Chapter 1

Introduction

1.1 Introduction

The research is aimed to highlight how the quality, benefits and challenges of Enterprise Resource Planning (hereafter referred to as ‘ERP’) systems plays a vital role in Technical Education Institutions (hereafter referred to as ‘TEIs’) to increase their effectiveness in today’s dynamic environment and its impact on human resource. In this research ERP system in technical educational institution are being analyzed from its stakeholders’ perspective i.e. mainly end users. The educational institution are constantly changing and growing and it is vital for the successful enhancement and evolution of these systems that they adapt to these changes. The selection of a correct system in accordance to the institution’s needs in order to remain efficient is also highlighted by this research study.

The Enterprise Resource Planning systems encompass various functions and therefore there is a need to understand the very concept of ERP systems and its implementation, functionality and the derived user satisfaction throughout its life cycle. ERP system implementation is an ongoing process of integration and transformation of the business using an ERP system, but there is a further need to understand the post-implementation utility, benefits and the challenges behind its successful adaptation. Another essential factor in the success of any system is the satisfaction derived by its various users such as the students, staff and academics. The post–implementation challenges of the ERP systems have also been taken into account i.e. the ability of the system to be modified according to the technical education institution’s changing requirements and needs.

1.2 Research Concern

The selection and implementation of ERP systems is costly and time consuming process. There are numerous educational institutions around the world that have adopted these systems but have been unsuccessful in fully realizing their benefits.
There are many organizations that have even given up their adoption process midway after heavily investing into it due to unforeseen and uncontrolled factors which have resulted in failures. This research study endeavors to identify the problems associated with selection of an ERP system in technical educational institutes with the aim of obtaining solutions to these common but vital challenges. In addition, this study also determines means to increase impact and transformation abilities of existing ERP systems in the institutes, the benefits to the various users and means to achieve optimal satisfaction from the system usage. In the Education sector the dynamics are rapidly changing and only those ERP systems can operate properly which can consolidate and transform to meet the varying needs of its diverse users. This problem also requires a long-term solution which the research study is investigating within its domain. The various stakeholders identified for the purpose of this research study in technical educational institutes’ context are students, staff (administrators/managers/technical) and academics. The major impact of the ERP implementation is on the teaching staff of the TEIs because the processes of teaching like attendance, teaching plan, assignments, result analysis etc become automated. Therefore teaching staff of the TEIs have been selected as respondents to study the impact of ERP system on them.

1.3 Research Questions

The present study aims to answer the following research questions:

- What is the impact of Enterprise Resource Planning (ERP) system implementation on human resources of technical educational institutes?
- What are the benefits and disadvantages of Enterprise Resource Planning (ERP) systems?
- What are the various challenges encountered by these institutions in maintaining these ERP systems?
1.4 Research Motivation

In the educational sector’s dynamic and rapidly changing environment any Institution’s competitive edge is determined by its quality of research and information systems by students and staff both. This research study aims to provide educational institutions with a better understanding of the functional issues, benefits and challenges of implementing ERP systems. This study will provide the Technical Educational Institutes with a better understanding of the complexity in ERP selection, training, post-implementation functionality and usage. The ERP systems are the largest software application packages that are implemented with a considerable dedication of its various resources. In the opinion of Nielsen (2002) very limited research has been conducted in a university setting as compared to other environments. At present, the ERP systems are well-established in the various activities and processes of the Technical Educational Institutes such as academic, research, administration, finance, registration etc and the majority of these institutions use the systems to enhance efficiency and increase effectiveness of routine work. Various government bodies like All India Council of Technical Education (AICTE), Directorate of Technical Education (DTE), University etc. requires different types of information and reports at any point of time. The ERP systems can be very handy in such cases where anyone can get the desired information or reports within no time. The common challenge to all the Technical Educational Institutes’ is the system’s ability to change and modify according to the different requirements and growth of the institutions. The research findings of this study will also contribute to the institutions’ future strategic vision. The practical outcomes of this research study will be a better understanding of the impact of ERP system on the human resource and various users’ expectation and perception of the usability of ERP systems. The present study will provide the various Technical Educational Institutes’ with a better understanding of the internal and external challenges and their impact on the performance of these ERP systems. The result is dissatisfaction among the various stakeholders as the perceived benefits are not fulfilled although heavy investment has been made.
Some of these areas are:

- The institutes are having limited understanding about the benefits of ERP systems as against the cost involved to implement it.
- Although the various Technical Educational Institutes’ utilize ERP systems to improve their efficiency; the common problem is their ability to the common challenge to all of them is their ability to understand the changes required and to accommodate those changes for growth of the institutions.
- The knowledge, outcomes and findings of this research study can be utilized by the institutions for successful implementation of ERP systems.

1.5 Research Justification

The continuous technological advancement and the increasing complexity of the ERP systems require the institutes’ to regularly upgrade their systems. The ERP systems, the interfaces, administrative, educational and support systems have a limited lifespan. These systems require upgrading and modifying according to diverse and changing needs as it is essential to maximize an institution’s effective use of these systems. It is very important to retain support from the software vendors for proper maintenance and modification of the ERP systems. These systems are the largest software applications adopted by universities through significant investments made in their implementation (Abugabah and Sanzogni, 2010). According to Finney and Corbett (2007), there is a lack of research that focuses on key factors of ERP systems from the viewpoint of its multiple stakeholders in an educational context. This research studies aspires to address these gaps. The Technical Education Institutions need to have a necessary knowledge base and guideline to enable them to carefully handle the post implementation phase and manage institutional impacts on the various stakeholders. This research study aims to develop a theoretical framework which will assist the Technical Education Institutions’ in their management of the ERP systems, the impact of ERP systems on end users, benefits realization and the challenges being faced in maintaining these systems.
1.6 Aims and Objectives

The research lies in the context of the ERP systems implemented in Technical Educational Institutions in Maharashtra state and its impact on human resource. Human resource includes teaching and non-teaching staff in educational institutes. Here the focus is on teaching staff as they play an important role in institution’s development. Such an exploration is undertaken with the aim of indentifying the different ERP systems used in TEI to improve the main organizational activities, in this dynamic environment. In a Technical Education Institutional context the ERP systems functionality is a key element as it determines the flexibility of the system to support the various organizational changes. In the educational sector the requirements and needs of the ERP systems are unique to its diverse users. The success of the ERP system depends on the user’s involvement and characteristics as well as their training. In additional to this the transformation ability of the ERP system will also determine its survival and growth.

Objectives of the study:

The main objective of this study is to study the Enterprise Resource Planning (ERP) systems in technical educational institutes and its impact of the human resources within Maharashtra state

The objectives of the present study are as under:

1. To study the role and importance of Enterprise Resource Planning.
2. To study the problems and prospects of Enterprise Resource Planning in Technical Educational Institutes (TEIs).
3. To understand the cost and benefit proportion of Enterprise Resource Planning implementation.
5. To study the impact of Enterprise Resource Planning implementation on organization’s efficiency.
6. To suggest the effective measure for better implementation of ERP system in Technical Educational Institutes (TEIs).
1.7 Scope of the Study

The challenge common to all Technical Education Institutions is to strengthen the quality of their programs and faculty and meet the need of the competitive environment to counterbalance the external pressures and provide higher quality education and research facilities. These Technical Education Institutions are aiming to be distinctive i.e. they are striving to obtain better ranking over other institutions by investing heavily in their IT capability. They have invested in introducing ERP systems that are one stop systems to provide better, integrated and complete solutions for their various stakeholders.

ERP systems are increasingly crucial in enabling the technical educational institution to meet the challenges in areas of integration of information systems successfully. The study of dynamics of ERP systems is a multi-disciplinary subject as these systems address a wide range of strategic, managerial and operational activities involved in the gathering, processing, storing, distributing and use of information, and its associated technologies, for and in education institutions. The universities are also considered large organizations but their environments are different from those of the traditional organization and similarly, their use of technology is also different i.e. for educational purposes. Mehlinger (2006) suggests that the needs of its diverse users are unique and they have to be understood and comprehended into the ERP system as it is the main channel of communication between all the different stakeholders. Thus it would not be wrong to say that the ERP systems are critical to the strategic mission of these educational institutions and should be carefully selected, developed, implemented and maintained. There is a lack of awareness of the implications of ERP systems in technical educational institutes.

Therefore, it is very important that there is a good fit between the ERP applications and the users’ needs if these institutions want to avoid any future failures. Therefore there is a requirement to investigate and identify the factors that can result in failure of similar projects. As this research study aims at exploring the ERP systems utilized in Technical Education Institutions; the ERP systems in the Technical Educational Institutes in Maharashtra state have been selected for the purpose of research and their systems investigated. The future progressive
enhancement and integration of the ERP systems are vital as all the activities are interrelated and rapidly changing in the Technical Education sector. The overall objective of the present study of ERP systems in technical educational institutes’ context is to provide students, academics, staff and administrators with a theoretical framework for the evaluation, selection and post implementation management of ERP systems in the long run.

1.8 Hypotheses Tested

Formulation of hypothesis is an important task of any research. The hypothesis word is made up of two words; namely ‘Hypo’ and ‘Thesis. Hypo means composition of two or more variables which need to be verified while ‘Thesis’ means position of the variables with specific reference.

James E. Greighton defines hypothesis as it is a tentative supposition or provisional guess which seems to explain the situation under observation.

According to Lungberg A hypothesis is a tentative generalization the validity of which remains to be tested. In its most elementary stage the hypothesis may be any hunch, guess, imaginative idea which becomes the basis for further investigation. All hypotheses formulated for this study were alternative hypotheses and accordingly tested. Following hypotheses were formulated for the research study.

Table 1.1 Table showing Hypotheses Tested

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1</td>
<td>ERP helps to improve the efficiency of employee</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>ERP Implementation is costly affair as compared to its benefits</td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>Use of ERP saves time of the organization</td>
</tr>
<tr>
<td>Hypothesis 4</td>
<td>ERP improves employee’s decision making</td>
</tr>
<tr>
<td>Hypothesis 5</td>
<td>Appropriate training leads to successful ERP implementation</td>
</tr>
<tr>
<td>Hypothesis 6</td>
<td>Implementation of ERP is time consuming process</td>
</tr>
</tbody>
</table>
1.9 Overview of Research Methodology

The study is related to ERP implementation in TEIs and its impact on human resources within Maharashtra State. For this study the researcher has used survey based research methodology and all TEIs were considered for data collection.

This research project was conducted using a survey using Google Forms. Director/Principal, Administrator, Staff and learners were contacted via email inviting them to participate in the survey and providing them with a link to the survey website. Survey results will measure the perceived acceptance of the new system and what user factors affect a successful implementation. Also, this case will compare the CSF and best practices found in current research that have been found to improve the chance of a successful ERP implementation.

The process of identifying a sample to survey involved identification of key staff members who were impacted by the ERP implementation because their daily work was affected by this implementation. Groups identified to be invited to participate in this survey process include:

• Institutes Director / Managing Authority.

• End users/ staff members

The research can be categorized into various categories like exploratory, qualitative, quantitative, applied, descriptive and basic research. The selection of the research category depends on the methodology used in the research and the choice of research justification. The choice of the methodology has been chosen to achieve the objectives of the research. This chapter will present the justification of the choice of research methodology.

This research study is related to the use of ERP system implemented by TEIs in Maharashtra state. It uses both primary and secondary data. The secondary data uses information from both published and unpublished sources. The primary data was collected by survey method. Survey was conducted by census survey method. A census survey collects complete information from all participants in the population.
1.9.1 Primary Data

Primary data were collected through a survey method using a structured questionnaire. There were two questionnaire designed for end users and management/management representative users. This primary data is first hand and original in nature. Since the researcher was the person who involved in ERP implementation in his organization, the data also collected from personal observation, interview with both the user and vendor. The data were collected through online Google application Google Forms and by hard copy as well.

1.9.2 Selection of Population Area

For this study Maharashtra state was selected as area of population since lots of TEIs are there in the state and big institutes of them are investing in ERP for tasting benefits of it. An attempt was taken to study the ERP implantation in such TEIs and its impact on its human resources. There is lots of scope of improvement in ERP implementation in TEIs and very few TEIs were implemented ERP system. This study helps those TEIs who want to implement ERP in future.

1.9.3 Selection of Technical Educational Institutes (TEIs)

The objective of the research is to identify the TEIs in Maharashtra state who have implemented ERP system and its impact on their human resource i.e. teaching staff. To find out TEIs in Maharashtra state who have implemented ERP system, the information regarding the TEIs is collected from the Directorate of Technical Education’s (DTE) website along with the ERP vendors like WordPro, GEMS, Ekklavya Infosys, Aarush systems and eCampus. For this study only those TEIs were selected who have implemented ERP system.
1.10 Research Methodology for Present Study

Research Approach

By considering the objectives of this study and the problem statement, survey method was considered to be appropriate.

Pilot Survey

A pilot survey was executed before conducting the main survey. The reason behind the pilot survey is to scrutinize the questionnaire which was developed for the study of ERP system implementation. The pilot survey was conducted in 3 TEIs and valuable information was collected for further improvement. Pilot survey provided some important inputs such as which part is to be included in questionnaire, types of questions to be asked etc. Based on this pilot survey final questionnaire was designed.

Final Survey

After successful pilot survey, the questionnaire was finalized. Since online survey method is useful in time saving and easy, Google Forms web site was used to create online questionnaire. The questionnaire link then sent to the respondents through emails. This further helps to analyze the data collected from the respondents with an ease. Few responses were collected in the written format also for better understanding of the information collected from the respondents. The addresses of the online questionnaire are shown in the Table 1.2.

Table 1.2 Questionnaire Address

<table>
<thead>
<tr>
<th>Respondent Type</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>End User</td>
<td><a href="https://docs.google.com/forms/d/15K4hUBDKLE7CjvJcQEFv7_tt-tAKNmLGcHd5o1le5rl/viewform">https://docs.google.com/forms/d/15K4hUBDKLE7CjvJcQEFv7_tt-tAKNmLGcHd5o1le5rl/viewform</a></td>
</tr>
<tr>
<td>Management</td>
<td><a href="https://docs.google.com/forms/d/1mcwqbOOK8VtGSRwy-o3jgRKWWgHJBTf0ywNPj-8AXfI/viewform">https://docs.google.com/forms/d/1mcwqbOOK8VtGSRwy-o3jgRKWWgHJBTf0ywNPj-8AXfI/viewform</a></td>
</tr>
</tbody>
</table>

(Source: www.docs.google.com)
The above addresses of questionnaires had been sent to the selected end users and management users of the TEIs where ERP system has been implemented.

**Research Design**

For this study, 24 technical institutes are identified with the help of Directorate of Technical Education (DTE), Maharashtra State and ERP vendors. In each of these institutes, the teaching staff was contacted and requested to participate in this study. The management/management representative at TEIs across Maharashtra who had implemented ERP systems were also approached. Of these, all TIEs consented to participate in the survey.

Several rounds of follow-up via telephone calls and e-mails were made to remind the TIEs to respond to the questionnaire. Around 393 responses of end users and 24 responses from management users were obtained.

The ERP system and its implementation have been observed within the research domain. This chapter emphasizes on the methodology used by the researcher to conduct the research. This chapter begins with the overview of research methodology, research design followed by data source and sample size. The chapter then proceeds by giving an overview of various research dimensions.

The design of this research starts with identifying the TEIs where ERP system is implemented. After identifying the TEIs, all TEIs were considered as the research study aims to find out the impact of ERP on the human resources of these TEIs. A structured questionnaire was designed for capturing the responses of these users along with other methods like observation and informal interviews. The collected data has been analysed with the help of SPSS 21 software and conclusions and recommendations have been drawn. Figure 1.1 shows a schematic diagram of research design used for the present study.
The above figure shows the research design for the present study. The first stage of the study was the population for the research. The teaching staffs of the TEIs who have implemented ERP system were the respondents. The samples were collected from all the TEIs who have implemented ERP system. For better understanding of ERP implementation and its impact on human resource, the first time user i.e. teaching staff was purposefully selected for the study. Because non-teaching staff like accountant and store incharge have already been using some or the other accounting software for maintaining the account. The samples were collected through structured questionnaire, interviews and observation and the data analysis has been done using statistical tool SPSS software. After analysis of data and hypothesis testing, findings and recommendations were drawn.
Data Source

The major source of data was primary. Secondary information was collected from various sources like research papers published in journals, books and e-journals. Articles in newspapers and magazines were also used for secondary information. Primary information was collected from few ERP vendors like WordPro and eCampus to identify the TEIs who have implemented ERP systems.

Universe

The Technical Educational Institutes (TEIs) of the Maharashtra state who have implemented Enterprise Resource Planning (ERP) system to streamline various processes of their institute. For this study only those TEIs were selected who have implemented all the vital modules of ERP system. It has been found during preliminary investigation that there are only 24 TEIs who have implemented all the modules of ERP systems in their institutes. Hence universe for this study was 24 Technical Educational Institutes (TEIs) within Maharashtra state who have implemented Enterprise Resource Planning (ERP) system in their institutes.

Sample Size

For this research, 393 end user responses were obtained from all the TEIs where ERP system has been implemented and 24 management/management representative responses received from 24 TEIs and all were considered for analysis. The samples were collected region-wise in Maharashtra state. These regions are based on the geographical area and each region has its regional centers. The regions are defined by the Directorate of Technical Education (DTE) and the same regions were considered for the study. The regions in Maharashtra state are shown in Figure 1-2.
Figure 1.2 shows that the regions in Maharashtra state. The DTE has 6 regional offices located across the state. The regional offices are located in Amravati, Aurangabad, Mumbai, Nagpur, Nashik and Pune. The TEIs under these regions report to these regional centers.

The TEIs were selected after doing pilot survey on TEIs and various vendors who have provided ERP solution to the TEIs. The distribution of samples in various regions of Maharashtra state is given in the following table:

Table 1.3 Region wise population distribution

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of TEIs</th>
<th>Number of ERP implemented TEIs</th>
<th>End User Sample Size</th>
<th>Management Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amravati Region</td>
<td>103</td>
<td>3</td>
<td>28</td>
<td>3</td>
</tr>
<tr>
<td>Aurangabad Region</td>
<td>215</td>
<td>3</td>
<td>108</td>
<td>3</td>
</tr>
<tr>
<td>Mumbai/Konkan Region</td>
<td>293</td>
<td>4</td>
<td>52</td>
<td>4</td>
</tr>
<tr>
<td>Nagpur Region</td>
<td>251</td>
<td>3</td>
<td>34</td>
<td>3</td>
</tr>
<tr>
<td>Nashik Region</td>
<td>273</td>
<td>3</td>
<td>43</td>
<td>3</td>
</tr>
<tr>
<td>Pune Region</td>
<td>582</td>
<td>8</td>
<td>128</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1717</strong></td>
<td><strong>24</strong></td>
<td><strong>393</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

(Source: Compiled from Primary Data, 2014-15)
The Table 1.3 shows that there are 8 technical educational institutes from Pune region were selected who have implemented ERP system which is highest as compared to other regions in the state. From Mumbai region 4 TEIs were selected whereas samples from 3 TEIs each were collected from Amravati, Aurangabad, Nagpur, Nashik regions who have implemented ERP in their institutes.

**Period of the Study**

The technical institutes started implementing ERP system after 2010 when they started realizing its benefits. The TEIs who have implemented ERP system during 2010-15 were considered for this study.

**Sampling Technique**

Lists of TEIs who have implemented ERP were obtained with the help of various ERP vendors and DTE. A census survey method had been used as samples were collected from all the TEIs who have implemented ERP system. The respondents were divided into two categories/strata: end users and management users.

**Data Collection**

The aim of this research study is to study ERP systems in TEIs and its impact on human resources. In order to gain a deeper insight into issues impacting these institutions of ERP systems in the TEI a structured questionnaire has been designed to collect the data. The research design is based on a thorough literature review and identifying the gaps to aid the research process to collect data from questionnaire, observations and interviews. For the purpose of the current research a structured questionnaire is considered as the main source along with interview and document reviews.

**Field Study**

This is one of the oldest methods of collecting raw data in natural settings. The advantages of the methods are that the researcher is close to the respondents under investigation and can gather invaluable insight about the facts. The other advantage is
that the information gathered is up to date and original. The major disadvantage of this method is that it is very time consuming and costly. This method has been utilized for this research study as assist the researcher to investigate ERP systems in TEI context.

**Questionnaire**

In order to carry out this research study using the multiple perspectives, structured questionnaire has been prepared and circulated to the selected TEIs. Majority questions in the questionnaire are based on Likert scale while few questions are open-ended. Likert scale questions are designed to understand the perception of the respondents towards ERP implementation. The questionnaire was sent to the respondents with the prior permission and informed them by email and/or phone.

**Secondary Data Collection**

Other data collection techniques such as documentations and records which include: journals, research articles, books, thesis etc. were all reviewed and used as a secondary source of data collection that has proved very useful for this current research. As the reliability of the sources varies every care has been taken in verification and selection of the most reliable sources. Using the institution documents whenever possible gives the researcher an inside view of their ERP systems being used and the details related to the research context. The gathering of such information has not been an easy task in these institutions as ERP related information is perceived as confidential and dispensing of it as a breach of their privacy. The different methodologies are combined to answer the research question as completely and accurately as possible and to ensure that the data collected and analyzed depicts the true issues and their respective solutions.
1.11 Limitations of the Study

Though the effort has been made to address all the aspects of the present study successfully, few constraints and limitations also identified during this study.

1. One of the major limitations was in terms of getting access to the institutes who have implemented ERP system. This was the case of few institutes only. Few institutes were refused to participate in the research as they don’t want to share the information. But after lots of meetings I was able to convince my motive of the research, they provided me the information.

2. Another important limitation is the authenticity and credibility of the information provided by the institutes and users. There is no method to ensure the authenticity of the date collected from the user. Therefore, there is a possibility that the information provided by the users may have deviated from the reality.

3. As the research study was conducted across Maharashtra state there was also the added constraint of travelling these institutes. Time constraint was a major issue as all the users responses need to collect with prior appointments.

4. It was very difficult to get responses from the management users as generally they were busy in their work. To get the data from the management user instead of asking them to fill up the questionnaire, the researcher himself filled up the questionnaire by asking them the questions from the questionnaire.

5. The other limitation was the availability of teaching staff for distributing the questionnaire and collecting the data. The participation of the research was voluntary although many of the staff agreed to participate but some also refused for unknown reasons.

6. Furthermore, the other limitation was that the institutions do not completely share all the ERP related documents and reports as they hide the sensitive information from being exposed.
1.12 Structure of the Thesis

This research study provides an overview of ERP systems and its implementation in Technical Educational Institutions and its impact on its human resource using survey method. The main source of data collection is questionnaire, interviews and the secondary data sources of documents, observation and publications. In addition to this, the analysis has been done to determine the ERP systems quality, impact, usage, benefits and challenges in a TEI context using collected data. The report is broadly divided into 6 chapters.

This chapter deals with the background study undertaken for this research. It introduced the research topic and illustrates the importance of the research focus and its domain. It also discussed in brief the objective and scope of the study, research concern, research motivation and justification. Further, it talks about research methodology used for this study including research design developed for the study.

**Chapter 2:** The second chapter deals with the literature review that discusses the view point of various academics and researchers on ERP implementation, life-cycle and integration as well as the ERP systems usage, impact, benefits, challenges, training and various other factors associated with the ERP systems generally and then in the educational institutions specifically.

**Chapter 3:** The third chapter discusses overview of ERP and Technical Educational Institutes (TEIs). The chapter explains about Enterprise Resource Planning (ERP), overview of ERP in India, technical education in India and Maharashtra, features and benefits of ERP and ERP in the context of education. The chapter also includes profile of the selected Technical Educational Institutes (TEIs) in Maharashtra who have implemented ERP system.

**Chapter 4:** The fourth chapter presents statistical analysis of data and interpretation. In addition to this, the secondary data collection techniques of observation and documentation review have also been discussed.
Chapter 5: The fifth chapter comprises of findings, conclusions, and suggestions. This chapter concludes the thesis by discussing the contributions and limitations of the research findings as well as future contributions to be made. This chapter also includes the contribution and suggestions for future research in this field.

1.13 Concluding Remark

Data collection in this study was tiresome process. During this process, data was collected from 393 end user respondents and 24 management respondents. Total 24 TEIs were approached for the data collection. All were participated in the survey. Questionnaire was sent to the respondents through Google Forms and hard copies. As Google Forms have facility to take only one response from one respondent, it was easy to collect non-redundant data.

This chapter provided detailed information about the research methodology used to conduct this research. The available research approaches that are mostly used in social sciences research i.e. quantitative and qualitative were thoroughly presented along with some discussions about several research strategies that fall under both quantitative and qualitative research. Similarly, the three research paradigms or research philosophies i.e. positivistic, interpretive, and critical research that are generally used in information system research have also been considered.
References


