Chapter 1

INTRODUCTION

1.1 BACKGROUND

Careers and the world of work have witnessed a sea change in the recent years. The business environment today is marked with rapid and volatile changes. Globalization, technological breakthroughs and intense competition have forced widespread organizational transformations. These far reaching changes have influenced virtually all aspects of the functioning of organizations, including the management of human resource. Standing at the verge of the beginning of their career, the university graduates of today are confronted with the much challenging and demanding job market.

The new world of work demands such knowledge, skills and other vital attributes that were not required from a traditional employee. The traditional job market has undergone a radical change. The work environment in earlier times was characterized by job stability, foreseeable work environment, long term employment and organizational responsibility for career management. Herriot and Stickland (1996) point out that under the traditional psychological contract, job security was exchanged for loyalty and hard work of an employee. However, for the modern psychological contract, the key characteristics include flexibility, job insecurity and individual responsibility for career management and employability (Hiltrop, 1995; Raeder and Grote 2001). Such significant transformations have indeed changed the way employees are hired, developed and managed in organizations.

In view of these changes, it has largely been recognized by the key stakeholders like government and employers, that the knowledge, skills and the competencies of an individual play a crucial role in building competitive edge for organizations (Hartshon and Sear, 2005; McQuaid and Lindsay, 2005). The relevance of a degree is no longer a passport for securing employment (Yorke and Knight, 2006). At this backdrop, the “employability” of graduates, is thus, an all-encompassing term for knowledge, skills, experience and other vital competencies, has indeed gained considerable significance. The ability to gain employment lies at the core of employability. As job security and lifelong employment continue to
diminish in the modern world of work, enhancing employability offer individuals the means to manage their careers and ensure continued employment. Against this backdrop, the strong need for enhancing employability of workforce has largely been acknowledged by both academia and industry.

Although employability has gained vital significance, yet, it is noteworthy that “employability gap” is a global phenomenon which is prevalent in majority of the countries today, including both developing and developed nations (Aring, 2012). This gap can be described as a striking difference in the competencies required for a job and those possessed by the applicants. It refers to the qualitative mismatch in the demand and supply of human resource. According to Mistry (2014), the gap implies that, both, at the supply end i.e. higher education institutions have enough graduates to supply, and at the demand side i.e. industrial / service sector have enough vacancies. Still, not all graduates get suitably employed and companies struggle to get their demand fulfilled by quality talent. This gap exists because the potential job seekers are not suitably equipped to get employed in the industry.

The shortage of skilled labours across many industries is emerging as a significant and complex challenge to India’s growth and future. In context of India, it is crucial to underline that employability gap has seriously hit majority of the sectors of its economy (FICCI, Ernst and Young, 2012; Manpower Group, 2015; Team Lease Services, 2007). Ernst and Young (2012) highlight that only 25% of the total Indian professionals are considered employable by the organised sector. It has been found that in the year 2015, 58% of the employers in India found difficulty in filling jobs (Manpower Group, 2015). Team Lease Services (2007) reports that 57% of the India’s youth suffer from some degree of unemployability.

Plugging in the demand-supply mismatch of human resource in qualitative terms would ultimately ensure a steady supply of skilled workforce to meet the quantitative manpower demands of the industry. This calls for a strong need to bridge the employability gap in order to ensure that the knowledge, skills and competencies possessed by the potential human resource meets the requirements of the industry.

In order to address this issue of employability gap and bridge the qualitative demand supply mismatch, it becomes fundamental to understand the cause for such a
gap. This necessitates the need to revisit and analyse employability at the first stance. Analysing employability and investigating its antecedents would further provide a framework to explore the areas of gap. Therefore, the vital question that prevails is what the predictors of employability are, or put differently, what are the requirements and expectations of the employers from graduates while hiring for jobs. However, the answer to this simple question is rather complex. Though the subject of employability has been extensively discussed in the literature, there is no consensus on its predictors. Also, it is noteworthy that though there are some skills and competencies that are generally common for all jobs, the predictors of employability may be different for different jobs depending on the sector specific requirements and precise demands of the job. It is evident from the literature that employability is a complex construct that can be explored from different dimensions, and so can be the employability gap. Some of the past researches have indicated that the difference in perceptions among stakeholders can be a plausible reason for widening the employability gap (Wickramasinghe and Perera, 2010; Lee et al., 2002; Turner and Lowry, 1999)

The present study is, thus, an attempt to explore and assess the nature of employability gap in Indian Information Technology sector based on the perceptual differences among key stakeholders. Such a multiple stakeholder approach, using a mix of qualitative and quantitative methodology, to understand and analyse the reasons for the employability gap, is not just a strategic assessment of the problem, but also has long term implications for all the key stakeholders in the sector.

In this study, a multipronged approach has been adopted to address the issue of employability gap. At the outset, the antecedents of employability identified from the literature are subjected to qualitative modelling to gain an insight into the interrelationships between them. Further, the predictors of employability are validated from two key stakeholders (employers and potential employees) perspectives, based on which gap analysis is undertaken to analyse any significant difference contributing to the employability gap in this sector. While employability gap is rampant across industries, it is more pronounced in the IT sector, given the fast pace of change prevalent in this sector. The Indian IT sector, too, despite its exponential growth, is
(Nasscom, 2014; Nasscom, 2012) is not immune to the manpower challenges posed by the problem of employability gap.

Thus, the strategic assessment approach used in the study encompasses qualitative analysis of the predictors of employability by the industry experts, development of a hierarchical model of these predictors, establishment of a conceptual model of research and validating it by the two key stakeholder groups i.e. employers and potential employees, in the IT sector. The perceptual gap between the key stakeholders highlights the need to strategize beyond the skill deficit or loopholes in the higher education system, that have been much extensively highlighted in the available literature as the prime reasons for employability gap. Based on the findings, recommendations have been proposed to bridge the employability gap by suggesting ways to address the perceptual differences.

1.2 CONTEXT AND MOTIVATION FOR RESEARCH

The 21st century world of work can be described as a high speed ever changing environment that places high level of pressure on those functioning within these context (Fugate and Kinicki, 2008). Employability has become a significant construct since the 1990s. With a different school of thought, Verhaar and Smulders (1999) and many other authors consider employability as just a buzzword, however, it is notable that in many countries like Britain, China, Germany, Italy, France etc., policy makers are increasingly focussing on graduate employability as a key indicator of higher education decision making (Cranmer,2006).

Employability, as discussed earlier, is an all-encompassing term for knowledge, skills, experience and competencies that are significant for securing and maintaining employment (Robinson, 2000; Hillage and Pollard,1998). Employability of graduates is considered essential for both employers and employees. While on one hand it is crucial for the career management and development of the graduates, on the other hand, employable graduates offer a competitive edge to organizations contributing to its success with their updated skills and competencies. Although the importance of graduate employability has been extensively acknowledged, still, employability gap remains to be a widespread phenomenon prevalent in many of the developed and developing countries at present. This includes countries like India,
China, Cambodia, Pakistan, USA, Canada, Europe, Egypt, Qatar and others (Aring, 2012).

Employability gap, in Indian context, is a major challenge for almost all the sectors, and is more pronounced in the fast-paced Information Technology sector, despite its impressive growth. Nasscom (2015) brings out that this sector accounted for 8 percent of GDP in 2014 and 19 percent of the total exports. The sector has grown at a CAGR of close to 30% between 2004 and 2009 (National Skill Development Corporation). As per NASSCOM’s Strategic Review 2013, the sector aggregated revenues exceeding 108 billion and employed almost 3 million people in this year. Though the sector is acknowledged as one of the fastest growing sectors, low employability is a major challenge for the recruiters. NASSCOM’s report (2012) highlighted that unemployability is one of the major challenges for IT sector in India and that there is an oversupply of talent with low employability. Further in 2014, NASSCOM reports indicated that in IT Services, Software Products and Engineering and R&D, only about 25% of the graduates are deemed employable. NASSCOM (2012) reveals that unemployability is a major challenge with only 10-15% employable graduates in business services and 26% of employable engineers in technical services. Also, only 12% of the students graduating every year are considered employable by Tier 1/Tier 2 companies (NASSCOM, 2009).

As the employability gap continues to adversely impact the high growth of the Information Technology sector, it calls for a substantial need to assess its nature in order to address the reason for such a gap. This necessitates the need to explore employability and examine its antecedents that will in turn reveal the areas of gap. While different models and frameworks have been proposed outlining the factors that influence employability, there is no consensus among them. While many of the models are too shallow, the others are far embracing. Most of the models enlist the components that affect employability without a comparative understanding of how they are different from the other ones, the rationale for the identified factors in the model and the empirical evidence is limited. Moreover, further focusing on the sector specific skill requirements of the Information Technology sector, the literature is very limited and more inclined towards policy level recommendations.
Also, another significant dimension to the issue is the perspectives of the key stakeholders. There are various surveys and research studies that identify the desired skills required for graduate employability from the standpoint of employers (Aasheim et al., 2012; Bailey and Mitchell, 2006; Benamati, 2007; Archer and Davison, 2008; Fang et al., 2005; Harris, 2012, Ramli et al., 2010, Saad et al., 2013). However, it is crucial to measure the perceptions of the graduates as well in order to ascertain if they have similar viewpoints as that of the employers. A comparison of such perceptions between the two stakeholder groups can reveal the perceptual differences, if any, that can be one of the prime reasons for originating and intensifying the magnitude of the existent employability gap.

In light of the discussion above, this research has been carried out with an exclusive focus on the Information Technology sector, to assess the nature of employability gap that is prevalent in the sector. In order to achieve its objectives, the study analyses the knowledge areas, skills and competencies in graduates that influence their employability and are valued at the workplace. Further, besides validating the proposed model of research, the study highlights the perception differences among the two key stakeholder groups (employers and potential employees). Such perceptual differences are assumed to be one of the fundamental cause for employability gap prevalent in the sector.

Accordingly, the following major outcomes have been envisaged from the study:

1. To propose and validate the conceptual model for the antecedents of graduate employability in Information Technology sector.
2. To measure and test if there are significant differences in the perceptions of key stakeholders i.e. employers and graduates, in IT sector with respect to the significance of the predictors of graduate employability.

1.3 DEFINITION OF KEY TERMS

This section provides the definition of key terms that have been used in this study:
a) **Employability**: For the purpose of this study, employability is considered as the ability to get initial employment, maintain employment and obtain new employment if required as defined by Hillage and Pollard (1998)

b) **Information Technology (IT) Companies**: Companies involved in the development, deployment and management of technology. Such companies offer technical solutions, deliver IT services, business and technology consulting and system integration services and solutions.

c) **Graduates**: Any student in the final academic year of a specific bachelor’s level course

d) **Information Technology (IT) Graduates**: Any student in the final academic year of a bachelor’s level degree course in Information Technology / Computer Science / Computer Applications and allied areas.

e) **Skills / Competencies/ Attributes**: These are the components or factors that represent specific ability that contributes to employability. These terms are used interchangeably throughout the study.

f) **Employability Gap**: A difference in the competencies required for a job and those possessed by the graduates.

g) **Strategic**: It relates to the identification of long term and overall aims and interests and the means of achieving them. It refers to the decisions or plans designed to impact favourably the key factors on which the desired outcome of an organization depends.

h) **Assessment**: It is the act of judging or deciding the amount, value, quality, nature or importance of something. It refers to evaluation, estimation, appraisal or analysis of something.

i) **Stakeholder**: A person, group or organization that has a legitimate interest in a project or entity. In context of higher education which is implied in this study, stakeholder is anyone with a reasonable interest in education who thereby acquires a right to intervene.

### 1.4 RESEARCH QUESTIONS AND OBJECTIVES

The research questions that have been examined in this study are listed below:

a) What are the factors / antecedents that influence graduate employability in the Information Technology sector?
b) How are these antecedents related to each other and influence graduate employability in Indian Information Technology Sector?

c) What are the perceptions of the two key stakeholder groups (graduates and employers) with respect to the factors that influence graduate employability in Information Technology sector?

d) Are there any significant perceptual differences between the employers and graduates with respect to these factors?

e) What are the areas of perceptual differences between the two key stakeholder groups (employers and graduates) on these factors that contribute to employability gap and how it can be addressed?

At the backdrop of these research questions, the objectives of the study have been delineated as follows:

a) To identify the antecedents / factors that influence graduate employability in general and in the context of IT sector in India.

b) To study the interrelationship among these factors of employability identified from the literature

c) To develop the conceptual framework of factors affecting employability, and validate from the perspectives of the two key stakeholder groups i.e. employers and potential job seekers (graduates) in Indian IT sector.

d) To analyse the perceptual difference among the two key stakeholder groups (employers and graduates) with respect to these factors.

e) To highlight the areas of perceptual differences between the two key stakeholders (employers and graduates) that contribute to employability gap and suggest ways to address it.

1.5 EMPLOYABILITY GAP- THE STRATEGIC ASSESSMENT

The present study aims to assess the employability gap in Indian Information Technology sector by examining and comparing the perceptions of the two key stakeholder groups i.e. employers and graduates. The basic theoretical assumption of this study is that such perceptual differences do not just cause the employability gap, but further augment it. Such an analysis of employability gap requires to revisit the concept of employability and understand its antecedents.
It is evident from the literature that employability is a complex and multifaceted term that can be analysed from different dimensions and in different contexts. The present study addresses the issue of employability gap by examining the predictors of employability based on the intrinsic factors like knowledge, skills, competencies and other vital attributes that enhance the chances of securing and maintaining employment, in the context of Indian Information Technology sector. The assessment of employability gap in this study has been termed “strategic” because of the multi methodological and multi stakeholder perspective approach that has been adopted to address the issue.

This study goes much beyond the mere identification of skills and examining their relative importance for jobs to underline the areas of gap. Rather, taking a step further, the acknowledged knowledge / skill areas have been endorsed by the domain experts to propose a conceptual model of antecedents of employability and validate from the perspectives of two key stakeholders. The key deliverables of the strategic assessment include the qualitative analysis of factors that influence employability, a hierarchical model of these factors, an empirically validated conceptual model for the antecedents of employability, a comparison of the perceptions of two key stakeholder groups (employers and potential job seekers) on employability and further, revealing the perceptual differences that augment the employability gap. These different phases of the strategic assessment adopted for the study have been elaborated in chapter 3. At the end, based on the outcomes of this strategic assessment, recommendations have been proposed that have long term implications for all the key stakeholders.

1.6 OVERVIEW OF METHODOLOGY

This section provides an overview of the methodology that has been used in this research:

Preliminary Phase

The study has been initiated with a preliminary groundwork in order to broaden the information horizons, explore and gain a better understanding of the subject matter. A conceptual review of literature has been carried out to understand employability and dynamics of talent demand and supply, both in general and specific to Information
Technology sector. The research constructs have been largely drawn from the review of literature. Subsequently, interpretive modeling of the research variables has been undertaken in order to gain a better understanding of the relationships between them. For the same, qualitative technique called Total Interpretive Structural Modeling (TISM) has been used.

**Conceptual Framework and Hypotheses Formulation**

Based on the identified research constructs and qualitative analysis in the preceding stage, the conceptual framework of research has been developed. Such a model depicts the framework used for this study. Further, hypotheses of research have been formulated to explore the nature and strength of relationship between the identified variables of study.

**Empirical Study for Hypotheses Testing**

The research hypotheses formulated for the study have been tested through the deployment of two distinct set of questionnaire based opinion surveys for the two stakeholder groups i.e. employers and the graduates (potential employees). Also, two discrete sets of hypotheses have been formulated. The hypotheses of association have been tested to understand the possible relationship between the identified research constructs. Hypotheses of difference have been tested to gauge the difference in opinion of the stakeholders, if any. The proposed model has been empirically validated, at both macro and micro level, using multivariate data analysis techniques.

**Analysing Employability Gap: A Perceptual Analysis**

The findings from the two distinct opinion surveys deployed for employers and graduates are synthesized to analyse the employability gap through perceptual analysis. The synthesis enables to compare the perceptions of these two key stakeholder groups and highlight the areas of perceptual differences between them. Such an examination enables to assess the nature of employability gap arising from the differences in perceptions on the required knowledge and skill areas among employers and potential job seekers.
Data and methodological triangulation techniques have been used in this study. These techniques cross validate the findings that have been gathered through the two groups of respondents and through the deployment of qualitative and quantitative analysis techniques. The triangulation outcomes enhance the credibility of the research findings. At the culmination of this study, logical conclusions have been drawn from the findings and recommendations have been proposed to bridge the employability gap.

1.7 ORGANIZATION OF THESIS

This thesis has been organized into different chapters each describing a distinct phase of research. The chapter themes are discussed in this section.

Chapter one provides an overview of the present research. It introduces the topic under study and further elaborates the background, context and motivation of research. It enlists the research questions and objectives and discusses the research methodology that has been adopted. Finally, the organization of thesis is outlined.

Chapter two presents the extensive review of literature that has been undertaken on the different aspects of this study. The chapter elaborates the concept of employability by discussing its meaning and definitions, its origin and evolution, the different models and frameworks of employability that have been proposed and the wide ranging perspectives on the subject. Further, the general predictors of graduate employability have been outlined. Also, key areas like skill landscape in India and the role of higher education in building employability have been elaborated. Subsequently, narrowing the discussion down to Indian Information Technology sector, an overview of the sector and its present state has been presented. Also, employability gap in this sector has been highlighted. Further, the predictors of employability in context of Information Technology sector have been elaborated to identify the research constructs. The perception differences among the key stakeholders has also been discussed. Finally, the learning from the literature review and research gaps have been summarized.
Chapter three illustrates the research design used for the present study. It outlines the phases of strategic assessment used in this study, the research constructs i.e. the macro and the micro variables and the hypothesized relationship among them. The research model conceptualized for the purpose of this study is depicted. Further, the framework and the approach used for the conduct of this research has been discussed highlighting the techniques used for data collection, validation and analysis.

Chapter four elaborates the qualitative analysis of the research constructs that has been undertaken through interpretive modeling. The chapter reports the working and results of Total Interpretive Structural Modeling (TISM) technique that has been used for the purpose of understanding the nature of relationship between the identified research constructs.

Chapter five elaborates the opinion survey approach that has been used in this study for empirical validation. The results from the questionnaire based survey of the employers are reported in this chapter. Also, the related aspects like questionnaire development, its administration, validity, descriptive and statistical techniques used for data analysis have also been discussed.

Chapter six reports the results of the opinion survey for graduates in IT sector. Similar to the reporting of results for the opinion survey of employers as discussed in chapter five, this chapter discusses analogous concepts like questionnaire development and pretesting, results of validity and reliability testing, descriptive and statistical techniques for analysing the responses obtained from the graduates.

Chapter seven, synthesizes the findings of the two empirical surveys to assess the employability gap through perceptual analysis of the two key stakeholder groups i.e. employers and potential job seekers. The chapter compares the perceptions of the employers and graduates to highlight the areas of perceptual differences that bear and widen the employability gap.

Chapter eight, the concluding chapter, triangulates the obtained results, draws meaningful conclusions and proposes recommendations. This chapter discusses the triangulation approach that has been used in this research for the validation of research framework. Further, the chapter revisits the objectives, summarizes the key
findings and provides conclusions for the study. Also, recommendations based on these results and its implications for the stakeholders have been discussed. Finally, the limitations of the research and scope for future research have been enumerated.

1.8 CHAPTER SUMMARY

This chapter is an introduction to this research that provides an overview of the subject being investigated, elaborates the background of this study and the context and motivation for this research. Further, the research questions and objectives have been enumerated, the research methodology in brief has been outlined and the organization of thesis is described. The next chapter explores the literature related to various dimensions of this study and provides a conceptual review.
encouraging me to progress in life. Their prayers have sustained me thus far. I would also like to thank my parent in laws for their best wishes, constant support and encouragement throughout this tough journey. I owe a special thanks to my sister, Alka and my brother-in-law, Rajeev who have helped me in every possible way that they could for the completion of this research. Especially during the data collection stage, they have been instrumental in mobilising data for this study. I will forever be indebted to them for their significant contribution in the completion of this research. I would also like to thank my sister, Neetu, for always boosting my morale during the tough times of this research.

My heartfelt thanks and deepest appreciation for my husband, Sachin, for his unconditional support and constant encouragement throughout this experience. Without him, I would not have the courage to embark on this journey at the first place. I would like to thank him for standing by my side throughout this challenging period and living every moment of it. I shall forever be thankful to him for his emotional support and the numerous sacrifices that he made on my behalf during these years. I would also like to thank my beloved daughter, Omisha, for being so accommodating, composed and cooperative at such a young age. Her patience has indeed helped me to balance my personal and professional life.

Above all, I owe it all to Almighty God for granting me the wisdom, health and strength to undertake this research task and enabling me to its completion. Thank you God for everything.

Nidhi Arora

October 2016
This is to certify that Ms. Nidhi Arora, Department of Business Administration has satisfactorily completed the course work/comprehensive examination and pre-submission seminar requirement which is part of his PhD programme.

Date:                        (Signature of the Chairman of the Department)
COPYRIGHT TRANSFER CERTIFICATE

Title of the thesis: Strategic Assessment of Employability Gap in Indian IT Sector: A Perceptual Analysis of Key Stakeholders

Candidate’s Name: Nidhi Arora

Copyright Transfer

The undersigned hereby assigns to the Aligarh Muslim University, Aligarh, copyright that may exist in and for the above thesis submitted for the award of the PhD degree.

Signature of the Candidate

Note: However, the author may reproduce to authorize others to reproduce material extracted verbatim from the thesis or derivative of the thesis for author’s personal use provide that the source and the University’s copyright notice are indicated.
LIST OF ABBREVIATIONS

1. BCA : Bachelors of Computer Applications
2. B.Tech: Bachelor of Technology
3. CS : Computer Science
4. HEI : Higher Education Institutions
5. IS : Information Science
6. ISM: Interpretive Structural Modeling
7. IT: Information Technology
8. NASSCOM: National Association of Software and Service Companies
9. TISM : Total Interpretive Structural Modeling
<table>
<thead>
<tr>
<th>Table Number</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.9 (b)</td>
<td>ANOVA for Macro Variables</td>
<td>122</td>
</tr>
<tr>
<td>5.9 (c)</td>
<td>Coefficient Summary for Macro Variables</td>
<td>123</td>
</tr>
<tr>
<td>5.10</td>
<td>Results of Testing Macro Hypotheses from Employers’ Perspective</td>
<td>124</td>
</tr>
<tr>
<td>5.11(a)</td>
<td>Regression Analysis Model Summary for Micro Variables of Technical Skills</td>
<td>124</td>
</tr>
<tr>
<td>5.11 b)</td>
<td>ANOVA for Micro Variables of Technical Skills</td>
<td>124</td>
</tr>
<tr>
<td>5.11(c)</td>
<td>Coefficient Summary for Micro Variables of Technical Skills</td>
<td>125</td>
</tr>
<tr>
<td>5.12 (a)</td>
<td>Regression Analysis Model Summary for Micro Variables of Personal and Interpersonal Skills</td>
<td>125</td>
</tr>
<tr>
<td>5.12 (b)</td>
<td>ANOVA For Micro Variables of Personal and Interpersonal Skills</td>
<td>126</td>
</tr>
<tr>
<td>5.12 (c)</td>
<td>Coefficient Summary for Micro Variables of Personal and Interpersonal Skills</td>
<td>126</td>
</tr>
<tr>
<td>5.13 (a)</td>
<td>Regression Analysis Model Summary of all Independent Variables</td>
<td>127</td>
</tr>
<tr>
<td>5.13 (b)</td>
<td>ANOVA for all Independent Variables</td>
<td>127</td>
</tr>
<tr>
<td>5.13 (c)</td>
<td>Coefficient Summary for all Independent Variables</td>
<td>128</td>
</tr>
<tr>
<td>5.14</td>
<td>Summary of Hypotheses Testing of Micro Variables from Employers’ Perspective</td>
<td>129</td>
</tr>
<tr>
<td>6.1</td>
<td>Research Framework for Opinion Survey Method for Graduates</td>
<td>133</td>
</tr>
<tr>
<td>6.2</td>
<td>Summary of Attributes of the Questionnaire Used for the Opinion Survey of Graduates</td>
<td>134</td>
</tr>
<tr>
<td>6.3</td>
<td>Sample Design for Opinion Survey of Graduates</td>
<td>135</td>
</tr>
<tr>
<td>6.4</td>
<td>Results of Factor Analysis for Questionnaire-II (Graduates)</td>
<td>138</td>
</tr>
<tr>
<td>6.5</td>
<td>Results of Reliability Test for Questionnaire-II (Graduates)</td>
<td>140</td>
</tr>
<tr>
<td>6.6</td>
<td>Univariate Statistical Analysis for Macro Variables-Questionnaire II</td>
<td>141</td>
</tr>
<tr>
<td>6.7</td>
<td>Univariate Statistical Analysis for Micro Variables-Questionnaire II</td>
<td>141</td>
</tr>
<tr>
<td>6.8</td>
<td>Results of Correlation Analysis for all Research Variables</td>
<td>143</td>
</tr>
<tr>
<td>6.9 (a)</td>
<td>Regression Analysis Model Summary for Macro Variables</td>
<td>144</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>Table 6.9 (b)</td>
<td>ANOVA for Macro Variables</td>
<td>144</td>
</tr>
<tr>
<td>Table 6.9 (c)</td>
<td>Coefficient Summary for Macro Variables</td>
<td>145</td>
</tr>
<tr>
<td>Table 6.10</td>
<td>Results Of Testing Macro Hypotheses of Association from Employers’ Perspective</td>
<td>146</td>
</tr>
<tr>
<td>Table 6.11 (a)</td>
<td>Regression Analysis Model Summary for Micro Variables of Technical Skills</td>
<td>146</td>
</tr>
<tr>
<td>Table 6.11 (b)</td>
<td>ANOVA for Micro Variables of Technical Skills</td>
<td>147</td>
</tr>
<tr>
<td>Table 6.11 (c)</td>
<td>Coefficient Summary for Micro Variables of Technical Skills</td>
<td>147</td>
</tr>
<tr>
<td>Table 6.12 (a)</td>
<td>Regression Analysis Model Summary for Micro Variables of Personal and Interpersonal Skills</td>
<td>148</td>
</tr>
<tr>
<td>Table 6.12 (b)</td>
<td>ANOVA For Micro Variables of Personal and Interpersonal Skills</td>
<td>148</td>
</tr>
<tr>
<td>Table 6.12 (c)</td>
<td>Coefficient Summary for Micro Variables of Personal and Interpersonal Skills</td>
<td>149</td>
</tr>
<tr>
<td>Table 6.13 (a)</td>
<td>Regression Analysis Model Summary of All Independent Variables</td>
<td>150</td>
</tr>
<tr>
<td>Table 6.13 (b)</td>
<td>ANOVA for All Independent Variables</td>
<td>150</td>
</tr>
<tr>
<td>Table 6.13 (c)</td>
<td>Coefficient Summary for all Independent Variables</td>
<td>150</td>
</tr>
<tr>
<td>Table 6.14</td>
<td>Results of Testing Micro Hypotheses of Association from Graduates’ Perspective</td>
<td>151</td>
</tr>
<tr>
<td>Table 7.1</td>
<td>Summary Results of One Way ANOVA for Macro Variables</td>
<td>156</td>
</tr>
<tr>
<td>Table 7.2</td>
<td>Summary Results of One Way ANOVA for Macro Variables</td>
<td>157</td>
</tr>
<tr>
<td>Table 7.3</td>
<td>Synthesized Regression Analysis Results for Macro Variables</td>
<td>158</td>
</tr>
<tr>
<td>Table 7.4</td>
<td>Synthesized Regression Analysis Results for Micro Variables of Technical Skills</td>
<td>160</td>
</tr>
<tr>
<td>Table 7.5</td>
<td>Synthesized Regression Analysis Results for Micro Variables of Personal and Interpersonal Skills</td>
<td>161</td>
</tr>
<tr>
<td>Table 7.6</td>
<td>Synthesized Regression Analysis Results for Controlled Impact of all Independent Micro Variables</td>
<td>162</td>
</tr>
<tr>
<td>Table 8.1</td>
<td>Triangulation Method Adopted for The Study</td>
<td>174</td>
</tr>
<tr>
<td>Table 8.2</td>
<td>Data Triangulation</td>
<td>175</td>
</tr>
<tr>
<td>Table 8.3</td>
<td>Methodological Triangulation</td>
<td>176</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Figure 3.1</td>
<td>Conceptual Framework of Research</td>
<td>69</td>
</tr>
<tr>
<td>Figure 3.2</td>
<td>Phases in Research Methodology</td>
<td>78</td>
</tr>
<tr>
<td>Figure 3.3</td>
<td>Flowchart for Statistical Analysis of Opinion Surveys</td>
<td>81</td>
</tr>
<tr>
<td>Figure 3.4</td>
<td>Flowchart for Research Approach</td>
<td>83</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>TISM Framework</td>
<td>88</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Diagraph with Significant Transitive Links</td>
<td>93</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>TISM of Factors Affecting Employability</td>
<td>94</td>
</tr>
<tr>
<td>Figure 5.1</td>
<td>Profile of Respondents for Employer Survey</td>
<td>110</td>
</tr>
<tr>
<td>Figure 5.2</td>
<td>Types of Validity</td>
<td>112</td>
</tr>
<tr>
<td>Figure 5.3</td>
<td>Validated Macro Model of Research from Employers’ Perspective</td>
<td>129</td>
</tr>
<tr>
<td>Figure 5.4</td>
<td>Validated Model of Micro Variables of Technical Skills from Employers’ Perspective</td>
<td>130</td>
</tr>
<tr>
<td>Figure 5.5</td>
<td>Validated Model of Micro Variables of Personal and Interpersonal Skills from Employers’ Perspective</td>
<td>131</td>
</tr>
<tr>
<td>Figure 5.6</td>
<td>Validated Model of Controlled Impact of all Independent Variables from Employers’ Perspective</td>
<td>131</td>
</tr>
<tr>
<td>Figure 6.1</td>
<td>Courses of Study from which Graduate Sample is Drawn</td>
<td>137</td>
</tr>
<tr>
<td>Figure 6.2</td>
<td>Validated Macro Model from Graduates’ Perspective</td>
<td>151</td>
</tr>
<tr>
<td>Figure 6.3</td>
<td>Validated Micro Model of Technical Skills from Graduates’ Perspective</td>
<td>152</td>
</tr>
<tr>
<td>Figure 6.4</td>
<td>Validated Model of Micro Variables of Personal and Interpersonal Skills from Graduates’ Perspective</td>
<td>153</td>
</tr>
<tr>
<td>Figure 6.5</td>
<td>Validated Model of Controlled Impact of all Independent Variables from Graduates’ Perspective</td>
<td>154</td>
</tr>
<tr>
<td>Figure 8.1</td>
<td>Methods of Triangulation</td>
<td>172</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS

1 INTRODUCTION 1
  1.1 BACKGROUND 1
  1.2 CONTEXT AND MOTIVATION OF RESEARCH 4
  1.3 DEFINITION OF KEY TERMS 6
  1.4 RESEARCH QUESTIONS AND OBJECTIVES 7
  1.5 EMPLOYABILITY GAP-A STRATEGIC ASSESSMENT 8
  1.6 OVERVIEW OF METHODOLOGY 9
  1.7 ORGANIZATION OF THESIS 11
  1.8 CHAPTER SUMMARY 13

2 LITERATURE REVIEW 14
  2.1 CHAPTER OVERVIEW 14
  2.2 UNDERSTANDING THE CONCEPT OF EMPLOYABILITY 14
    2.2.1 Graduate Employability 17
    2.2.2 Origin and Evolution of Employability 18
    2.2.3 Models and Frameworks of Employability 19
  2.3 EMPLOYABILITY SKILLS: PERCEPTIONS AND EXPECTATIONS 27
    2.3.1 The Demand for Skills 27
    2.3.2 Employability - The Recent Perspectives 28
    2.3.3 Graduate Employability and the Role of Higher Education 31
  2.4 GENERAL PREDICTORS OF GRADUATE EMPLOYABILITY 33
  2.5 DOMAIN OF THE STUDY: INFORMATION TECHNOLOGY SECTOR IN INDIA 35
    2.5.1 The Skill Landscape in India 36
    2.5.2 The Information Technology Sector in India 39
  2.6 EMPLOYABILITY PREDICTORS FOR TECHNICAL GRADUATES 44
  2.7 GRADUATE EMPLOYABILITY AND STAKEHOLDERS’ PERCEPTION 50
    2.8 LEARNINGS FROM LITERATURE REVIEW AND RESEARCH GAPS 51
      2.8.1 Learnings from Literature Review 51
      2.8.2 Research Gaps 52
  2.9 CHAPTER SUMMARY 53

3 RESEARCH METHODOLOGY 55
  3.1 OVERVIEW OF THE DESIGN OF STUDY 55
  3.2 THEORETICAL PERSPECTIVES 56
  3.3 RESEARCH OBJECTIVES 57
  3.4 PHASES OF STRATEGIC ASSESSMENT ADOPTED IN THE STUDY 57
  3.5 RESEARCH CONSTRUCTS / VARIABLES 60
    3.5.1 Identification of Research Variables for Study 61
    3.5.2 Macro Constructs 63
    3.5.3 Micro Constructs 66
  3.6 RESEARCH FRAMEWORK 68
  3.7 HYPOTHESIS FORMULATION 69
    3.7.1 Hypothesis of Association 69
    3.7.2 Hypotheses of Difference 72
  3.8 RESEARCH METHODOLOGY 76
    3.8.1 Methodology for Literature Review 78
    3.8.2 Methodology for TISM 79
    3.8.3 Methodology for the Opinion Survey 80
    3.8.4 Synthesis of Results for Assessment of Employability Gap through Perceptual Analysis 81
    3.8.5 Methodology for Triangulation 82
6.7 RESULTS OF THE UNIVARIATE ANALYSIS
   6.7.1 Univariate Analysis for Macro Constructs from Graduates Perspective
   6.7.2 Univariate Analysis for Micro Variables from Graduates Perspective
6.8 BIVARIATE AND MULTIVARIATE ANALYSIS
   6.8.1 Correlation Analysis
6.9 REGRESSION ANALYSIS FOR OPINION SURVEY OF GRADUATES
   6.9.1 Regression Analysis of Macro Variables
   6.9.2 Regression Analysis of Micro Variables
6.10 VALIDATED RESEARCH MODEL-GRADUATES’ PERSPECTIVE
   6.10.1 Validated Macro Model of Research from Graduates’ Perspective
   6.10.2 Validated Model of Micro Variables of Technical Skills from Graduates’ Perspective
   6.10.3 Validated Model of Micro Variables of Personal and Interpersonal Skills from Graduates’ Perspective
   6.10.4 Validated Model of Controlled Impact of All Independent Micro Variables from Graduates’ Perspective
6.11 CHAPTER SUMMARY
7 EMPLOYABILITY GAP-A PERCEPTUAL ANALYSIS
   7.1 CHAPTER OVERVIEW
   7.2 RESULTS OF TESTING HYPOTHESES OF DIFFERENCE
   7.3 PERCEPTUAL ANALYSIS OF TWO KEY STAKEHOLDERS
      7.3.1 Perceptual Differences among Stakeholders on Macro Variables of Study
      7.3.2 Perceptual Differences among Stakeholders on Micro Variables of Study
   7.4 ASSESSMENT OF EMPLOYABILITY GAP FROM THE STUDY
      7.4.1 Analysing Employability and its Predictors
      7.4.2 Formulation and Validation of Conceptual Model of Research
      7.4.3 Perceptual Analysis of Key Stakeholders
      7.4.4 Bridging Employability Gap by Plugging Perceptual Differences
   7.5 ASSESSMENT OF EMPLOYABILITY GAP- A PERORATION
   7.6 CHAPTER SUMMARY
8 TRAINGULATION, CONCLUSIONS AND RECOMMENDATIONS
   8.1 CHAPTER OVERVIEW
   8.2 TRIANGULATION OF THE OUTCOMES
      8.2.1 Methods of Triangulation
   8.3 TRIANGULATION IN CONTEXT OF PRESENT STUDY
      8.3.1 Data Triangulation
      8.3.2 Methodological Triangulation
   8.4 SUMMARY OF THE MAJOR FINDINGS
      8.4.1 Identification of Research Variables
      8.4.2 Interrelationships among the Research Variables
      8.4.3 Validation of the Conceptual Model of Research
      8.4.4 Perceptual Differences among Employers and Graduates
   8.5 KEY CONCLUSIONS
   8.6 MAJOR RECOMMENDATIONS
   8.7 IMPLICATIONS FOR KEY STAKEHOLDERS
      8.7.1 Implications for Employers
      8.7.2 Implications for Potential Job Seekers
      8.7.3 Implications for Higher Education Institutions
   8.8 SIGNIFICANT RESEARCH CONTRIBUTIONS
   8.9 LIMITATIONS OF THE STUDY
   8.10 SCOPE OF FUTURE RESEARCH
   8.11 CONCLUDING REMARKS