Institutional preparedness for e-governance in Indian Affiliating Universities: A study on the views of Administrative Faculty

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Abstract. Several e-governance initiatives have been carried out in various sectors, some of them are successful, some are partially successful and some are not successful. In the field of education the major initiative is in the process of teaching and learning, and not much has been done in introducing e-governance in the administration of Affiliating Indian Universities in India. This study aims to find the preparedness for introducing e-governance in Indian Affiliating Universities from the perspective of administrative faculty. The data is collected through intensive interview and questionnaire and analyzed using factor analysis. This study concludes that the institutional preparedness and the general atmosphere for implementation of e-governance at various levels in the Indian affiliating universities are encouraging.

Keywords: E-Governance, Affiliating Universities, Administrative Staff, Factor Analysis.

1 Introduction

Information and Communication Technology (ICT) plays a major role in removing the operational inability and improving various aspects of governance. An integrated “Higher Education Service System” is one example that helps the governing bodies in the development of the education policy in the entire country and in handling diverse collaborators in a much healthier way [1].

ICT in higher education is mainly used for preparing study material; conveying and sharing content; communication among students, educators, and the outside world; developing online courses; academic research; administrative support and student enrolment [2][3][4].
During the past few decades allocation of financial resources for implementation of
e-governance projects has been substantially increased. Initially the projects had a
technological focus, since it was believed that performance of an organization could be
improved by simply infusing technology. Failure of several IT projects prompted
many to acknowledge the limitation of this approach and hence both academicians
and practioners have recently turned their attention to the organizational aspects of the
IT projects. In developed countries e-governance has been adopted as a tool to offer
better service to citizens which leads to transparency and eliminates corruption. When
properly applied, e-governance can meritoriously improve the over-all functioning of
an University. It also improves the quality of education and ensures that the
regulations as per the university statutes and acts are followed.

2 Affiliating Indian University

In India affiliating system is still followed in higher education. The affiliating
practice, which links the colleges and the university, has long been given up in the
country of its origin and it does not exist anywhere in the world except India, Pakistan
and Bangladesh [5]. The entire higher education in India takes place in such affiliated
colleges. A good number of these affiliated colleges do not have the minimum
infrastructure required even for recognition by the University Grants Commission
(UGC) under section 2f of the UGC act and still continue to impart higher education
without any hindrance. The present structure of higher education in India is outdated
and is not competent to meet the emerging challenges in the age of knowledge [1][6].

Administration of an affiliating Indian university involves enormous clerical work.
To carry out each such activity the section initiates a note in the form of a file.
Hence, a huge amount of administrative staff is needed. Occasionally, additional
people are recruited on daily salary basis. There are innate setbacks, negligence and
inability in administration leading to diverse problems and dispute. Further the term
of appointment for all the officers of the university is for a period of three years and
hence an efficient decision support system should be developed for ensuring
continuity in university administration. Hence, e-governance will serve as an efficient
tool for improving the performance of an university in all aspects of governance [2].

3 E-Governance in Education System

E-governance initiates quite a few programs and policies which encourage the
practice of ICT in higher education. Backus [7] is of the view that recognized systems
of e-governance should be more than the formulation of an online occurrence. Many
universities implemented e-Governance and it will be quite helpful in improving the
existing system of governance [8][9]. Implementing e-governance in educational system will facilitate efficient supervision of academic norms.

Universities and colleges normally use ICT and e-governance in various administrative and support tasks [3][10][11][12]. Several Universities are now embracing the use of ICT for additional proficient and competitive methods both in delivery of lectures as well as in administrative processes. The demand to automate university progression is becoming significant in line with university excellence [13].

4 Theoretical Model

The technology acceptance models concentrate on behaviour intention or usage behaviour or both. There are two types of study, namely, cross-sectional study and longitudinal study. For cross-sectional study data are gathered only once over a period of time. In a longitudinal study data are gathered at two or more times [14].

In Fig. 1 PU stands for Perceived Usefulness, FC for Functional Construction, IU for Intention to Use and UB for Usage Behaviour.

The proposed research model comprised of two core constructs (independent variables). These variables are perceived usefulness (PU) and facilitating conditions (FC).

The following are the main hypotheses of the this study

H₁: PU is positively significant on impact of Intention to Use
H₂: FC is positively significant on impact of Intention to Use
5 Research Methodology

Intensive interview with the heads of institutions and descriptive survey method have been employed to collect the required data for this study from the administrative staff of around ten Indian Affiliating Universities.

The administrative staff in the university forms the major group, whose total involvement is absolutely essential for the successful implementation of administrative reforms, including e-governance. Hence, a questionnaire consisting of 74 items was developed for this group with the following seven factors.

- Creation and maintenance of records
- Distance education related activities
- Process of affiliation
- Finance related activities
- Meetings of various bodies
- Examination related activities
- Communication between sections in the university

Items 1 to 11 in the questionnaire deal with the creation and maintenance of records, items 14 to 19 deal with distance education related activities, items 20 to 30 deal with the affiliating process, items 31 to 41 deal with finance related activities, items 42 to 51 deal with the meetings of various bodies, items 52 to 62 deal with examination related activities and items 63 to 76 deal with communication between sections at the Indian affiliating universities. The researcher adopted technology acceptance model 2 as a model for this study.

6 Analysis

For analysis of the data the researchers used Structural equation model in AMOS and Factor analysis in SPSS. Bayesian analysis is used for estimation of the proposed research model TAM2.

6.1 Structural Equation Model

Table 1 represents AMOS text output for unstandardized maximum likelihood estimates of structural paths.

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>IU ←-- PU</td>
<td>0.787</td>
<td>0.138</td>
<td>10.999</td>
<td>0.0000</td>
</tr>
<tr>
<td>IU ←-- FC</td>
<td>0.417</td>
<td>0.038</td>
<td>5.704</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
Exogenous latent variables are significant due to two structural paths. The probability less than 0.001 indicates that getting a critical ratio of PU is as large as FC (10.999). Hence at 0.001 level (two-tailed), IU dimension significantly differ from zero as the regression weight for FC is 5.704.

Use of alternative indices is more beneficial for chi-square test in SEM. The adequacy between the structural model and sample data is validated with the CFI of 0.903. The GFI value of 0.905 along with RESMA value of 0.045 confirm that it is good fit between the model and data.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Hypothesis</th>
<th>Hypothesis supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_{a1}$</td>
<td>PU is positively significant on impact of IU</td>
<td>Yes</td>
</tr>
<tr>
<td>$H_{a2}$</td>
<td>FC is positively significant on impact of IU</td>
<td>Yes</td>
</tr>
</tbody>
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The empirically proved TAM2 model for administrative staff is given in the Fig. 2.

Fig. 2.
6.2 Bayesian Analysis for Estimation of Research Model for TAM2 of Administrative Staff

Bayesian Analysis for estimation of proposed research model of TAM2 for administrative staff is empirically tested. AMOS provides several diagnostics that help to check convergence. The Convergence Statistic value shows 1.0095 and an “unhappy face” (red) is displayed in Fig. 3, reflecting the satisfactory convergence, AMOS shows “a happy face” (YELLOW) shown in Fig. 4, and is found that C.S
6.3 Content and Construct Validity Analysis of Administrative Staff Questionnaire

KMO and Bartlett’s test have been conducted and results are shown in Table 2. The result of 0.745 shows the appropriateness of factor analysis for the above-mentioned purpose. The result of Bartlett’s test of Sphericity taken for this study is 0.000 which is less than the acceptable number 0.05 and hence confirms the validity of our method.

Table 2: KMO and Bartlett's Test

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</th>
<th>0.745</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td></td>
</tr>
<tr>
<td>Approx. Chi-Square</td>
<td>269.317</td>
</tr>
<tr>
<td>df</td>
<td>45.000</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The conclusion arrived at through the investigation of the collected data using Factor Analysis are reported below. The first component dealing with creation and maintenance of data has the largest contribution of 28.818% of total variance. The percentage of contribution of the total variance of the second, third, fourth, fifth, sixth and seventh components are respectively, 18.387%, 16.326%, 10.458%, 7.353%, 7.353% and 7.353%. The numbers of variables for the seven components are respectively 9, 6, 11, 10, 11, 14 and 11.

7 Discussion

Administrative staff forms the backbone of university administration system. They are the people who are actually involved in the administration process, maintenance of files and day-to-day problems faced in the administration. Administrative staffs spend much of the time in creating, maintaining and updating various records of the university. This involves a lot of paper work and hence converting all these records as soft copies will substantially reduce the work load and also repetition of the work. Hence, they have given record creation and maintenance as the most important factor in the process of introducing e-governance. The next major issue which consumes a lot of time and energy are the distance education related activities. This is one of the major sources for generating funds for the university. Further, there are large numbers of complaints from the students under distance education such as non-receipt of course materials in time, delay in the publication of examination results, problems with various study centers and organization of contact classes. Hence, the introduction of e-governance in this vital
area will enhance the image of the university in the public which in turn will attract more students to the system. This is extremely important especially in the context of competition among the various universities in attracting students for distance education mode. Hence factor II dealing with distance education related activities has been rated as the second most important factor.

The factor dealing with finance related activities has been rated as the third important factor since a lot of activities such as preparation of monthly pay slip, annual increment and, daily cash transaction are to be carried out almost throughout the year.

Meetings of various bodies such as Syndicate, Senate, Standing Committee on Academic Affairs (SCAA) and Board of Studies (BOS) are to be conducted every year and such meetings take place almost throughout the year. The administration of such meetings involves sending meeting notices to all the concerned members, preparation of an agenda for the meeting, conducting the meeting, preparing minutes, circulating the minutes to members for approval, incorporating the corrections in the minutes and distributing the relevant portions to the various sections in the university for further action. Hence this activity involves a lot of paper work and printing and is rated as the fourth important factor. The remaining factors namely the process of affiliation; communication between sections in the university and examination related activities occupy last three positions. The affiliation process is normally completed within a period of three months in the beginning of the academic year. Perhaps the administrative staffs feel that the university may not be able to provide the facility required for online communication between different sections in the university and also perhaps they are not confident regarding the successful implementation of such communication since most of the senior administrative staff are not familiar with the handling of computers.

Examination related activities involve a lot of confidential work and this may be the main reason why it is rated as the least important factor. Perhaps the staff members are of the opinion that online dealings with question paper setters and printing of question papers may not be feasible.

8 Conclusion

Based on the intensive interview the researcher had with heads of institutions, it is found that few universities in India have started e-governance initiatives. Some of the universities have partially implemented e-governance. However, the heads of most of universities are interested in implementing e-governance at all levels of administration. Administrators in some of the section are of the opinion that there is an element of risk in implementation of e-governance in confidential activities such as setting and printing of question papers. The most important factor which results in failure of an e-governance project is lack of training for the staff members who are actually involved in the implementation. Since, most of the people involved in university administration are already users of computer and internet it is not difficult to implement necessary training for successful implementation of e-governance. From
the analysis carried out on the data collected by the researchers, it is seen that the institutional preparedness and the general atmosphere for implementation of e-governance at various levels in the Indian affiliating universities are encouraging.

References
