a judicious and efficient way.
- **Technical knowledge:** Technical knowledge and skills of workforce and faculty members are vital for effective e-governance. The IT staff need know about hardware and software and be gifted to troubleshoot hitches. The faculty need be expert in the consumption of technology and be talented to assimilate technology into their coaching practices.
- **Human resources:** E-governance needs a passable quantity of IT staff to realize the IT infrastructure, offer technical backing, and advance new facilities. The run must be capable, skilled, and dedicated to providing superiority facilities.
- **Funding:** Acceptable funding is dynamic for the development and preservation of IT infrastructure and the assignation of IT staff. The rational should encompass provisions for hardware and software promotions, staff training, and the growth of novel facilities.
- **Leadership:** Robust headship is vibrant to ensure the accomplishment of e-governance in higher education institutes. The headship should be devoted to the growth of IT underpinning and services and be talented to deliver the essential capitals and backing.
- **User awareness and participation:** The success of e-governance in higher education institutes also depends on the attentiveness and contribution of users. Faculty, staff, and students must be skilled in the use of technology and be gifted to admission services effortlessly.
- **Policies and standards:** Policies and standards are significant to confirm the security, privacy, and quality of IT services. The policies should discourse issues such as data protection, data retention, data accessibility, and data quality.

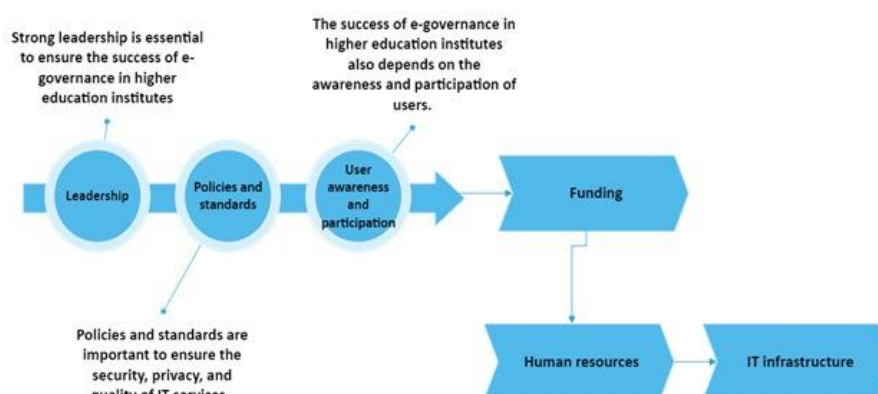


Figure 2: Key factors of e-governance success

Results

The results and findings section is vital in any study as it gifts the results of the research obviously and briefly. In a study considering the model for e-governance achievement in Higher Education Institutes (HEIs) of Pakistan, the results and findings section present the outcomes of the study and the impact of the various factors and variables on the success of e-governance in HEIs.

The results of the study show that there are numerous challenges facing HEIs in Pakistan, counting a lack of funding, insufficient facilities, and inadequate teacher exercise. Notwithstanding some energies to discourse these challenges, they endure to limit the skill of HEIs to deliver quality education to their students. The findings also propose that there is a need for augmented investment in HEIs to improve their facilities and support staff training.

Latent factors for the achievement of e-governance application in universities could comprise adequate funding, sufficient and well-trained IT staff, well-designed IT systems and infrastructure, effective governance and management processes, strong leadership, clear policies and standards, user-friendly technology, continuous training and support, and data security and privacy.

- **Adequate funding:** Confirming a steady and adequate flow of funds is vital for the development and upkeep of IT systems and infrastructure.
- **Sufficient and well-trained IT staff:** Having a team of well-informed and well-trained IT professionals is vital for confirming efficient and active IT systems and services.
- **Well-designed IT systems and infrastructure:** The design of IT systems and infrastructure should encounter the current and future needs of the organization, be user-friendly, and provision the overall goals and objectives.
- **Effective governance and management processes:** The launch of clear governance and management procedures supports to confirm that IT systems and services are united with the goals of the organization and are being used efficiently and competently.
- **Strong leadership:** Strong leadership is significant for pouring change, launching a vision for IT, and ensuring that IT initiatives are united with the goals of the organization.
- **Clear policies and standards:** Clearly demarcated policies and standards support to confirm that IT systems and services are used steadily, meet legal and regulatory necessities, and provision the goals of the organization.
- **User-friendly technology:** The technology should be informal to use and available for all stakeholders and should care their work and academic actions.
- **Continuous training and support:** Continuing training and care are essential for confirming that stakeholders can efficiently use the technology and for keeping up to date with novel expansions.
- **Data security and privacy:** Approving the safety and confidentiality of thoughtful information is unsafe for possession the faith of stakeholders and compliant with lawful and supervisory provisions.

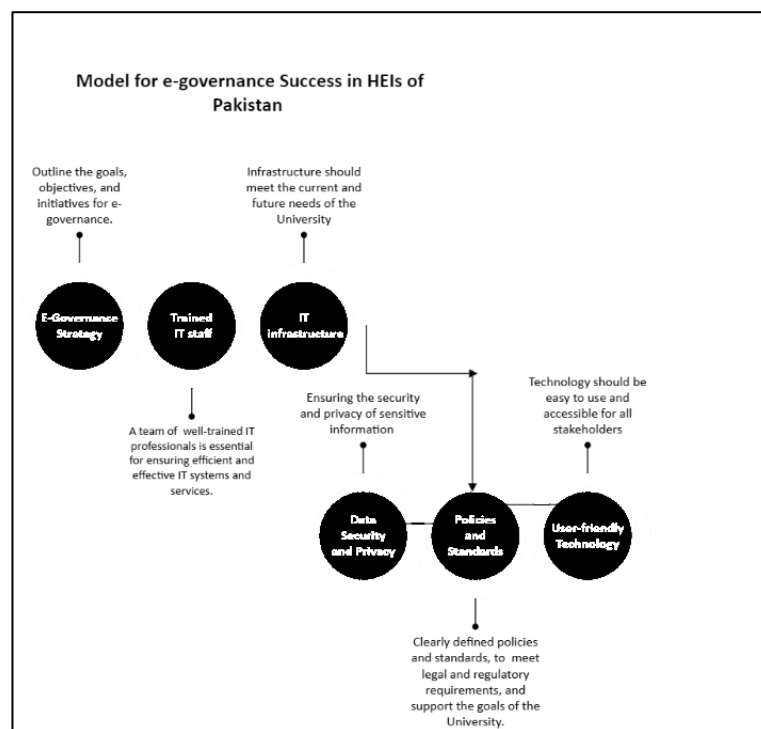


Figure 3: E-Governance Success Model for HEIs of Pakistan

The performing of a real IT governance system in HEIs desires watchful discussion of a range of issues, counting satisfactory funding, adequate and well-trained IT staff, well-designed IT schemes and organization, actual governance and organization procedures, robust leadership, strong rules and values, comprehensible technology, unceasing drill and support, and data safety

and confidentiality. Each of these matters must be fast to and unified into the overall governance model to ensure the success of the execution.

Conclusion and Future Work

The conclusion of the study considering the e-governance achievement model for Higher Education Institutions (HEIs) in Pakistan is haggard by succinct the findings and results got from the research. This research study forms that the request of an active IT governance system in HEIs wants vigilant thought of frequent issues comprising acceptable funding, adequate and well-trained IT staff, elegant IT systems and infrastructure, actual governance and management procedures, robust leadership, vibrant policies and values, comprehensible technology, unceasing training and backing, and data safety and confidentiality.

Well-known for its ideals, it has been shown that e-governance in HEIs is achieved by robust leadership, vigorous governance, and vigorous management events. Robust regulations and standards also help to ensure that the infrastructure and IT systems align with the institution's aims and objectives. An effective e-governance system also has to have user-friendly technology, sufficient and well-trained IT staff, and acceptable budget.

The report emphasizes how important it is to carry out further research on e-governance in HEIs in order to fully understand the complex interactions between many elements and how these affect the success of e-governance efforts. In addition, more study might be done to identify best practices for e-governance system application in HEIs while taking the institution's specific needs and structure into account. In general, the research study provides important insights into the problems that motivated the success of e-governance projects in HEIs and emphasizes the necessity of giving these variables careful consideration during the development and implementation of e-governance systems.

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