Chapter 8
TRIANGULATION, CONCLUSIONS AND RECOMMENDATIONS

8.1 CHAPTER OVERVIEW

The present study is rooted in “employability gap” that has gained much prominence and is a major challenge for both academia and industry. The bridging of this gap has become fundamental for the development of graduates, the success of organizations and the progress of the economy as a whole. With a focus on Indian Information Technology sector, the domain of study, that has been seriously wedged by the problem of employability gap, this research has started with the view to identify the antecedents of employability and later analysing the perceptual differences among the key stakeholders on the significance of these factors that widen the employability gap.

The aims and objectives of this study, the research design employed, the methodology and the results of the data analysis have been discussed in the previous chapters. This closing chapter triangulates the findings of this study, revisits the objectives and draws conclusions from the study. Also, recommendations based on these results have been discussed. Finally, the limitations of the research and scope for future research has been enumerated.

8.2 TRIANGULATION OF THE OUTCOMES

Triangulation is basically a technique to ascertain if the different data sources, theories, investigators or research methodologies lead to singular proposition about the phenomenon being studied. Denzin (1978) defines triangulation as the “the combination of methodologies in the study of the same phenomenon.” Primarily, triangulation increases the credibility and validity of the results of a research. Yeasmin & Rahman (2012) argue that triangulated techniques are helpful for cross-checking and providing confirmation and completeness. Also, triangulation is used for the purpose of congruence i.e. the use of triangulation techniques endorses the results of a research through the convergence of different perspectives. Jick (1979) bring out that triangulation is a technique for the cross validation and captures a complete and holistic picture of the units under study. Therefore, it can be inferred that triangulation brings in congruence and convergence in research by overcoming
the limitations of a single method, single-observer, single-theory studies and enhances the generalizability and credibility of the obtained results of the study.

8.2.1 Methods Of Triangulation

Triangulation can be done through different techniques. Figure 8.1 presents the different methods of triangulation that have been elaborated below.

![Methods of Triangulation Diagram](image)

**Figure 8.1: Methods of Triangulation**

As the Figure 8.1 shows, there can be four different methods of triangulation i.e. Methodological Triangulation, Data Triangulation, Investigator Triangulation and Theoretical Triangulation. These are elaborated below:

**Methodological Triangulation**: This technique refers to using more than one method of measuring the same object of interest (Oppermann, 2000). Methodological triangulation enables to reveal the information that might have remain undiscovered with the use of a single approach. (Hales, 2010) argues that the use quantitative and qualitative methods in a single research facilitates to rule out rival explanations of change and improves the validity and reliability of findings.

**Theoretical Triangulation**: This method of triangulation enables the researcher to validate or converge the results of multiple theories that are used in a single study. (Hales, 2010) argues that the use of multiple theories helps to look beyond the obvious explanations and increase the number of alternative explanations.

**Data Triangulation**: This refers to using the same approach for different sets of data in order to verify the generalizable trends are discovered in one data set (Oppermann, 2000). This technique is commonly used when the data is collected from
different groups of respondents, or in different time frames or space. Data triangulation leads to improving the accuracy of judgements.

**Investigator Triangulation**: This method implies using different investigators in a single study. The use of such multiple investigators helps to reduce the bias in terms of data collection and its further analysis.

The four basic methods of triangulation are discussed above. However, different methods may be used together in a study. When at least two or more methods of triangulation are used in combination, it is referred to as *Multiple Triangulation*. Therefore, it can be concluded from the above discussion that the use of triangulation further endorses the results of study and reveals the deviant aspects. It is a vehicle for verification that introduces completeness and congruence in the research thereby enhancing the validity of the obtained results.

**8.3 TRIANGULATION IN THE CONTEXT OF PRESENT STUDY**

Triangulation has been used in the present study in order to enhance the credibility of the results that have been obtained from this research. It is evident from the preceding sections that not all techniques of triangulation can be used together. The selection of the triangulation method varies with different kind of methodologies adopted in a research.

In the present research, a mixed methods approach has been used. The research constructs have been largely drawn through the conceptual review of literature. Further, a qualitative analysis of the research constructs has been conducted through the use of Total Interpretive Structural Modeling (TISM) technique. Subsequent to the preliminary validation of the research constructs, the conceptual framework of study is formulated. This developed framework is subjected to empirical validation through the use of quantitative technique i.e. opinion surveys. Therefore, it can be summarized mixed methods i.e. both qualitative and quantitative data have been used in this research. Therefore, methodological triangulation has been used to validate the results.
Also, the quantitative data through the use of questionnaires has been collected through two distinct stakeholder groups i.e. employers and graduates. The same research constructs have been used in both the surveys. Therefore, data triangulation technique has been used to examine the congruence of the results obtained from the two group of respondents.

The use of triangulation techniques for the present study is summarized in the Table 8.1 below:

<table>
<thead>
<tr>
<th>Type of Triangulation (Denzin, 1978)</th>
<th>Triangulation Approach Adopted for the Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data triangulation</td>
<td>Perception of two groups of respondents has been captured i.e. employers and graduates.</td>
</tr>
<tr>
<td>Methodological triangulation</td>
<td>Use of the qualitative and quantitative techniques.</td>
</tr>
<tr>
<td>Investigator triangulation</td>
<td>Not possible in a doctoral research as there is a single investigator</td>
</tr>
<tr>
<td>Theory triangulation</td>
<td>Not applicable in context of the present study. Multiple theories have not been used.</td>
</tr>
</tbody>
</table>

Therefore, it can be inferred that multiple triangulation has been used in this study through the deployment of data and methodological triangulation.

8.3.1 Data Triangulation

As discussed earlier in this chapter, data triangulation is used for the validation of results when the data is collected from different groups of respondents, in different time frames or space. In the present study, data triangulation is used in context of the respondent groups. The data has been collected from two different stakeholder groups i.e. employers and graduates to capture their perceptions on the significance of graduate employability. The responses of these two groups is compared in the Table 8.2
### Table 8.2: Data Triangulation

#### Triangulation Results For Macro Variables

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variables</th>
<th>Opinion Survey of Employers (Regression Analysis)</th>
<th>Opinion Survey of Graduates (Regression Analysis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technical Skills</td>
<td>All the three macro variables considered significant</td>
<td>All the three macro variables considered significant</td>
</tr>
<tr>
<td>2</td>
<td>Organizational Knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Personal and Interpersonal Skills</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Triangulation Results For Controlled Impact of Micro Variables**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variables</th>
<th>Opinion Survey of Employers (Regression Analysis)</th>
<th>Opinion Survey of Graduates (Regression Analysis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technical Specialties Knowledge</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>2</td>
<td>Technology Management Skills</td>
<td>Significant</td>
<td>Insignificant</td>
</tr>
<tr>
<td>3</td>
<td>Communication Skills</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>4</td>
<td>Problem Solving and Critical Thinking Skills</td>
<td>Significant</td>
<td>Insignificant</td>
</tr>
<tr>
<td>5</td>
<td>Creative Thinking Skills</td>
<td>Insignificant</td>
<td>Insignificant</td>
</tr>
<tr>
<td>6</td>
<td>Teamwork and Interpersonal Skills</td>
<td>Significant</td>
<td>Insignificant</td>
</tr>
<tr>
<td>7</td>
<td>Organizational Knowledge</td>
<td>Significant</td>
<td>Significant</td>
</tr>
</tbody>
</table>

**Triangulation / Interpretation:** It can be inferred from Table 8.2 above that both employers and graduates consider the three independent macro variables significant. However, while examining the controlled impact of the seven micro variables when taken together, the employers consider only one out of the seven i.e. Creative Thinking Skills as insignificant. However, the graduates consider four out of seven as insignificant. Only Technical Specialties Knowledge, Communication Skills and Organizational Knowledge are considered significant by the graduates. Therefore, the results obtained from the two groups have been triangulated for some of the research variables. However, a difference in findings on the other variables across the two groups indicate perceptual differences between employers and graduates that has been highlighted in Chapter 7.

### 8.3.2 Methodological Triangulation

Methodological triangulation is used to cross validate the results of multiple methods that are used in the same study. In the present research, both qualitative and quantitative techniques have been used. The results of the same are summarized in Table 8.3 below:
Table 8.3: Methodological Triangulation

<table>
<thead>
<tr>
<th>Methods</th>
<th>Literature Review</th>
<th>Total Interpretive Structural Modeling (TISM) (Qualitative Method)</th>
<th>Regression Analysis (Quantitative Analysis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Skills</td>
<td>2 micro variables identified from the literature review</td>
<td>• 2 Drivers (Technology Management Skills, Technical Specialties Knowledge)</td>
<td>• Both Technology management skills and Technical Specialties Knowledge found significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal and Interpersonal Skills</td>
<td>4 micro variables identified from literature review</td>
<td>• 1 Driver (Communication Skills)</td>
<td>• All the micro variables of Personal and Interpersonal Skills are found significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 3 Enablers (Problem Solving and Critical Thinking Skills, Creative Thinking Skills, Teamwork and Interpersonal Skills)</td>
<td></td>
</tr>
<tr>
<td>Organizational Skills</td>
<td>No micro variables defined</td>
<td>• Enabler</td>
<td>• Organizational Knowledge found significant</td>
</tr>
</tbody>
</table>

The research constructs were identified through the literature review. The TISM results revealed that all the micro constructs identified through the literature review were further endorsed by the industry experts. The Technical Specialties Knowledge, Technology Management Skills and Communication skills were identified as the driving forces for employability. A subsequent empirical validation of the micro constructs by the employers through regression analysis verified that these skill categories are considered significant by the employers.

The results of the study have been cross validated using data triangulation and methodological triangulation techniques. The outcome of methodological triangulation reveals the validation of results obtained through qualitative and quantitative analysis. The results of the data triangulation imply congruence in the significance of macro variables across the two group of respondents i.e. graduates and employers. However, a contradicting results for some of the micro variables indicate perceptual differences between them. The triangulation has further enhanced the credibility of the research outcomes.
8.4 SUMMARY OF THE MAJOR FINDINGS

This section summarizes the major findings of the present research. These findings have been logically aligned with key research objectives in order to compare the outcomes of the study with respect to the purpose and intentions that essentially originated this research. The results are discussed in the sub sections below to address the research objectives (as listed in Chapter 1).

8.4.1 Identification of Research Variables

Analysing graduate employability, perception differences among key stakeholders and its subsequent influence on employability gap is one of the fundamental premise of this research. Therefore, at the initial stage, it becomes pertinent to identify the factors that influence graduate employability in this sector as envisaged in the first research objective.

The preliminary phase of this research was focussed at extensive review of literature in order to understand the predictors of graduate employability in general and those relevant for the Information Technology sector in specific. Based on the available literature in domain, three macro independent variables of research were identified- Technical Skills, Personal and Interpersonal Skills and Organizational Knowledge. Further, four micro variables were identified to constitute the Personal and Interpersonal Skills and two key skills (micro variables) were found to constitute the Technical Skills.

8.4.2 Interrelationships among the Research Variables

Subsequent to identification of these predictors of graduate employability, qualitative analysis through Total Interpretive Structural Modeling was undertaken. This enabled the preliminary validation of the identified research constructs and understand the relationship and interaction among them as envisaged in the second research objective. All the macro and micro constructs of the study were endorsed by the experts. These constructs are found to be interrelated with each other. Also, the TISM results revealed that Communication Skills, Technical Specialties Knowledge and
Technology Management Skills are the key drivers of graduate employability in this sector.

8.4.3 Validation of the Conceptual Model of Research

Although research constructs for the present study have been largely drawn from the literature, a preliminary validation and an analysis of the interaction among them has enabled to formulate the hypotheses and the conceptual model of research. As envisaged in the third research objective, the conceptual research framework has been developed and empirically validated using multivariate data analysis techniques. This validation has been done from the perspectives of both, employers and graduates, for macro and micro variables of research. The validated macro and micro models of research for employers and graduates is depicted in Chapter 5 and Chapter 6 respectively. The conceptual model of research has been validated using bivariate and multivariate analysis techniques.

8.4.4 Perceptual Differences among Employers and Graduates

As envisaged in the fourth and fifth research objective, the perceptual differences between the two stakeholder groups (employers and graduates) on the factors that influence employability have been explored. The results of one way ANOVA reveal that a statistically significant difference exists in the perception of these two groups on all the identified variables of employability. In line with the fifth research objective, the areas for such perceptual differences has been analysed by synthesizing the results of the regression analysis obtained from the opinion survey of employers and graduates. The results obtained from the collated findings reveal that majority of the macro and micro variables are considered more significant by the employers than the graduates.

8.5 KEY CONCLUSIONS

Based on the above discussion, the key conclusions of the study have been summarized below:
Drawing from literature review, three macro variables (Technical Skills, Organizational Knowledge, Personal and Interpersonal skills) and six constituting micro variables were identified and subjected to qualitative analysis (TISM) to gain a deeper insight into their interrelationships.

All the eight variables of study (six micro variables of Technical Skills and Personal and Interpersonal Skills, Organizational Knowledge, Employability) were endorsed by the industry experts. The hierarchical modelling highlighted the significance of three micro variables namely Technical Specialties Knowledge, Technology Management Skills and Communication Skills, as the strong drivers of Employability.

Based on the literature review and further qualitative analysis, conceptual research framework (linking antecedents with Employability), was proposed and was further validated with the help of two empirical surveys conducted for the two stakeholder groups (employers and graduates)

The key conclusions drawn from the results of two opinion surveys are summarized as follows.

**Employers’ Perception on Factors Influencing Employability**

- All the three macro variables and six micro variables are perceived significant by the employers for employability.
- The employers perceive that the two macro variables i.e. Technical Skills and Personal and Interpersonal Skills are more significant for employability than the Organizational Knowledge.
- At the micro level, the employers consider that Technical Specialties Knowledge has a stronger influence on employability in comparison to Technology Management Skills.
- The employers perceive that each of the seven independent micro variables (six micro variables of Technical skills and Personal and Interpersonal skills, and Organizational Knowledge) as significant for employability when considered separately, however, one of them i.e. Creative Thinking Skills was not found to be significant when all the micro variables were taken together.
- Analysing the controlled impact of variables i.e. when all the micro variables are taken together, highlighted the relatively greater importance attributed to
Technical Specialties Knowledge (maximum beta value) and also the insignificance of Creative Thinking Skills

Graduates’ Perception on Factors Influencing Employability

- As in case of employers, all the three macro variables and six micro variables are perceived significant for employability by the graduates.
- The graduates perceive that out of the three macro variables, Personal and Interpersonal Skills are most significant for employability followed by the Technical Skills and Organizational Knowledge.
- At the micro level, the graduates consider Technical Specialties Knowledge to have a stronger influence on employability than Technology Management Skills.
- While the graduates perceive each of the seven independent micro variables as significant when considered separately, however, only three of them i.e. Technical Specialties Knowledge, Communication Skills and Organizational Knowledge are considered significant under the controlled impact when all the seven micro variables are considered together.
- The graduates consider the Personal and Interpersonal Skills as most significant as compared to the other two macro variables (Technical Skills and Organizational Knowledge). However, analysing of the micro variables of Personal and Interpersonal skills highlighted a relatively lesser significance attributed Creative Thinking Skills and Problem Solving and Critical Thinking skills (low beta values) as compared to Communication Skills and Teamwork and Interpersonal skills. This indicates that though the graduates acknowledge that Personal and Interpersonal skills are crucial for employability, however, they do not comprehend this set of a comprehensive manner.

Analysing Employability Gap through Perceptual Analysis of Stakeholders

- There exists a significant perceptual gap between the employers and the graduates with respect to the factors that influence employability. This striking perceptual gap is apparent with respect to all the independent variables (three macro variables and six micro variables) of study.
• A vast majority of the factors that influence graduate employability are considered more significant by the employers than the graduates. On a broader parlance, this justifies the statistically significant perceptual difference that has been observed between the two stakeholder groups.

• A comparative investigation at the macro level reveals that all the three variables i.e. Technical Skills, Personal and Interpersonal Skills and Organizational Knowledge taken together are considered more significant by the employers than the graduates.

• Technical Skills and Organizational Knowledge are considered more significant by the employers than the graduates. This shows while the employers consider these skills as important for employability, the graduates do not lay an equal emphasis on them.

• A comparative examination at the micro level also highlights significant differences in perceptions of the two stakeholder groups. With respect to the influence of two micro variables of Technical Skills on employability, the employers perceive that these two variables taken together account for a much higher variability in employability (75.5%) as compared to the graduates (57.7%).

• Exploring the two micro variables of Technical Skills distinctly across the employers and graduates, it is notable that both Technical Specialties Knowledge and Technology Management Skills are considered more significant by the employers than the graduates.

• Perceptual differences between employers and graduates are also notable while analysing the four micro variables of Personal and Interpersonal Skills. As compared to the graduates, the employers perceive that these four micro variables when taken together explain for a much high variation in employability (71.2%). The graduates perceive that these skills account for only 59.8% variability in employability.

• With respect to the four micro variables of Personal and Interpersonal Skills, the Problem Solving and Creative Thinking Skills and Teamwork and Interpersonal Skills are considered more significant by the employers than the graduates.

• A marked difference is observed while comparing the influence of controlled impact of all the seven independent micro variables on employability across
the two stakeholder groups. All these seven micro variables are considered significant by both the groups when analysed distinctly. However, when considered together, the graduates perceive that only three (Technical Specialties Knowledge, Communication Skills and Organizational Knowledge) out of seven variables are significant for employability. However, the employers perceive that six out of seven variables are significant. Creative Thinking Skills are considered insignificant by the employers under the controlled impact.

- Under the controlled impact, the employers perceive that all the micro variables when taken together account for a much higher variability in employability as compared to graduates.
- A comparison of the three common variables that are considered significant by both the groups under controlled impact, it can be inferred that Organizational Knowledge is considered more significant by the employers than the graduates. The graduates perceive Communication Skills are more significant than the employers.
- The statistically significant perceptual differences and the areas of perceptual gap that have been revealed by the study contribute to widening the employability gap. The differences in viewpoints of the two key stakeholder groups i.e. employers and graduates on the fundamental postulation of the factors that are deemed to influence employability indicates a serious void. This perceptual gap at the roots is one of the crucial reasons for amplifying employability gap that is existent in the Information Technology sector.

**8.6 MAJOR RECOMMENDATIONS**

Based on the results of the study, recommendations are proposed to bridge the employability gap through the route of enhancing graduate employability and plugging in the perceptual differences. The same are listed below:

- **Focus on Technical Skills**: The significance of technical skills highlighted by the study calls for a need for the higher education institutions to impart most updated technical knowledge to the graduates. It is important that the curriculum is most updated and the pace of curriculum change matches with the pace of technology
change. An active involvement of industry can be sought to endorse these changes. This would ensure that these skills are not obsolete and can be applied in the world of work.

- **Development of Key Skills**: The present study brings out that it is significant to develop the Technical Skills, Personal and Interpersonal Skills and Organizational Knowledge of the graduates to enhance their employability for potential technical jobs. As higher education institutions are considered as the breeding grounds for graduate employability, there exists a strong need to design the curriculum and align the teaching and learning methodologies that focus on both technical and non-technical knowledge and skill areas rather than a sole thrust of building technical expertise of the graduates which is predominantly dictated by the curriculum. Besides this, considering the limited resources on the part of higher education institutions, the students should become independent learners and should take self-initiatives to engage in workshops, training and development programs and other allied activities that aim to hone their skills.

- **Acknowledging significance of Technology Management Skills**: Technology Management Skills has been recognized as a significant skill area by employers, acknowledging the fast-paced volatile sector and incessant technological changes. Therefore, apart from gaining the technical knowledge like software packages / programming languages etc. as defined by the curriculum, it is important that the graduates develop their aptitude and capability to learn new technologies, understand the technological trends and develop their ability to apply the learnt technologies. This calls for a strong need for the higher education institutions to design training and development programs that focus on the logical and learning abilities of the students, encourage faculties to upgrade their knowledge so that they can in turn impart knowledge to the students, facilitate sufficient resources for computing updates and align the speed of curriculum change relative to the technology change.

- **Development of Soft Skills**: The high level of importance placed on soft skills by the employers is another noteworthy result of the study. It can be observed that though many higher education institutions are following a directional change towards soft skills, still a gap in this regard indicates it is important that such skills should be built with the desired competency level rather than at the surface level.
Though these skills are imparted by many HEIs, but the mere possession of these skills does not suffice. The combination of the requisite soft skills with the expected level of proficiency will provide graduates better access to jobs. Hence, it is significant to impart soft skills, gauge the level of proficiency gained by the student and equate it with the requirements of the industry.

- **Standardized Work Readiness Skill Training and Certification**: The development of soft skills calls for a strong need for work readiness skills training and certification. Such certification programs can include practical trainings on areas like soft skills and business functional knowledge that have been identified as crucial in this study. Also, such certifications should be standardized and embedded into the course curriculum with measurable results. This would help in stabilizing the uneven quality of graduates produced by different colleges.

- **Stakeholder Responsibility Approach**: The perceptual difference between the employers and graduates revealed in the study imply that the knowledge and skill areas deemed crucial for employability should be imparted with a stakeholder responsibility approach to meet the ever changing and demanding requirements of the industry. This would imply that imparting essential skills for employability should not be the sole responsibility of higher education institutions alone, rather, it should be a combined responsibility of the academia and industry. The industry, being a significant stakeholder, should fill in the void and contribute to the skill development through well designed and structured on the job trainings, personal and professional development programs for the employees and regular internal training programs that focus on the continuous development of employability skills of the new entrants. Further, the level of skill development in the university context and employer context should be clearly defined.

- **Robust Industry Academia Integration**: The industry academia integration is extensively highlighted in the arena of jobs and career advancement. However, the perception gap between employers and graduates revealed by the study indicates that this collaboration needs to be more robust. Rather than an engagement at the institutional level, a holistic tripartite partnership involving graduates, employers and HEIs may be the best process for producing graduates with the mixture of cognitive and behavioral skills deemed desirable. A more interactive and
collaborative environment with the participation of all the three key stakeholders is imperative.

- **Intensified Academic Interventions by Companies:** The perceptual differences between the employers and graduates calls for intensified academic interventions by the industry. The companies should establish a strong, all-encompassing coalition with the higher education institutions involving the faculty, management and students. Such alliance can address crucial areas like curriculum amendment workshops, faculty development programs, research development, student internships and projects. Such initiatives have been taken by a few companies like Infosys has launched “Campus Connect” programme, Wipro has started “Wipro Academy of Software Excellence” in collaboration with BITS (Pilani) and Cisco has started “Cisco Networking Academy”. However, such initiatives are very few. An active participation of the multinationals in such initiatives can lead to a stronger academia industry interaction.

- **Enhancing Graduates’ Employability Skills through Faculty Empowerment:** Faculty can play an intermediate role to bridge the perception gap between employers and graduates. The continuous development of faculty would ensure that they are competent enough with updated knowledge and innovative teaching methodologies to enhance the capability of the students. The industry should actively collaborate with faculty in this regard to share industry best practices, new technologies, case studies and behavioural proficiencies to further enable the students.

- **Integration of Employability Development with Course Outcomes:** Though employability skills are imparted to graduates by the HEIs, however a more structured and vigorous approach calls for a need to integrate employability development in the course outcome. Employability development program when formally integrated in the curriculum would make the students aware of the industry demands and would further narrow the perception differences. Accordingly, employability profile of the student can be developed on completion of program in collaboration with the industry that may be presented to the prospective employers for securing jobs.

- **Creation of a Collaborative Ecosystem:** The perceptual differences between employers and graduates revealed by the present study underline the need for a
holistic association at the level of these two stakeholder groups. Such a concerted environment would imply moving beyond the guest lectures, internships and projects. A collaborative ecosystem would be a platform for the students and the employers to connect with each other directly. This can be done through the operationalization of online networking platforms to ensure a regular interaction between the employers and graduates. Such an online ecosystem can facilitate corporate mentors assigned to each student, knowledge sharing on global business trends, employability skills, technological advancements, projects and job opportunities and allied areas. A regular interaction of the students and directly with the industry professionals through such platforms would greatly help to bridge the perceptual differences.

- **Change in Pedagogical Methods:** The results of this study indicate that the pedagogical methods should reflect a change from memorization to developing capacity in students for areas like critical thinking, creative thinking, problem solving and the ability to apply the theory to practice. Such skills cannot be nurtured in the students through theoretical lectures or limited practical training sessions, rather, the development of such skills demand a gradual shift in the thinking process. Therefore, these skills should be infused in the students through innovative teaching practices rather than imparting them as theoretical courseware.

### 8.7 IMPLICATIONS FOR KEY STAKEHOLDERS

The implications of the findings of the research for key stakeholders namely higher education institutions, employers and the academia may be highlighted as follows:

**8.7.1 Implications for Employers**

The employability of graduates and bridging academia industry gap calls for a stronger collaboration of the industry with the academia. The academia industry integration has rather become a buzzword, and the perceptual differences revealed by the study imply there is a scope to strengthen the integration. In order to ensure that employable graduates are readily available, the IT companies need to intensify their association with the higher education institutions at the level of management, faculty and the students. Also, such collaboration is required across all strata of institutions like government, private and self-financed colleges spread across metro and other
smaller cities. Furthermore, such alliance should span across all category of institutions rather than the foremost institutions. A steady and consistent interaction with the HEIs through meaningful initiatives would ensure that they are aware of the changing demands of the sector and the expectations from the graduates. The industry alliance can be much beneficial for faculty enrichment thereby enhancing their knowledge and skills which is further transferred to the students. Also, a step down collaboration at the senior school level can further help in nurturing the students at an early stage.

8.7.2 Implications for Potential Job Seekers

The conclusions drawn from this study has implications for students who are the potential job seekers. At the first stance, the significance of different knowledge / skill areas highlighted in the present study implies that the students should make well informed career decision and choice of higher education institution for studies. It is pertinent for the students to assess themselves and analyse if they possess the fundamental abilities, interest and the learning capacity to make a career in IT sector rather than just joining the bandwagon. Further, the choice of higher education institution is indeed a crucial decision while pursuing further studies. The students must assess the course curriculum, teaching methodologies, essential resources, training, internships, placements and other vital means of industry exposure offered by the institution. This would ensure that the offerings of the chosen HEI matches with the requirements of the industry. Also, once they join a particular HEI, the entire focus should not be to attain a degree. Rather, it is essential for these graduates to focus on their technical skills and also participate in co-curricular activities that offer them robust platforms to develop and nurture their non-technical skills, get corporate exposure and make themselves job ready.

8.7.3 Implications for Higher Education Institutions

The present study highlights the issue of employability gap and perceptual differences between graduates and employers. While examining solutions to this issue, it is important to acknowledge the integral role of higher education institutions as the breeding grounds for employability. Thus, the study has implications for HEIs. These higher education institutions have the sole responsibility of churning novice students
to employable graduates by imparting significant knowledge and skills in line with the demands of the industry. Considering the fact that such knowledge and skills have to be inculcated in the students in the limited time frame of the duration of the academic program, it is important that the institutions reinforce stringent student recruitment procedures. Especially, with the advent of self-financing institutions, huge compromises are made with the quality of admitted students to increase the intake which often leaves them unemployable. A scrutiny of the students at the recruitment stage would ensure that only those students who have an aptitude, interest and capability to pursue the course are admitted rather everyone joining the IT bandwagon. Furthermore, imparting knowledge and skills in line with the industry demands requires a strong academia industry collaboration. These HEIs must build close collaboration with the industry in the areas like curriculum design, curriculum revisions and upgradations, faculty development, student internships, guest lectures, projects and final placements. Furthermore, it is important that for a volatile and fast paced sector like Information Technology, the speed of curriculum change must align with the speed of technology change. This may call for frequent curriculum changes in contrast to the present system. Also, the faculty should be engaged in regular development programs and industry interaction platforms to upgrade their technical skills, understand the changing demands of the corporate and enhance their proficiency to further impart it to the students. Analysing the skills valued by employers at the workplace, there is need for qualitative improvement in education.

8.8 SIGNIFICANT RESEARCH CONTRIBUTIONS

Some of the significant contributions of this study are listed below:

- The findings of the research reiterate the fundamental proposition that difference in the perception of key stakeholders contribute to and augment the employability gap.
- The assessment of employability gap by way of analysing perceptual differences among the key stakeholders is notable. While majority of the literature analyses employability gap from the perspectives of a weak academia industry integration or gaps in higher education system, the present
study brings to light the perceptual gap as the crucial reasons for amplifying the employability gap.

- Substantiating perceptual gap between the two key stakeholder groups (employers and graduates) on the factors that influence employability by way of formulating, validating and deploying a conceptual model of research is a significant contribution of this study.

- The development of comprehensive research framework, integrating employability and factors affecting it, in general and in specific context of Indian Information Technology sector is an original and valuable contribution of this research.

- The use of qualitative analysis of the research variables through Total Interpretive Structural Modeling (TISM) technique to understand the relationship between the variables is an important contribution of this study. Also, the model assessment framework that has been employed to further confirm the acceptance of the proposed structural model is noteworthy.

- This study modestly attempts to contribute to the stakeholder theory of organization management and business ethics given by Freeman (1984). In line with the stakeholder theory that lays an emphasis on the interests of the stakeholders, the present study acknowledges and compares the perception of the two key stakeholder groups i.e. employers and graduates while analysing the issue of employability.

- This study attempts to contribute to the Resource Based View given by Barney (1991) for the competitive advantage of a firm. The resource based theory examines the resources that the firm possesses and further assesses their capability to enhance the sustainability of the firm. In line with the same, the present study analyses the significant skills and knowledge areas deemed crucial for the entry level employees. A thrust on the skills of the human resource in the present study is a modest contribution to the theory.

8.9 LIMITATIONS OF THE STUDY

It is important to acknowledge the key limitations of this research considering the resource constraints in terms of time, money and efforts. These limitations are as follows:
a) Opinion surveys have been used in this study to analyze the perception differences among the two stakeholder groups. There might exist a possible bias in the responses.

b) Although the respondents to the empirical surveys encompass different states, however, majority of the responses have been largely drawn from the respondents in Delhi / NCR region only due to resource constraints. This limits the generalization of research model.

c) Considering the much narrowed delineation of profile of the respondents, it was difficult to employ probability sampling techniques and hence non probability sampling technique have been used. Limitations in making generalizations using this sampling technique cannot be ignored.

d) Due to the paucity of time and resources, this study focusses only on IT sector in India.

8.10 SCOPE FOR FUTURE RESEARCH

Based on the insights gained from this study, the scope of future research in this area is discussed below:

- The study is focused on graduates at the bachelor’s level in the field of Information Technology and allied areas. However, it may be further extended to those at the master’s level for further generalization of the research framework.

- Due to resource limitations in terms of time, this study is restricted to understanding the perception differences among two stakeholder groups i.e. employers and graduates has been examined. However, the scope of the research can be extended by including other stakeholders like institutions of higher education offering courses in Information Technology / Computer Science. The study is focused on understanding the perception differences between employers and fresher graduates. However, this perception gap can also be examined with regard to experienced professionals in the field.

- The future study in this area can further explore the impact of external factors issues like economic situation, job opportunities etc. to understand the impact of such macro level factors on employability.
Considering a focused approach of the present study towards macro level issues, demographic or micro level analysis has not been incorporated in this study. Such an analysis can be taken up in future research that can include the impact of gender, length of work experience, size of the company etc. on the perception differences.

With the basic assumption that perceptual differences and employability gap is less when examined at the level of institutions of academic excellence, this study focusses on affiliated colleges and private universities that are churning graduates in big numbers. However, a future research in the area can include the responses from such premier institutions and compare the perceptions among of the graduates across the different categories of HEIs.

The study is focused on Information Technology sector, however, other sectors like ITeS can also be studied using the same model.

8.11 CONCLUDING REMARKS

This final chapter summarizes the key findings and draws conclusion for the study. Recommendations based on these results have been discussed. Finally, the limitations of the research and scope for future research has been enumerated.

At the end, this study can be regarded as an initiative to explore the complex landscape of employability and develop a model to portray its antecedents especially in context of Information Technology sector. Through the deployment of the model, the perceptual differences between the key stakeholders have been revealed that further contribute and augment the existing employability gap in the sector. Plugging the perceptual differences and employability gap is imperative for the continued growth of the sector in future.