2020- 2021 EDITION

COUNCIL of ETHICS

EMPLOYABILITY SKILLS REVIEW

A CROSS-DEMOGRAPHIC STUDY OF GRADUATES ENTERING THE WORKFORCE

WICCI
WOMEN'S INDIAN CHAMBER OF COMMERCE AND INDUSTRY

ABOUT US

WICCI COUNCIL OF ETHICS

WICCI Council of Ethics has been established under the aegis of the Women's Indian Chamber of Commerce and Industry (WICCI) and includes the National Ethics Council, Delhi Ethics Council, Maharashtra Ethics Council, West Bengal Ethics Council, Rajasthan Ethics Council and Madhya Pradesh Ethics Council. The Council aims to create a community that can ensure ethical and safe spaces for every individual, and mainstream conversations around ethics by bringing them to the forefront of every discussion.

The Women's Indian Chamber of Commerce and Industry (WICCI) is India's first national business chamber for women with councils representing 200+ sectors, through which the aim is to empower women-owned businesses to bring about fundamental changes in governmental policies, laws and incentives. It is supported by the massive global networks of ALL Ladies League (ALL), Women Economic Forum (WEF) and SHEconomy, with 200,000 members and supporters worldwide.

GRADE

GRADE stands for the Global Review, Assessment, and Determination of Employability. The aim has been to promote UNSDG 4 Quality Education, and UNSDG 8 Decent Work and Economic Growth by helping students and young professionals to get access to the world's best expertise in employability and thereby stimulating their career growth. GRADE ensures that their success is directly proportionate to their efforts and not hampered by a lack of accessibility.

GRADE through takegrade.com ensures that students have access to resources needed to assess their employability across 11 skills that employers look for during recruitments.

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JULY 2021

NEW DELHI

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EMPLOYABILITY SKILLS REVIEW 2020-21

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As a part of our study, we had the privilege of speaking with seasoned professionals who command expertise on employability, assessment, recruitment, training and development. We are thankful to all of them for agreeing to contribute their time and insights to our discussions.

We are grateful to the team from Global Review, Assessment, and Determination of Employability (GRADE) for developing the employability assessment, administering the assessment on a sample of over 10,000 students across the country and providing subsequent analysis on the assessment results. In this process, both the Eight Goals One Foundation (8one) and The RASICH Group (TRG) also provided us with immense support.

We also thank the team of writers and editors from the WICCI Council of Ethics for bringing structure and clarity to the results, and adding context to the outcomes of the assessment.

Finally, we recognise that this study has only been possible due to the efforts of a large group of individuals, and we extend our gratitude to everyone involved, directly or indirectly, in the successful implementation of this endeavour.

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EMPLOYABILITY AS A MEASURE CAN BE SEEN AS THE PERCENTAGE OF THE HUMAN RESOURCE THAT HAS BEEN TRANSFORMED INTO HUMAN CAPITAL, OR AS THE PERCENTAGE OF WILLINGNESS TO CONTRIBUTE THAT HAS BEEN TRANSFORMED INTO AN ABILITY TO CONTRIBUTE.

FROM THAT VANTAGE POINT, BUILDING EMPLOYABILITY BECOMES NOT JUST A PRESSING EDUCATIONAL CONCERN BUT AN URGENT ECONOMIC ONE.

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OPERATIONAL DEFINITIONS

For the purpose of the study, the operational definition of Employability stands as follows:

EMPLOYABILITY

Employability is the ability determined by a cumulative of skills, and competencies, which increases an individual's likelihood of gaining meaningful paid employment.

FACTORS

The study measures employability as an aggregate of 11 skills and competencies, or "Factors", identified by academicians, recruiters and consultants, which are crucial in determining the necessary ability-interest fit for a job role in the industry of choice.

THESE FACTORS ARE:

Ability to Undertake Tasks

Measure of accepting responsibility for own actions and demonstrating commitment to accomplish work in an ethical, efficient and cost-effective manner.

Inclination to Learn

Measure of wanting to understand new things and picking them up quickly, while taking on new tasks and adapting to change.

Communication

Measure of effectively conveying information, expressing thoughts and facts, and displaying openness to other people's ideas and thoughts.

Cohesiveness

Measure of the ability to get along with people you work with and working together to achieve a shared goal.

Engagement

Measure of the vigour, dedication and absorption of an employee to their work.

Structured Approach

Measure of the ability to break a complex task into smaller and manageable modules following a systematic approach.

Focus

Measure of how well one can concentrate on a task evading distractions.

Stress Management

Measure of the ability to handle or minimise the physical and emotional effects of workplace pressures and dilemmas.

Motivation

Measure of the level of energy, commitment, and creativity that an employee brings to work.

Work Ethic

Measure of the belief that work and diligence have a moral benefit and an inherent ability, virtue or value to strengthen character and individual abilities.

Mental Acuity

Measure of the brain‘s ability to respond to a stimulus, accounting for the speed, quality, and relevance of the response.

RESEARCH METHODOLOGY

METHOD OF DATA COLLECTION

A structured questionnaire was used for primary data collection, which was administered in the format of a monitored examination.

The questionnaire, designed by GRADE, was developed using a combination of primary focus-group interaction and secondary review spanning from 2012 to 2020, curated from over 35 countries and 250 academicians, industry professionals and student researchers.

The administered questionnaire consists of 63 close-ended questions, entailing the following question types:

- Single Choice
- Multiple Choice
- Rating Scale
- Forced Rating Scale
- Ranking Scale

As for the content, the question types included, but were not limited to:

- Reading Comprehension
- Data Interpretation
- Mathematical Reasoning
- Verbal Reasoning
- Situational Judgement
- Meta-observation

The questionnaire was administered online on takegrade.com, the website interface provided by GRADE, in a remotely proctored setting, with randomised sets normalised for difficulty levels. In addition to measuring the 11 factors, the platform measured meta-variables including idle time, time taken per question, time taken for the overall test, cursor movement on screen and abrupt end/submission of test-session, etc. to further validate respondent performance, as well as manage confounding variables.

METHOD OF SAMPLING

The identified sample comprised individuals presently and formally enrolled in higher education, training, or employment, graduated or set-to-graduate in 2020.

Respondents were invited at random to allow for greater representation of demographic, academic and professional diversity.

10,043 USABLE RESPONSES

1,774 ACADEMIC INSTITUTIONS

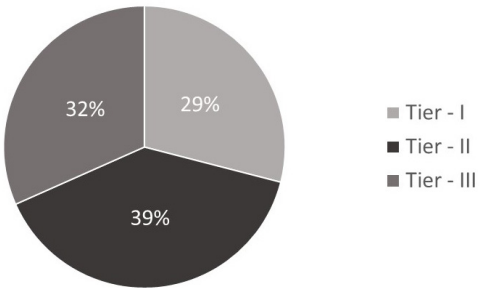
6,084 ORGANISATIONS

1,089 CITIES

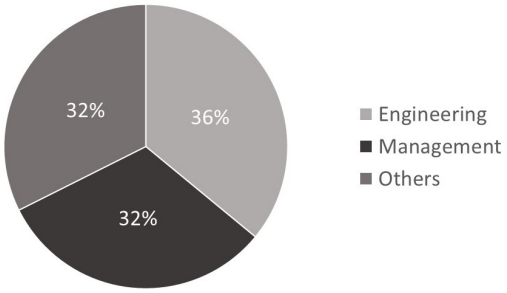
28 STATES

7 UNION TERRITORIES

City-tier Representation



Course-wise Representation



NOTE

WE ACKNOWLEDGE THE GENDERED NATURE OF EDUCATION AND THE SUBSEQUENT EMPLOYMENT OPPORTUNITIES, AND HAVE THEREFORE ACTIVELY UNDERTAKEN AN UNBIASED APPROACH TOWARDS BOTH, COLLECTING DATA AND PRESENTING IT TO EMPLOYERS INDEPENDENT OF THE GENDER IDENTITIES OF THE RESPONDENTS. AT BOTH, THE WICCI COUNCIL OF ETHICS AND GRADE, WE SUPPORT MERIT-BASED EMPLOYMENT BASED ON BLIND RECRUITMENT TECHNIQUES THAT HELP REMOVE BIASES BASED ON GENDER, AS WELL AS CASTE, RACE, RELIGION AND OTHER SIMILAR FACTORS THAT MAY LEAD TO DISCRIMINATION.

ANALYSIS

A descriptive and exploratory approach was undertaken with the aim of reporting the current state of employability and skill-availability in the sample, which can provide an insight into the level of employability in the corresponding population as a whole.

To that effect, the study addresses three objectives:

- To report the overall level of employability among graduates and young professionals;
- To report demographic variations in employability and skill availability; and,
- To identify and establish factors effecting employability and skill availability.

The subsequent analyses were grouped under three sets as follows:

Cumulative Statistics

Providing an estimation of the employability levels among Indian graduates and young professionals, as well as the level of skill-availability across the 11 employability Factors.

- Employability Score 2020: Descriptive Statistics
- Skill Availability 2020: Descriptive Statistics

Demographic Statistics

Providing a state-wise, city-wise and course-wise view of overall employability and the variation across states, cities and courses in skill-availability.

- State-wise Employability
- Tier-wise Employability
- Course-wise Employability

Factor Weight

Establishing a relationship and identifying weightage of each of the 11 skills, tier, 10th and 12th grade scores in the overall employability of an individual.

- Skill Correlation Matrix
- Tier Correlation
- 10th and 12th Grade Score Correlation

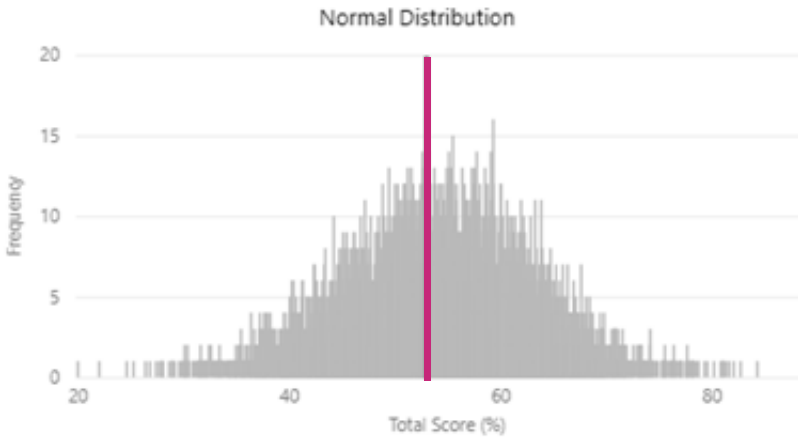
LIMITATIONS

As a result of randomised sampling, the usable responses received from each state, city and institution varied in absolute numbers. However, the variances in the samples were found to be not significantly different, and the employability scores were normalised according to the respondent participation to conduct demographic analyses.

To further reduce loss of power and confounding variables, the questionnaire was administered at the same time for representatives of a sample group, and within one month across all sample groups.

EMPLOYABILITY SCORE 2020: DESCRIPTIVE STATISTICS

Summary of Total Score (%)	
Min	20.06 %
First Quartile	48.90 %
Mean	54.22 %
Median	54.27 %
Third Quartile	59.83 %
Max	84.36 %
Standard Deviation	8.24
Variance	67.83
Skewness	-0.0654
Kurtosis	3.0696
Number of people above average	5,046
Number of people below average	4,997

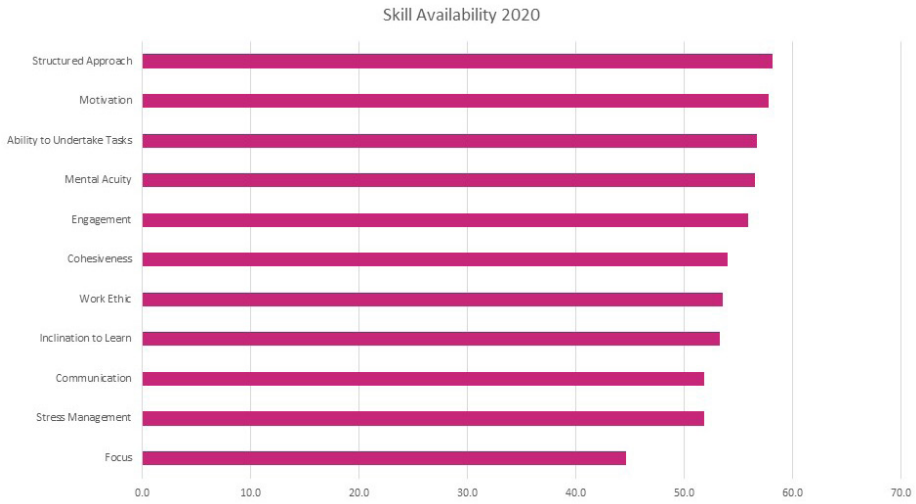


The mean employability score stood at 54.22 %

Employability Score (%) or total employability score is the outcome received by each individual at the end of the assessment. The employability score in the sample had a range of 64.32%, with the lowest and highest scores being 20.06% and 84.36% respectively. The mean and median stood at 54.22% and 54.27%, respectively, indicating that this variable is distributed normally, with a standard deviation of 8.24 and variance of 67.83.

The descriptive analysis above shows that respondents' employment scores are normally distributed across the range, which means that the sample is a good representative of the population.

SKILL AVAILABILITY 2020: DESCRIPTIVE ANALYSIS



Skill availability is measured as the mean score obtained by the sample under each of the 11 individual skills or factors.

The sample has a higher mean score of 58.1% for Structured Approach and 57.8% for Motivation, followed by Ability to Undertake Tasks and Mental Acuity. With a mean score of 44.7%, Focus ranks as the least available skill, followed by Stress Management and Communication at 51.9% each.

	W1 (%)	W2 (%)	W3 (%)	W4 (%)	W5 (%)	W6 (%)	W7 (%)	W8 (%)	W9 (%)	W10 (%)	W11 (%)	Total (%)	10th CGPA	12th CGPA
Mean	56.71	53.27	51.93	54.03	55.97	58.14	44.68	51.85	57.79	53.59	56.53	54.22	8.44	7.95
Standard Deviation	10.68	9.06	9.63	10.97	9.72	11.90	12.56	11.17	12.18	12.10	9.85	8.24	1.14	1.47
Min	19.47	11.34	14.77	10.00	16.44	12.63	4.21	13.92	17.17	6.88	17.08	20.06	0.70	0.00
25%	49.47	47.61	45.60	46.43	49.56	50.18	35.53	44.31	49.57	45.63	50.10	48.90	7.72	7.06
50%	56.84	53.58	52.29	53.93	56.22	58.25	44.21	51.57	57.61	52.19	56.88	54.27	8.60	8.04
75%	63.86	59.40	58.62	61.61	62.89	66.32	53.42	59.41	66.09	62.50	63.13	59.83	9.34	8.94
Max	95.79	84.03	83.03	89.64	89.11	100.00	91.32	94.12	101.52	89.06	94.48	84.36	10.00	94.40

W1 - Ability to Undertake Tasks | W2 - Inclination to Learn | W3 - Communication | W4 - Cohesiveness | W5 - Engagement
W6 - Structured Approach | W7 - Focus | W8 - Stress Management | W9 - Motivation | W10 - Work Ethic | W11 - Mental Acuity

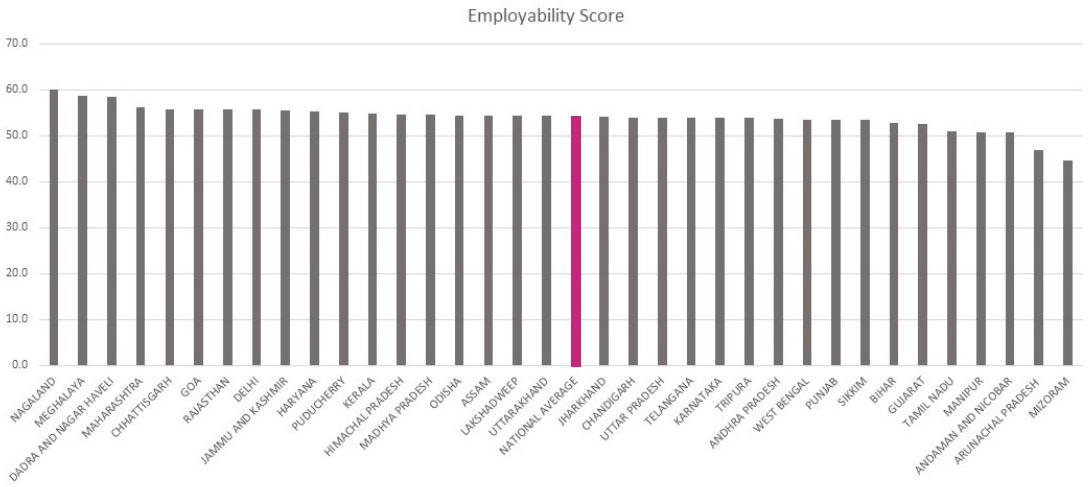
Taking into consideration the mean of the Employability score is 54.22%, this distribution reflects that college graduates excel at having a structured approach to problem solving and staying motivated, exceeding industry expectations by 3.88% and 3.58% respectively. However, they struggle to focus on the tasks at hand, falling behind in this domain by 9.52%.

STATE-WISE EMPLOYABILITY

An analysis of state-wise employability helps in determining the regionalised differences in training efforts, as well as access and awareness about employment opportunities and how to capitalise on them.

NOTE: For the purpose of analysing state-wise employability, the respondents were mapped to their domicile states, and not the state in which they were currently residing/studying. For instance, if a student is originally a resident of Madhya Pradesh, but is currently enrolled in a University in Delhi, their employability score will be counted under Madhya Pradesh.

Therefore, to draw inferences from the following data, it is important to remember that the "State" refers to the domicile of the respondents and not to the institutions located in that state. This approach allows the recognition of prior-learning of individuals.



The state-wise employability analysis indicates the following:

- The range of mean employability across states is 16.5%, with Nagaland having highest mean employability (60%) and Mizoram having lowest (44.5%).
- The states and Union Territories with the highest employability scores include Nagaland, Meghalaya, Dadra and Nagar Haveli, Maharashtra, Chhattisgarh and Goa.
- 18 states and Union Territories scored above the national average.

STATE-WISE SKILL AVAILABILITY

Ability to undertake tasks	Inclination to learn	Communication	Cohesiveness	Engagement
MEGAHALAYA 61.94	MEGAHALAYA 58.09	DADRA & NAGAR HAVELI 60.46	MEGAHALAYA 63.58	DADRA & NAGAR HAVELI 59.25
LAKSHADWEEP 60.71	PUDUCHERRY 56.65	NAGALAND 55.33	DADRA & NAGAR HAVELI 62.61	MAHARASHTRA 58.60
DADRA & NAGAR HAVELI 60.80	DADRA & NAGAR HAVELI 56.65	PUDUCHERRY 54.93	SIKKIM 60.46	PUDUCHERRY 57.94
JAMMU AND KUSHMI 60.71	CHHATTISGARH 55.57	LAKSHADWEEP 54.51	MAHARASHTRA 57.47	MEGHALAYA 57.38
NAGALAND 59.92	MAHARASHTRA 54.90	MEGHALAYA 54.51	GOA 57.12	GOA 57.35

Sructured Approach	Focus	Stress Management	Motivation	Work Ethic	Mental Acuity
NAGALAND 68.63	NAGALAND 61.92	NAGALAND 65.12	NAGALAND 69.58	MIZORAM 61.17	NAGALAND 64.31
LAKSHADWEEP 65.29	MEGAHALAYA 47.78	MEGAHALAYA 56.69	MEGAHALAYA 62.95	NAGALAND 58.04	DADRA & NAGAR HAVELI 64.09
DADRA & NAGAR HAVELI 65.24	RAJASTHAN 47.25	LAKSHADWEEP 54.04	TRIPURA 60.68	MAHARASHTRA 57.14	MEGAHALAYA 60.30
MEGAHALAYA 65.12	GOA 47.10	MAHARASHTRA 53.81	MAHARASHTRA 60.41	TRIPURA 56.04	PUDUCHERRY 59.09
JAMMU AND KASHMIR 61.26	CHHATTISGARH 46.59	RAJASTHAN 53.78	RAJASTHAN 59.50	HIMACHAL PRADESH 54.50	CHHATTISGARH 58.49

The table above lists the top 5 states by each skill.

A state-wise measure of skill availability for each of the 11 skills was conducted and the states with highest skill availability for each skill were identified.

- In terms of the frequency of states appearing in the highest skill availability indices, the north-eastern state of Meghalaya features among states with highest skill availability across 10 out of 11 skills.
- As an aggregate of top 5 states with highest skill availability in each of the 11 skills, collectively, north-eastern states of Meghalaya, Nagaland, Mizoram, Tripura and Sikkim occupy 22 out of a total of 55 spots.
- Maharashtra, Rajasthan, Goa and Chhattisgarh showcased high skill availability in 6, 3, 3 and 2 of the 11 skills respectively.
- Dadra and Nagar Haveli reported availability of most number of skills, 6 out of 11, amongst all Union Territories.

TIER-WISE PERFORMANCE

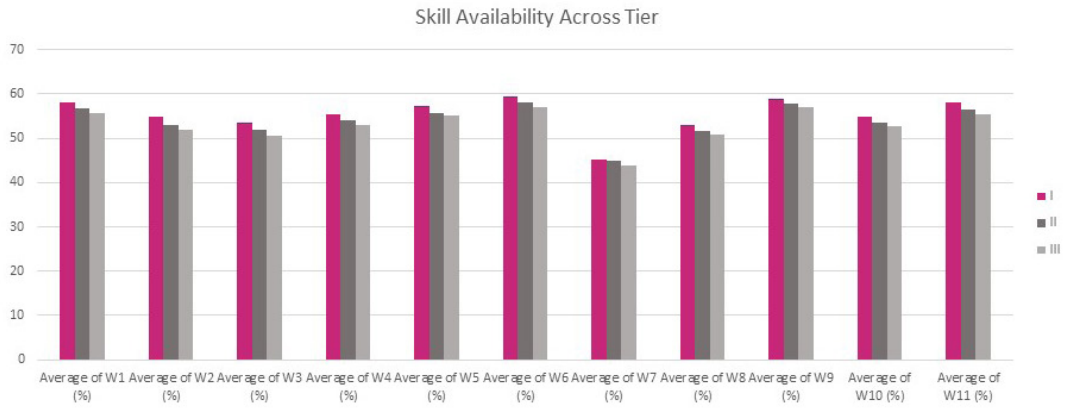
For the purpose of the study, the cities were divided into three tiers:

- Tier-1: Metropolitan centres
- Tier-2: Urban centres
- Tier-3: Semi-urban and rural centres

The mean score for overall employability and skill availability across all 11 factors was calculated for each tier. The analysis revealed that there is no significant difference between the mean scores across tiers, indicating that cannot be seen as a determinant of employability.

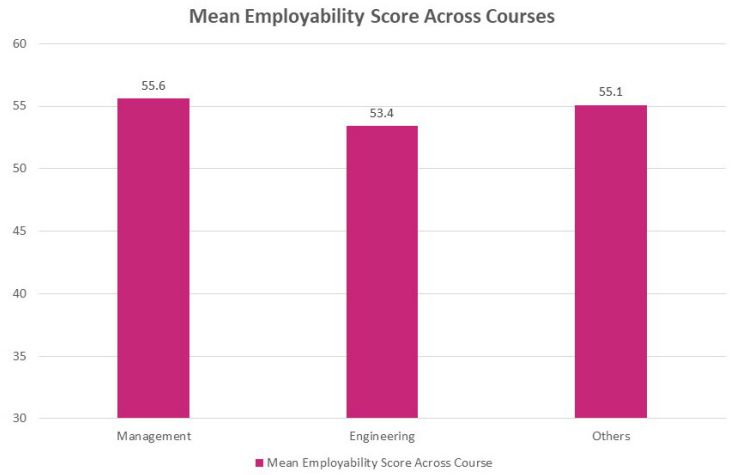
SKILL AVAILABILITY ACROSS TIERS

COURSE-WISE EMPLOYABILITY



W1 - Ability to Undertake Tasks | W2 - Inclination to Learn | W3 - Communication | W4 - Cohesiveness | W5 - Engagement
W6 - Structured Approach | W7 - Focus | W8 - Stress Management | W9 - Motivation | W10 - Work Ethic | W11 - Mental Acuity

The survey received responses from students enrolled in a wide range of courses in science, management, law, humanities and arts for both bachelor's and master's programs. The sample included higher representation from Management and Engineering disciplines.



Students enrolled in management and other disciplines, had a higher average employability score than the mean employability score of the sample (54.22%), whereas students enrolled in engineering had a lower-than-average mean employability score.

While the difference between overall employability amongst engineering and management students is significant, the analysis of skill availability reveals that the management and engineering students had no significant difference across individual skill scores.

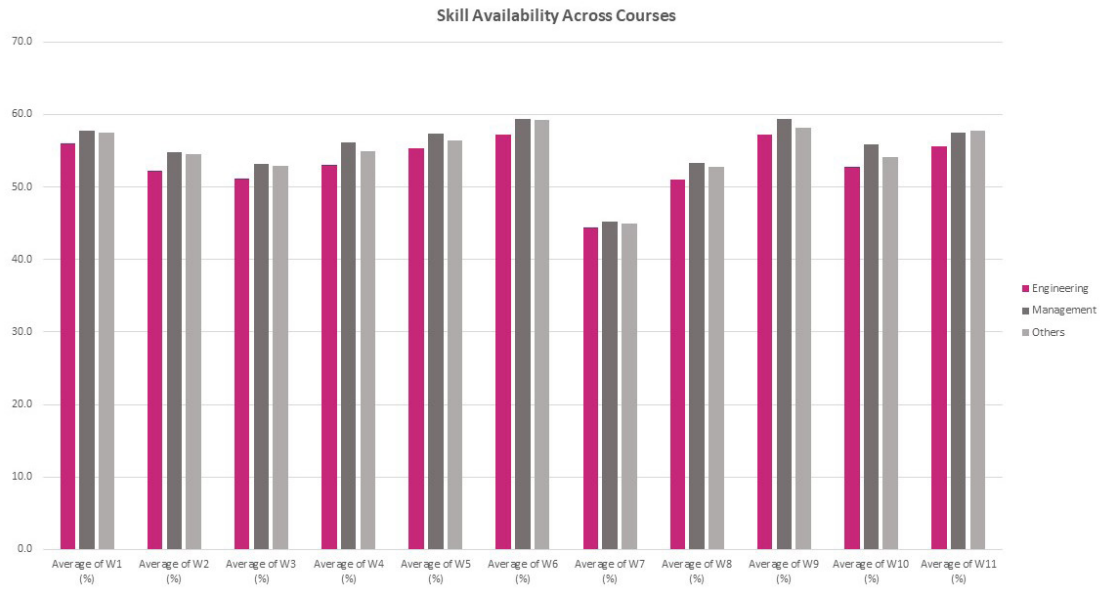
For students enrolled in other disciplines, mean employability score was higher than the sample statistics, and the students performed at par with management students in 7 out of 11 skills.

SKILL AVAILABILITY ACROSS COURSES:

Management students reported consistently higher averages across the 11 skills, followed by students enrolled in other disciplines, such as law, humanities and arts.

While engineering students scored lower averages across skills relative to other disciplines, there was no significant difference in the skill availability in 7 out of 11 skills.

Engineering students reported a significantly lesser skill availability from management students in Inclination to learn, Communication, Cohesiveness and Work Ethic.



W1 - Ability to Undertake Tasks | W2 - Inclination to Learn | W3 - Communication | W4 - Cohesiveness | W5 - Engagement

RELATIONSHIP BETWEEN SKILLS

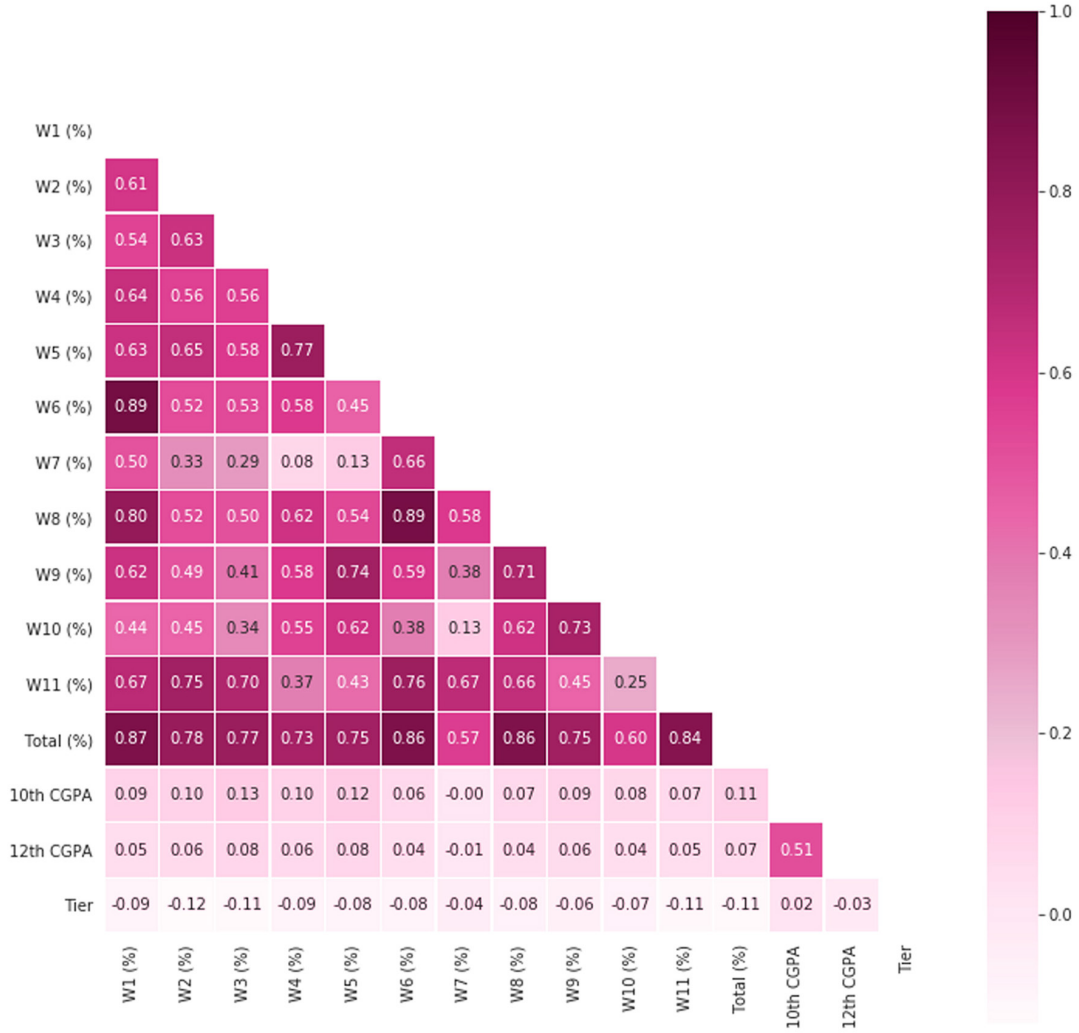
The objective of this section is to investigate the relationships between skill scores.

These relationships may be statistically understood with the help of Pearson correlation coefficient, which is a measure of the strength of a linear association between two variables.

- A value of 0 indicates that there is no association between the two variables.
- A value greater than 0 indicates a positive association
- A value less than 0 indicates a negative association

The stronger the association of the two variables, the closer the Pearson correlation coefficient, will be to -1 or 1.

The figure below is a correlation matrix, which displays the correlation coefficients between different variables.



The key insights from the above analysis are:

- The following set of skills are highly correlated. This means that a person skilled at anyone of them is highly likely to be skilled at the other ones (and vice-versa):

W1 (ABILITY TO UNDERTAKE TASKS)	W6 (STRUCTURED APPROACH)
W6 (STRUCTURED APPROACH)	W8 (STRESS MANAGEMENT)
W1 (ABILITY TO UNDERTAKE TASKS)	W8 (STRESS MANAGEMENT)

- The following set of skills are moderately correlated. This means that a person skilled at any one of them is somewhat likely to be skilled at the other ones (and vice-versa):

W1 (ABILITY TO UNDERTAKE TASKS)	W7 (FOCUS)
W3 (COMMUNICATION)	W8 (STRESS MANAGEMENT)
W2 (INCLINATION TO LEARN)	W9 (MOTIVATION)

- The following set of skills are lowly correlated. This means that a person skilled at anyone of them is equally likely to be skilled or unskilled at the other ones (and vice-versa):

W4 (COHESIVENESS)	W7 (FOCUS)
W5 (ENGAGEMENT)	W7 (FOCUS)
W7 (FOCUS)	W10 (WORK ETHIC)

- Additionally, the following parameters were found to have no significant correlation with the overall employability score or individual skills score:

ACADEMIC SCORE IN 10TH GRADE
ACADEMIC SCORE IN 12TH GRADE
TIER

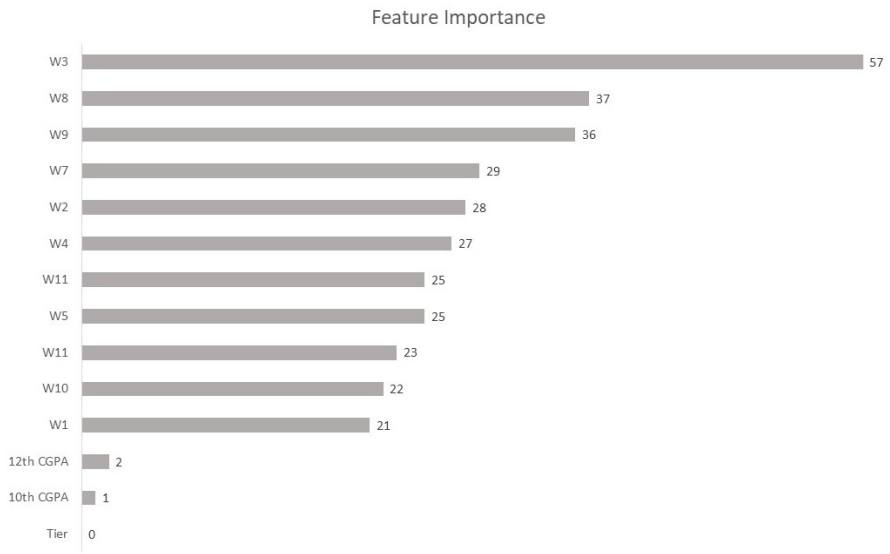
This indicates that the commonplace practice of recruiting candidates based on academic performance in schools or focusing on Tier-I cities to source candidates is not effective in filtering candidates with higher employability levels.

This reinforces the need for inculcating blind reviews in the recruitment process, to not only ensure ethical consideration of each applicant, but also to increase the effectiveness of the process in filtering applicants with greater potential for professional success.

While correlation is a measure of the relationship between two variables, there is a need to recognise how one variable affects the other. In particular, the aim is to examine which factors are the most (and least) important in the total employability score.

The traditional approach of achieving the same is a regression analysis. However, one of the assumptions of this analysis is that the variables have low multicollinearity. Unfortunately, this isn't true in this case.

Consequently, XGBoost regression analysis was employed. Here, the assumption does not hold, and the results are reliable. The graph below shows the relative importance of all the features on the total score.



The following insights can be drawn from the analysis:

- Communication is the most valued skill in defining the total employability score.
- Ability to Undertake Tasks is the least valued skill in defining the total employability score.
- 10th and 12th CGPA do not contribute significantly in defining the total employability score.
- Tier does not contribute significantly in defining total employability score.

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WHILE INFRASTRUCTURE AND ACCESS PLAY A VITAL ROLE IN PREDICTING THE EMPLOYABILITY OF A GROUP OF STUDENTS, THE DATA IN THIS REPORT, AND MANY OTHERS, POINTS TO SIGNIFICANT INTANGIBLE FACTORS AT PLAY AS WELL.

ONE WAY TO LOOK AT THESE INTANGIBLES IS TO RECOGNISE THE EFFORT EXERTED BY STUDENTS AND TEACHERS IN THEIR DAILY LIVES, WHICH SEEM TO SURPASS THE CHALLENGES OF INFRASTRUCTURE AND ACCESS.

CONCLUSION

On the surface, the Employability Skills Review indicates that there is still a significant gap in the employability levels amongst students and young professionals in the country.

While this notion has been repeated frequently in literature pertaining to employability in India, the analysis of skill availability helps in identifying the key skillsets which need to be addressed in existing educational and training curriculums.

To reiterate, Structured Approach, Motivation and Ability to Undertake Tasks take the mantle in skill availability, whereas Communication, Stress Management and Focus are key areas for directing training efforts.

The study also addressed a few myths about employability, such as the weightage given to tiers, 12th CGPA and 10th CGPA, none of which seem to be significant factors in determining how employable an individual can be. This is evidenced in the report wherein respondents from states and Union Territories such as Nagaland, Meghalaya and Dadra and Nagar Haveli have secured much higher mean scores overall and across skills, than other parts of the country.

To that effect, the report was able to achieve its objectives as well as reveal the confounding variables which have been conventionally seen as parameters that determine employment, leading to biases and skewed recruitment outcomes.

The subsequent section addresses more such conventional queries on the subject of employability.

Q. What are the top 3 skills that contribute most to employability?

A. Communication, Stress Management and Motivation. These parameters were found to have the maximum impact on the total employability score when the XGBoost regression analysis was employed.

Q. Which skills had highest availability in the sample?

A. Structured Approachh, Motivation and Ability to Undertake Tasks. These skills had the top three highest mean scores across the sample.

Q. Do 10th and 12th grades have an impact on employability score?

A. 10th & 12th grades have no significant impact on employability score and were not recognised as deciding parameters for employment. These parameters were found to have least feature importance in the XGBoost regression analysis. Most students were found to have secured the necessary grades for employment eligibility.

Q. Which skills were least available in the sample?

A. Focus, Stress Management & Communication. These skills had lowest mean scores in the sample.

Q. Is the employability score of a student affected by the city they live in?

A. No. According to our analysis, applicants from Tier 2 and 3 cities performed equivalent to Tier 1 city applicants.

Q. Which skill is most correlated with overall employability?

A. Ability to Undertake Tasks betters Structured Approach which in turn induces better Stress Management. Therefore, it is an important skill set that one must possess to improve their employability score. Results obtained from the correlation matrix.

Q. What are the prevailing myths around higher levels of employability?

A. Some prevailing myths around employability are as under:

1. One must be from a premier institution to be employable.
2. Staying in a tier-1 city makes you more employable.
3. There is a lesser chance of employment if you don't have an engineering or MBA degree.
4. High academic scores in school ascertain your employability.
5. Communication is the only important skill to get a job.

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