

Implementation of ERP as part of E-Governance in Higher Educational Institutions

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Abstract

E-governance, also known as electronic governance, is associated with carrying out functions and achieving results through technology. E-governance has recently been used in the education system to enhance transparency and accountability in the administrative process. It has the capability of integrating all the information into one centralised system. The present study aims to understand the effectiveness of Enterprise Resource Planning (ERP) as part of e-governance in Higher Education Institutions (HEIs) in Delhi by looking at the current status and prospects. Purposive sampling was employed to choose the HEIs. 500 students enrolled in different courses were chosen from selected institutions through stratified sampling. The questionnaire was made after a thorough discussion with ten experts. Frequency distribution and SPSS have been used for data analysis. Findings suggest that ERP has increased transparency in university administration, making daily tasks more convenient. It has also promoted a paperless society by keeping all data in one place. However, despite these benefits, students expressed concerns over issues such as a lack of awareness or orientation programs from the university administration, which hinder the adoption and knowledge of ERP.

Introduction

India currently has 39.4 million students enrolled in higher education. It has experienced significant growth, with India now being the world's second-largest provider of higher education after China (University World News, 2022) (Ministry of Education, 2022). The expansion of higher education institutions increased significantly after liberalisation. This demand led to the proliferation of private and technical education, making education more accessible to the masses. The rapid expansion of higher education results from the growing population and the demand for access (Chopra, 2020,

p.123). Thus, India has made significant progress in expanding access to higher education, but challenges remain, with improving quality and reducing disparities being the most prominent ones. HEIs are continuously turning towards e-governance to enhance the administrative process and provide equal access to all.

University Grants Commission (UGC) has recently highlighted that to enhance the quality and efficiency of HEIs it is necessary to implement e-governance (UGC, 2019). It has advocated for the use of e-governance in the administration and management of HEIs to improve institutional challenges.

E-governance refers to the use of information and Communication Technology (ICT) for the exchange of information, communication, and transactions. It allows the integration of various

standalone systems into one centralised system. E-Governance aims to provide services to citizens in an effective, transparent, and convenient manner. The Council of Europe defines e-governance as the utilisation of ICT in three main areas of public action. These areas include the relationship between public authorities and civil societies, the operations of public authorities at all levels and stages of the democratic process, and the delivery of public services (Council of Europe. n.d.). Thus, we can say e-governance refers to the integration of existing services and the exchange of information between the government and the citizens through the use of technology. E-governance can enhance the participation of individuals in the decision-making process as they are regularly updated regarding the policies of the government. This helps the citizens to know the next step by the government. This increases their social and economic opportunities (Arora, et.al. 2014). Thus e-governance can enhance transparency and accountability by streamlining the entire system into one centralised system. Collaborations and networking between the different departments come hand in hand with e-governance.

With higher education in India seeing a recent increase, there are two challenges that the policymakers are continuously facing first is massification of HEIs and second is to couple quality with quantity. Ensuring continuous quality across HEIs is a challenge and a continuous process (Mathews et al., 2022) (Chopra,2020). E-Governance

initiatives have been taken up by HEIs to streamline the entire administrative process into one, thus providing easy access to all stakeholders. The present study aims to understand the implementation of ERP as part of e-governance in two central universities of Delhi taking into consideration the viewpoints of 500 students.

Enterprise Resource Planning

Enterprise Resource Planning refers to a type of software that organisations use to integrate their core business processes such as accounting, procurement, project management, and supply chain operations into one integrated system (Oracle. n.d.), With the integration of different processes into one, data can be efficiently shared across the institution. It also allows real-time access to data allowing the management to make informed decisions based on up-to-date information. ERP can automate and streamline all the administrative processes from admission to student records. It can even help us keep track of the alumni (Proctur,2022). ERP is used by institutions around the world recently replacing financial and administrative management of higher education (Pollock and Conford,2004) (Norman and Ahmed, 2015 p.386). ERP has played a significant role in the management of the administrative process of higher education through technology. It can also provide an enhanced teaching-learning environment and the ability to research at reasonable costs. However, implementing an ERP system in HEIs comes with unique challenges. These challenges require proactive and strategic planning and efficient execution.

India is currently in the early stages of implementing ERP in HEIs. While not all implementation efforts have been

successful, many institutions especially private higher educational institutions have successfully implemented ERP and reaped the benefits of reducing inventory, improving administrative service, enhancing communication between the teachers and students, and more. Implementing ERP in developing countries is a challenging process, with some of the major obstacles being the high cost of implementation and maintenance, lack of top management support, employee resistance, a lack of exposure to ERP, poor IT infrastructure, and other factors (Nizamani, 2015). Therefore, it is crucial to comprehend the modalities of ERP in HEIs. Hence taking into consideration the above present study has been carried out.

Statement of the problem

The present study aims to understand the current policies and practices of ERP implementation in selected HEIs. The researcher has tried to understand the current status and prospects of ERP implementation as part of e-governance. More specifically the problem is stated as "*Implementation of ERP as part of E-Governance in Higher Educational Institutions.*"

Research Objectives

- To understand the current status of ERP implementation in HEIs
- To understand the current policies in place for the effective implementation of ERP as part of e-governance in HEIs
- To understand the prospects of ERP implementation in HEIs

Review of Literature

Noaman et.al. (2015) states that e-governance can help HEIs serve and

innovate their administrative process. It can help us serve a diverse student body by providing accessible and flexible educational experiences to the masses. The researchers state that regulatory authorities are emphasising the need for e-governance to enhance the effectiveness of higher education. Although private institutions have been able to get the maximum benefit out of it, public institutions have yet to do so.

Chopra (2020) states that e-governance in higher education institutions encompasses a wide range of applications such as students' and faculty information systems into an integrated system. E-governance not only streamlines the administrative process but also enhances the experiences of both students and faculty. However, universities have yet to reap the full benefits of it. There is still room for improvement in data infrastructure and data management.

Kalla et. al. (2021) states that ERP as part of e-governance has become increasingly important for managing administrative, financial, and academic aspects of a university. The adoption of ERP has become increasingly important and has proven to make the work of institutions easier. ERP systems have a wide range of scopes such as tracking a wide range of activities of human resource management, administrative records, and academic records. ERP systems are changing the educational landscape hence it is important to understand their implementation in the educational context. This will help us give directions and improvise wherever required.

According to Mehlinger (2023), understanding ERP implementation in Higher Education is crucial as it differs significantly from other organisations due to the unique environment and

circumstances under which the system is used. Faculty, students, and staff members interact with each other to create a better e-learning environment, which is essential for the university's success. Therefore, it is important to understand its modalities.

Khand (n.d.) states that the use of ERP systems has become increasingly important for integrating data across different departments into one central system, allowing for easy flow of information and data handling. These systems help manage assets efficiently, ultimately saving time and costs. However, it's important to note that implementing ERP is quite expensive, and universities have to spend a lot on this. Therefore, understanding the implementation of ERP in higher education is crucial. Additionally, there is a lack of literature on ERP implementation in the global south. While a lot has been written about the implementation of ERP in developed countries, there is a dearth of literature from the global south.

The literature emphasises the importance of conducting more research on the effects of ERP implementation in higher education. This research can offer valuable insights and recommendations to both private and public institutions, enabling stakeholders to better utilise technology and improve the experiences of students, teachers, and administrative staff. Since there is limited research on ERP implementation in the global south, this study will be especially beneficial in helping policymakers provide region-specific recommendations and opportunities.

Methodology

A semi-structured interview with open-

ended questions was used to gather the respondents' views on the status of ERP implementation in selected HEIs. Students from all the courses offered by the institutions were interviewed using stratified random sampling. For the selection of the universities, purposive sampling was employed, and a thorough investigation was conducted through the websites of the universities. Central Universities that have implemented ERP as a part of e-governance for more than eight years were chosen for the research.

Sample and sampling

All the central universities located within the state of Delhi were the population of this study. There are seven central universities in Delhi. Out of the seven, two central universities were selected based on the track records of their ERP implementation but the names of the universities could not be revealed for ethical concerns.

Results

One central university started its ERP project in the year 2007 however, the ERP system came into existence in the year 2008. Administrative staff started using ERP for leave management, payroll, inventory, workforce administration, and accounting transactions.

The other central university started ERP implementation in the year 2003-04, with eighteen modules. It provides a transactional approach to all the processes of the university administration. Enrolment of students, teaching-learning process, recruitment of staff, retirement of staff, and payroll are integrated with the ERP system. It got the best jury award for ICT Enabled Institution of Higher Learning developed by the university.

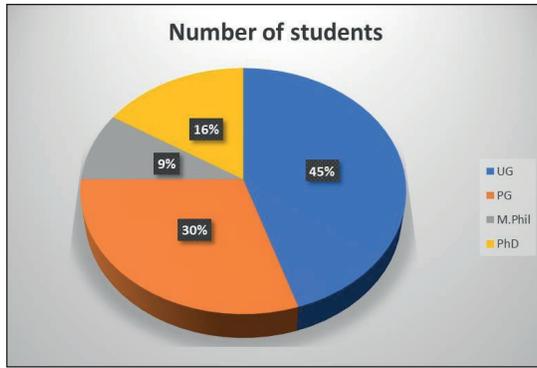


Fig. 1: Distribution of participants based on the courses offered by the universities

Figure 1 shows the distributions of participants based on the course distribution. Out of the total 500 students selected for this research, 45% were from undergraduate courses and 30% were from postgraduate courses.

However, of the total 500 students selected for the research, 9% were from M.Phil courses and 16% were from Ph.D. programs at the two central universities selected for this research.

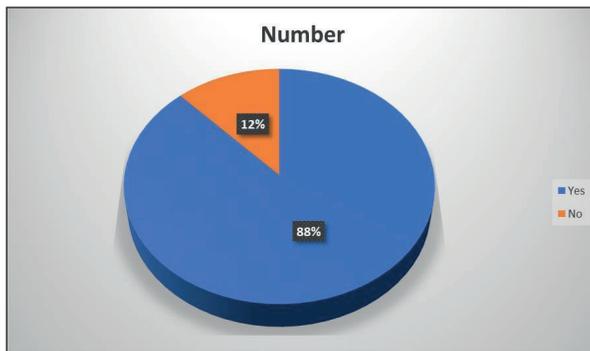


Fig. 2: Information regarding ERP

Figure 2 shows the distribution of participants who were aware of the ERP system implemented in their university. Out of the total 500 students selected for this research, 88% (which is 440

students) were aware that the university manages students' information through an ERP system. However, 12% (60 students) were not aware of this.

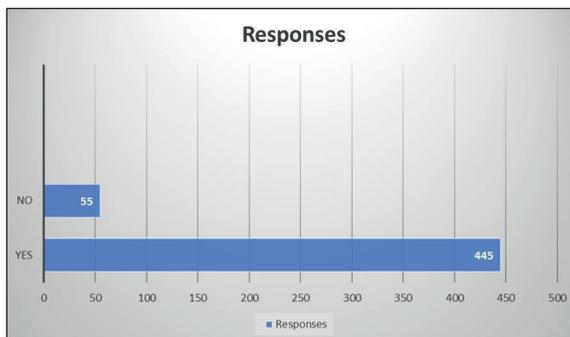


Fig. 3: Ease of use of the ERP system

Figure 3 shows the distribution of participants based on the ease of use of ERP. Out of the total number of participants in the research, 445 students mentioned that they found the university's implemented ERP system easy to use. Upon further inquiry, the students stated they could easily access all the necessary information through a centralised platform. They could check their attendance records and their marks. The students expressed satisfaction with the transparency provided by the ERP system. They no longer needed to search extensively to access their marks and attendance records.

Additionally, the university had a process for uploading students' marks, and students could request a recheck within ten days. According to the students, this system made it easier for them to request rechecks. This contributed to making the faculty and administration more responsive to the student's needs. However, 55 students from the total sample reported that they did not find the ERP system easy to use. They encountered issues such as marks not being visible even after being uploaded by the faculty, as well as discrepancies in attendance records. Additionally, students mentioned finding mistakes in the attendance records during their first semester.

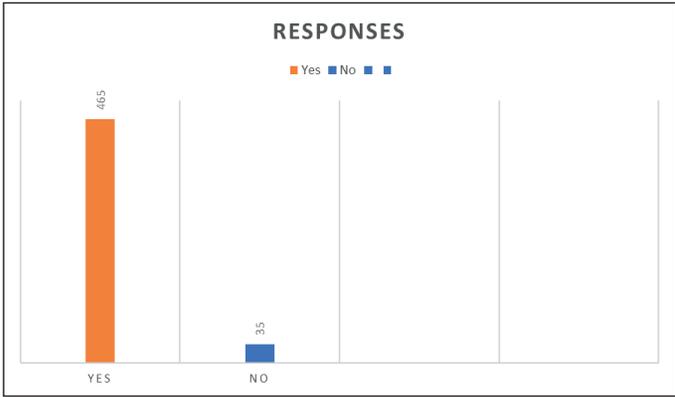


Fig. 4: Were you provided with any training for the use of ERP?

Figure 4 illustrates the breakdown of participants based on whether they received training for the use of ERP during university orientation or at another time. In the research sample, 445 students responded that they received training for the use of ERP during the university's orientation program after admission. However, they found the training duration too short and expressed a need for a longer training process. Additionally, students felt that they should receive orientation whenever the university added new modules to the ERP, which was missing.

Furthermore, students mentioned that their universities were in the initial stages of implementing SAMARTH, a free centralised ERP offered by the government of India, and they received orientation for it. However, students reported not receiving any orientation program for SAMARTH.

Out of the total sample, 35 students reported not receiving any orientation program on the use of ERP, attributing it to their absence during the orientation program, which caused them to miss the training.

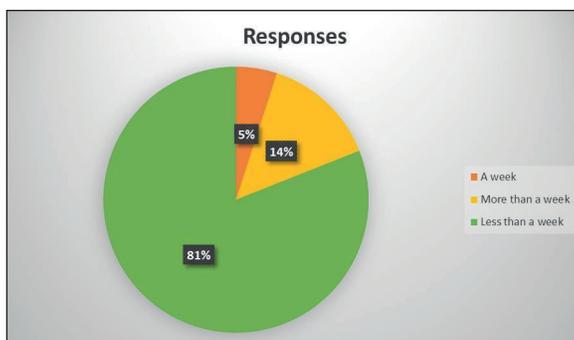


Fig. 5: Duration of training

In Figure 5, the duration of training offered by the university is presented. When asked about the duration of training for ERP, 81% of the respondents stated that the training lasted less than a week, while 14% reported receiving training for more than a week. Among the total participants, 5% indicated receiving a week-long training. Furthermore, respondents expressed a need for the university to provide at least a week-long orientation program for the use of ERP, as they encounter initial challenges and often have to seek help from their peers.

Prospects of E-Governance in HEIs

The potential for e-governance in higher education institutions (HEIs) in Delhi looks promising with the advent of SAMARTH, a government of India initiative. SAMARTH which stands for (System for Assessment, Management, and Accreditation of Institutions) is a comprehensive e-governance system module developed by the University Grants Commission (UGC) to streamline various administrative and academic processes in HEIs into one centralised system (Ministry of Education, n.d.) The project was started in the year 2019 to help the universities across India to manage and monitor the services. It helps provide a central platform for all the information of students, faculty and administrative staff. SAMARTH

is implemented across all HEIs of India, including central universities, state universities, National Institute of Technology (NITs), Indian Institute of Technology (IITs) and India Institutes of Management (IIMs).

By transitioning towards SAMARTH, HEIs in Delhi can benefit from e-governance to improve efficiency, transparency, and accountability in their daily administrative process. The platform includes modules for student lifecycle management, human resource management, and more. This centralised module can help reduce manual work, improve the accuracy of data, and enable real-time monitoring of various institutional activities. Additionally, SAMARTH can facilitate better coordination amongst HEIs and regulatory bodies. As HEIs in Delhi continue to embrace e-governance through the introduction of SAMARTH, they can streamline their processes, enhance service delivery, and promote the overall enhancement of the higher education system.

Conclusion

The present study focused on the implementation of ERP in Higher Education Institutions (HEIs) in Delhi. The data showed that the HEIs have been proactive in using ERP for e-governance to streamline various administrative processes. This has not only increased

transparency but also reduced manual work previously done on paper. While there is still some manual work been carried out in the universities to keep track of records, but it has been significantly reduced. A majority of students were aware that the university managed information through ERP, indicating a high level of awareness among the student population. Additionally, a significant number of students found ERP easy to use as it provided information such as grades and attendance, contributing to increased transparency and accountability by the university administration. However, some discrepancies still need to be addressed, such as timely visibility of marks and attendance, as a significant number of students reported facing issues with it.

The study also revealed that the

university provided training for the use of ERP during the orientation program to familiarise students with its usage. However, students felt that the duration of training was not sufficient and longer training sessions are needed. They also felt that regular orientation for new modules is necessary whenever they are added. To address this issue, universities should consider increasing the duration of the training program to help students acquire the necessary knowledge required to effectively navigate the system.

Overall, the findings suggest that ERP has been successfully implemented and generally accepted by the student community. However, there is room for improvement in terms of training, support, and continuous refinement to ensure better experiences for students and equitable access for all.

Reference

- Arora, S., & Kaur, S. (2014). *E-governance in higher education*. In Proceedings of the D.H.E. Haryana-approved National Seminar on Quality Initiatives in Higher Education. https://www.sdcollegeambala.ac.in/wp-content/uploads/2022/12/IQAC0322_P_24.pdf
- Council of Europe. (n.d.). *E-governance*. Council of Europe. https://www.coe.int/t/dgap/democracy/Activities/GGIS/E-governance/Default_en.asp
- Khand, Z. H. (2020). *The impact of enterprise resource planning (ERP) in higher education institutions: Support in the improvement of academic processes* (Doctoral dissertation, University of Liverpool, England).
- Mathews, J., Sharma, A., & Gupta, R. (2022). Higher education in India: A comprehensive overview of the landscape. *Quality Assurance in Higher Education*, 15(2), 123-145.
- Mehlinger, L. (2006). Implementing ERP in higher education. *EDUCAUSE Quarterly*, 29(2), 64-67.
- Ministry of Education. (2022). *AISHE final report 2021-22*. Government of India. <https://aishe.gov.in/aishe-final-report/>
- Neera, C. (2020). E-governance in higher education institutions in India: Status and prospects. *Európai Tükör*, 2020(4), 121-140. <https://api.semanticscholar.org/CorpusID:237380603>
- Nizamani, S. (2015). Challenges in implementing ERP in developing countries. *International Journal of Computer Applications*, 111(9), 1-5.
- Noaman, A. Y., & Ahmed, F. F. (2015). ERP systems functionalities in higher education. *Procedia Computer Science*, 65, 385-395. <https://doi.org/10.1016/j.procs.2015.09.099>
- Oracle. (n.d.). *What is ERP?* Oracle India. <https://www.oracle.com/in/erp/what-is-erp/>

- Tiwari, S., & Kalla, N. (2023). *A study on the impact of ERP implementation and adoption in higher education institutions*. ResearchGate.<https://www.researchgate.net/publication/374535863>
- University Grants Commission. (2019). *UGC annual report 2018-19*. https://www.ugc.gov.in/pdfnews/3060779_UGC-ANNUAL-REPORT--ENGLISH--2018-19.pdf
- University World News. (2022). India's higher education is opening up. But is it ready? <https://www.universityworldnews.com/post.php?story=20221102093858736>