

Training Need Assessment (TNA) Report

*Design and Operationalization of a Stainless Academy for Jindal
Stainless Limited: Project Yogyataa*

July 2026



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List of Abbreviations

Abbreviations	Details
AICTE	All India Council for Technical Education
AP	Andhra Pradesh
FTP	Fabricator Training Program
GDP	Gross Domestic Product
GMAW	Gas Metal Arc Welding
ITI	Industrial Training Institute
JSL	Jindal Stainless Limited
KAM	Key Account Manager
MAG	Metal active Gas Welding
MIG	Metal Inert Gas welding
MSME	Micro, Small, and Medium Enterprise
NCVT	National Council for Vocational Training
NSDC	National Skill Development Corporation
P&T	Pipe & Tube
SS	Stainless-Steel
TN	Tamil Nadu
TNA	Training Need Assessment
ToT	Training of Trainer
UP	Uttar Pradesh

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This report covers the analysis and findings of four segments (Employers, Students, Independent Fabricators and Organized Workers) and provides a holistic understanding and insights around the trends and practices of each segment within the Stainless-Steel ecosystem.

In conclusion, we acknowledge the amalgamative efforts of all involved stakeholders and bodies, because of which this study serves as a foundation for informed and strategic interventions aimed at addressing the skill gaps in India's stainless-steel sector, especially for the mid-stream and downstream industries.

1. Scope, Objectives and Methodology

1.1. Context

Jindal Stainless Limited (JSL) is the largest Stainless-Steel manufacturers in India and among the top 10 in the world. Founded in 1970, Jindal Stainless Limited (JSL) embodies the vision of improving lives through trustworthy and innovative stainless solutions while maintaining a steadfast commitment to social responsibility. The company prides itself on its excellent workforce, value-driven business operations, customer-centric approach and industry-leading safety practices.

Stainless Academy is an initiative by Jindal Stainless Limited (JSL) which serves as a hub for education, skilling, upskilling, research & collaboration and aims to create a skilled workforce in the Stainless Steel (SS) sector in India. The Stainless Academy envisions becoming the apex body to ensure the development of nationally recognized training standards and curriculum for the Stainless-Steel (SS) sector, enabling the adoption of industry relevant and standardized skill training and education. The Stainless Academy aims to unite industry, students, government, and professionals for nurturing talent and driving excellence for human resources that supports the growth and innovation for Viksit Bharat.

Stainless Academy has commissioned a Training Need Assessment (TNA) study aimed at gaining insights into the dynamics of labour demand and supply across select industry segments and stakeholders while on the path to achieve its objectives in the Stainless-Steel sector. To carry out the study and to define the roadmap of Stainless Academy, PricewaterhouseCoopers Services LLP (PwC) was appointed in March 2024 as a consultant for the project 'Yogyataa - Design and Operationalization of a Stainless Academy'.

Objectives and Intended Outcomes of the TNA

A Training Needs Assessment (TNA) systematically determines the presence and extent of training requirements within a specific group and identifies skill deficiencies. This type of research study is vital for enhancing performance by highlighting areas for improvement and guiding the development of customized reskilling and upskilling programs. The TNA study is essential for pinpointing existing training needs and directing future training initiatives to address specific gaps.

The TNA conducted for Stainless Academy aimed to identify gaps in skills and knowledge among independent fabricators, organized workers, employers, and students, to determine the key training interventions required to effectively bridge these gaps. The core objectives envisioned for this study, pertaining to the 4 stakeholder groups, are as follows:

- **Stainless-Steel Fabricators:** Skilled individuals or MSMEs engaged in the cutting, forming, welding, and finishing, and assembly of stainless-steel products such as gates, railings, grills, furniture, staircases, canopies, kitchen equipment, and other architectural and industrial fabrications.
- **Organized Workers in the Stainless-Steel Fabrication Sector:** Individuals employed by registered enterprises engaged in the value-added processing and fabrication of stainless steel into finished or semi-finished products. These workers perform skilled, semi-skilled, or supervisory functions across manufacturing, fabrication, finishing, assembly, quality assurance, and installation.

- **Employers in the Stainless-Steel Fabrication Sector:** Registered business entities—including micro, small, medium, and large enterprises—that manufacture, fabricate, process, assemble, or install stainless steel products and employ workers to carry out these activities.
- **Students:** Learners pursuing technical education in ITIs, Polytechnics, Engineering Institutions, or other vocational training centres who participate in stainless steel-focused courses, workshops, and industry training programmes conducted by JSL to develop knowledge and practical skills for careers in the stainless-steel manufacturing and fabrication sector.

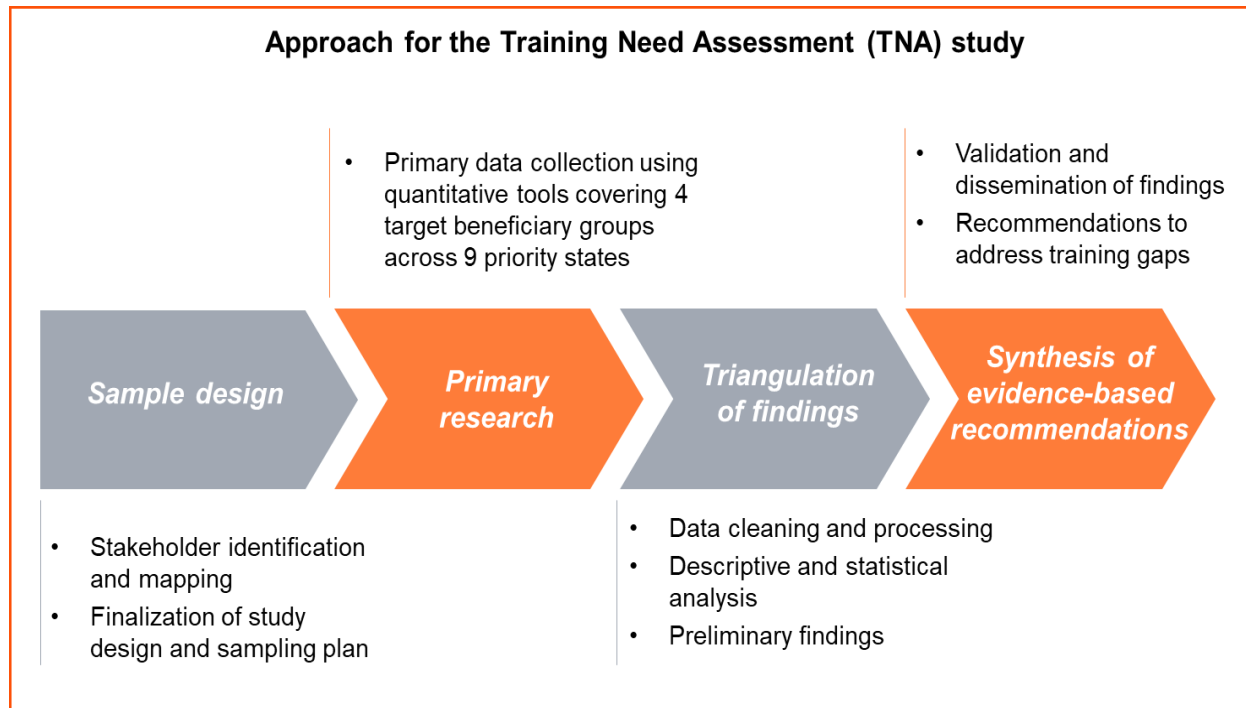
The objective was to:

- Gain an understanding of independent fabricators and worker's work experience and job understanding, critical skills requirements and training needs. Additionally, the study sought to explore respondents' awareness of the existing skilling and training ecosystem for the Stainless-Steel sector.
- Gain insights from employers into hiring practices, critical skills requirements, and high-demand job roles within selected employer segments, while exploring employers' awareness and training practices for entry-level workers, perceptions of graduates' skills preparedness, and industry awareness of the skilling ecosystem.
- Gather detailed insights into students' skills, training needs, and career aspirations to aid Stainless Academy in developing training programs that align with industry requirements, bridge the education-industry gap, and foster a competent workforce in the Stainless-Steel sector.

1.2. Approach and Methodology

To achieve the outlined scope of the study, the following approach was followed –

Figure 1: Approach for Training Need Assessment (TNA) study



Stage 1: Developing the sample framework design

Three core outcomes were expected from this stage, namely - developing the sample frame of 4 target groups across 9 priority states; identifying beneficiaries; and developing research instruments for the primary quantitative surveys.

- Sample size:** Within the scope of the TNA study, a sample size comprising 1,630 beneficiaries – including independent fabricators, organized workers, employers and students, was established for comprehensive coverage.
- Selection of geographies:** Nine priority states were identified for the TNA study based on a rigorous evaluation of economic growth, steel demand potential, working age population, and the availability of training infrastructure. Each parameter was assigned a specific weightage, reflecting the strategic priorities of the Stainless Academy, JSL, and the broader Stainless-Steel industry. Following the comprehensive geographic potential assessment, priority weightages for the nine priority states were established as follows: High-priority states include Gujarat, Haryana, Tamil Nadu, Odisha, and Uttar Pradesh; Medium-priority states comprise Maharashtra, Karnataka, and Andhra Pradesh; and Jharkhand is categorized as a low-priority state.
- Sampling approach:** Considering the extensive scope covering four stakeholder groups across nine priority states, two types of sampling methods were employed for selecting beneficiaries: 1) At macro-level (state level) and 2) At micro-level (beneficiary level), as illustrated in the table below:

Table 1: Sampling methods employed

Level	Type of Sampling	Remarks
At the macro level – (State)	Simple Random method	A simple random sampling method was employed within segments – for employers, independent fabricators, and organized workers, and within institute types for students, based on the pre-defined priorities (high, medium, low) of the nine states.
At the micro level – (Beneficiary)	Snowball sampling	At the beneficiary level, snowball sampling techniques were applied, as respondents were familiar with their territory and could refer to other workers or shop locations best suited to contribute valuable insights for the TNA study.

To ensure comprehensive representation across all states, while addressing the high, medium, and low prioritization among the nine states, a strategic approach was established. This involved allocating greater weight to high-priority state samples, and comparatively less weight to medium and low-priority state samples. The decision was informed by the significance of state-level prioritization and a thorough understanding of the study's context and requirements.

- d) **Sampling size calculation:** Based on the approach and the need for this study to emphasize state-wise priorities, a 'simple ratio method' or 'proportional division' method was used to determine the sample size. The ratio adopted for the state-wise section was a 5:4:3 ratio (i.e., 3 units from the 1 low priority state, 4 units each from the 3 medium priority states, and 5 units each from the 5 high priority states). Units represent the sample count of respondents across the four target stakeholder groups considered in the study. The exact numbers of distribution in the sample were subjected to few manual changes as proposed by Stainless Academy.

The total sample size was estimated using the formula below:

$$\text{Proportion for Item} = \left(\frac{S_i \times R_i}{\sum (S_i \times R_i)} \right) \times N$$

Where Proportion for Item = Total Sample Size

S_i = Number of states as per priority

R_i = Ratio allotted to sample

N = Overall count

The sample size per state was estimated using the formula below:

$$\text{Contribution} = \left(\frac{R_i}{\sum (S_i \times R_i)} \right) \times N$$

Where Contribution = Sample size in each state

R_i = Ratio allotted to sample

S_i = Number of states as per priority

N = Overall count

The below table summarizes the overall state-wise sampling of interviewees, for the quantitative survey chosen for the TNA survey –

Table 2: Overall sample size distribution for the study

Category	High-priority states					Medium-priority states			Low priority state	TOTAL
	Gujarat	Haryana	Tamil Nadu	Uttar Pradesh	Odisha	Andhra Pradesh	Maharashtra	Karnataka	Jharkhand	
Employers	31	32	31	31	31	25	25	25	19	250
Independent fabricators	93	93	15	93	93	15	74	74	55	605
Organized workers	70	70	70	70	70	60	60	60	45	575
Students	60	60	60	60	60	40	40	40	30	450
Grand Total	254	255	176	254	254	140	199	199	149	1880

- e) **Developing research instruments:** Specific probe areas were identified for each of the four stakeholder groups to capture key perspectives. Detailed survey questionnaires were then developed based on these probe areas to collect responses for the study. A structured process guided the questionnaire development, focusing on major aspects such as the content of the survey tool, formulation of questions relevant to Stainless Academy, sequencing of questions, and determining response directions.

Stage 2: Primary research

Three core outcomes were expected from this stage, namely – undertaking a pilot study for testing the survey tools; training of survey team members and enumerators; and conducting the on-ground survey.

- a) **Pilot testing of tools and survey questionnaires:** Before finalizing the survey questionnaires, a pilot exercise was conducted to check the relevance, suitability and adequacy of the questions included in the survey questionnaires. The pilot aimed at assessing if the questions included in the tool were understood by the respondents in the same way as intended by the study team. In consultation with Stainless Academy, a small number of respondents from Gurgaon and Wazirpur were identified across three Stainless Steel workshops, representing both independent fabricators and organized workers. These respondents were not included in the sample universe in the final survey. The team administered the draft tools to respondents as targeted for the survey. The study team also sought feedback from participants of the pilot study on the following aspects: suitability of the length of the questionnaire and its duration; suitability of the language used; sections/questions that were offensive or irrelevant to the study; and sections/questions that may be added to the tool. Based on the findings of the pilot study, the survey instruments got reviewed and revised appropriately. Further, the survey tool was translated into regional languages considering the geographic spread of the survey.
- b) **Training of enumerators and supervisors:** Before the start of the survey, training sessions were conducted for the surveyors, focusing on key elements essential for the successful execution of the survey. Firstly, emphasis was placed on research ethics during the training, guiding surveyors on how to introduce themselves and brief respondents about the survey's objectives before seeking consent. Enumerators were also instructed on the paramount importance of accurately capturing information while maintaining confidentiality throughout the data collection process. Secondly, all

surveyors underwent training on the specific objectives of the survey and the interventions proposed by Stainless Academy, ensuring a clear understanding of the research goals. Additionally, surveyors received training on basic sectoral knowledge, although they were not expected to act as primary sources of information. This knowledge was deemed crucial to facilitate meaningful engagement with respondents on sector-specific issues. Furthermore, the training covered the art of asking questions, ensuring uniform administration by each surveyor to elicit consistent responses from beneficiaries. Specific instructions were provided for each question, with the team offering insights on how to pose queries effectively in the field. Lastly, given the utilization of digital and telephonic platforms for survey execution, all surveyors were trained on how to capture responses accurately. The digital survey form incorporated built-in skip patterns, streamlining the data collection process and enhancing the overall efficiency of the survey.

- c) **On-ground survey:** A team of 42 enumerators were deployed to conduct the TNA study across the 9 priority states. The progress of the on-ground surveys was closely monitored by extracting the data of completed interviews from the server on a regular basis. Basic quality control checks were performed on the data captured, and in case any inconsistencies were observed, the surveyors were informed, and corrective measures were undertaken. Finally, 1,904 respondents were covered across 9 priority states as part of the TNA.

Stage 3: Triangulation of findings: At the end of the survey, a data cleaning exercise was conducted on the raw data to eliminate any discrepancies and finalize the cleaned datasets for detailed analysis. Descriptive and statistical analyses were then employed to interpret the data, revealing insights into current skills and training requirements specific to each group. The preliminary findings provided a snapshot of potential areas for development, such as challenges faced by fabricators, topic preferences for Stainless-Steel training programs, career aspirations, employers focus on workforce development, and students aiming for industry-relevant competencies in the domain. Triangulation of findings was achieved by consolidating the results obtained from these distinct groups to ensure the study accurately reflected their needs. This approach ensured the reliability of the findings, reflecting the genuine training needs of each group, thereby enabling Stainless Academy to design customized training programs that effectively bridged the identified gaps. Please note that for multiple-choice questions the reported figures represent percentages of cases, the total may exceed 100%. When considering percentage of responses, the rankings remain the same and the figures add up to exactly 100%.

Stage 4: Synthesis of evidence-based recommendations: The inferences derived from the quantitative surveys were correlated and validated to establish the evidence for generating suitable recommendations for Stainless Academy. Based on the gathered insights, two types of recommendations were derived: a) Enhancing the content modules in existing programs 2) Introducing new programs.

2. Respondents covered

The final sample size of 1,904 respondents was covered across 9 priority states as part of the Training Need Assessment (TNA).

Figure 2: Sample size covered across priority states

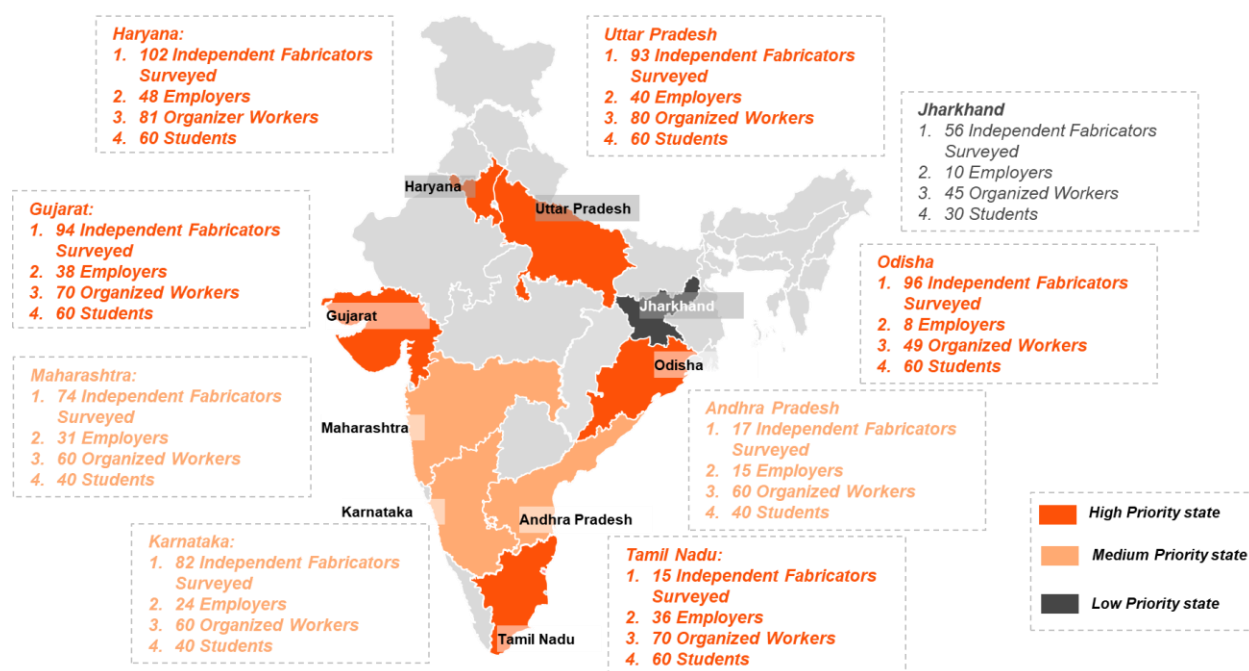


Table 3: Stakeholders covered in the TNA

Sr No	Stakeholder Group	No of Respondents covered
1.	Independent Fabricators	629
2.	Organized Workers	575
3.	Employers	250
4.	Students	450
	TOTAL	1904

3. Key Insights

3.1. Independent Fabricators

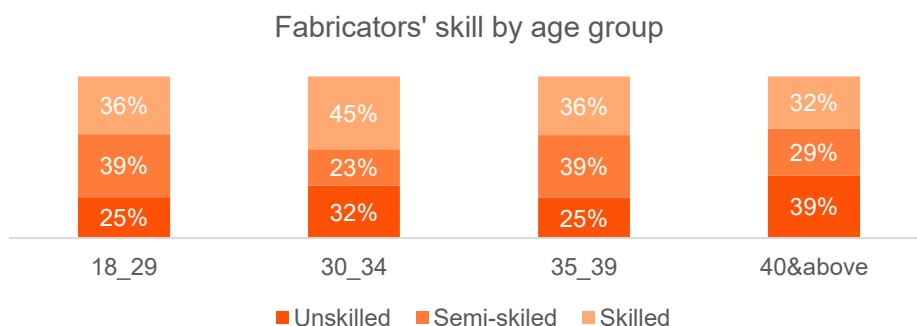
Theme 1: Skill, age, education and experience

Figure 3: Fabricators' skill level



- An unskilled fabricator is defined as an individual who demonstrates little or no independent judgement and lacks prior experience, despite possessing a basic familiarity with the occupational environment.
- A semi-skilled worker is defined as an individual whose role involves tasks with defined nature of work, where the major requirement is the effective execution of duties rather than the application of judgement or skills.
- A skilled worker is defined as an individual who exercises considerable independent judgement and performs their duties with responsibility.
- Only one-third of fabricators are currently skilled, showing a major skill gap in the steel sector.
- Two-thirds of fabricators reported themselves as semi-skilled or unskilled representing an opportunity for upskilling initiatives.
- Training for remaining two-thirds (semi-skilled and unskilled) of fabricators can potentially improve productivity, product quality, as well as long-term industry strength. Training can be imparted from basic level to advance level.

Figure 4: Fabricators' skill by age group

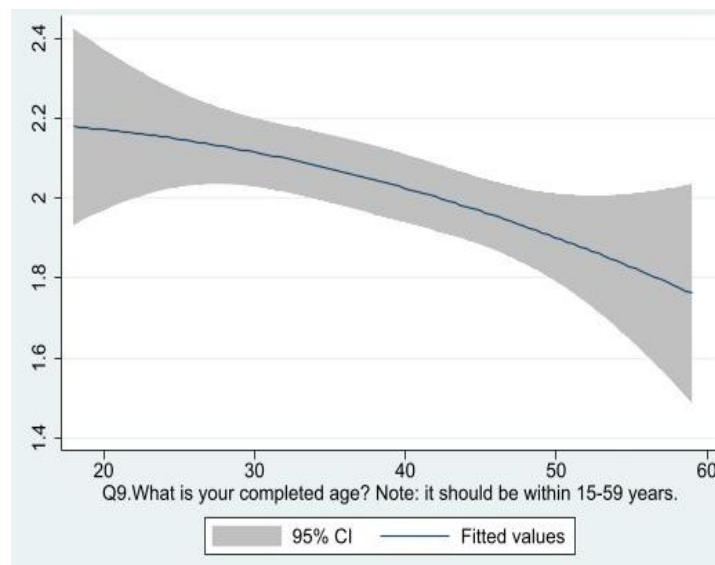


Pearson $\chi^2(6) = 17.6384$ Pr = 0.007

- Skill level peaks at age 30-34: This age group has the highest share of skilled fabricators (45%).

- Young entrants are predominantly semi-skilled: Among 18–29-year-olds, 39% are semi-skilled, followed by skilled fabricators (36%).
- Skill level dips at 40 & above: The share of unskilled fabricators is highest in this group (39%) and skilled lowest (32%), indicating potential skill erosion, outdated knowledge, or missed opportunities for upskilling over time.
- Skill acquisition does not progress linearly with age-after peaking at 30–34.

Figure 5: Quadratic regression analysis

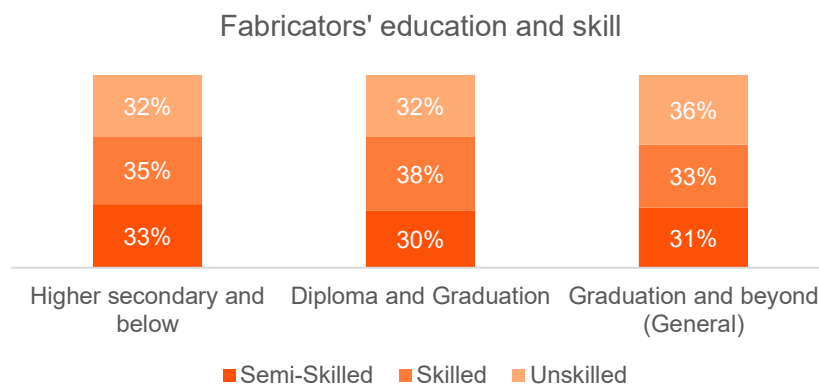


To further understand the relationship between age and skill, a quadratic regression analysis was conducted, which yielded the following insights:

- There is a negative relationship between age and skill level among individuals aged 15 to 59.
- Younger fabricators generally exhibit higher skill levels, while skill levels tend to decline as age increases.
- This trend may reflect limited access to upskilling opportunities, reduced motivation among older individuals, or shifts in occupational roles with age.
- The shaded band around the trendline represents the 95% confidence interval, confirming that the decline is statistically significant and reliable.

Theme 2: Skill and education are not related in case of fabricators

Figure 6: Fabricators' education and skill

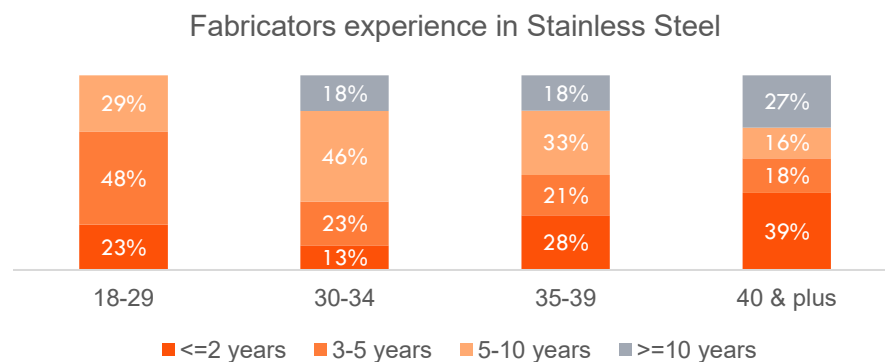


Pearson $\chi^2(4) = 0.9368$ Pr = 0.919

- Among fabricators, education is not a key determinant of skill level.
- Education qualifications are similarly distributed across all skill levels.
- Fabricators who have completed a diploma and graduation exhibit a marginally higher proportion of skilled fabricators (38%).
- Fabricators with a general graduate education and higher represent the largest proportion of unskilled fabricators (36%).
- The Chi square test also indicates that there is no association between levels of education and skill among fabricators.

Theme 3: Age and experience in stainless-steel sector

Figure 7: Fabricators' experience in stainless steel by age

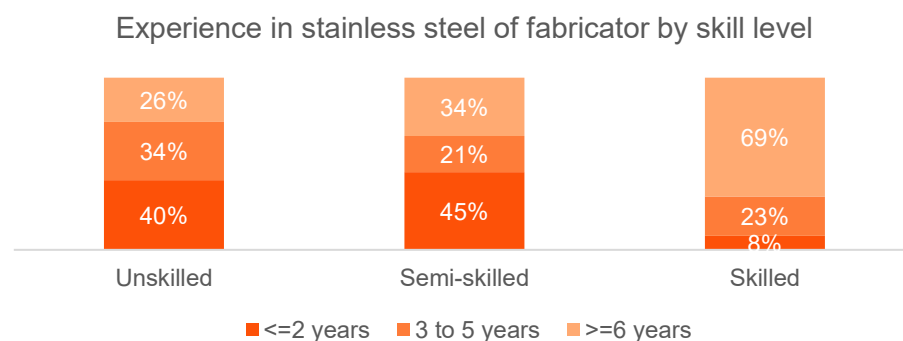


Pearson chi2(9) = 119.1621 Pr = 0.000

- A significant 46% of fabricators are aged 40 and above.
- Nearly 40% of fabricators aged 40 and above are new to the trade, highlighting a notable share of late-career entrants in the sector.
- A growing number of fabricators, particularly new entrants (28%), are joining the trade after reaching the age of 35.
- In the age group of 18-29 years, more than 48% of fabricators have experience of 3-5 years and 29% have experience of 5-10 years in stainless fabrication.
- 39% of fabricators aged 40 and above are new to Stainless-Steel fabrication, which is 16% higher than the proportion of younger fabricators aged 18-29.

Theme 4: Experience strongly aligns with skill level

Figure 8: SS experience by skill level

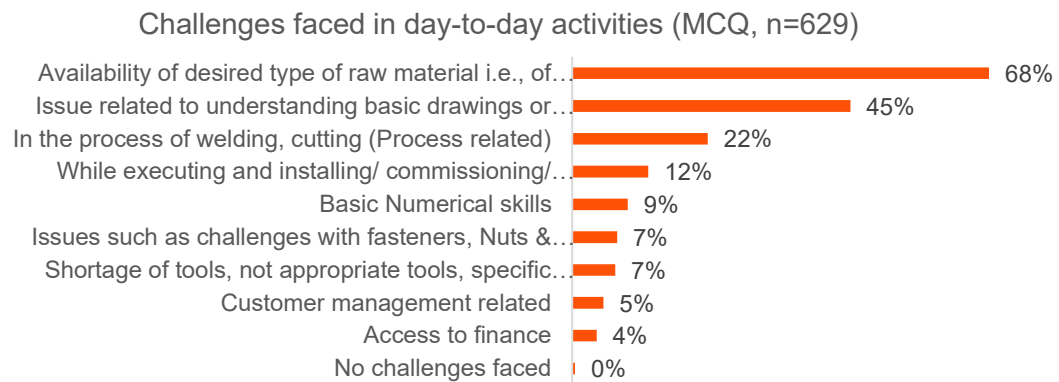


Pearson chi2(4) = 117.1265 Pr = 0.000

- Skilled fabricators possess substantial experience, with nearly 69% having over six years in stainless steel work.
- Majority of unskilled and semi-skilled fabricators are relatively new to the sector, with over 40% in each group having two years or less experience.
- Statistical test confirms that there is a clear link between experience and skill level.

Theme 5: Fabricators' challenges vary by skill level

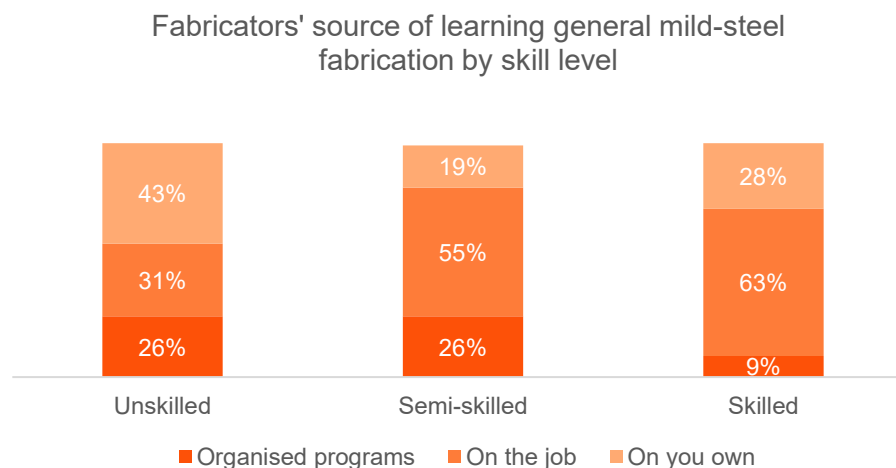
Figure 9: Challenges faced by fabricators



- Raw material access is the top concern for all groups (68%), but particularly acute among unskilled fabricators.
- The second major challenge faced by fabricators is technical comprehension, with 45% reporting difficulties in understanding drawings or engineering terms.
- Process-related issues (e.g., welding/cutting) are consistently reported by 22% across all groups, suggesting a universal need for refresher training.

Theme 6: Learning methods differ by skill level, with unskilled workers primarily self-learning and skilled workers learning through on-the-job experience in 'General Mild Steel Fabrication'

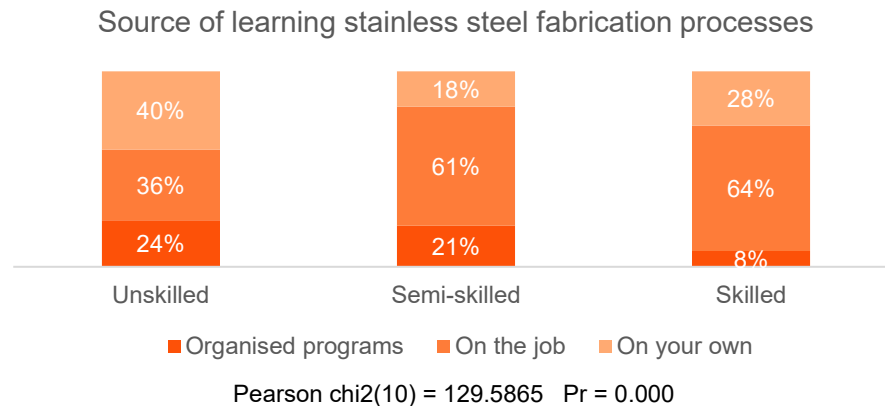
Figure 10: Fabricators learning methods for mild steel fabrication



- Among unskilled fabricators, 43% learn on their own, while only 26% acquire knowledge through organized training programs, highlighting their limited exposure to formal training.
- Semi-skilled workers gain their skills through various methods: 55% learn on the job, 26% participate in training programs, and 19% learn on their own.
- Skilled fabricators primarily develop their expertise on-the-job, accounting for 63%, while only 9% attend organized programs, indicating a shortfall in formal reinforcement.

Theme 7: The learning pattern in SS fabrication mirrors that of general mild steel fabrication

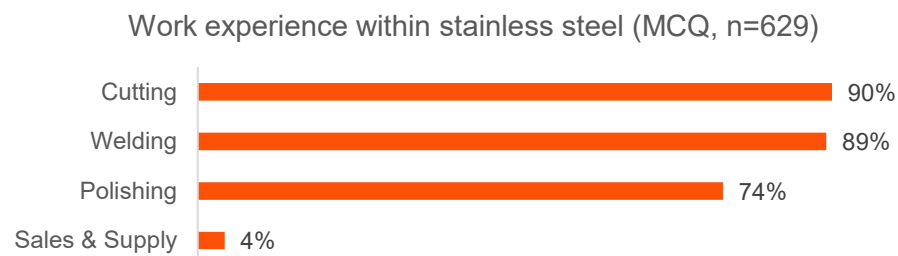
Figure 11: Fabricators learning methods for stainless-steel fabrication



- Unskilled fabricators predominantly acquire skills on their own (40%) and on-the-job experience (36%), with only limited access to formal training programs (24%).
- Semi-skilled workers primarily gain their skills through on-the-job experiences (61%), with moderate participation in organized programs (21%), and a smaller proportion of learning on their own (18%).
- Skilled fabricators predominantly gain their skills through on-the-job experiences (64%), with a low uptake of organized programs (8%), despite some proportion of learning on their own (28%)
- Across all skill levels, organized programs are not a primary learning source, pointing to systemic gaps.
- Chi-squared results confirm that learning methods differ significantly by skill level.

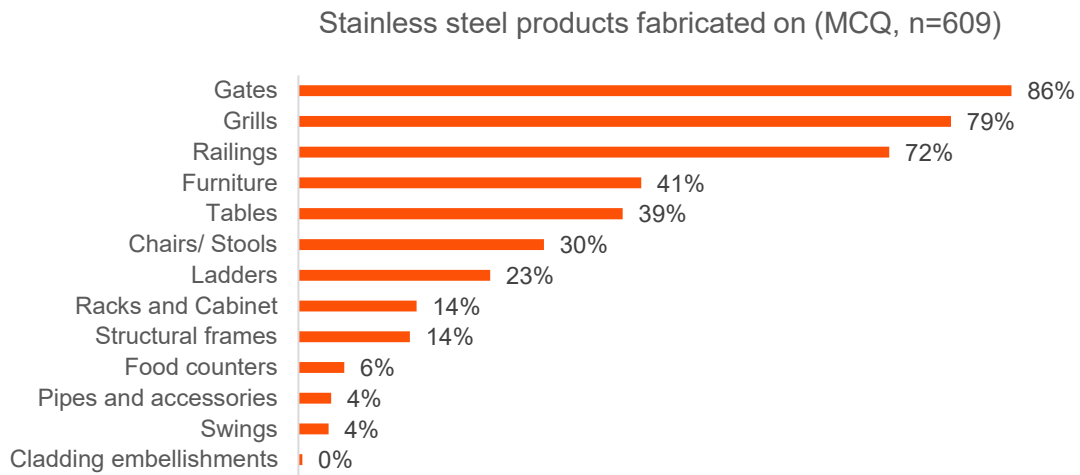
Theme 8: Prior experience in stainless-steel domain

Figure 12: SS work experience



- Fabricators show key involvement in welding (89%) and cutting (90%), highlighting a need for tailored training to enhance technical skills and efficiency.

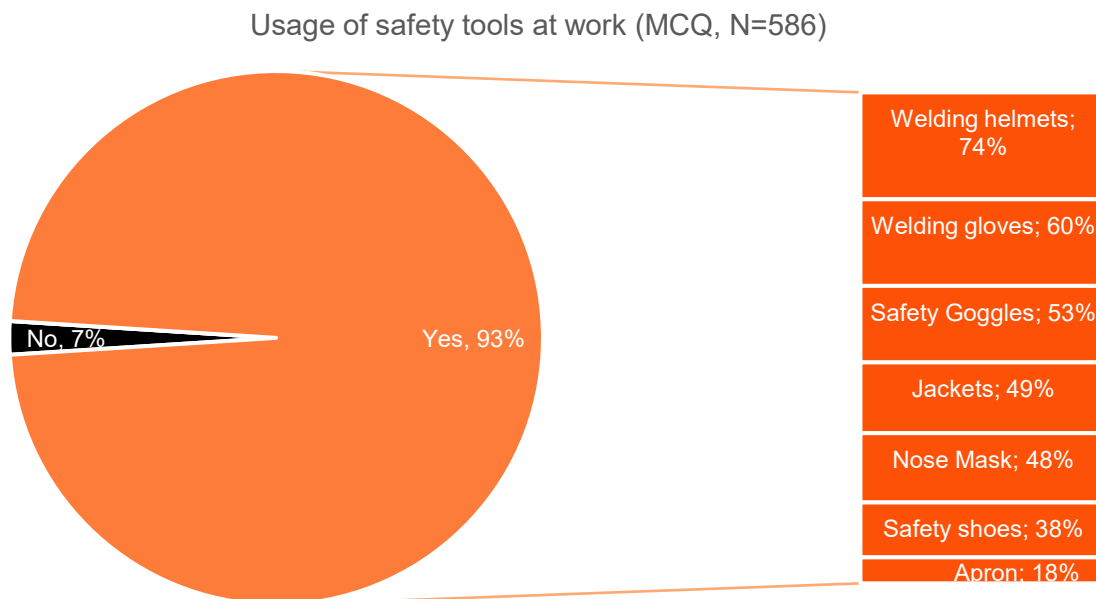
Figure 13: SS products fabricated



- High engagement in gates (86%), grills (79%), and railings (72%) suggest a concentrated demand for these products and a need for specialized training in these areas to boost productivity. Swings and Cladding embellishments have shown the least demand.

Theme 9: Safety practices

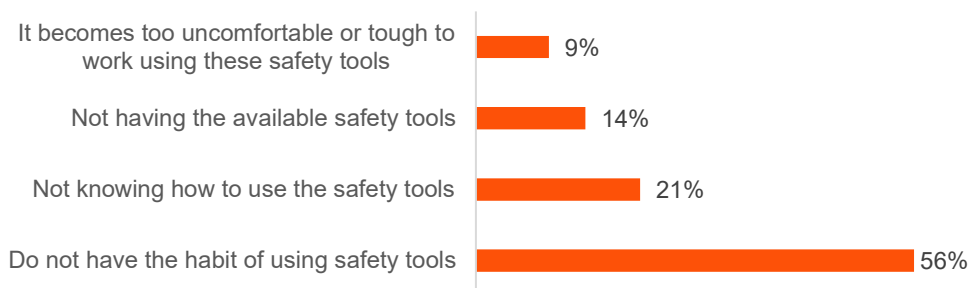
Figure 14: Usage of safety tools at work



- Safety practices are emphasized, with fabricators using safety tools/protective gear like welding helmets, gloves, goggles, nose masks, and safety shoes, indicated by 586 fabricators (93%).

Figure 15: Reasons for not using safety tools

Reasons for not using safety tools (MCQ, n=43)



- The primary reason the remaining 7% (43) do not use safety tools is their lack of habit. The 43 fabricators are split across Gujarat (1), Uttar Pradesh (19) and Odisha (23).

Theme 10: Past participation in training programs

Figure 16: Past participation in trainings

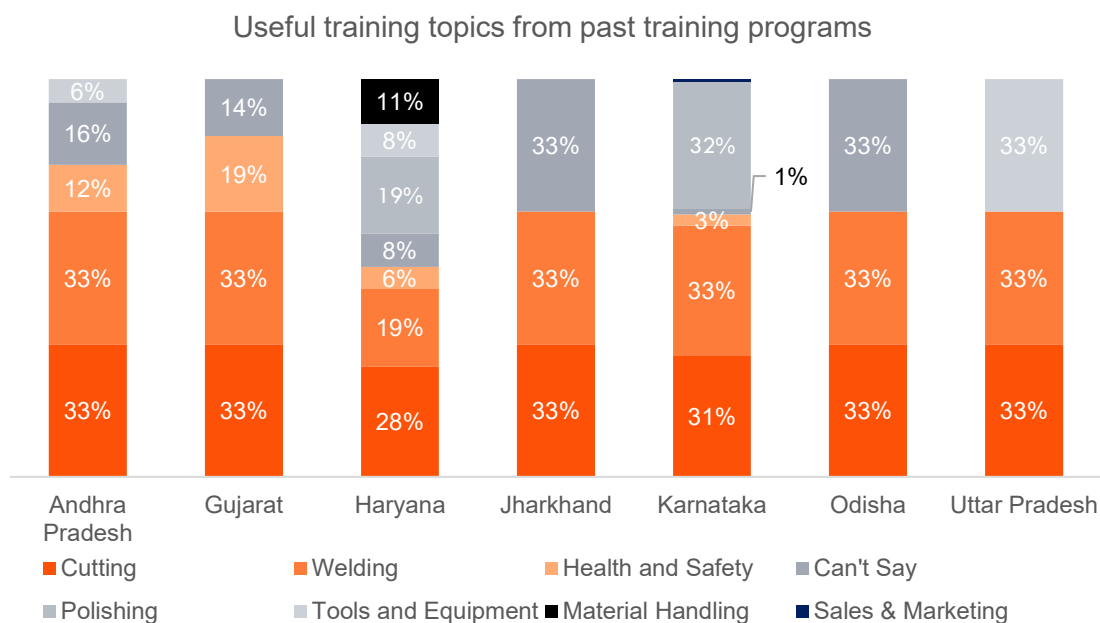
Type of Training programs attended



- Beyond the Fabricator Training Program (FTP) conducted by Stainless Academy, only 25% of fabricators have engaged in fabrication training, underscoring a need for more such programs.
- Private sector training is led by JSL alone, followed by Government institutions. Programs by other private entities are nearly absent (~1%).
- Academic institutions play a minimal role, highlighting weak linkages between formal education and hands-on skill training.
- The training ecosystem shows structural imbalance, heavily reliant on Government and JSL, with limited participation from other private and academic entities, suggesting a strong collaboration need for diversified engagement.

Theme 11: State variation in perceived usefulness of past training topics

Figure 17: Useful past training topics



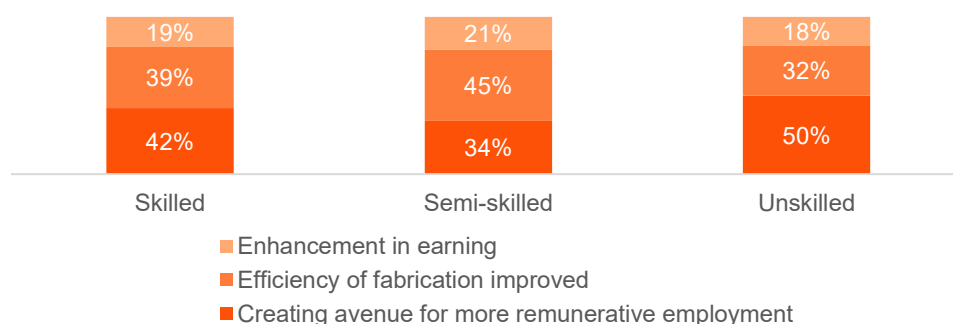
Pearson $\chi^2(60) = 464.7236$ Pr = 0.000

- Cutting and Welding are rated as the top useful topics across all states. Each is cited by over 30% of respondents in nearly all states.
- Health & Safety is the second highest rated training topic, especially in Odisha (33%), Gujarat (19%), and Andhra Pradesh (12%).
- Polishing emerges as a niche but locally important topic, with Karnataka (32%) and Haryana (19%) reflecting demand for finishing/detailing competencies.
- Tools and Equipment draw high interest in Uttar Pradesh (33%).
- The chi-square affirms that training preferences vary significantly by state, reinforcing the case for customized training curricula & delivery mechanisms.

Theme 12: Perceived training benefits differ by skill Level

Figure 18: Perceived benefits from past trainings

Benefits derived from training programs by skill level (MCQ)

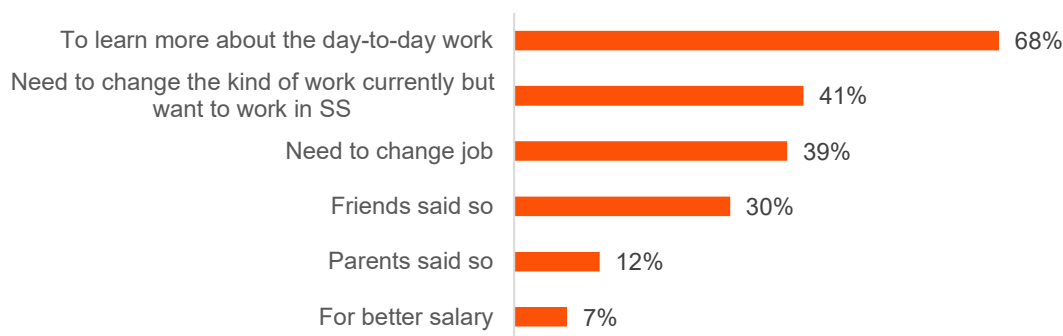


- Skilled workers emphasize employment mobility, with 42% noting training has opened better employment options, while 39% cite improvements in fabrication efficiency.
- Semi-skilled workers prioritize efficiency, with 45% reporting improved fabrication efficiency, indicating stronger alignment with operational gains.
- Unskilled workers highlight increased job opportunities, with 50% recognizing the potential for remunerative employment, reflecting aspirations for economic advancement.
- Gains in earnings are less emphasized across all groups (18–21%), suggesting indirect or delayed financial benefits from training interventions.
- The statistical test suggests that the perceived benefit of the training varies by the skill level.

Theme 13: Motivation to attend a training program

Figure 19: Motivation to attend a training program

Motivation to attend a training program (MCQ, n=174)

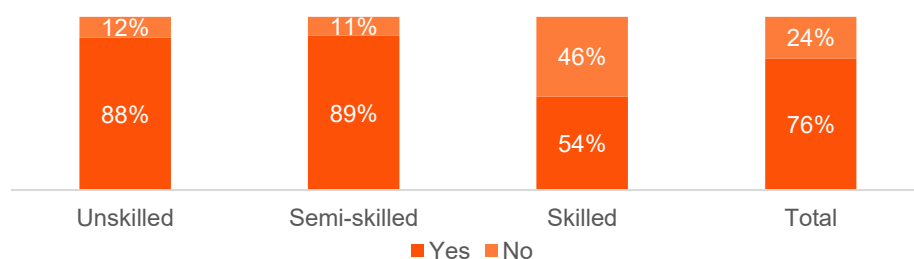


- The top motivation for attending the training program is to learn more about the day-to-day work, as indicated by 68% of fabricators.
- A considerable number of fabricators (41%) attend training because they need to change the kind of work they are currently doing but still want to remain in the same sector of stainless steel.
- The least cited reason, at 7%, is the motivation to achieve a better salary. This suggests that financial enhancement is not the primary reason for attending training programs compared to other motivations such as skill development and career change.

Theme 14: Interest in future certification/trainings is significantly higher across skill levels

Figure 20: Interest in future trainings by skill level

Wish to attain SS training/skill development certificate



- High certification interest among unskilled (88%) and semi-skilled (89%) fabricators indicates strong demand for formal training as a pathway for advancement.
- Skilled workers show moderate interest (54%), possibly due to existing expertise or alternative certification routes.
- Overall aspiration is strong, with 76% of all respondents wishing to obtain skill development certification in stainless steel. A key opportunity exists to expand accessible certification programs.

Theme 15: Key perceived benefits driving interest in stainless steel training

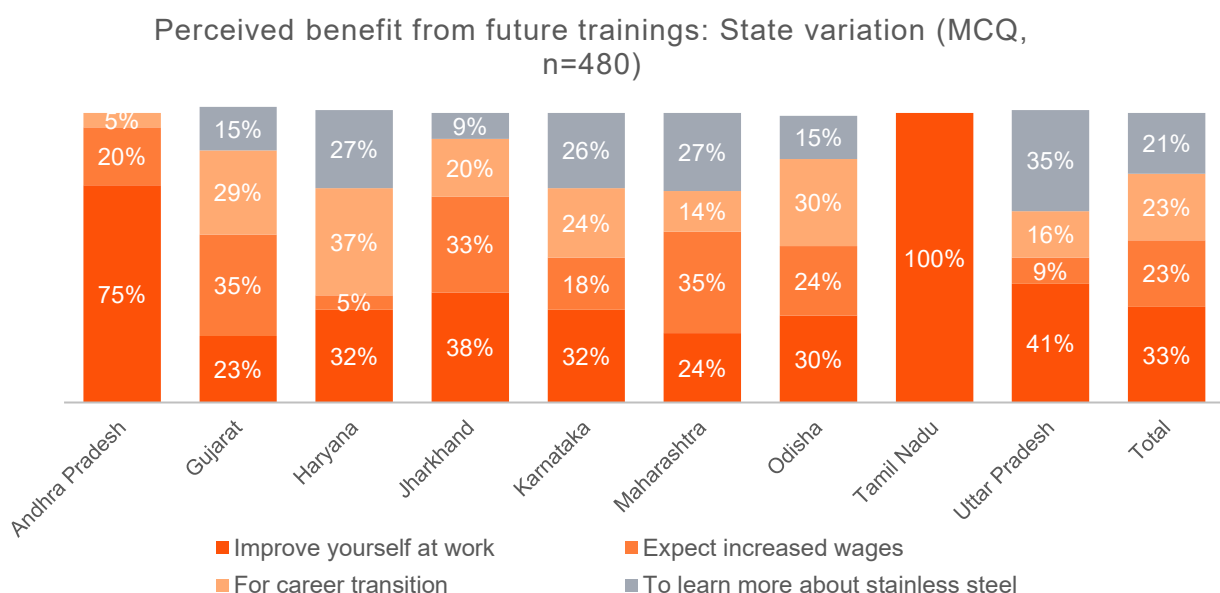
Figure 21: Perceived benefits of future trainings



- Improving at work (33%) is the top-cited benefit, indicating strong motivation for productivity improvement through training.
- Career Transition (23%) reflects a significant portion of respondents aiming for mobility or role change through skill development.
- Learning more about stainless steel (23%) is a core driver, highlighting interest in acquiring specialized understanding of stainless-steel processes.

Theme 16: Perceived benefits from future training varies across states

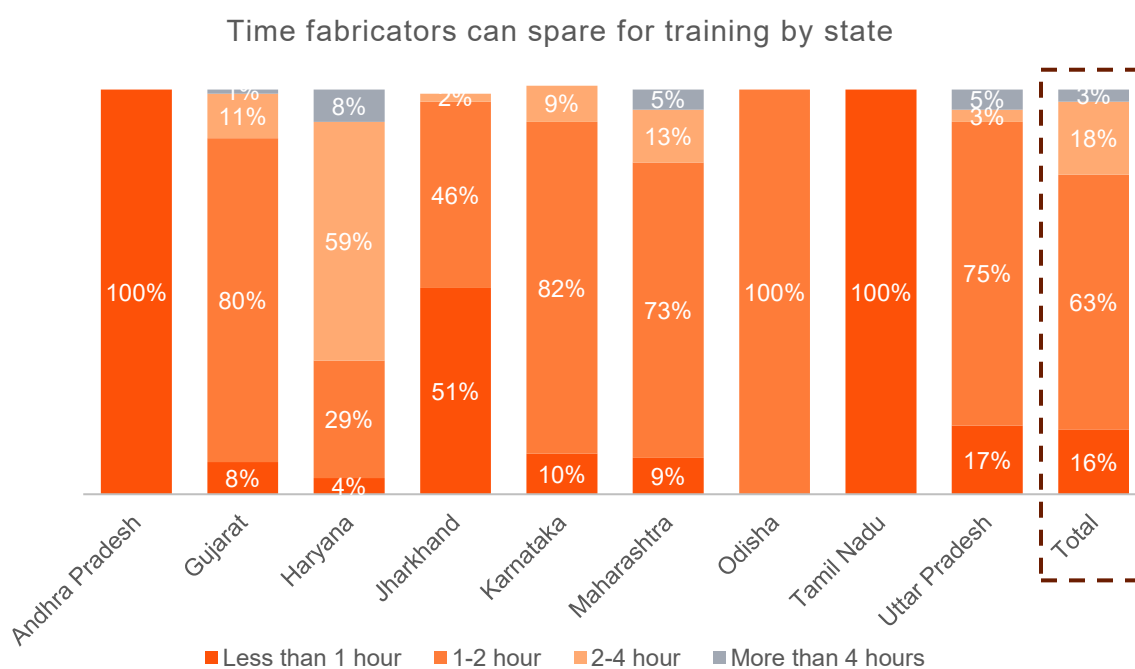
Figure 22: Perceived benefits from future trainings: state-wise



- Improving performance at work is the top-cited benefit overall (33%). Tamil Nadu (100%) and Andhra Pradesh (75%) indicate a strong demand for practical skill enhancement.
- Career development is viewed as a key benefit in Haryana (37%) and Gujarat (29%), suggesting that fabricators in these regions associate training with long-term progression in their trade.
- Gaining knowledge about stainless steel is a valued outcome in Uttar Pradesh (35%) and Maharashtra (27%), pointing to a need for material-specific training content in these states.
- Higher wages are anticipated as a benefit especially in Gujarat (35%) and Maharashtra (35%), reflecting strong economic expectations tied to training participation.
- The state-wise variation in perceived benefits supports the need for customized training design.

Theme 17: Training time availability differs significantly across states

Figure 23: Preferred duration for training

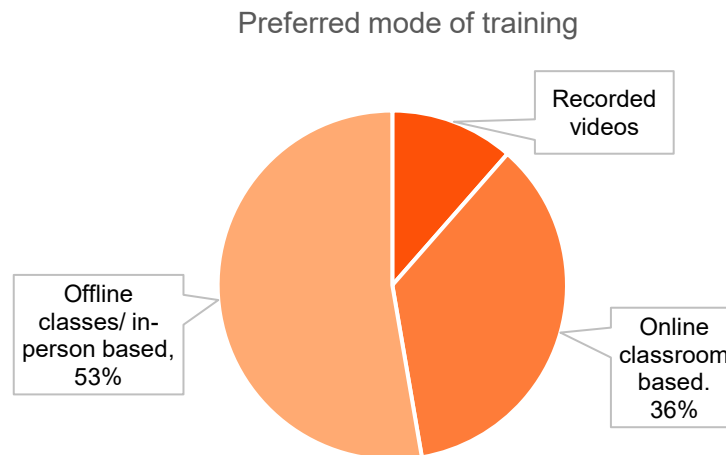


Pearson $\chi^2(24) = 317.3300$ Pr = 0.000

- 1–2 hours per day is the predominant time window reported (63%), with high responses in Odisha (100%), Karnataka (82%), and Gujarat (80%), indicating broad alignment around short-duration training formats.
- Fabricators in Andhra Pradesh and Tamil Nadu report availability only in the less than 1 hour category, reflecting limited daily flexibility for training.
- Haryana reflects the highest proportion (59%) of fabricators able to spare 2–4 hours, suggesting relatively greater scheduling flexibility.
- Time slots exceeding 4 hours are rare overall (3%) and minimally represented in Haryana (8%), Maharashtra (5%), and Uttar Pradesh (5%), suggesting capacity constraints for extended-duration training.
- The variation is statistically significant, reinforcing the need for state-specific training formats.

Theme 18: Preferred mode of training

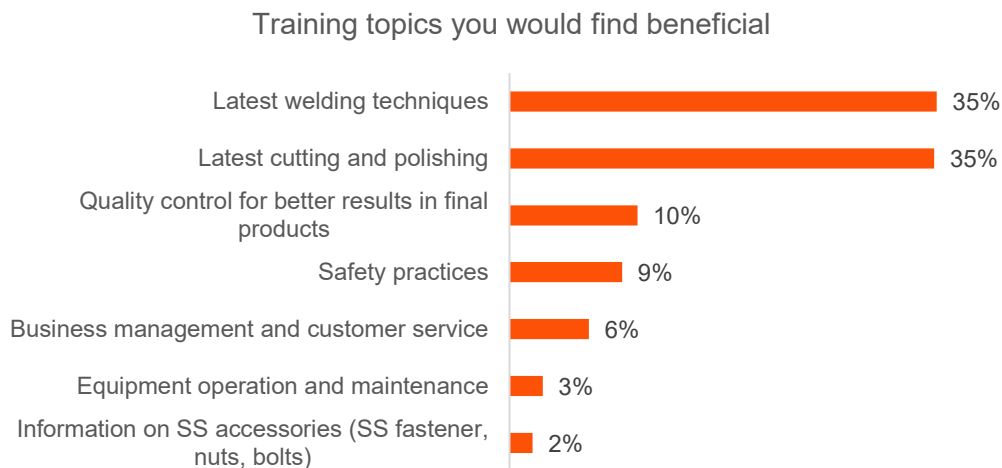
Figure 24: Preferred mode of training



- A preference for offline, in-person training is evident, indicated by 53% of fabricators.

Theme 19: Useful training topics reported by fabricators

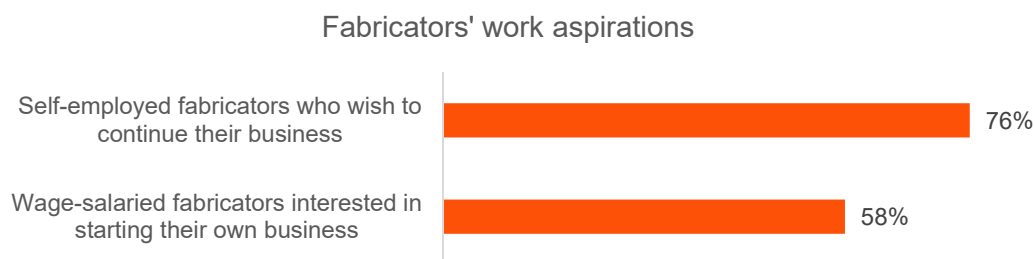
Figure 25: Useful Training Topics



- Two training topics, "Latest welding techniques" and "Latest cutting and polishing," both received a preference percentage of 35%. This indicates a high demand for technical skills among the fabricators.
- Topics such as "Quality control for better results in final products" (10%) and "Safety practices" (9%) have also shown moderate interest.

Theme 20: Work related career aspirations

Figure 26: Fabricators' work aspirations



- There is a strong entrepreneurial drive among fabricators, as indicated by 76% of self-employed individuals intending to continue their business and 58% of wage-salaried fabricators expressing eagerness to launch their own enterprises and become independent. This trend presents a promising opportunity for Stainless Academy to explore in the future.

Theme 21: Areas of support identified for Stainless Academy

Figure 27: Avenues for Stainless Academy to support



- The highest proportion of fabricators (65%) are interested in gaining information about the availability of right raw materials and understanding which grades to use. This indicates a desire for material knowledge that can directly impact the quality and cost-effectiveness of their work.
- Fabrication-related training is sought by 34% fabricators, highlighting an interest in enhancing technical skills specific to their core operations.
- Fabricators have also shown interest in lead generation training (17%) and customer relationship management training (11%). This suggests that fabricators are looking to expand their customer base and improve client interactions, which are crucial for business growth.

Theme 22: Income increases with stainless steel experience

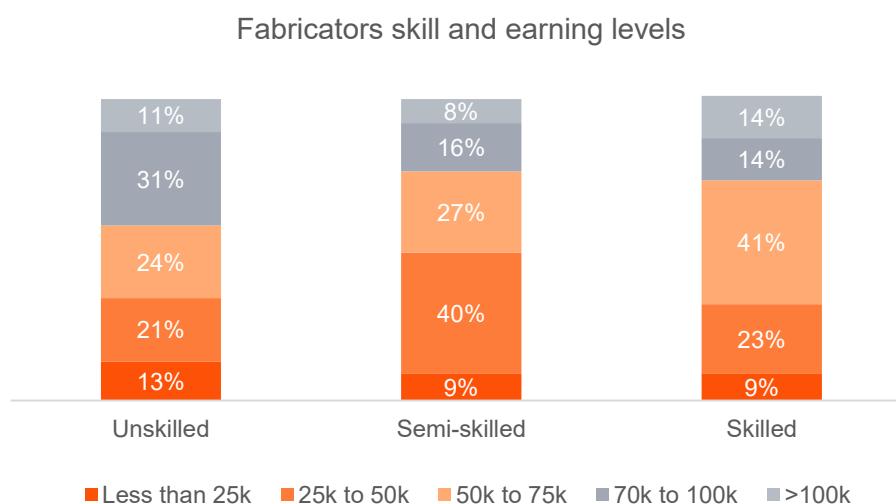
Figure 28: Average monthly income of fabricators



- Fabricators with 10 or more years of experience earn the highest average income at INR 70,465 per month.
- Fabricators with 5-10 years of experience earn INR 65,062, showing steady growth with mid-level experience.
- Fabricators with 3-5 years of experience earn INR 61,273.
- New entrants (2 or less than 2 years) earn significantly less at INR 46,810, underscoring the importance of on-the-job learning and retention.
- The trend clearly demonstrates a positive correlation between experience in stainless steel and average monthly income.

Theme 23: Higher skill levels are strongly associated with better earnings

Figure 29: Fabricators skill and earning levels



- Skilled fabricators earn higher incomes, with 41% earning between INR 50,000-75,000/-, and 28% earning over INR 100,000/-, highlighting strong income outcomes associated with skill sets.
- Semi-skilled fabricators exhibit uneven earnings, with 40% earning between INR 25,000-50,000/- and 27% earning between INR 50,000-75,000/-, indicating moderate returns and significant variation.
- Unskilled fabricators predominantly earn within mid-income ranges, with 21% earning between INR 25,000-50,000/- and 24% earning between INR 50,000-75,000/-. This distribution, with fewer earnings at the extremes, suggests limited yet stable earnings prospects.
- Higher earnings are concentrated among the skilled group, with wider distribution and notable representation in upper income (14% earning INR 70,000-100,000/-).
- Statistical test confirms strong association between earnings & skill level.

Two sample T-test with equal variation:

Table 4: Statistical test between training and income levels

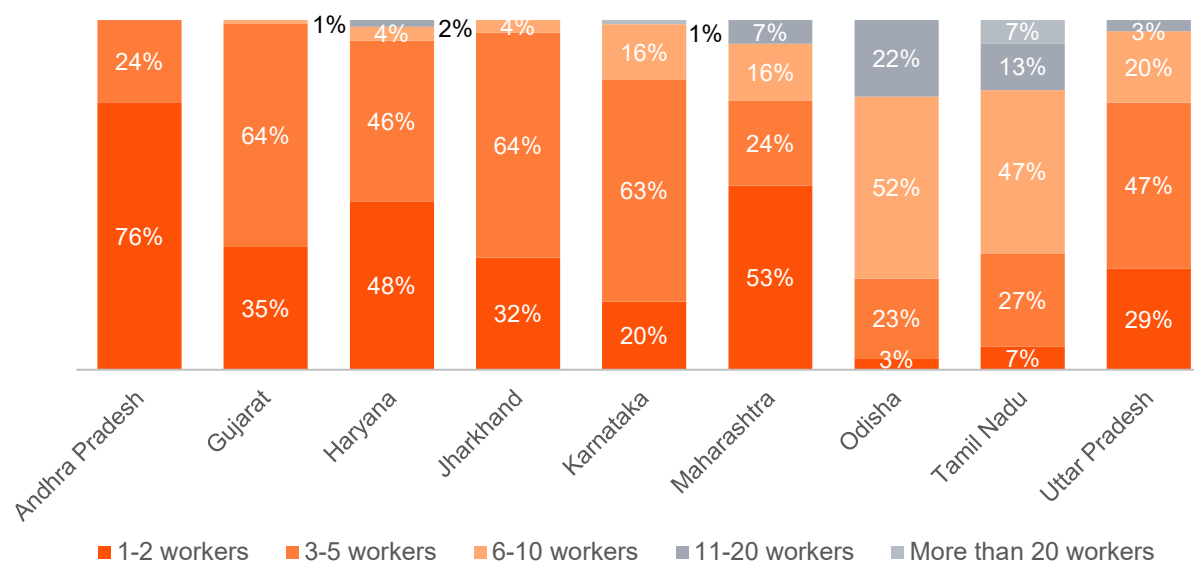
Difference in Income by Training Attainment (Two-sample t-test with equal variance)						
Group	Obs	Mean	Std. err.	Std. dev	(95% conf. interval)	
Not participated	455	57335.16	1213.966	25894.79	54949.47	59720.86
Participated	174	65086.21	2061.272	27180.05	61017.73	69154.69
Combined	629	59479.33	1055.273	26466.11	57407.05	61551.62
diff		-7751.04	2340.539		-12347.3	-3154.798
diff = mean (0) – mean (1)						t = -3.3116
H0: diff = 0				Degree of freedom = 627		
Ha: diff < 0			Ha: diff = 0		Ha: diff > 0	
Pr (T < t) = 0.0005			Pr (T > t) = 0.0010		Pr (T > t) = 0.9995	

- To understand whether participation in training has any measurable impact on income levels among fabricators, two hypotheses were constructed:
 - Null Hypothesis (H_0) – Training does not affect income; the average earnings of trained and untrained fabricators are equal.
 - Alternative Hypothesis (H_1) – Training influences income; the average earnings of trained fabricators are higher than those of untrained ones
- Two sample t-test were conducted to compare mean income between the groups. There is difference of – INR 7,751
 - Statistical significance confirmed-p-value ($Pr < t$): 0.0005, well below the 0.05 threshold — this rejects the null hypothesis.
- It can be concluded that training leads to an increase in income. The null hypothesis is rejected in favor of the alternative, confirming that training positively influences earnings among fabricators.

Theme 24: Workers employed in the workshop

Figure 30: Workers employed in workshop

Workers employed in your workshop

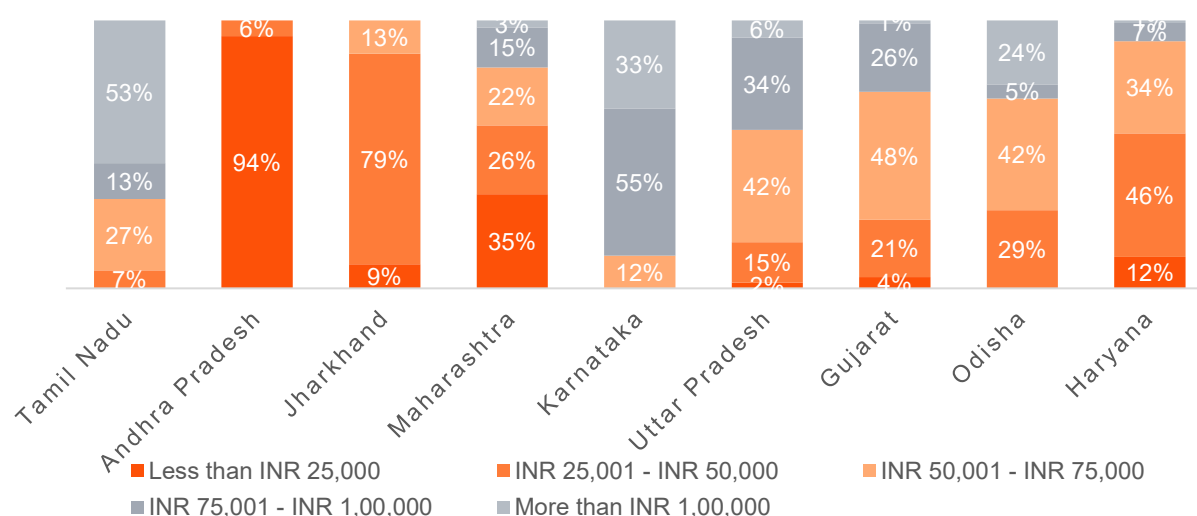


- Small workshops, employing 1 to 5 workers, constitute over 77% of all establishments across states. Andhra Pradesh leads with 76% of workshops employing 1 to 2 workers, whereas Jharkhand and Karnataka have a higher prevalence of workshops with 3 to 5 workers (64% and 63% respectively).

Theme 25: Average monthly income of the workshop

Figure 31: Average monthly income of workshop

Average monthly income of your workshop



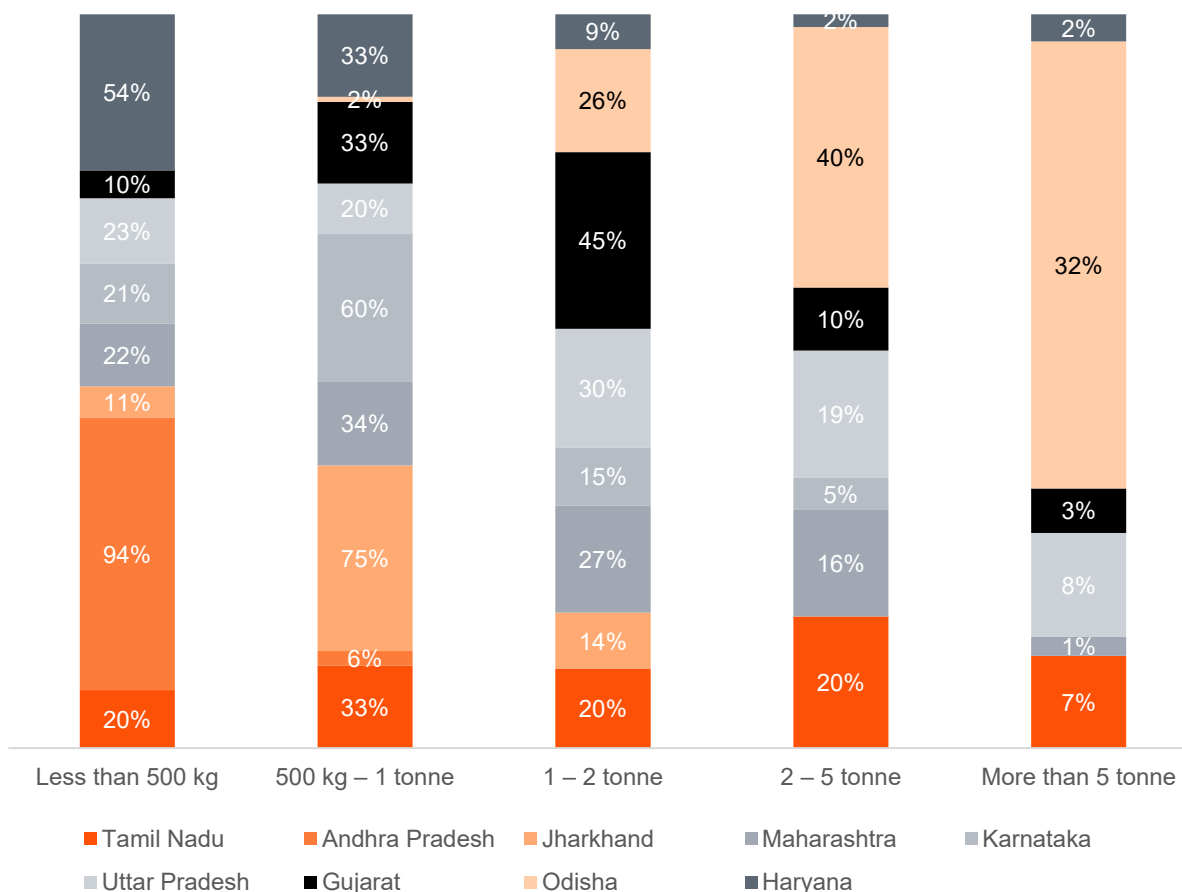
- Stark income disparities are observed among workshops across states. Tamil Nadu leads, with over 50% earning above INR 1,00,000, while Andhra Pradesh predominantly earns below INR

25,000, indicating an economic gap. States like Gujarat, Odisha, and Haryana, with earnings between INR 50,001 and INR 75,000, suggest that these states are in a transitional phase toward higher earnings.

Theme 26: Average monthly stainless-steel consumption in your workshop

Figure 32: Average monthly SS consumption in workshop

Average monthly SS consumption in your workshop

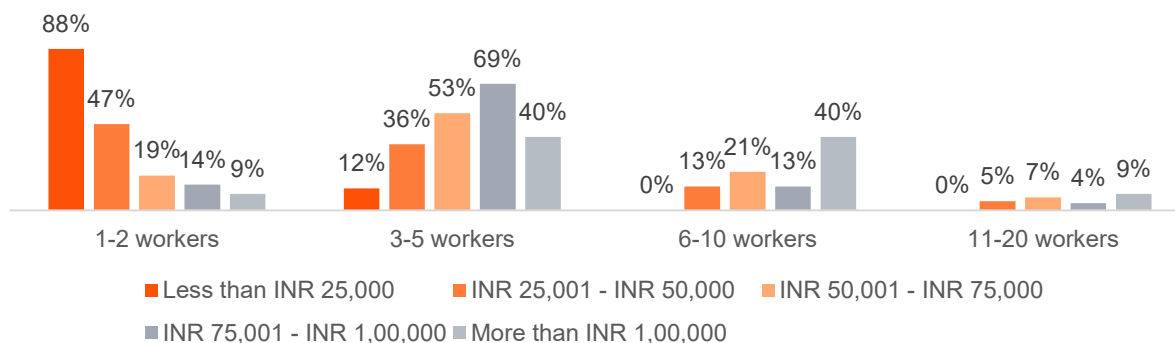


- Significant variations in stainless-steel consumption are observed across states. Tamil Nadu and Odisha demonstrate high consumption levels, consuming over 2 tonnes monthly, indicating robust activity.

Theme 27: Workers employed in workshop compared with average monthly income of workshop

Figure 33: Workers employed compared with average monthly income of workshop

Workers employed in workshop compared to average monthly income of your workshop

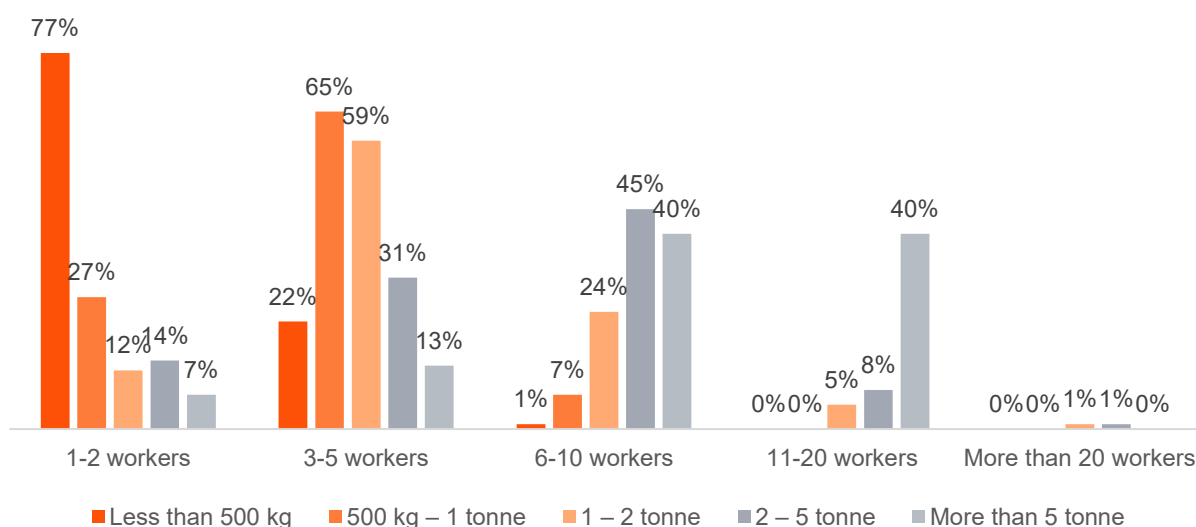


- For workshops with 1 to 2 workers, it is expected that 88% fall into the 'Less than INR 25,000' income bracket, as smaller group of fabricators often correlate with reduced capacity and lower income levels.
- For workshops with 3 to 5 workers, a significant proportion (53% earning INR 50,001 to INR 75,000 and 69% earning INR 75,001 to INR 100,000) indicates a higher income level. This pattern is expected, as more fabricators can contribute to increased earnings.
- For workshops with 6 to 10 workers, a portion falls into higher income brackets, with 40% earning more than INR 100,000. This suggests that as the number of fabricators increases, the potential for higher income also rises.

Theme 28: Workers employed compared with average SS monthly consumption in workshop

Figure 34: Workers in workshop compared with average SS monthly consumption

Workers employed in workshop compared with average SS monthly consumption in workshop



- Small workshops (1–2 workers) are highly concentrated in lowest consumption bracket (<500 kg).
- Workshops with 3–5 workers are spread across all consumption ranges but peak in the 500 kg – 2 tonne range.
- Medium-sized workshops (6–10 workers) dominate in “2–5 tonne” and “More than 5 tonne” consumption category.
- Workshops with >10 workers are predominantly in the higher consumption bands, particularly exceeding 5 tonnes. This confirms a strong positive relationship between workforce size and material usage.

Theme 29: Welding practices

Figure 35: Applicability of welding

Is welding applicable at your work?

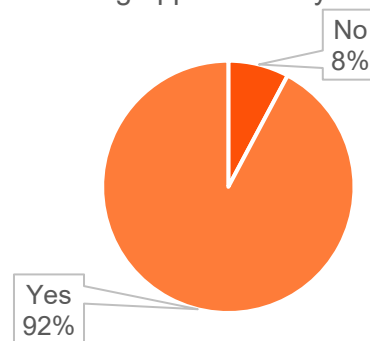
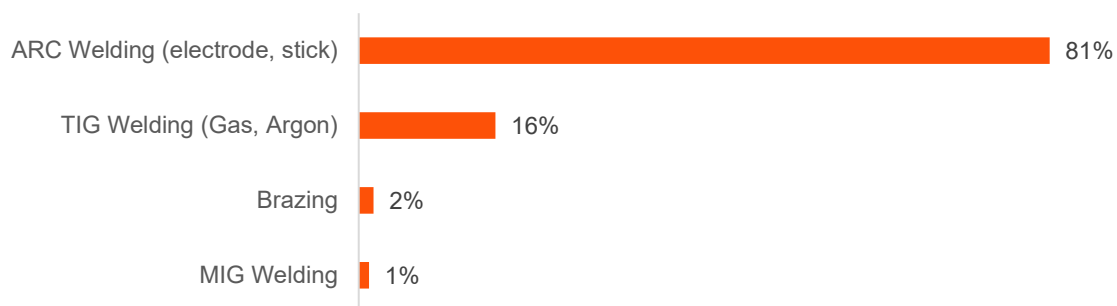


Figure 36: Type of welding practiced

What kind of welding you are practicing at the moment? (n=580)



- The majority (92%) of fabricators confirm the applicability of welding in their work environment, underscoring its critical role in day-to-day activities of fabricators.
- ARC Welding is the predominant technique, practiced by 81% of fabricators, indicating its effectiveness in various applications, making it a basis of workplace welding practice.

Theme 30: Usage of stainless steel and other materials

Figure 37: Usage of stainless-steel

Do you use stainless steel or not?

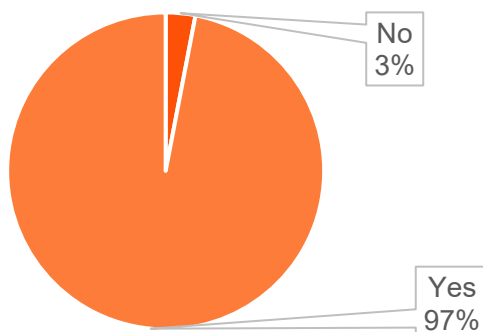


Figure 38: Reasons for not using stainless steel

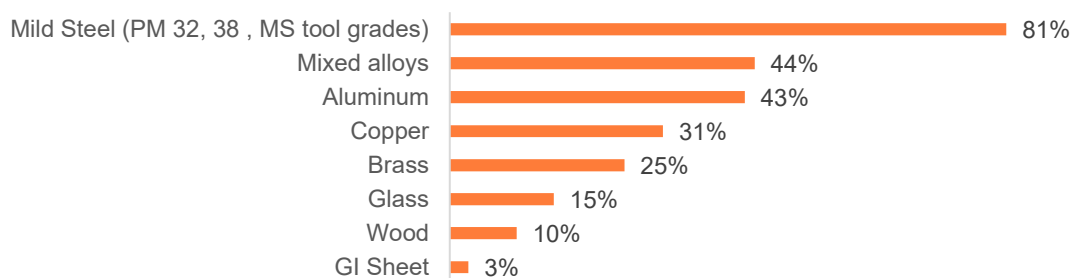
Why don't you use SS? [MCQ: n=19 (3%) who responded No]



- Majority (97%) of respondents use SS, indicating its popularity. Among the 3% (19 fabricators from Haryana) who do not use stainless steel, key barriers are insufficient demand, lack of knowledge about grades, and sourcing challenges.

Figure 39: Usage of other metal/materials apart from stainless steel

Other metal/materials you work with on a day-to-day basis [MCQ, n=555 (88%) respondents who use other metals/materials]



- While stainless steel is widely used, fabricators also rely on using mild steel, indicated by 81% of fabricators.

Theme 31: Usage of JSL raw materials/products

Figure 40: Usage of JSL raw material/products

Have you used raw material/products of JSL?

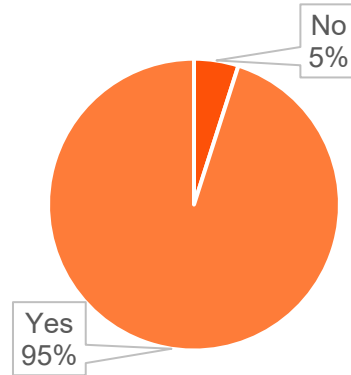
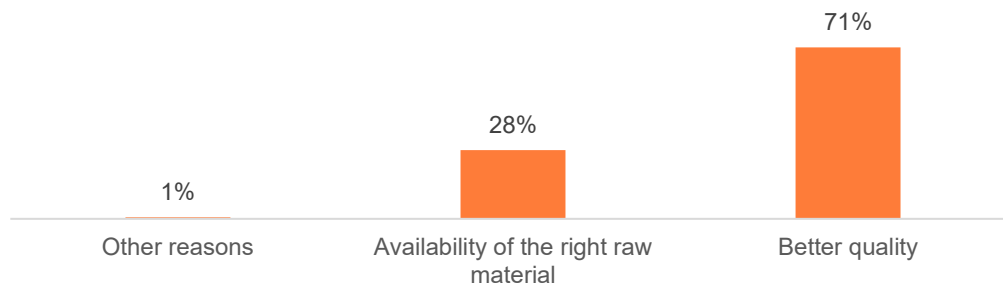


Figure 41: Reasons for using JSL raw material/products

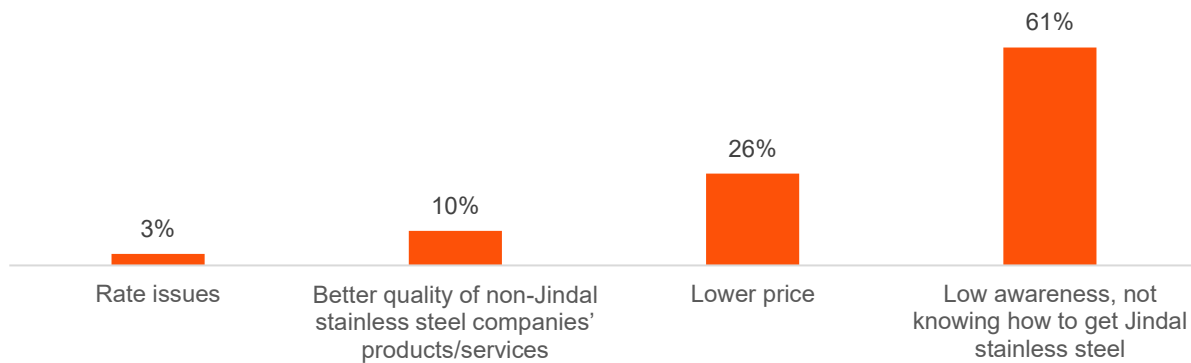
Reasons for using JSL raw materials/ products



- A significant number of fabricators (95%) have used JSL raw materials or products, primarily due to the availability of the raw materials (28%) and high quality (71%)

Figure 42: Reasons for using non JSL products/services

Reasons for using non-JSL products/ services



- Among the 31 (5%) respondents who have not used JSL products, 19 respondents (61%) report low awareness as a barrier.
- Odisha (15%) and Uttar Pradesh (15%) lead in raw material usage, reflecting effective supplier outreach and education. Gujarat (14%), Karnataka (13%) and Haryana (13%) also indicate strong regional presence.

Figure 43: Usage of JSL raw material/products (state variation)

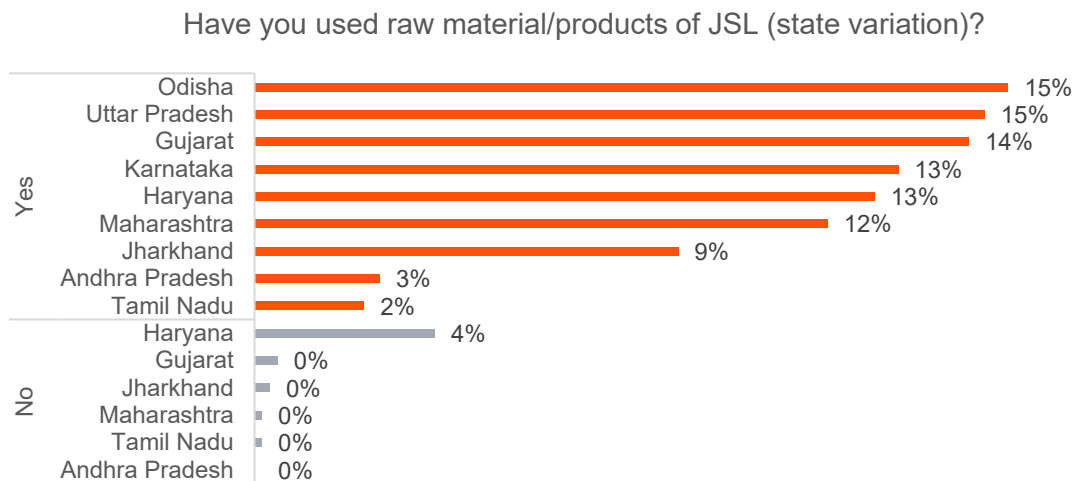
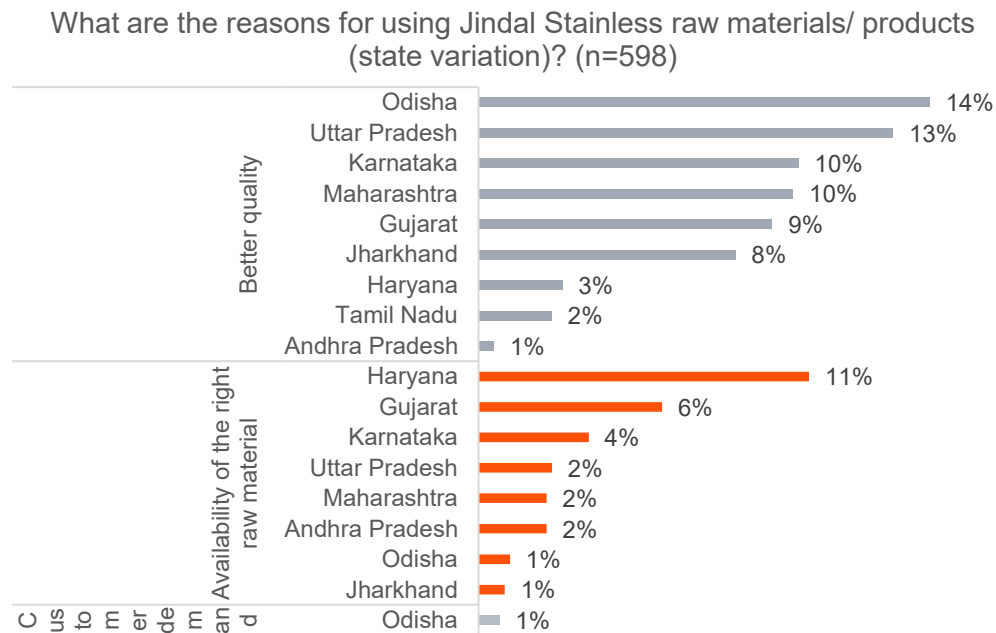


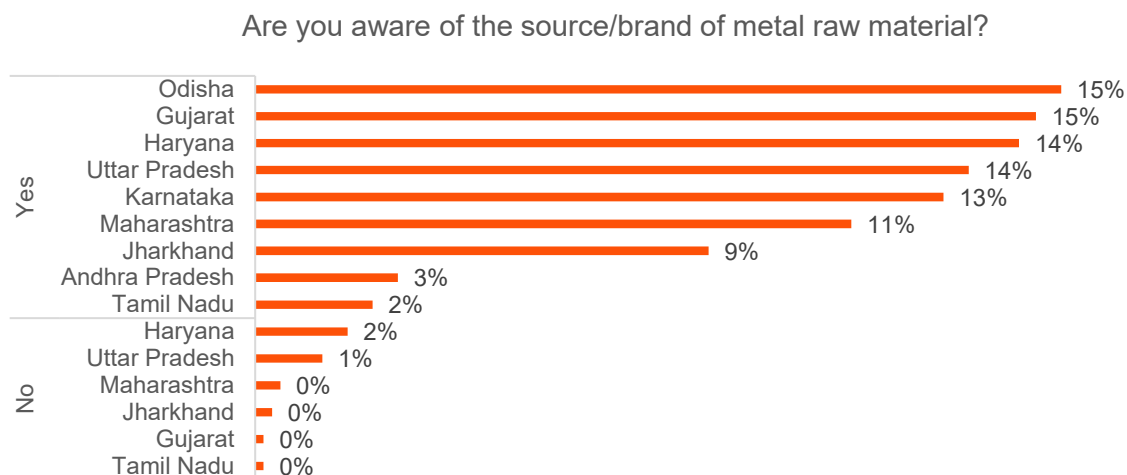
Figure 44: Reasons for using JSL raw materials/products (state variation)



- Odisha (14%) and Uttar Pradesh (13%) demonstrate significant consumer confidence in product quality, influencing purchasing behavior and encouraging suppliers to uphold high standards.
- Haryana (11%) and Gujarat (6%) respondents focus on the availability of the right raw materials, suggesting a priority on supplier relationships and logistics for efficient production.

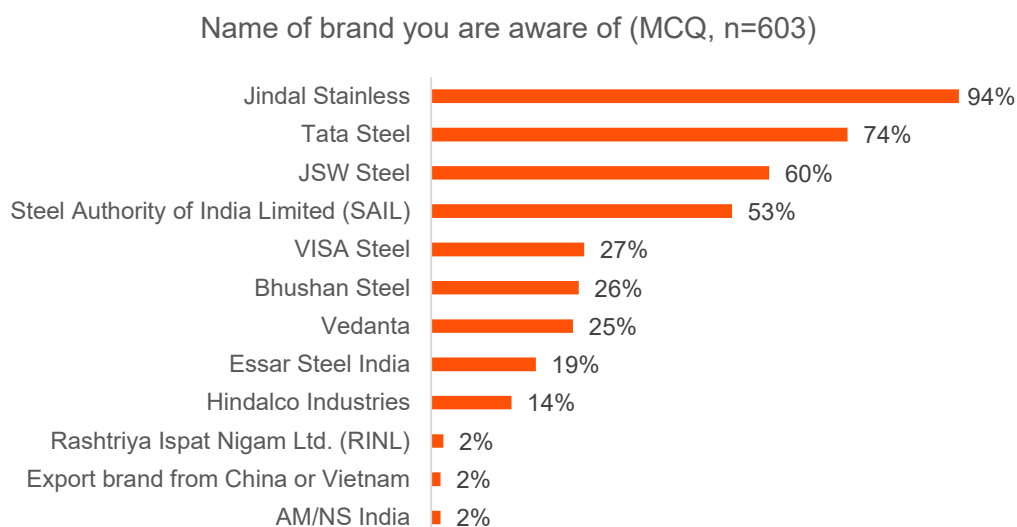
Theme 32: Brand awareness

Figure 45: Awareness of source/brand of metal raw material



- Majority of the fabricators (96%) are aware of the source or brand of the metal raw materials they use, indicating a high level of awareness among the fabricators.

Figure 46: Name of brand fabricators are aware of

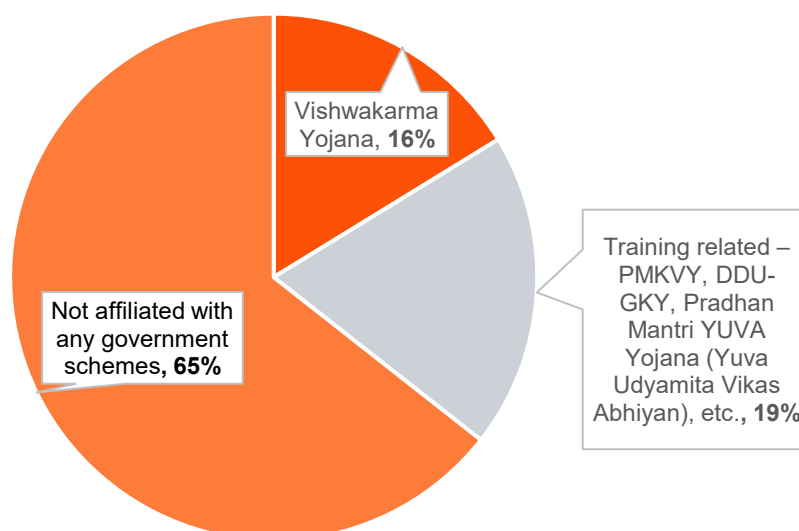


- There is a high level of brand awareness regarding metal raw materials, with JSL being the top recognized brand (94%), suggesting a strong market presence.

Theme 33: Awareness towards Government schemes

Figure 47: Any benefit received under Government schemes

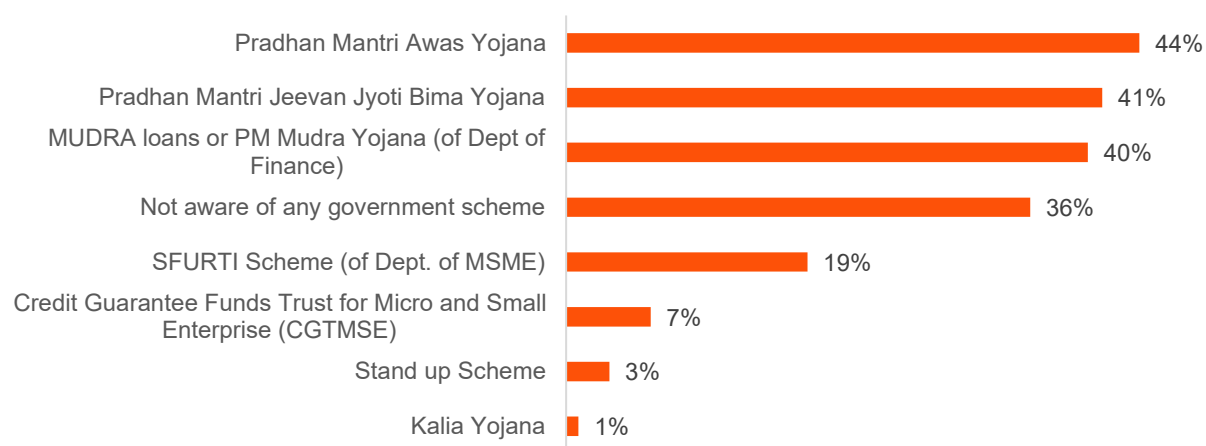
Have you received any benefit under schemes?



- A large portion of fabricators (65%) are not affiliated with any Government scheme, indicating a potential gap in outreach and accessibility.

Figure 48: Awareness towards schemes

Awareness towards Government/livelihood schemes (MCQ)

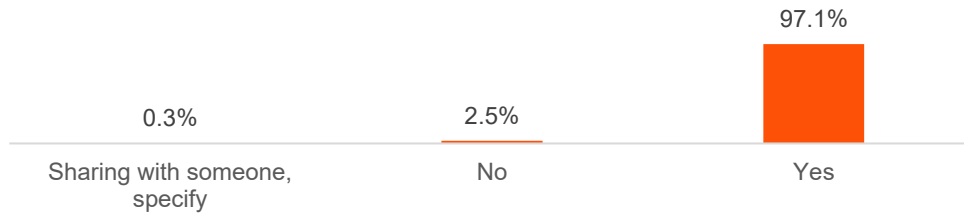


- Pradhan Mantri Awas Yojana is the top recognized scheme indicated by 44% of fabricators.

Theme 34: Digital literacy

Figure 49: Possession of smartphone

Do you possess a smartphone?



- A vast majority (97%) of fabricators possess a smartphone. Majority of the fabricators (87%) also utilize social media as a tool for workplace learning.

Figure 50: Use of social media platforms for learning

Use of social media platforms for learning at work

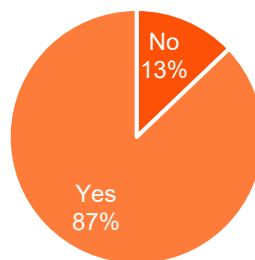
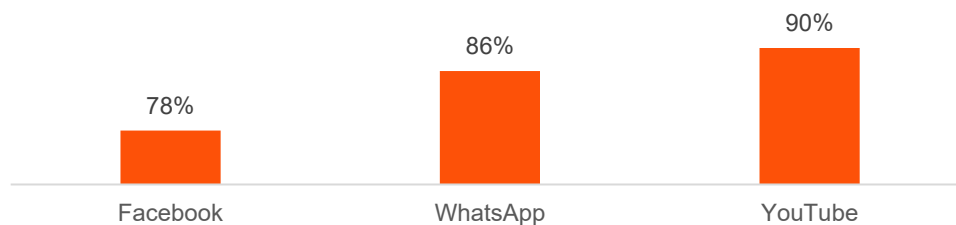


Figure 51: Social media platforms used for learning

Which social media platforms do you use for raising your knowledge/ training (MCQ, n=548)

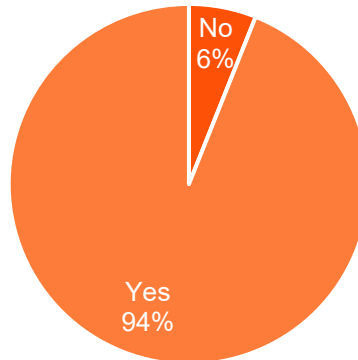


- YouTube (90%) is widely used for learning, followed by WhatsApp (86%) and Facebook (78%).

Theme 35: Financial literacy

Figure 52: Usage of BHIM/UPI for online payment/transfer

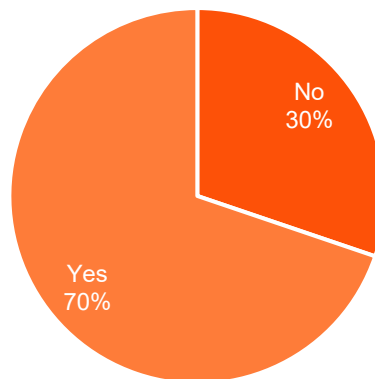
Use of BHIM/UPI for online payment/ transfer



- A vast majority (94%) of the fabricators use BHIM/UPI applications for online payment/transfer.

Figure 53: Possession of insurance

Possession of insurance (health/life)

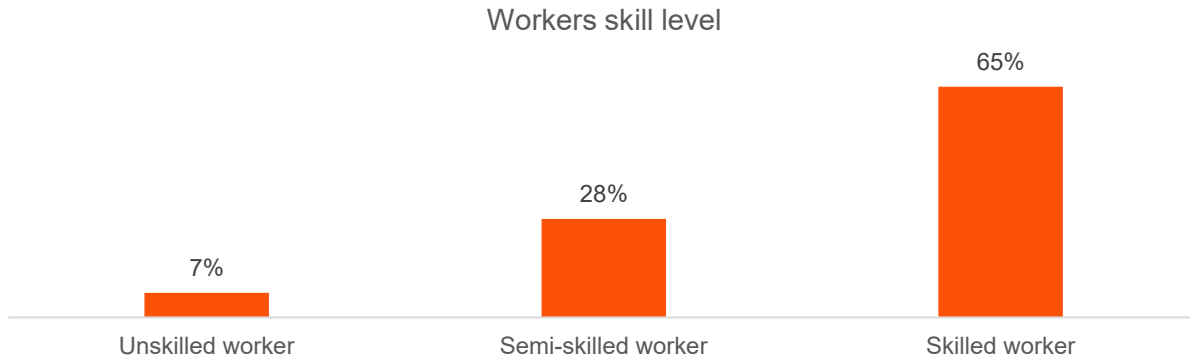


- Majority of the fabricators (70%) possess some form of health or life insurance.

3.2. Organized Workers

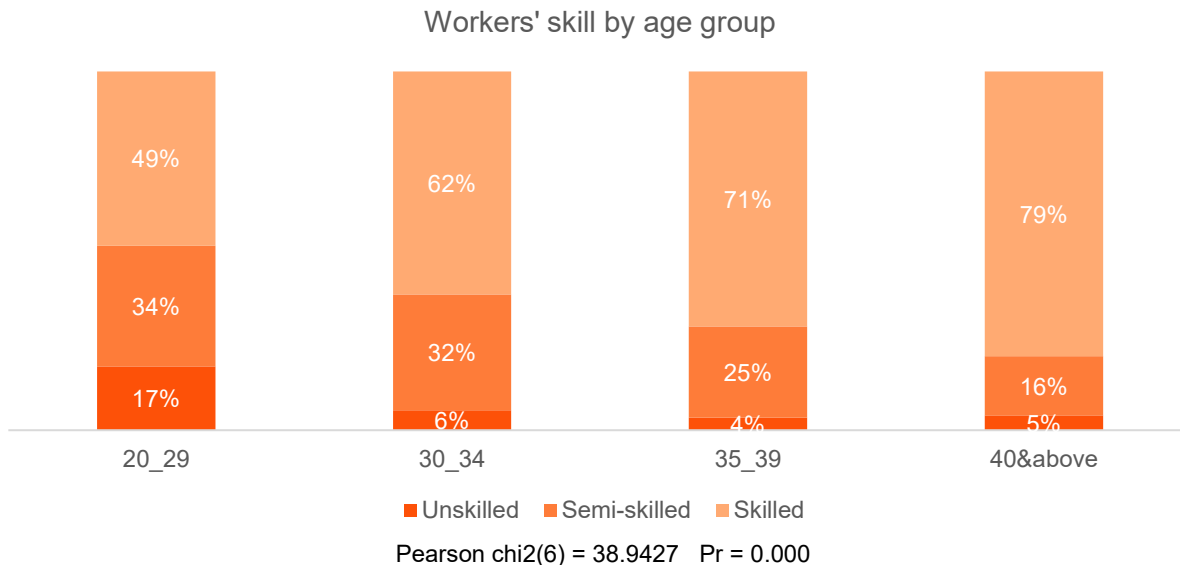
Theme 1: Age and education shape the skilling landscape

Figure 54: Workers' skill level



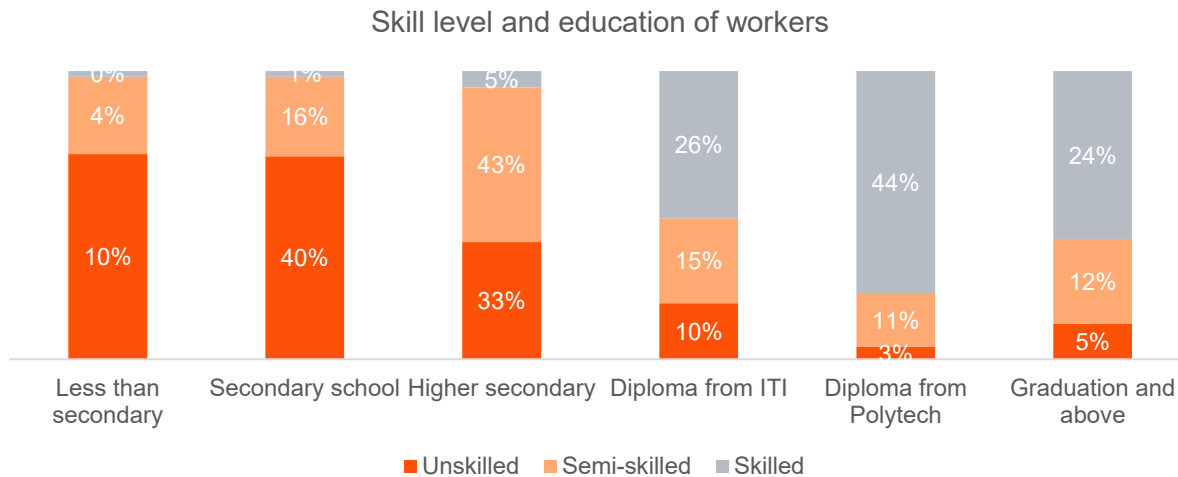
- An unskilled worker is defined as an individual who demonstrates little or no independent judgment and lacks prior experience, despite possessing a basic familiarity with the occupational environment.
- A semi-skilled worker is an individual whose role involves tasks with defined nature of work, where the major requirement is the effective execution of duties rather than the application of judgement or skills.
- A skilled worker is an individual who exercises considerable independent judgement and performs their duties with responsibility.
- 65% of workers classify themselves as skilled, while only approximately 7% identify as unskilled.

Figure 55: Workers' skill by age group



- Age is strong determinant of level of skill highlighting the importance of “Learning by Doing”.
- As the proportion of skilled workers increases with age, it can be inferred that skill level is positively correlated with the age of workers.

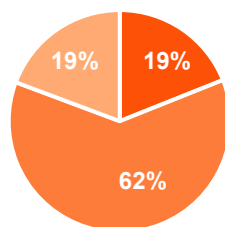
Figure 56: Skill level and education of workers



- Education levels strongly influence workforce skills, with 94% of skilled workers possessing a diploma from ITIs, polytechnics, or a degree from engineering colleges. This suggests that skill level is positively correlated with educational attainment.
- In the semi-skilled category, workers have predominantly higher secondary education. Transition of semi-skilled workers to skilled workers may require technical degrees from ITIs, Polytechnic, Engineering Colleges or some certification course.
- Employers can organize training/certification to upskill the unskilled/ semi-skilled workers.

Theme 2: Experience of workforce

Figure 57: Work experience in SS
Workers' experience in stainless steel

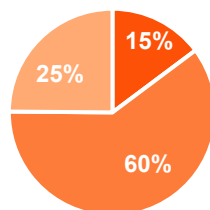


Majority of workers (60%) fall in the 3-5 years of (mid-level) experience bracket.

Nearly one in four workers has ≥6 years of experience.

Only 25% of the entry level workforce in the organization suggest that employers are not keen to hire from the pool of talents, maybe because of lack of required skill sets.

Figure 58: Total work experience
Total work experience

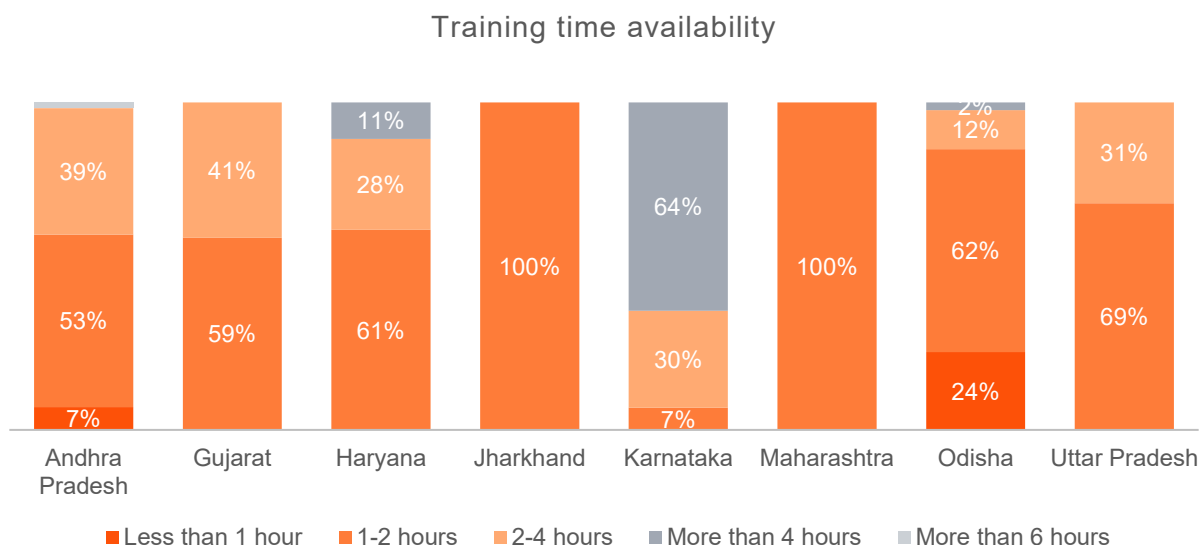


There is a need to strengthen partnership with technical institutes, ITIs, and polytechnic colleges to create industry-aligned training programs so that they are prepared for the job market once they complete the course.

■ <=2 years ■ 3 to 5 years ■ >=6 years

Theme 3: State-wise variations in daily training time availability

Figure 59: Training time availability per state

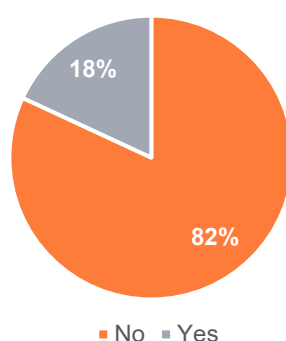


- Over half of all respondents (53%) reported they can spare 1–2 hours per day for training, making it the predominant duration across all states.
- Maharashtra and Jharkhand report 100% of respondents limited to 1–2 hours, showing no flexibility for extended training. Uttar Pradesh follows closely, with 69% in this range and none reporting availability beyond 2–4 hours.
- Odisha stands out at 24% reporting less than 1 hour, the highest across all states. Karnataka exhibits a unique profile, with 64% of workers able to dedicate more than 4 hours daily, the highest percentage in this category.
- Gujarat reflects 41% availability of 2–4 hours, with the rest opting for 1–2 hours.
- These patterns suggest a clear need for differentiated scheduling—short, modular formats in time-constrained states, and more intensive sessions in states like Karnataka and Gujarat.

Theme 4: Low certification and training participation among workers

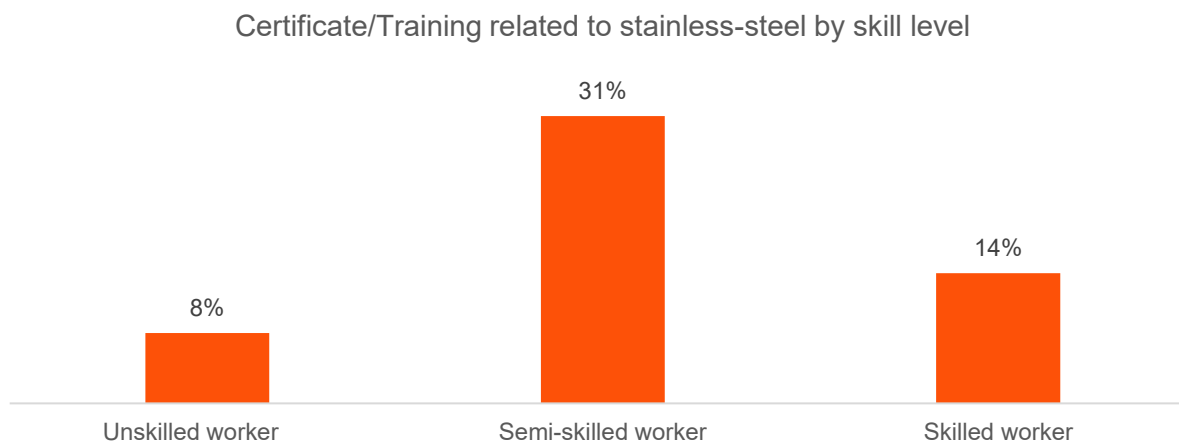
Figure 60: Workers undergone training/certification

Workers obtained any certificates or attended training program related to stainless steel



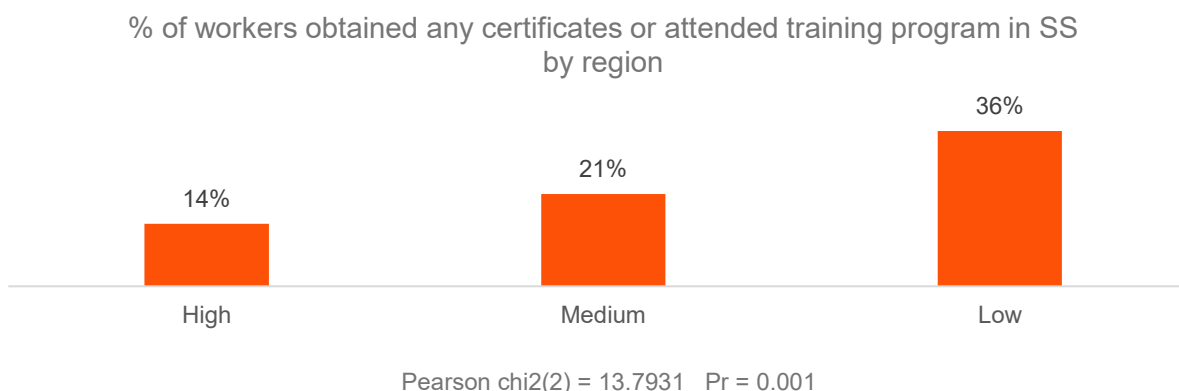
- Less than 20% of workers have attended a certification or training program, whereas more than 80% have not, highlighting a significant gap in upskilling opportunities.
- It can be inferred that on-the-job learning predominates in the sector, with limited opportunities for additional certification and training aimed at upskilling. Expanding structured training programs through partnerships with employers and technical institutions could help bridge this gap.

Figure 61: Certificate/Training related to SS by skill level



- Semi-skilled workers (31%) show the highest training participation, suggesting a strong inclination toward skill enhancement at this level.
- Skilled workers exhibit low participation in formal training programs, with only 14% taking part. This trend may be attributed to the fact that majority of workers may have developed their expertise through practical on-the-job experiences rather than formal education.
- Unskilled workers (8%) show minimal engagement with training programs, indicating barriers to skill development.
- The chi-square test confirms that the differences in training participation across skill levels are statistically significant. Skill level directly impacts the likelihood of obtaining certification, particularly among semi-skilled workers, underscoring the need for targeted training programs.

Figure 62: Priority region wise certification

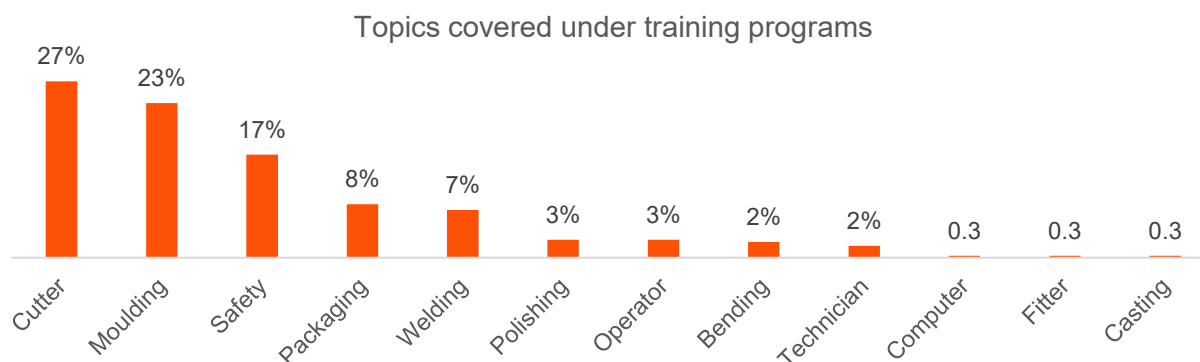


- Workers in Low-priority region show the highest uptake among workers for the training programs.
- The Medium-priority region shows moderate participation, indicating a balanced training effort but with room for improvement.

- High-priority regions exhibit the lowest participation in training programs, indicating a preference for on-the-job learning over upskilling through formal certification or additional training.
- The Chi-square test confirms that training participation varies significantly across priority regions.
- This suggests that factors such as the focus of private employers, industry concentration, availability of infrastructure, employer funding, and employer initiatives strongly influence the accessibility of training programs.

Theme 5: Topics found useful under the certification/training program

Figure 63: Useful topics covered in the training attended by workers

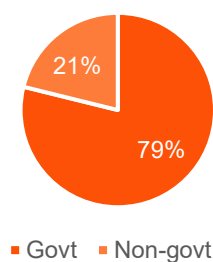


- Cutter/Cutting (27%) is the predominant valued skill, suggesting strong demand for fabrication expertise.
- Safety training (17%) ranks third, emphasizing its critical role in workplace operations.
- Packaging (8%) and Welding (7%) hold mid-level importance, indicating they are important but not primary training priorities.
- Polishing, Operator, Bending, and Technician training (2–3%) cover niche skills, potentially requiring further industry integration.
- Combination analysis reveals insights into the training combinations workers find useful. The Pearson chi-square test ($\chi^2 = 183.87$, $Pr = 0.000$) confirms significant differences in training topic preferences, indicating that certain areas are heavily prioritized while others receive minimal attention.". Please note Moulding is considered as an outlier response.

Theme 6: Organizer of training programs

Figure 64: Organizer of training programs

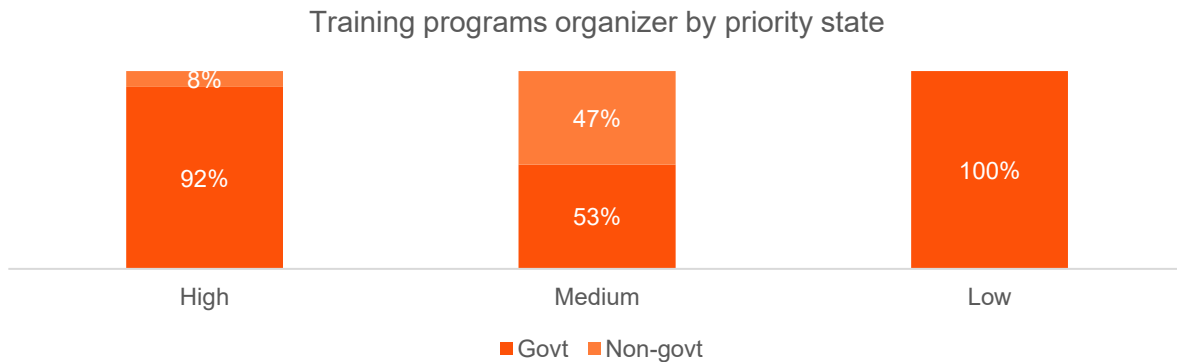
Organizer of training programs



Dominance of Government-Led Training Programs

Government led programs dominate certification and training programs, with minimal participation from the private sector.

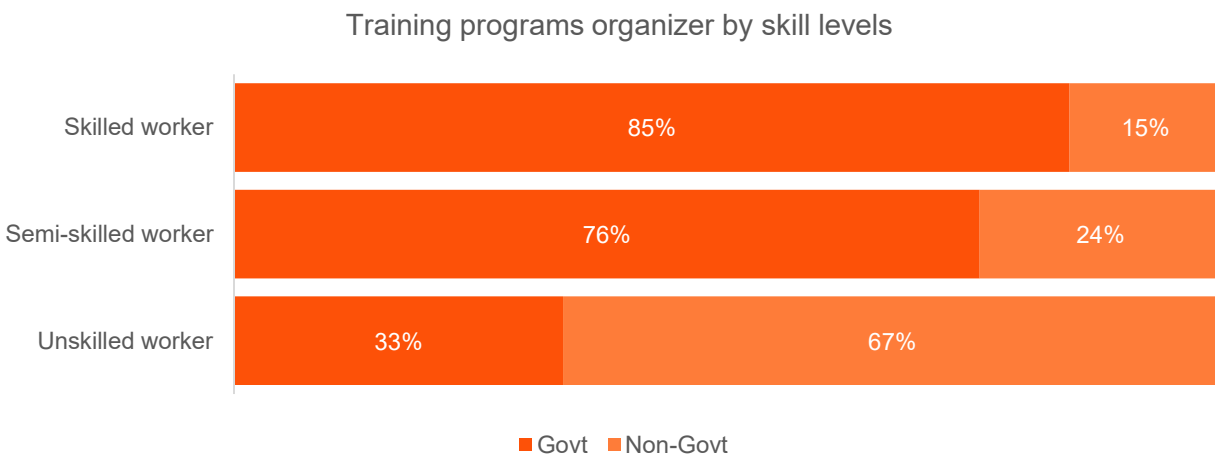
Figure 65: Training programs organizer by priority state



Pearson $\chi^2(2) = 25.1362$ Pr = 0.000

- In high-priority regions, the government leads 92% of training programs, while private sector involvement is minimal, accounting for only 8%.
- In medium-priority regions, the distribution of training is more balanced, with the government responsible for 53% of programs and non-government entities accounting for 47%.
- In low-priority regions, the training is entirely government-led, with no participation from the private sector in skill development.

Figure 66: Training programs organizer by skill levels



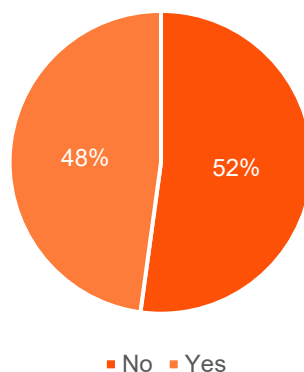
Pearson $\chi^2(2) = 5.0904$ Pr = 0.078

- Skilled workers exhibit significant reliance on government-led programs, with 85% having received training through this mode. Semi-skilled workers show considerable engagement with government-led training programs, at 76%, alongside higher private sector participation at 24%, compared to skilled workers.
- Unskilled workers have predominantly trained through private sector initiatives, at 67%, while 33% participate in government-led programs.
- Chi-square test confirms that the difference between government and non-government training initiatives is statistically significant.

Theme 7: Willingness to undergo further training

Figure 67: Willingness to undergo further training

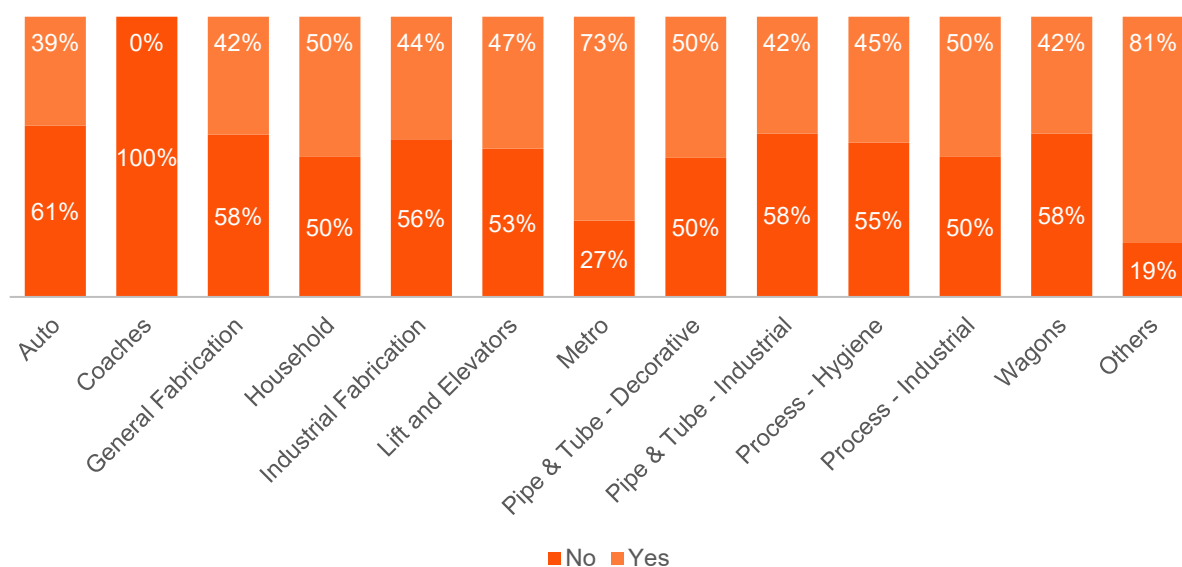
Workers' willingness to undergo further training



- 52% of workers are interested to participate in future training programs.
- 48% do not wish to pursue further training,
- The nearly equal distribution suggests that, although many workers acknowledge the benefits of training, it is crucial to identify and mitigate the barriers preventing others from engaging in these opportunities.

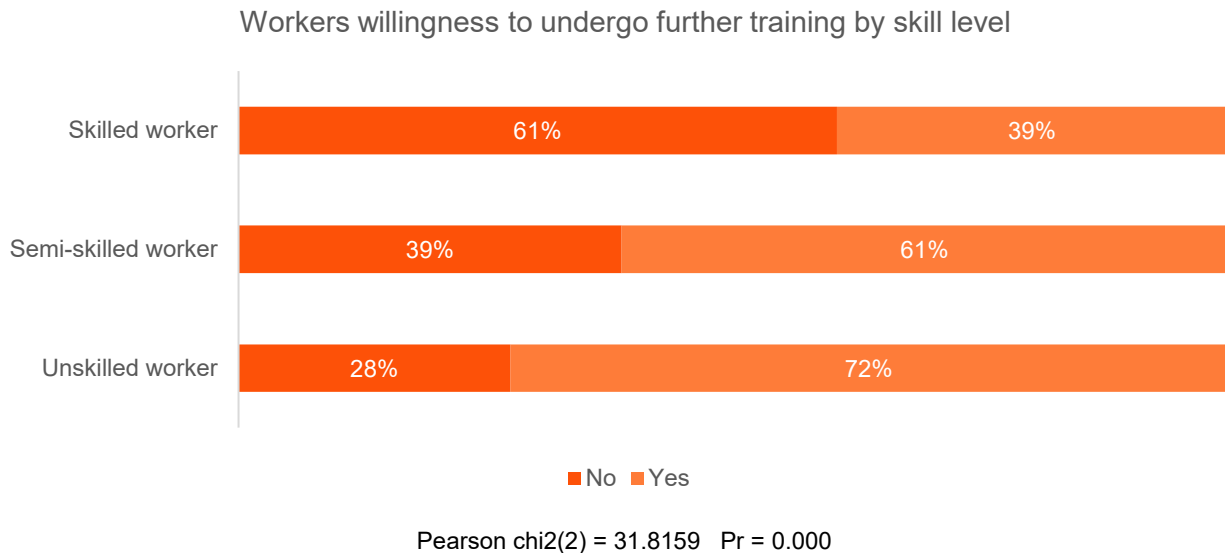
Figure 68: Willingness to undergo further training - Segment wise

Willingness to undergo further training - segment wise



- 48% workers showed interest in attending SS training programs. Given the total pool of organized workers at a pan-India level this indicates huge potential for Stainless Academy to tap in future.
- Workers in the Coaches segment, at 100%, and those in the Auto segment, at 61%, exhibit a strong inclination towards formal training in stainless steel programs.

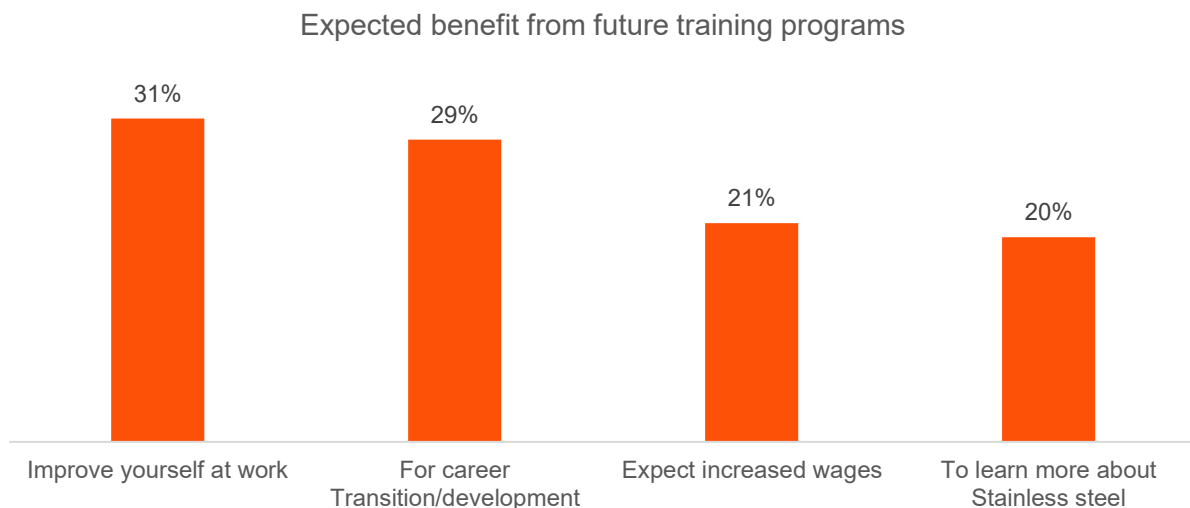
Figure 69: Willingness to undergo further training by skill level



- Among skilled workers, 61% express no desire to enroll in future trainings, whereas 39% are open to such opportunities, indicating a reduced motivation for skill enhancement at higher expertise levels.
- Semi-skilled workers demonstrate moderate engagement with further learning opportunities, with 61% expressing a willingness to train and 39% not inclined to pursue additional training. Unskilled workers exhibit strong motivation for skill development, with 72% willing to undertake training, while 28% remain uninterested, reflecting a strong motivation for skill development at entry-level positions.
- The Chi-square test confirms statistically significant differences in training willingness across skill levels, suggesting that skill gaps and perceived opportunities for career growth influence workers' decisions.

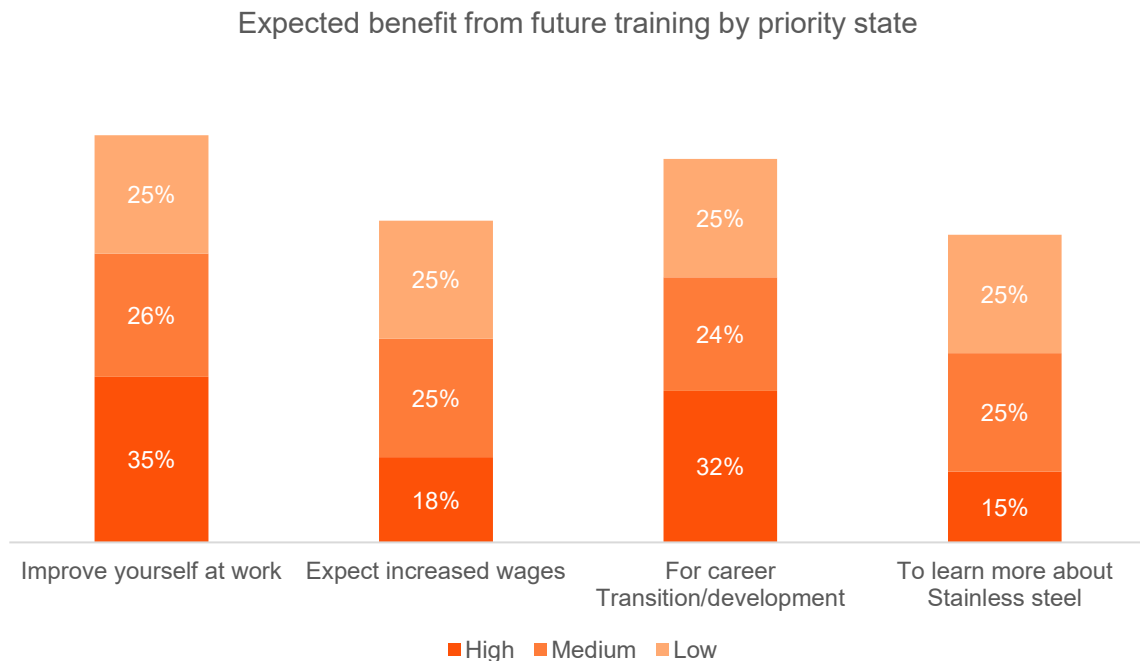
Theme 8: Expected benefit from future training programs

Figure 70: Expected benefit from future training programs



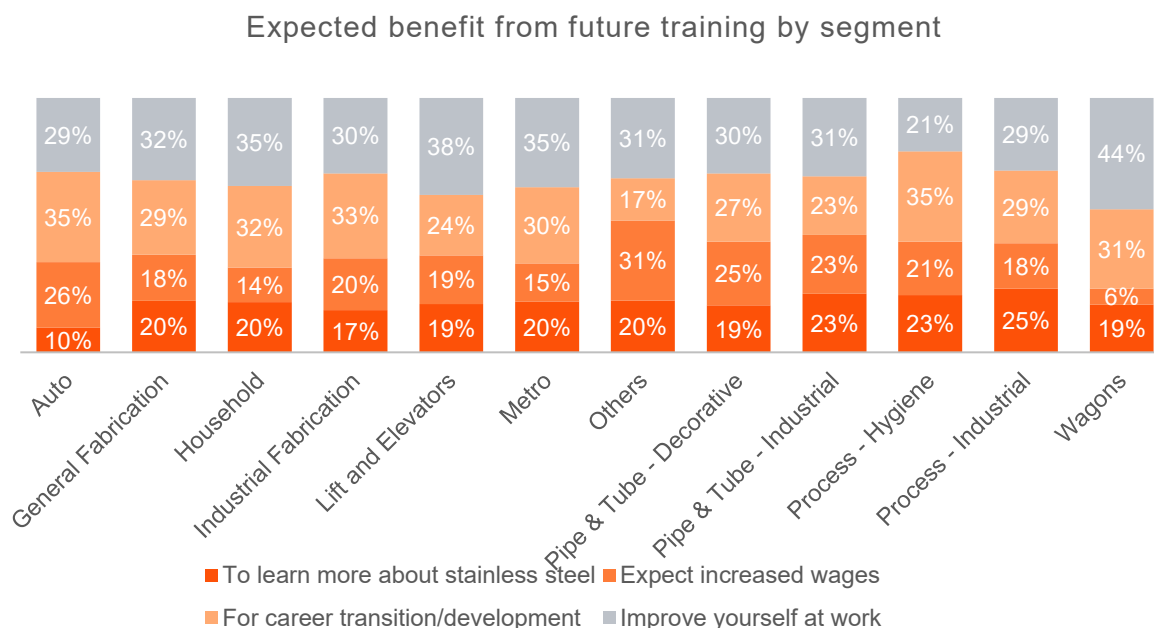
- Improving skills at the current job is a priority for 31% of workers, indicating that majority of the respondents prioritize skill enhancement over career shifts.
- Career transition and development, prioritized by 29% of workers, indicate that training is widely perceived as a pathway to professional growth
- Expectations of increased wages, expressed by 21% of workers, demonstrate that financial motivation is important, yet secondary to other factors.
- Learning more about stainless steel, prioritized by 20%, indicates that industry-specific learning is the least prioritized.

Figure 71: Expected benefit from future training by priority state



- In high-priority states, 35% of workers seek self-improvement, and 32% aim for career development, while expectations for increased wages (18%) and SS-specific learning (15%) rank lower, underscoring a concentrated emphasis on personal growth and career mobility.
- In medium-priority states, responses are more balanced, with each category ranging from 24% to 26%, suggesting that equal importance is given to all training benefits. In low-priority states, responses are evenly distributed across all categories at 25% each, indicating no distinct preference in training benefits.
- The Chi-sq test confirms statistically significant differences in expected training benefits across priority states, highlighting the regional influence on workforce perceptions of skill development.

Figure 72: Expected benefit from future training by segment



- The Wagons segment has the highest percentage of workers (44%) focusing on self-improvement, suggesting a strong interest in enhancing skills at work.
- Workers from Process - Industrial segment show maximum interest in learning more about stainless steel, with 25% of workers highlighting the material's importance in their field.
- The workers from Process - Hygiene segment leads in career transition/development interest, with 35% of workers seeing this as a key benefit of training programs.

Theme 9: Support Needs for Enhancing income/business opportunities through Stainless Academy

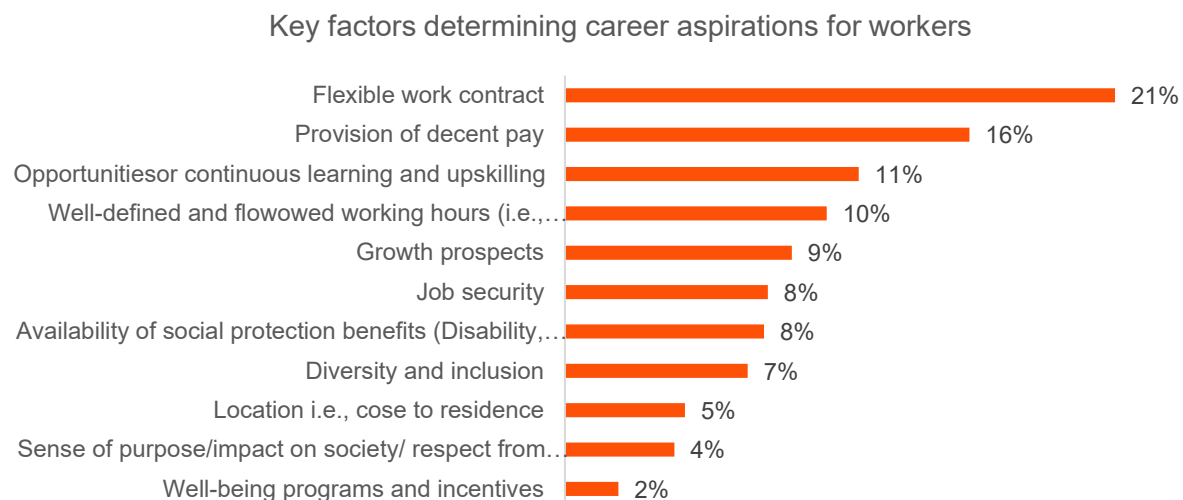
Figure 73: Ways to enhance income/business opportunities through Stainless Academy's support



- The primary cited support need is information on raw materials and grades (23%), followed by sourcing of stainless steel (19%).
- Requests for fabrication-related training (16%) and team management training (9%) signal towards technical upskilling and leadership development.
- Needs like process-related training (8%), safety practices (7%), customer relationship management (6%), and lead generation training (6%) indicate a growing awareness of efficiency, compliance, and business expansion strategies.
- Basic toolkit (3%) and awareness about social security benefits (3%) received the least attention.

Theme 10: Career aspirations among workers

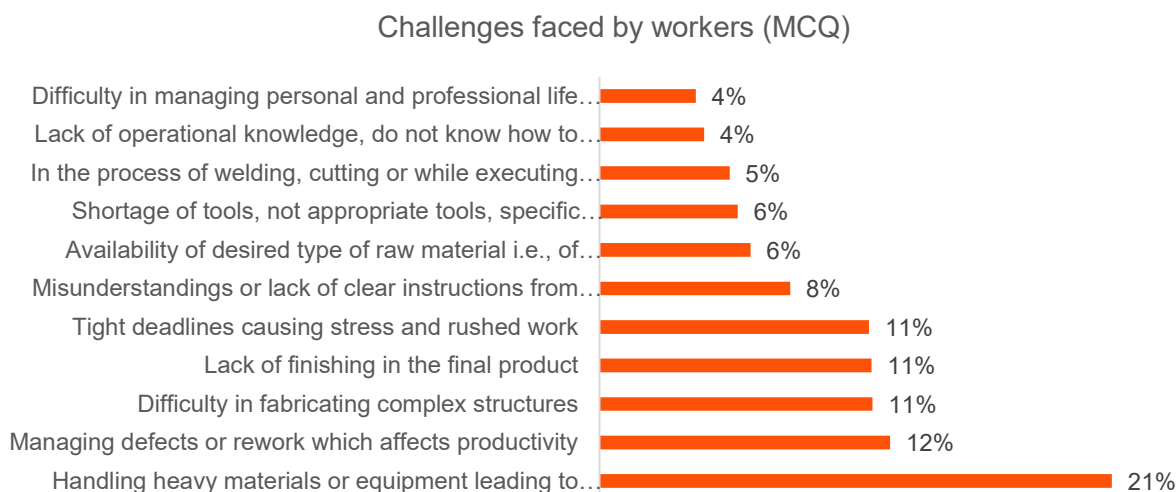
Figure 74: Key factors determining career aspirations for workers



- Flexible work contracts emerged as the top aspiration (21%).
- Decent pay ranks second (16%), underscore/suggesting the importance of financial stability in shaping career goals.
- Opportunities for continuous upskilling (11%) and well-defined working hours (10%) highlight growing aspirations for personal growth and balance between work and life.
- Factors like growth prospects (9%) and job security (8%) reflect desires for upward mobility and long-term stability.
- Social protection benefits (8%) and diversity & inclusion (7%) indicate emerging awareness and demand for equitable and safeguarded work environments.
- Job location (5%), sense of purpose/respect (4%), and well-being programs (2%) received lower importance-possibly reflecting either saturation or secondary consideration in career decision-making.

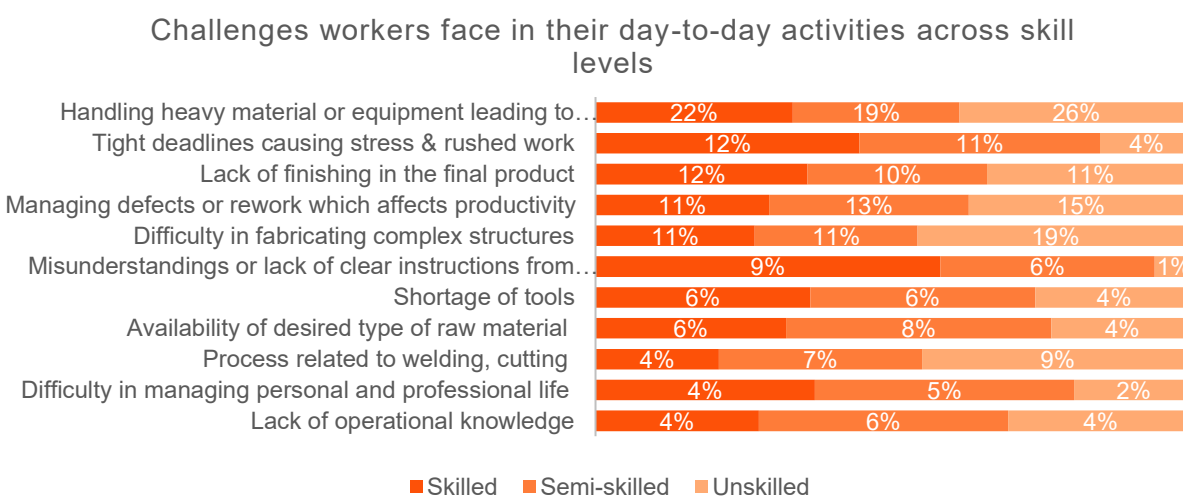
Theme 11: Day-to-day operational challenges faced by workers

Figure 75: Challenges faced by workers



- Workers face notable challenges, especially in managing defects (12%) and lack of finishing (11%).
- Workers face technical challenges in fabricating complex structures (11%) and executing welding & cutting process (5%),

Figure 76: Challenges faced by workers across skill levels

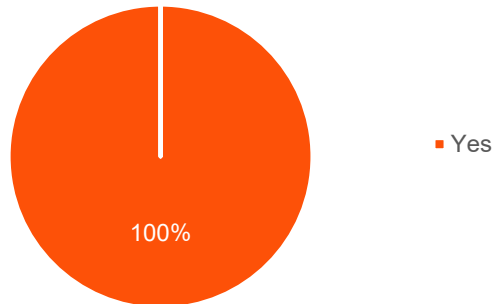


- Top three challenges are the “common challenges” faced by all workers irrespective of their skill level, highlighting the physical intensity of their work. Bottom three challenges are the least concerns for workers across skilled level.
- Unskilled workers face greater challenges in fabricating complex structures (19%), indicating a pronounced skills gap and the need for technical training.
- Skilled workers, on the other hand, are impacted by tight deadlines and quality finishing (12% each), reflecting greater ownership of output and the stress tied to meeting exacting standards.
- The Chi square test confirms that the relationship between challenges and workers' skill level of skill is statistically significant. This suggests that the differences in challenges faced by skilled, semi-skilled, and unskilled workers are unlikely to be attributed to random occurrence.

Theme 12: Safety practices

Figure 77: Safety practices followed by workers

Do you use safety tools at work?

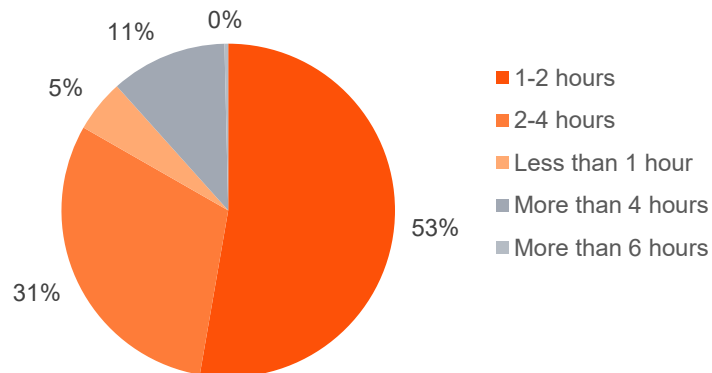


- Safety practices are emphasized, with all workers (100%) using safety tools/protective gear like goggles, nose masks, and safety shoes.

Theme 13: Preferred mode and duration of training

Figure 78: Preferred duration of training

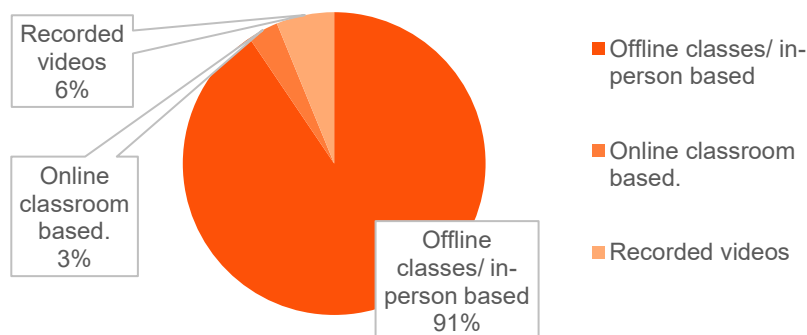
Preferred duration of training (n=275)



- Workers prefer offline, in-person training (91%) and dedicate 1-2 hours daily (53%).

Figure 79: Preferred mode of training

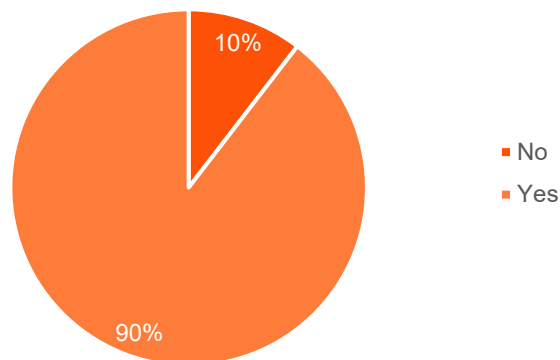
Preferred mode of training (n=275)



Theme 14: Digital literacy

Figure 80: Do you have a smartphone?

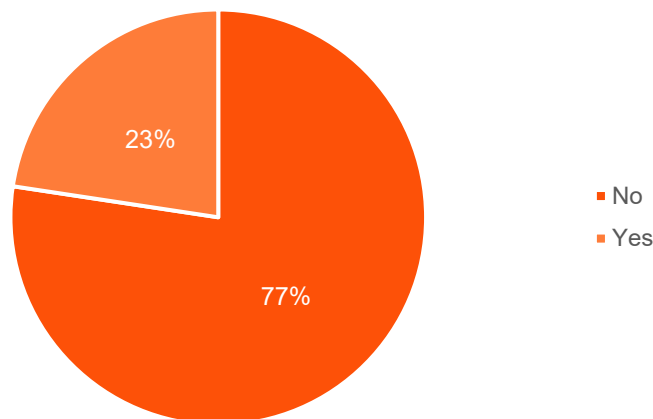
Possession of smartphone



- Despite 90% of workers possessing a smartphone, yet only 23% workers use social media for learning.

Figure 81: Use of social media for learning

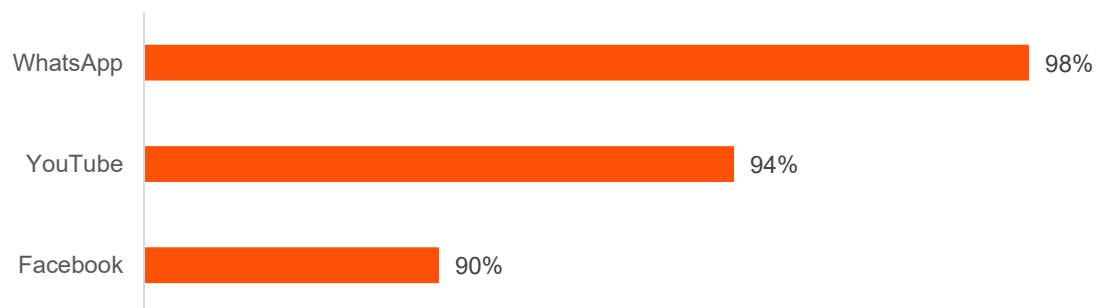
Use of social media for learning



- WhatsApp (98%) is widely used for learning, followed by YouTube (94%) and Facebook (90%)

Figure 82: Use of social media platforms for learning

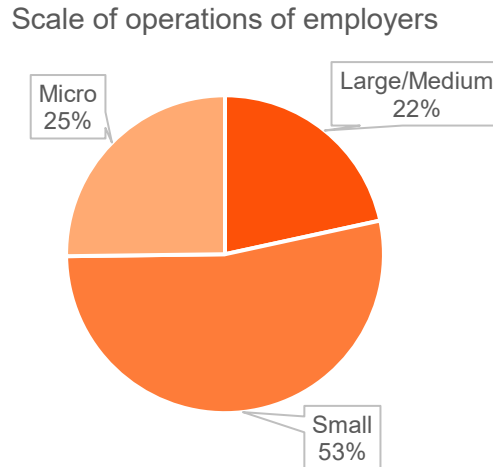
Use of social media platforms used for raising your knowledge/training



3.3. Employers

Theme 1: Distribution of employers by scale of operation

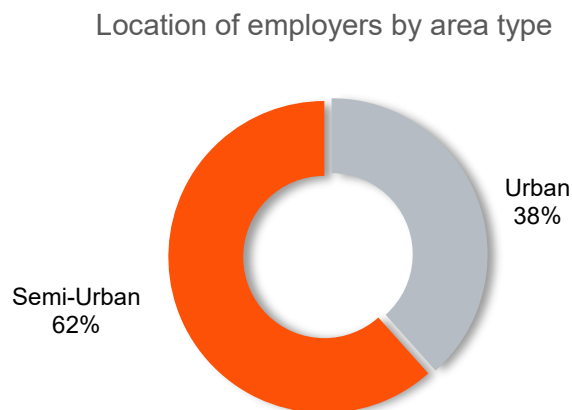
Figure 83: Scale of operations of employers



- Note: Micro ≤ 5 crores turnover; Small ≤ 50 crores; Large and Medium > 50 crores.
- Over half of employers (53%) operate on a small scale. 1/4th of employers are Micro-scale enterprises.
- Only 22% fall under medium/large-scale operations, pointing to relatively few employers with extensive capacity or reach.
- This distribution highlights the need for targeted training and support programs, especially customized for small and micro units that make up 78% of the ecosystem.
- Outreach strategies should focus on decentralization and accessibility, ensuring that smaller establishments can participate meaningfully in skill development.

Theme 2: Distribution of employers' location between urban and semi-urban areas

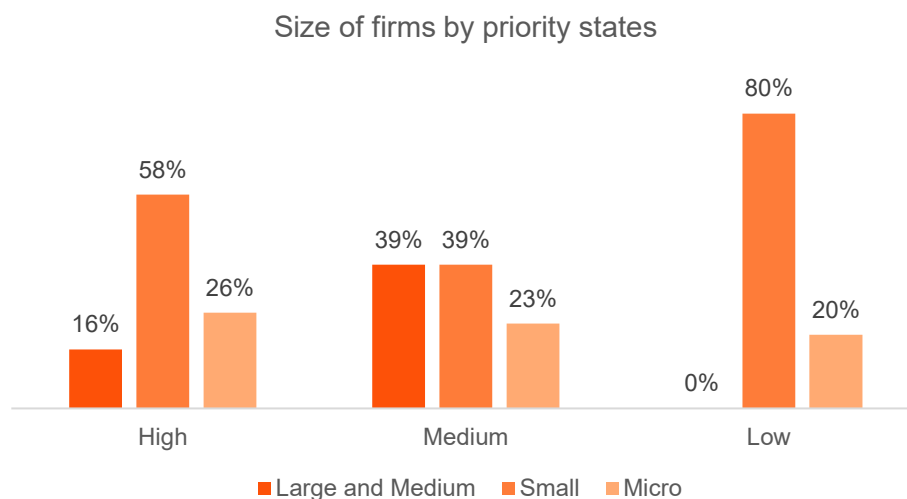
Figure 84: Location of employers by area type



- Most employers (62%) are based in semi-urban areas. Urban locations account for 38% of employer presence, indicating a smaller but notable footprint in developed zones.
- The data suggests that skill development and training programs may need stronger outreach given their higher employer density.

Theme 3: Firm size distribution across states

Figure 85: Size of firms by priority states

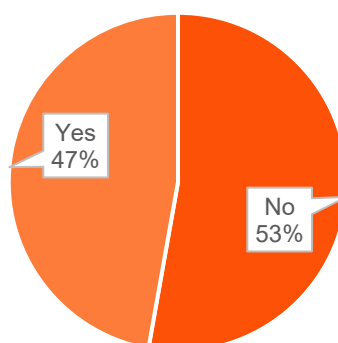


- Small firms dominate high-priority states (58%). Medium-priority states show a balanced distribution, with equal share of small and large/medium firms (39% each) and micro firms at 23%.
- Low-priority states are led by large/medium firms (80%), with no presence of large and medium enterprises.
- Training and outreach strategies should be customized by state priority, focusing on small/micro units in high-priority regions and larger entities in lower-priority zones.

Theme 4: Presence of employers' manufacturing facilities across India

Figure 86: Presence of employers' manufacturing facilities

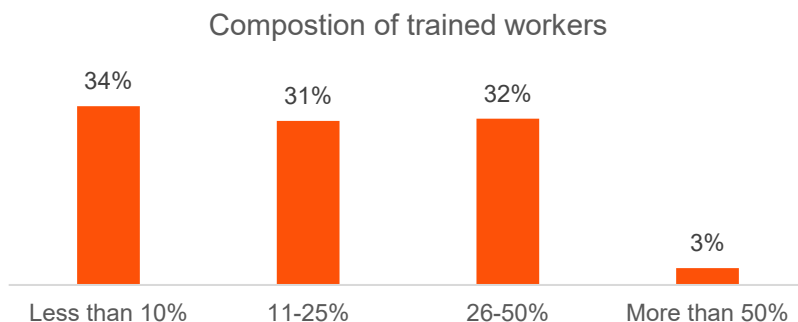
Presence of employers' manufacturing facilities across India



- 53% of employers do not have manufacturing facilities across India.
- 47% of employers do operate manufacturing units across India.

Theme 5: Distribution of employers by proportion of trained workers employed

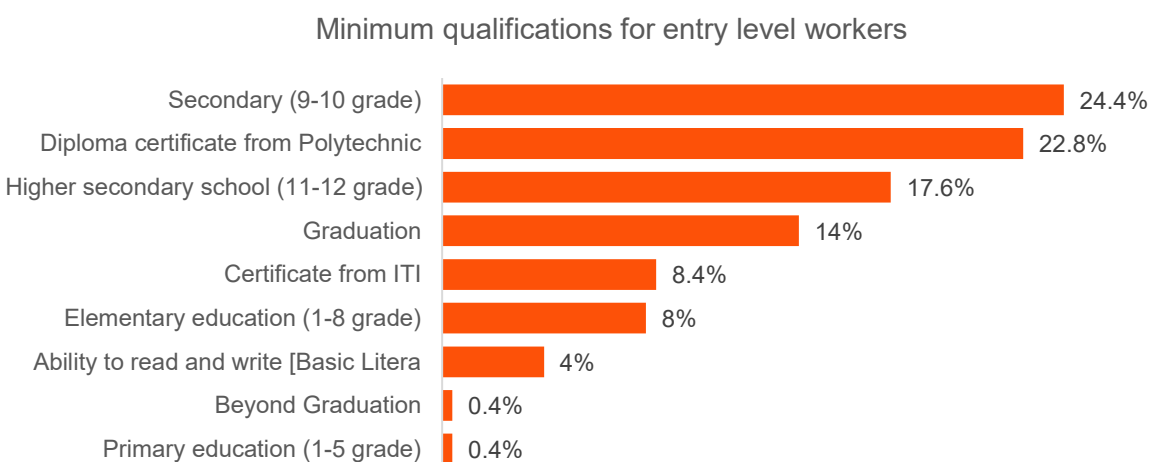
Figure 87: Composition of trained workers



- A significant number of firms have a low proportion of trained workers, with 34% having less than 10% trained staff and another 31% having between 11% and 25%
- Moderate training coverage is present in some firms with 32% reporting 26–50% trained workforce.
- Only a small percentage of firms exceed the halfway point, with just 3% having more than 50% of their workers trained. This indicates a concentration of limited workforce training, highlighting significant gaps in formal upskilling within the sector.

Theme 6: Educational qualifications expected for entry-level workers in the stainless-steel sector

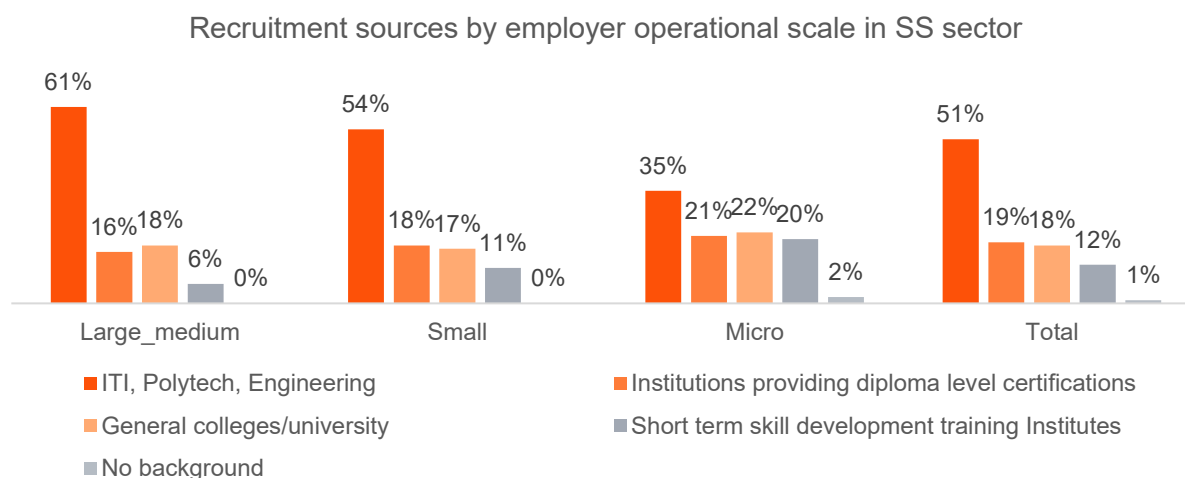
Figure 88: Minimum qualifications for entry level workers



- Secondary school education (9–10 grade) is the common minimum requirement (24.4%), indicating a foundational academic threshold for entry-level roles.
- Diploma from Polytechnic institutes rank closely (22.8%), reflecting demand for technically oriented education.
- Higher secondary (11–12 grade) and Graduation are required by 17.6% and 14% of employers, suggesting moderate preference for advanced general education.
- Vocational and basic education remain limited-ITI certificates (8.4%), elementary schooling (8%), and basic literacy (4%) are less frequently accepted.
- Higher education beyond graduation and primary education (1–5 grade) are nearly negligible (0.4% each).

Theme 7: Recruitment sources preferred by employers across different operational scales

Figure 89: Recruitment sources of employer across different operational scales



- Large/medium enterprises prefer candidates from ITI, Polytechnic, and Engineering institutions (61%), reflecting reliance on formal technical education.
- Small-scale employers show more distributed preferences: 18% recruit from diploma-level institutes, and 17% from general colleges/universities, suggesting flexibility in hiring.
- Micro enterprises are least likely to recruit from formal institutions: 35% hire candidates with no background, and only 20% from skill development training institutes.
- The statistical association is significant, indicating that recruitment patterns differ meaningfully by employer scale.

Theme 8: Recruitment sources preferred by employers across different segments

Figure 90: Recruitment modes across segments (1/2)

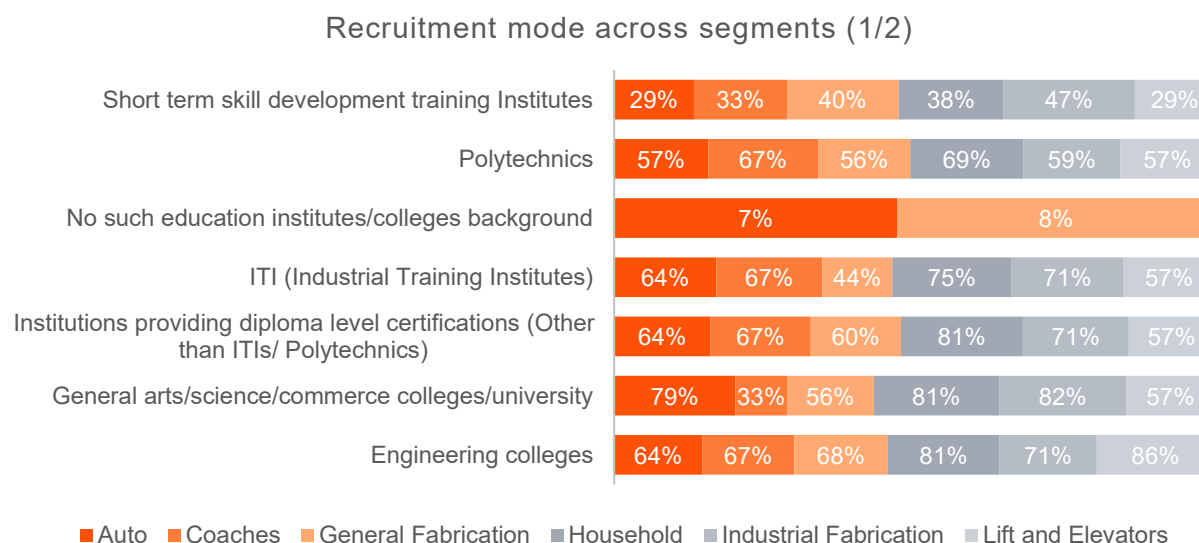
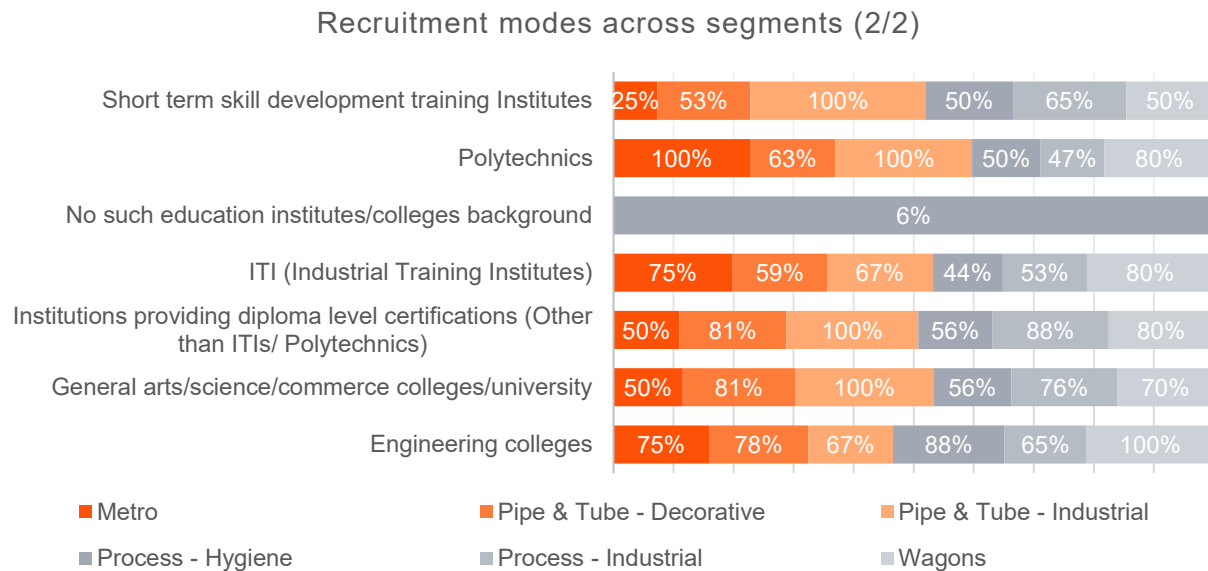


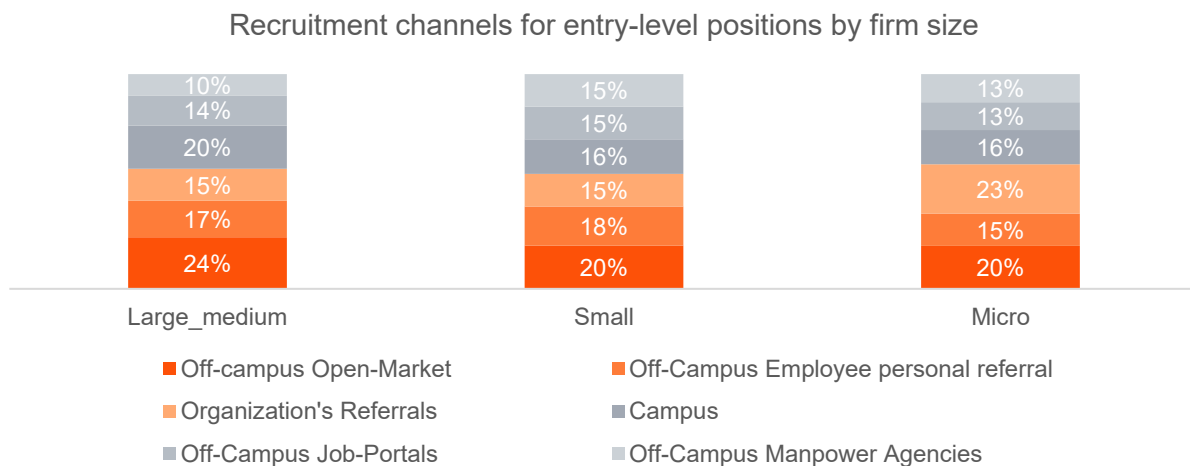
Figure 91: Recruitment modes across segments (2/2)



- The need for technical skills from Polytechnic and ITI backgrounds is emphasized in sectors like Pipe & Tube - Decorative and Industrial Fabrication.
- Diploma level institutions (72%) and engineering colleges (75%) play a major role as recruitment sources across majority of the sectors.
- Short-term skill development institutes have variable influences particularly in Pipe & Tube - Decorative and Wagons sectors.

Theme 9: Variation in recruitment methods for entry-level jobs

Figure 92: Recruitment channels for entry-level positions by firm size



- Large/medium firms prefer structured external channels, with the top choices being open market hiring (24%), campus recruitment (20%), and employee referrals (17%), indicating reliance on formal and semi-formal networks.
- Small firms follow a balanced strategy, utilizing open-market (20%), personal referrals (18%), and campus recruitment (16%) reflecting a mix of sourcing from both informal and institutional pipelines.

- Micro enterprises depend heavily on internal networks, with organization referrals (23%) being the primary method, followed by open-market hiring (20%), suggesting preference for low-cost, trust-based recruitment methods.
- Usage of Manpower agencies and Job-portals remains moderate across all sizes (10–15%), reflecting supplementary sourcing but not primary reliance.
- The chi square test suggests that recruitment practices vary meaningfully with firm scale.

Figure 93: Modes of recruitment by segment variation (1/2)

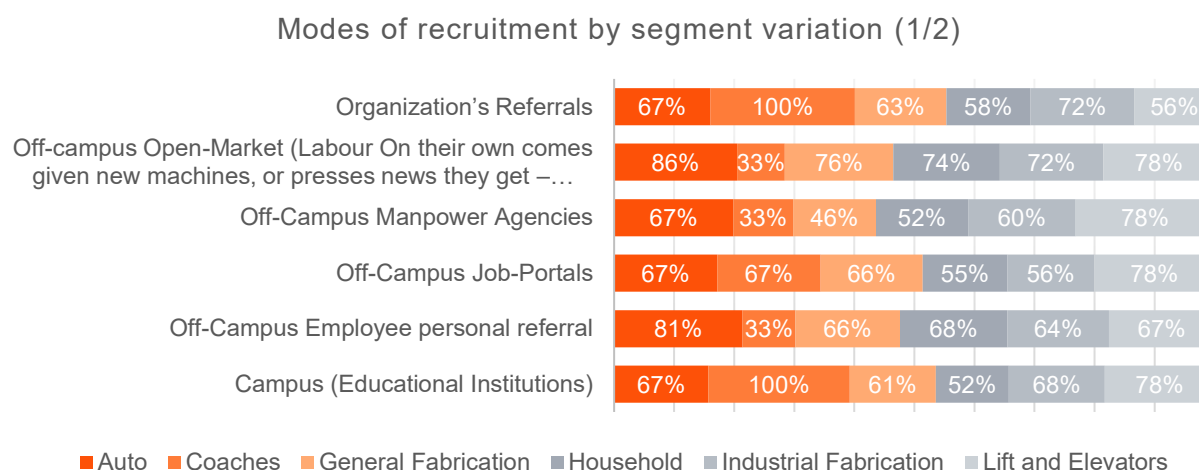
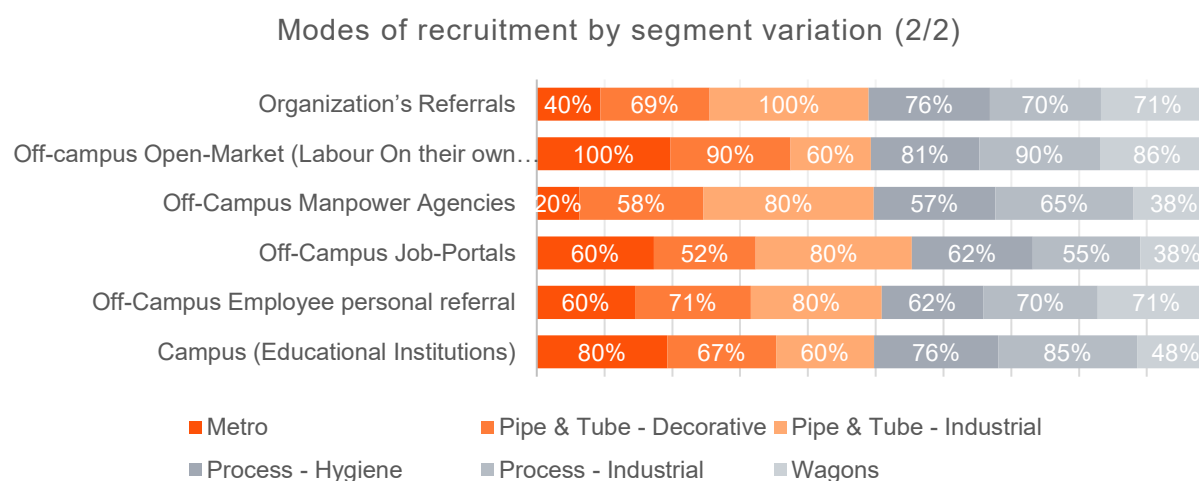


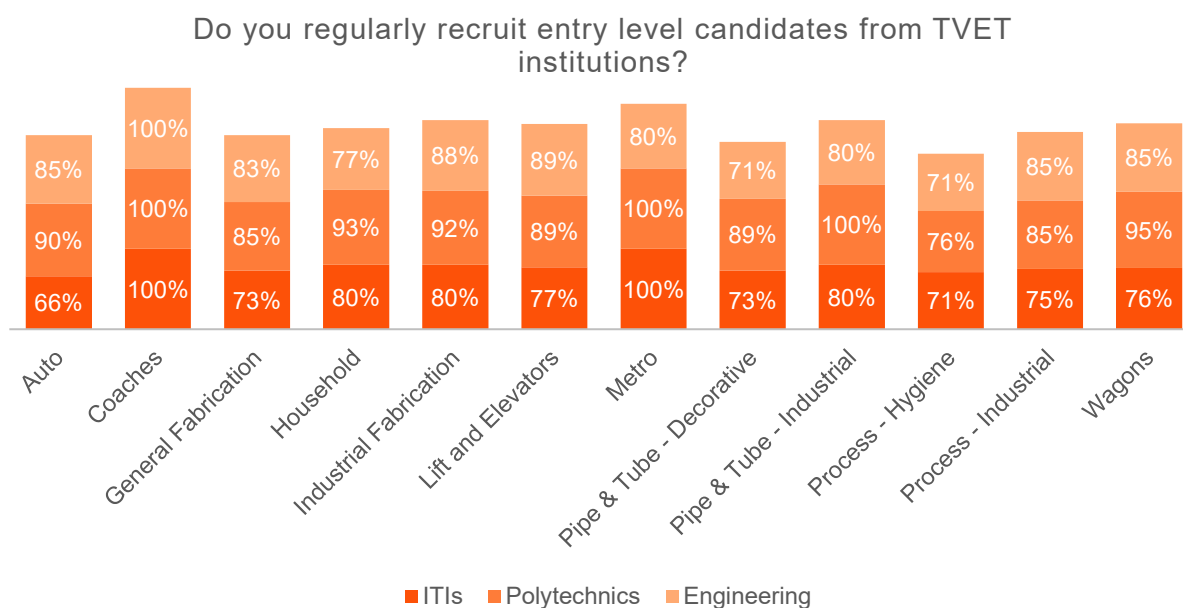
Figure 94: Modes of recruitment by segment variation (2/2)



- Employers in the Coaches segment rely heavily on both campus recruitment and organizational referrals (100% each).
- Employers in the Process-Industrial segment and Process-Hygiene segment display the highest reliance on off-campus open-market recruitment, indicated by 90% and 81% employers respectively.
- Employers in the Wagons segment demonstrate the least reliance across multiple recruitment methods, especially for off-campus job portals and manpower agencies (38% each).
- There's a balanced approach towards recruitment in segments like Metro, reflecting significant reliance on multiple methods.

Theme 10: Regularity of recruitment practices from TVET institutions

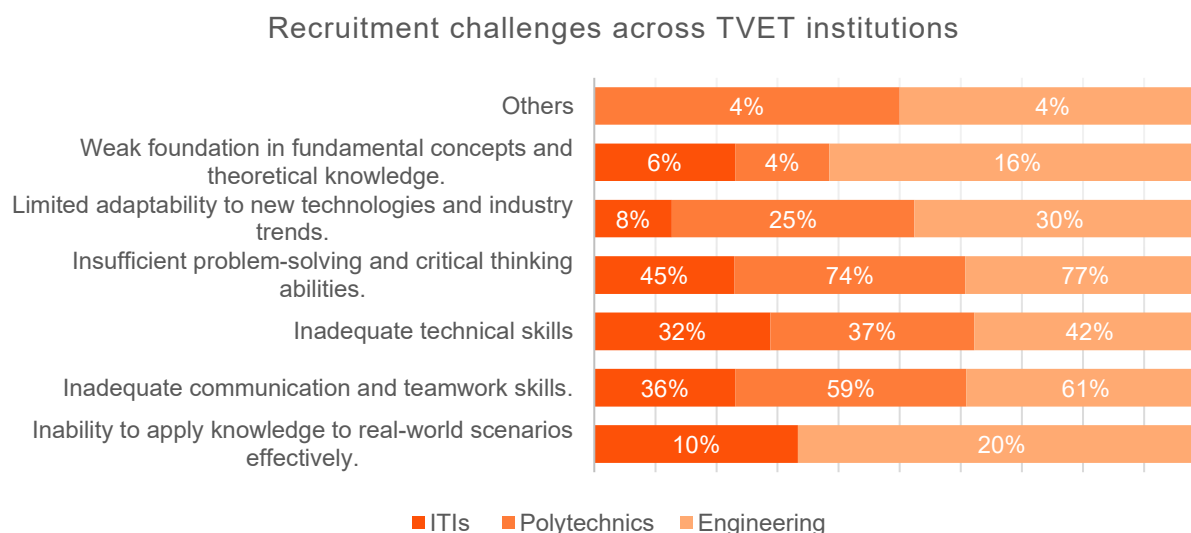
Figure 95: Regularity of recruitment from institutions



- Amongst the employers, the overall regularity of hiring workers is highest at Polytechnic colleges (~90%) followed by Engineering colleges (80%) and ITIs (~75%).

Theme 11: Recruitment challenges across TVET institutions

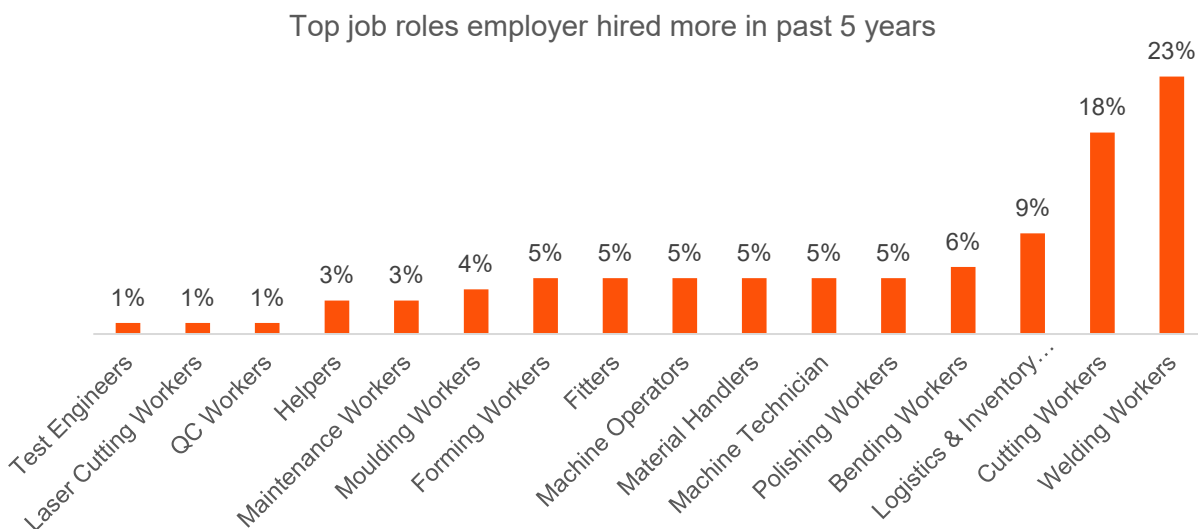
Figure 96: Recruitment challenges across TVET institutions



- Across ITIs, Polytechnics and Engineering, the three primary reasons for not recruiting workers are insufficient problem solving and critical thinking abilities, inadequate communication and teamwork skills, and inadequate technical skills.

Theme 12: Hiring trends across key operational roles in the stainless-steel sector

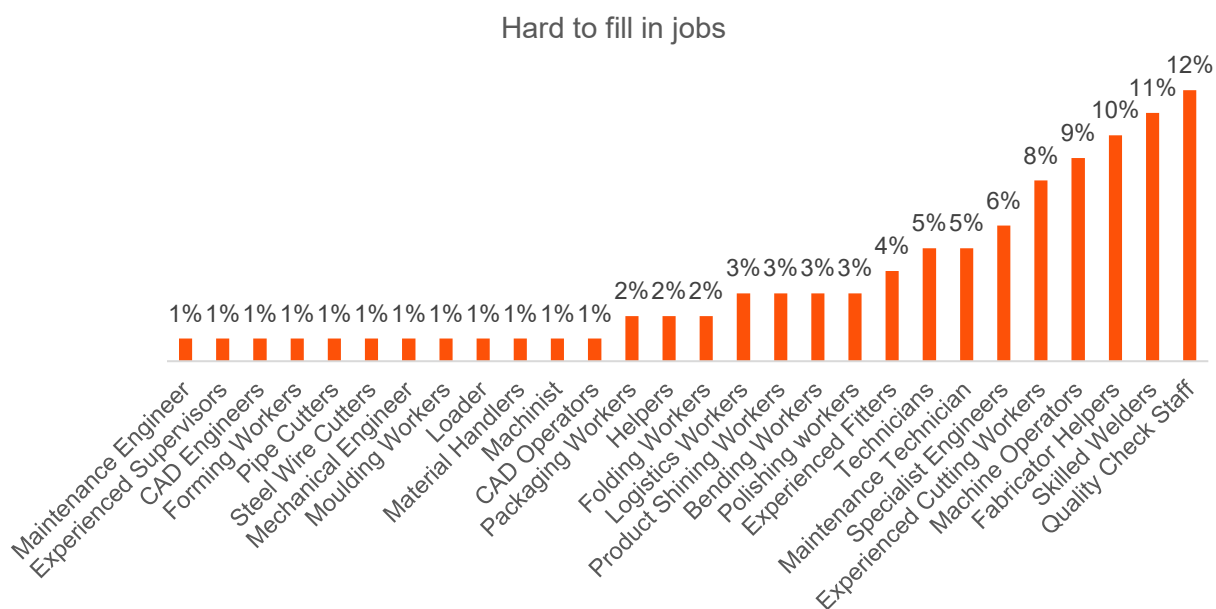
Figure 97: Top job roles employer hired more in past 5 years



- Demand for hiring welding workers leads, at 23%, reflecting their central role in the firm's processes.
- Cutting workers rank second with 18%, underscoring consistent demand for skilled cutters.
- Moderate hiring levels are observed for logistics/inventory roles (9%), bending workers (6%), and polishing workers (5%), indicating the importance of these support functions. Technical support roles like machine technicians (5%), material handlers (5%), and machine operators (5%) show comparable hiring frequencies. Roles such as fitters (5%), forming (5%), and moulding workers (4%) also contribute meaningfully to workforce demand.
- The hiring distribution reflects a focus on core production roles, alongside sustained but lower-level demand for auxiliary functions.

Theme 13: Job roles frequently reported by employers as difficult to recruit for

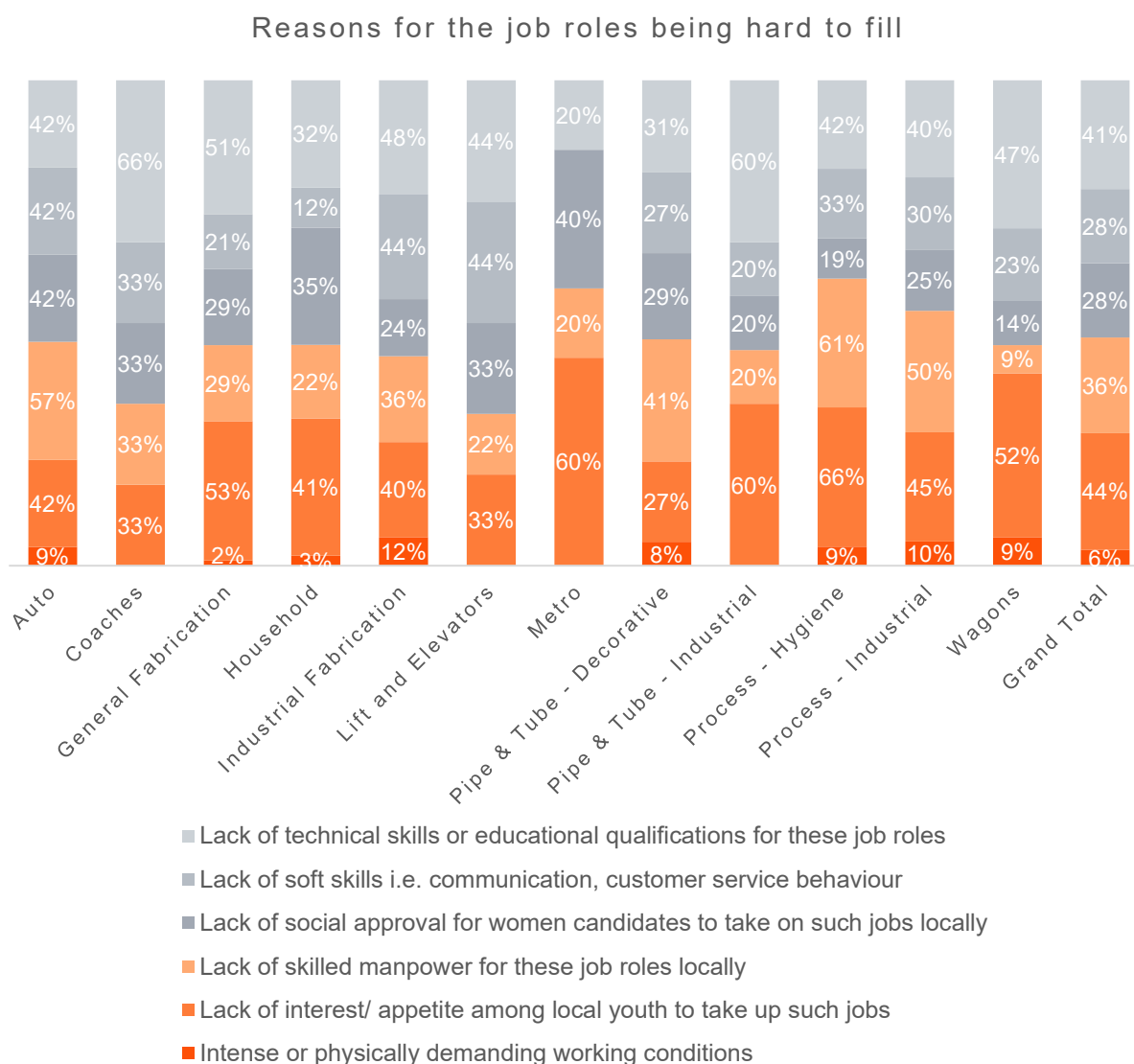
Figure 98: Hard to fill in jobs



- Quality Check Staff (12%) and Skilled Welders (11%) top the list of hard-to-fill roles, highlighting critical gaps in precision and core fabrication skills.
- Significant challenges also exist in hiring Fabricator Helpers (10%), Machine Operators (9%), and Experienced Cutting Workers (8%), indicating shortages across production-support roles.
- Specialist Engineer (6%) & Technician (5%) reveal difficulty in sourcing technically qualified manpower.
- A wide range of roles from Fitters to Polishing/Bending Workers (3-4%) also show moderate hiring difficulty, reflecting operational skill gaps.
- Roles like CAD Operators, Material Handlers, and Moulding Workers each reflect marginal challenges (1% or less), yet collectively point to weak pipelines in niche functions.

Theme 14: Factors behind hard-to-fill job positions

Figure 99: Reasons for the job roles being hard to fill

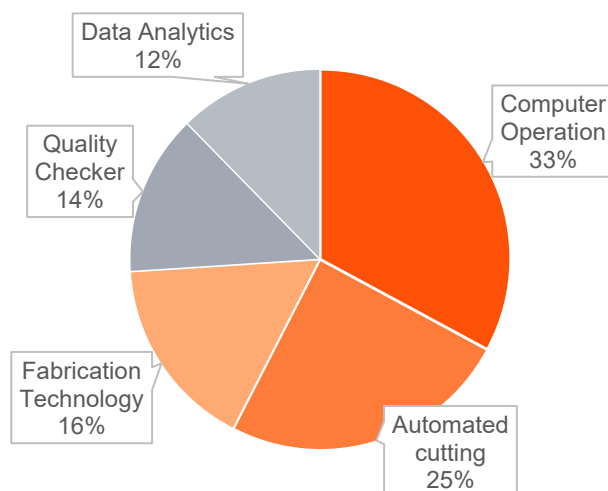


- The primary reason these job roles are challenging to fill is the lack of interest among local youth (44%), followed by insufficient technical skills or education (41%) and a lack of skilled manpower for these positions (36%).

Theme 15: Future-facing skill expectations driven by digitization trends

Figure 100: Skills employer expects in workers in next 3 years due to digitalization

Skills employers expect to have in workers in next 3 years due to digitilization



- Computer operation skills are the top in-demand skills (33%).
- Automated cutting proficiency (25%) signals increasing adoption of tech-integrated fabrication tools.
- Fabrication technology expertise (16%) remains crucial, highlighting the need to blend traditional know-how with digital interfaces.
- Quality checking skills (14%) remains one of the critical skills.
- Data analytics (12%), though the lowest, reflects an emerging interest in analytical capabilities to enhance efficiency and decision-making.

Theme 16: Recruitment barriers encountered by employers in sourcing entry-level talent for the stainless-steel sector

Figure 101: Key challenges faced during entry level recruitment of workers

Key challenges faced during entry level recruitment

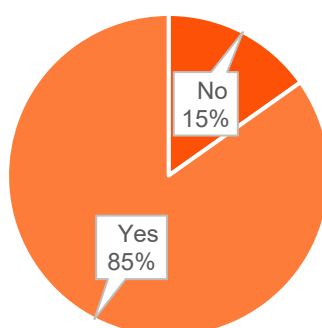


- 24% of employers report limited availability of appropriately trained technical personnel, highlighting a core skill gap at the entry-level.
- 18% of employers cite the absence of relevant educational institutions nearby, restricting access to campus-based recruitment practices.
- 17% of employers identify poor soft skills such as communication and leadership as major constraints among candidates.
- Wage expectations also present a critical challenge, with 11% of employers seek higher compensation than market norms. Additionally, 5% of employers mention that competitors are offering better pay.
- 7% of employers report candidates not joining after accepting offers, while 5% cite a lack of willingness to migrate. Additionally, demands for transport and accommodation are noted by 4% and 3% of employers, respectively.
- 4% of employers highlight time discipline concerns, while 2% of employers mention high attrition among temporary/ contractual staff.

Theme 17: Value of technical qualifications in wage decisions across the stainless-steel sector

Figure 102: Willingness to pay wage-premium for qualified/technically certified workers

Willingness to pay wage-premium for qualified/technically certified workers

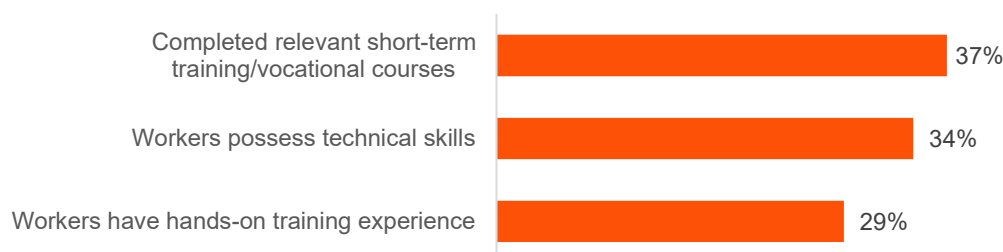


- 85% of employers are willing to pay a wage premium for technically certified or qualified workers- demonstrating strong market value attached to formal training.
- Only 15% of employers are unwilling to offer premiums.

Theme 18: Employer preferences for skill-based wage differentiation in the stainless-steel sector

Figure 103: Qualifications valued by employers for offering higher wages

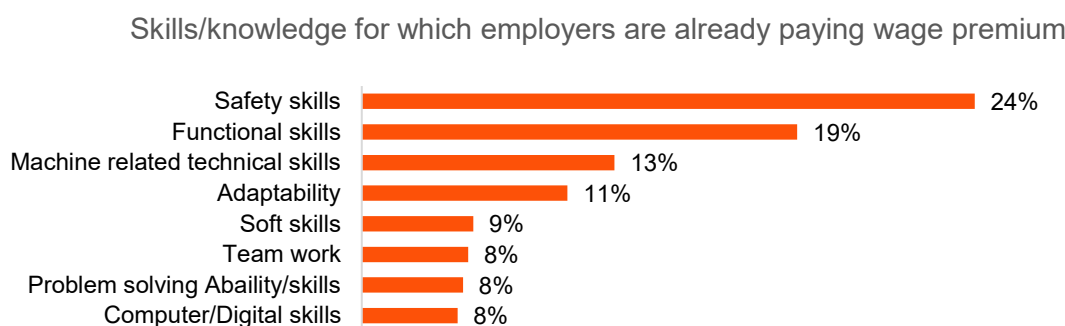
Qualifications valued by employers for offering higher wages



- 37% of employers prioritize candidates who have completed relevant short-term training or vocational courses, indicating high value placed on formal skilling programs.
- 34% emphasize possession of technical skills, suggesting that capability may be weighed as much as credentials.
- 29% consider hands-on training experience, reflecting demand for practical workplace exposure.

Theme 19: Current skill areas driving premium compensation in the stainless-steel sector

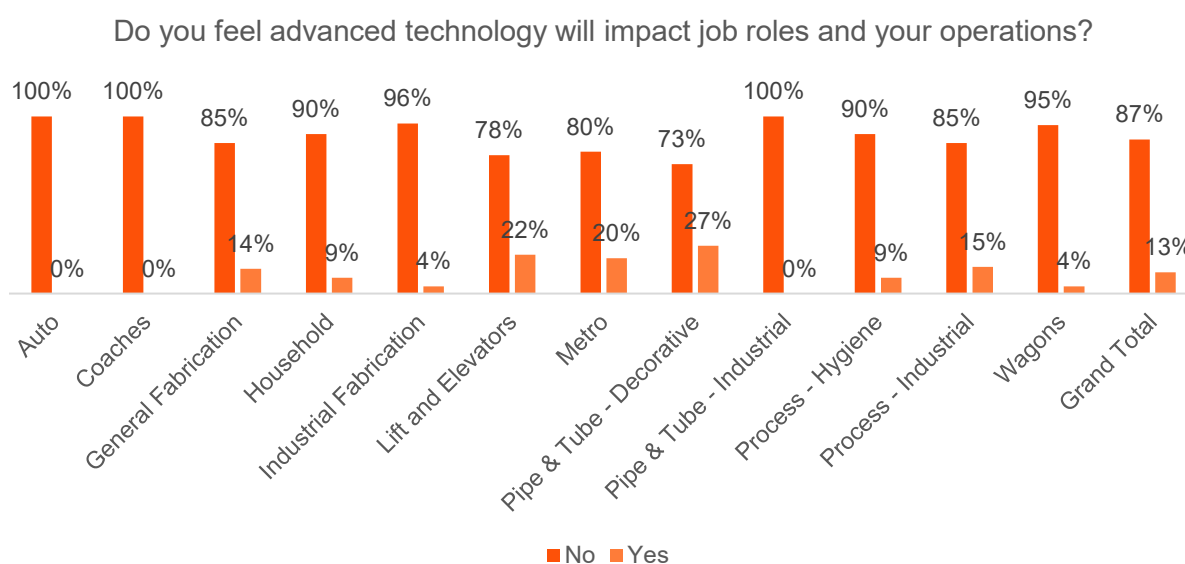
Figure 104: Skills/knowledge for which employers are already paying wage premium



- Safety skills command the highest wage premium (24%), emphasizing their critical importance in an enterprise's operations.
- Functional skills (19%) and machine-related technical skills (13%) are also highly valued.
- Adaptability (11%) and soft skills (9%) signal demand for responsive and communicative attributes.
- Other competencies such as teamwork (8%), problem-solving (8%), and computer/digital skills (8%) also attract premium pay, though to a lesser extent.

Theme 20: Impact of advanced technology on job roles and organization's operations

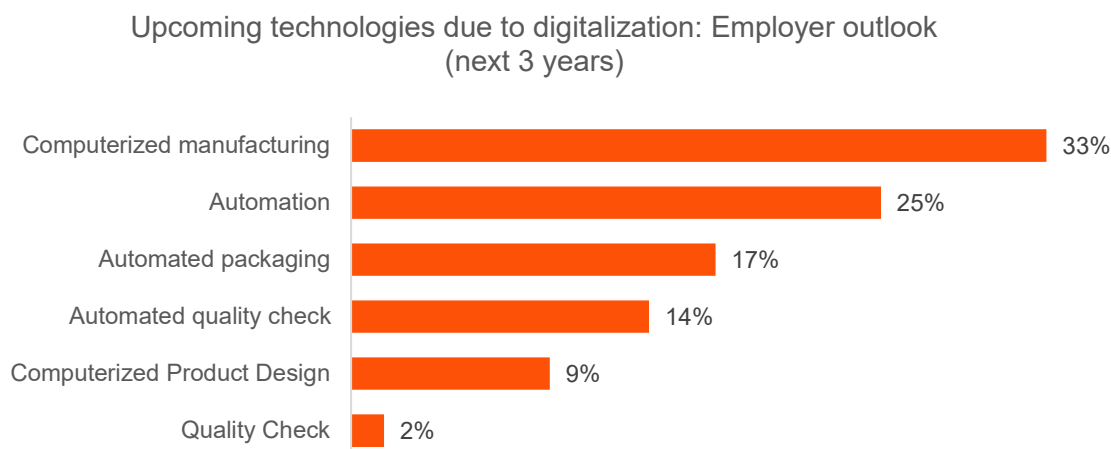
Figure 105: Impact of technology on job roles and operations



- Only ~12% (32 employers) across all segments attribute that technological changes, such as robotics and automation will impact on the job roles or changes their workers and organization's day-to-day work activities

Theme 21: Employer perceptions of upcoming technologies shaped by digitization trends

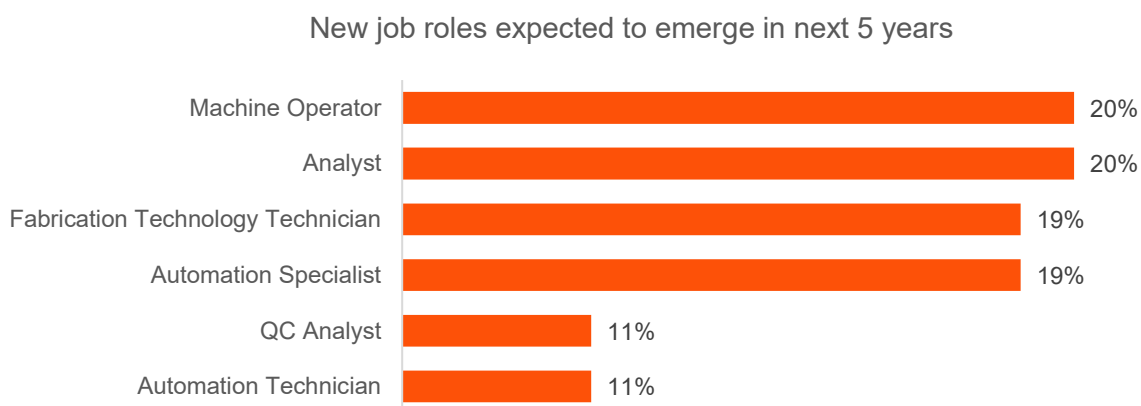
Figure 106: Upcoming technologies due to digitalization: Employer outlook (next 3 years)



- Computerized manufacturing leads with 33%, reflecting the growing integration of digitally controlled processes across production lines.
- Automation is gaining ground (25%), highlighting increased interest in system-driven operations to improve speed and precision.
- Automated packaging (17%) and automated quality checks (14%) suggest rising adoption of tech-enabled finishing and inspection.

Theme 22: Employer projections for emerging roles driven by digitization and technological change

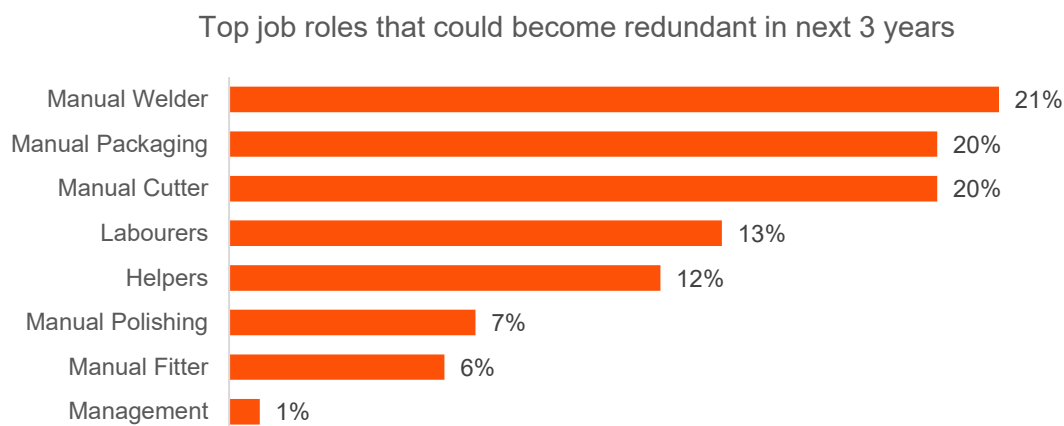
Figure 107: New job roles expected to emerge in next 5 years



- Machine Operators and Analysts, each accounting for 20%, are the top prioritized roles, demonstrating a dual emphasis on operational capability and data-driven decision-making.
- Fabrication Technology Technicians and Automation Specialists (19% each) closely follow, indicating a demand for digitally integrated production expertise.
- A moderate emergence is anticipated for Quality Control Analysts and Automation Technicians (each at 11%), reflecting growing needs in precision assurance and technology maintenance.
- These trends indicate a strong shift toward hybrid roles that combine machine handling, automation proficiency & analytical acumen. Training programs and workforce strategies should focus on building interdisciplinary skill sets, blending technical know-how with digital fluency and problem-solving.

Theme 23: Employer projections on roles likely to be redundant due to digitization and automation

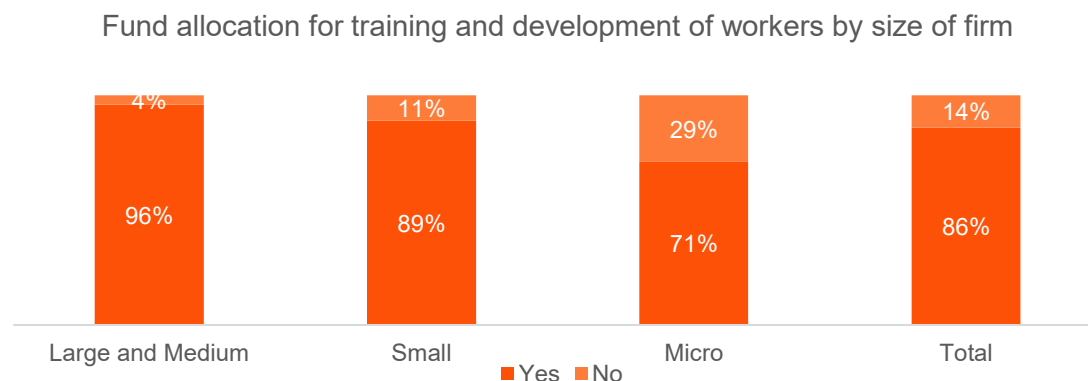
Figure 108: Top job roles that could become redundant in next 3 years



- Manual Welders will be redundant, indicated by 21% of employers, signaling potential replacement by automated welding technologies.
- Manual Packaging and Cutting roles (each 20%) also face high risk, driven by mechanized alternatives.
- Laborers (13%) and Helpers (12%) reflect broader displacement of non-specialized roles with increasing mechanization.
- Manual Polishing (7%) and Fitter (6%) show moderate vulnerability.
- Management roles are least affected (1%), indicating strategic and supervisory functions will be critical despite technological shifts.

Theme 24: Employer investment patterns in workforce training across different types of enterprises

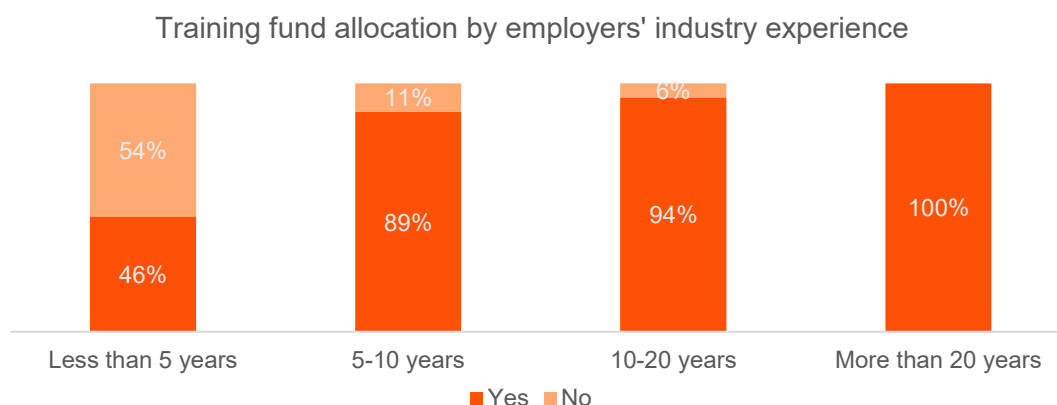
Figure 109: Fund allocation for training and development of workers by size of firm



- Micro firms lead in training fund allocation, with 29% committing resources, demonstrating intent despite their limited scale.
- Small enterprises are trailing, with only 11% allocating budgets for training, which suggests constrained or deprioritized investment.
- Large and Medium firms show the lowest commitment (4%), despite greater financial capacity, hinting at strategic or operational gaps in workforce development planning.
- Across all types of firms, only 14% of firms allocate training funds, pointing to systemic underinvestment in employee skill-building. The chi square test suggests that training fund allocation varies as per firm size.

Theme 25: Correlation between employers' years of experience in the steel industry and their inclination to invest in workforce training

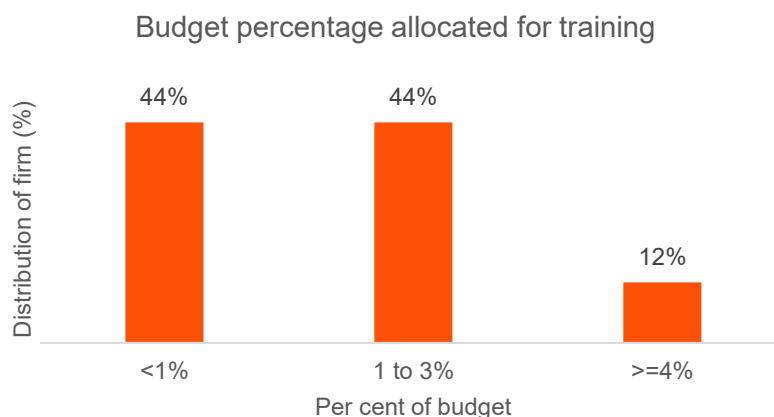
Figure 110: Training fund allocation by employers' industry experience



- Employers with long industry association (over 20 years) are highly likely to allocate training funds, with 100% responding 'Yes', showing strong institutional support for skill development.
- Fund allocation remains high across older cohorts, with 94% of employers having 10-20 years' experience and 89% among those with 5–10 years.
- In contrast, only 46% of employers with lesser industry association (less than 5 years) allocate funds for training and development.
- The data suggests that deeper industry experience aligns with greater commitment to workforce development.

Theme 26: Employer distribution based on training investment as a share of overall budget

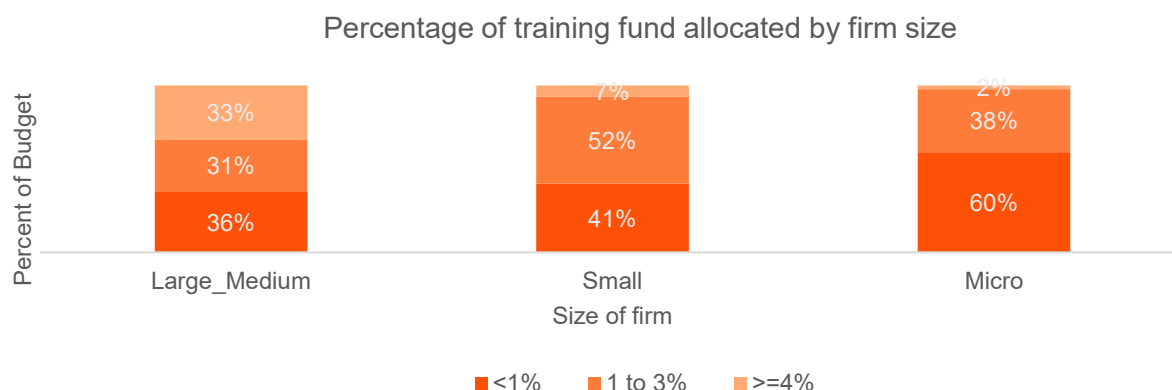
Figure 111: Budget percentage allocated for training



- A nearly equal proportion of employers (44% each) allocate either less than 1% or 1-3% of their overall budget for training.
- Only 12% of firms commit 4% or more, suggesting limited prioritization of robust training expenditure.
- The data suggests that while majority of employers do invest in training, the intensity of budgetary commitment remains modest, with very few able to allocate substantial funds.

Theme 27: Comparative analysis of training investments across different types of enterprises

Figure 112: Percentage of training fund allocated by firm size



- Large/Medium enterprises show balanced investment:
 - These firms are relatively evenly distributed across low, medium, and high budget allocations.
 - Over 30% allocate 4% or more, indicating deeper commitment to workforce training.
- Small firms indicate moderate investment:
 - Majority allocate 1–3% of budget (52%) showing intent but limited scale.
 - Very few (only 7%) cross the 4% mark, suggesting constraints in scaling training efforts.
- Micro enterprises invest the least:
 - A significant majority (60%) allocate less than 1%, and only 2% go beyond 4%.
 - Reflects budgetary limitations and possibly low prioritization of formal training.
- Investment varies strongly with firm size:
 - The Chi square test confirms a significant association between firm size and training investment levels.

Theme 28: Relationship between training investment and share of trained manpower across firm

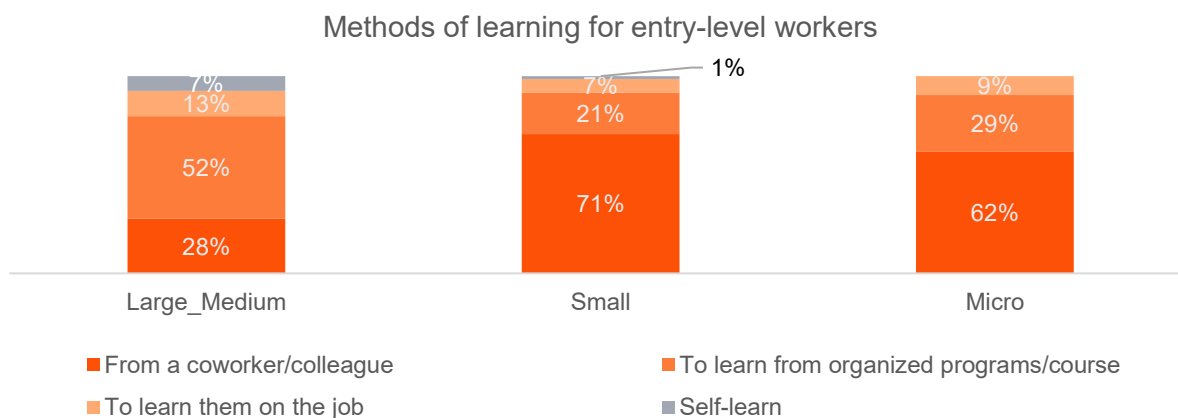
Table 5: Relationship between training investment and share of trained manpower

Q49. What percentage of your annual budget is dedicated to training and development?				
Q46. What percentage of your workforce can be categorized as trained manpower?	<1%	1 to 3 %	>=4%	Total
<=10%	66.67	30.3	3.03	100
11% to 25%	26.15	69.23	4.62	100
>=26%	40	35.29	24.71	100
Total	43.98	43.98	12.04	100
Pearson chi2(4) = 45.1703, Pr = 0.000				

- Firms with low trained manpower (<=10%) invest minimally-66.7% allocate <1% of their budget, and just 3% invest >=4%.
- Firms with high trained manpower (>=26%) show deeper commitment, with 24.7% allocating >=4%, a clear contrast to lower-skilled firms.
- Overall, only 12.04% of firms invest >=4%, indicating limited budgetary focus on training across the board. A statistically significant association exists between investment levels and workforce skill level.

Theme 29: Learning methods for entry-level staff

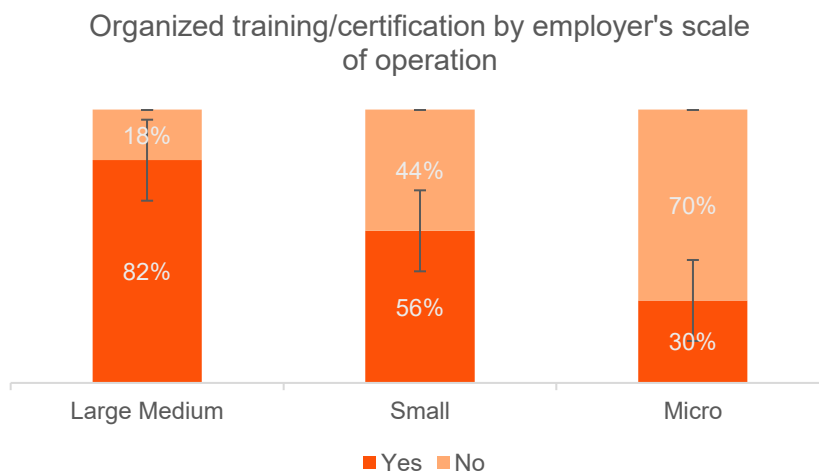
Figure 113: Methods of learning for entry-level workers



- Learning from coworkers is the leading method in Small (71%) and Micro firms (62%), showing strong reliance on informal, peer-driven knowledge sharing.
- Organized programs/courses dominate in Large/Medium firms (52%), reflecting a preference for structured skilling formats in bigger firms.
- On-the-job learning is more prevalent in Large/Medium firms (13%).
- Self-learning is the least preferred across all firms, with usage ranging from 7% to 9%.

Theme 30: How employer size influences the likelihood of organizing formal training and certification in the stainless-steel sector?

Figure 114: Organized training/certification by employer's scale of operation



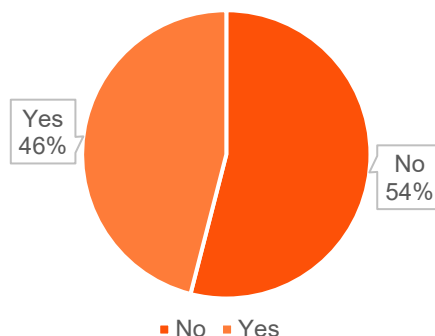
Pearson $\chi^2(2) = 31.0015$ Pr = 0.000

- Large/Medium firms lead in organizing training, with 82% responding “Yes”, reflecting formal skilling infrastructure in scaled enterprises.
- Small firms show moderate engagement (56%), suggesting partial formalization of training efforts.
- Micro firms fall behind, with only 30% offering organized training, and nearly 70% not engaging in such practices. Chi Square test confirms that training organization varies meaningfully by firm scale.

Theme 31: Proportion of employers who express intent to provide workforce training

Figure 115: Employers' willingness to impart training

Employers' willingness to impart training

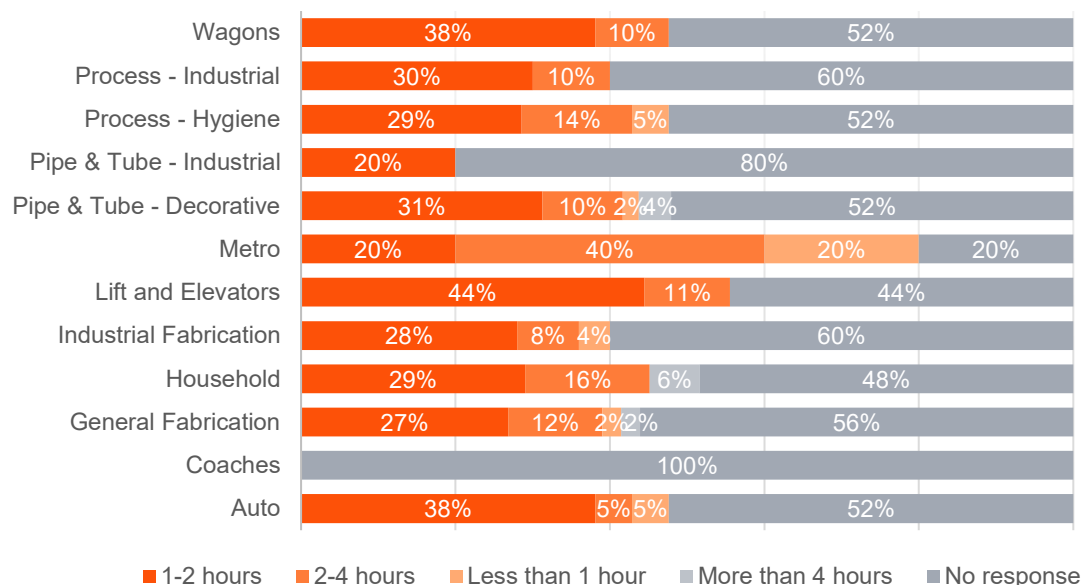


- Only 46% of employers wish to impart training, indicating that less than half demonstrate a proactive stance toward skill-building.
- A majority (54%) of employers do not intend to provide training, signaling widespread reluctance or possible constraints in training commitment.
- This divide highlights a crucial gap in workforce development.

Theme 32: Duration of training programs for the workforce

Figure 116: No. of hours the organization can spare for training of workers

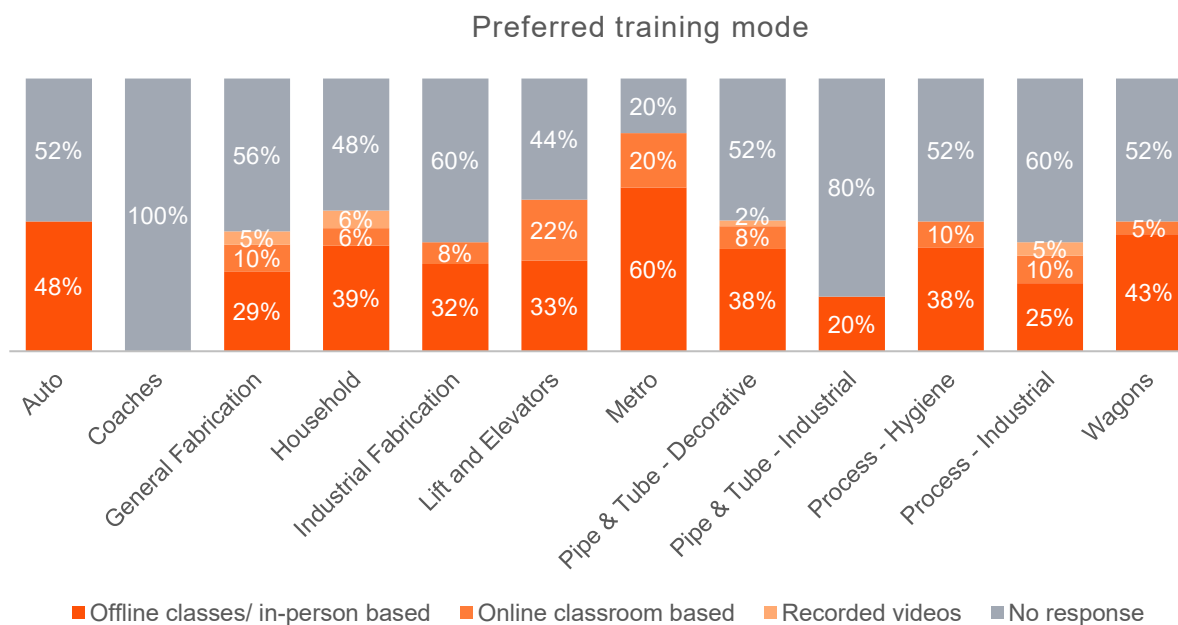
No. of hours the organization can spare for training of workers



- According to 66% of employers, their organizations can spare at least 1-2 hours daily for training of their workforce and 24% of employers said that their organizations can allow 2-4 hours.

Theme 33: Preferred training mode

Figure 117: Preferred training mode



- 77% of employers prefer offline/classes or in person mode of training for their workforce and 17% prefer online classroom-based training.

Theme 34: Assessing alignment between employers' willingness to offer training and their actual practices in the past 3 years

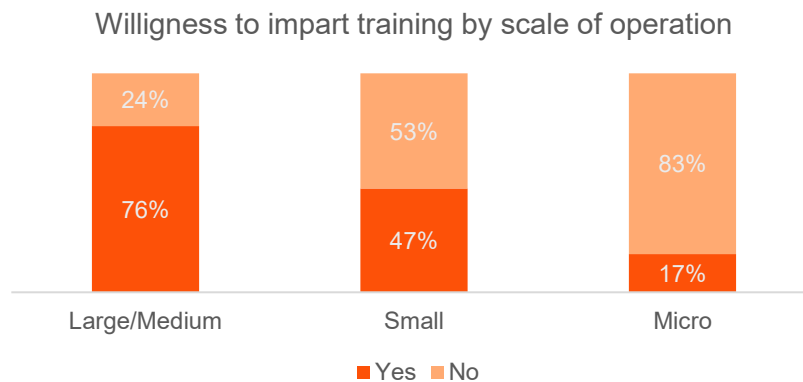
Table 6: Employers' willingness to offer training and their actual practices

Q56. Do you wish to impart training or provide skill development certificate at your organization's level?			
Q51. Did your organization do any certification program or organize any training programs for SS fabrication for your workers in the past 3 years?	Yes	No	Total
	80.29	19.71	100
Yes	80.29	19.71	100
No	4.42	95.58	100
Total	46	54	100
Pearson chi2(1) = 143.4880, Pr = 0.000			

- Most employers who intend to train have followed through, as indicated by the 80.3% of those who have conducted training.
- Employers who do not plan to conduct training generally do not act, as evidenced by the 95.6% who have not conducted any training
- Only 46% of employers show intent to train, and they account for nearly all the training activities done.
- A strong statistical link confirms training actions match stated intentions.

Theme 35: How employer size influences their willingness to offer training in the stainless-steel sector?

Figure 118: Willingness to impart training by scale of operation



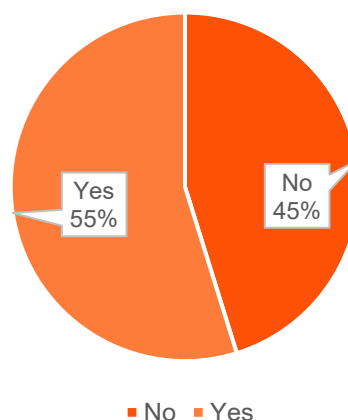
Pearson $\chi^2(2) = 40.2269$ Pr = 0.000

- Larger firms (76%) show a strong intent to offer training, indicating robust commitment to workforce development.
- Small firms are split, with 47% willing and 53% unwilling, reflecting moderate engagement.
- Micro enterprises fall behind, with only 17% expressing intent, and 83% not interested in training.
- The link between firm size and training intent is statistically significant ($\chi^2(2) = 40.23$, $p = 0.000$), confirming size strongly affects willingness to train.

Theme 36: Past training programs organized by employers in last 3 years

Figure 119: Past training programs organized by employers

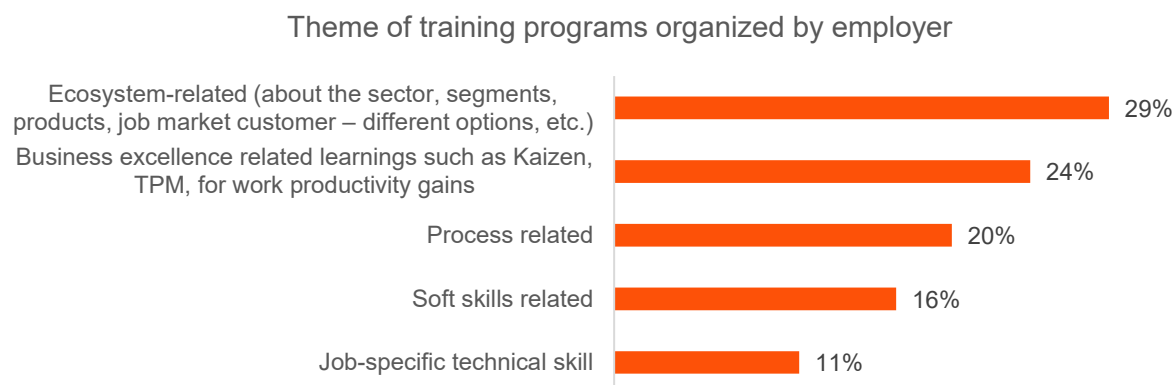
Did your organization do any certification programs or organize any training programs for SS fabrication for your workers in the past 3 years?



- Approximately 55% employers reported that their organizations conducted a certificate or training program for SS fabrication for their workforce. Most of these employers (around 85%) indicated that these training programs are mandatory.

Theme 37: Themes of training programs organized by employers

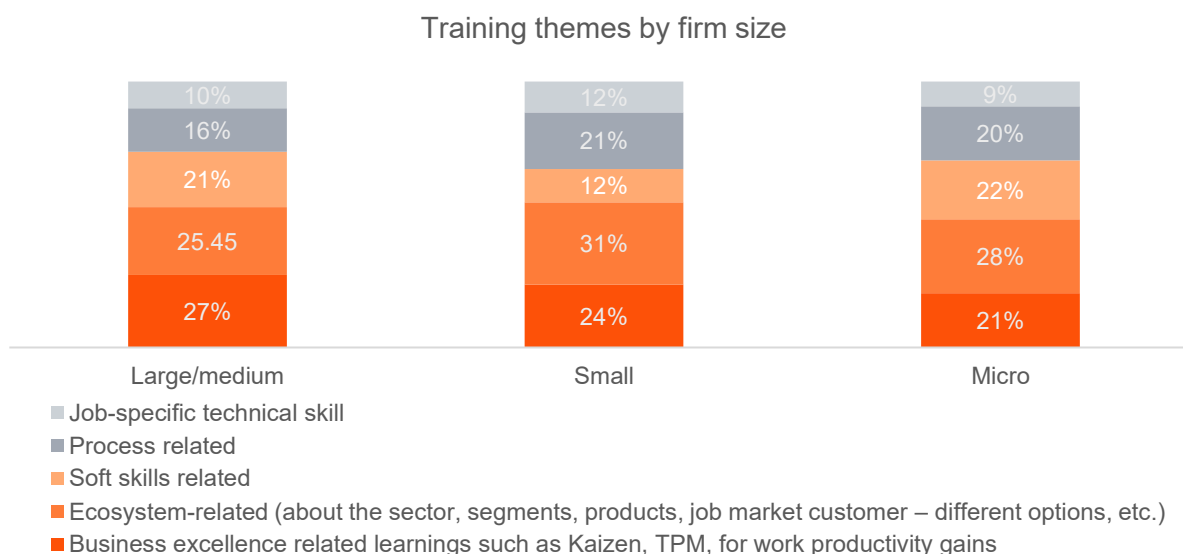
Figure 120: Theme of past training programs



- Sectoral ecosystem training is the predominant theme, at 29%, aiding workers in gaining a better understanding of the industry and its products.
- Training in business excellence, such as Kaizen and TPM, represents 24% and underscores a focus on improving work processes.
- Process-related (20%) and soft skills (16%) are also prioritized for smoother workflows.
- Technical, job-specific training is the least common (11%), showing preference for broader foundational skills.

Theme 38: Distribution of training content focus across different types of enterprises

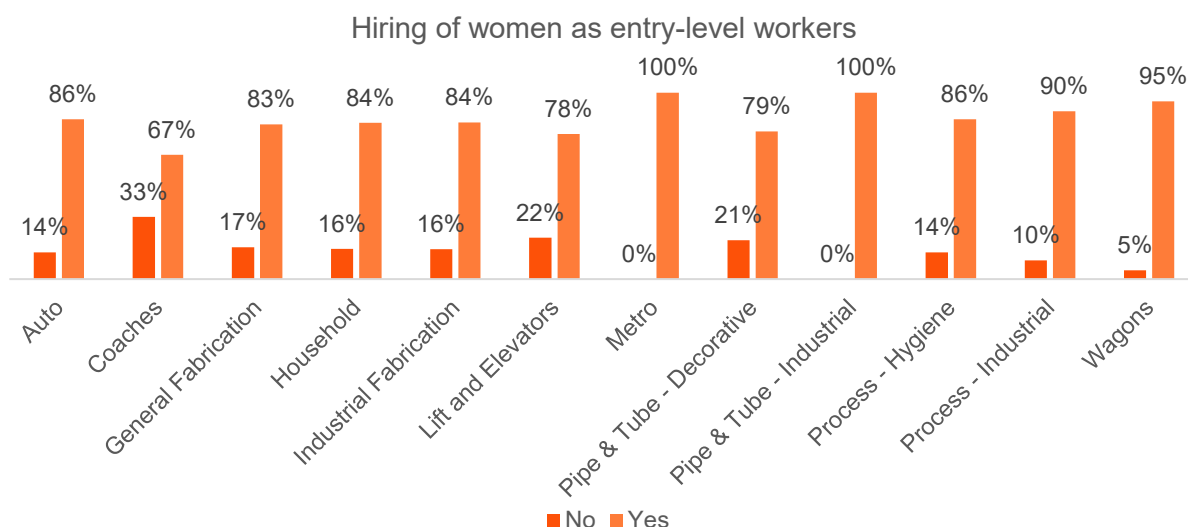
Figure 121: Training themes by firm size



- Business excellence is the top training theme in large/medium firms (27%), reflecting emphasis on operational improvements like Kaizen and TPM.
- Ecosystem training leads in small firms (31%) and is also popular among micro firms (28%), indicating priority on industry understanding and product familiarity.
- Micro firms favor soft skills (22%), possibly due to small team dynamics and informal establishments.
- Job-specific technical training is the least prioritized across all sizes, ranging between 9–12%.

Theme 39: Women in entry level roles in stainless-steel industry

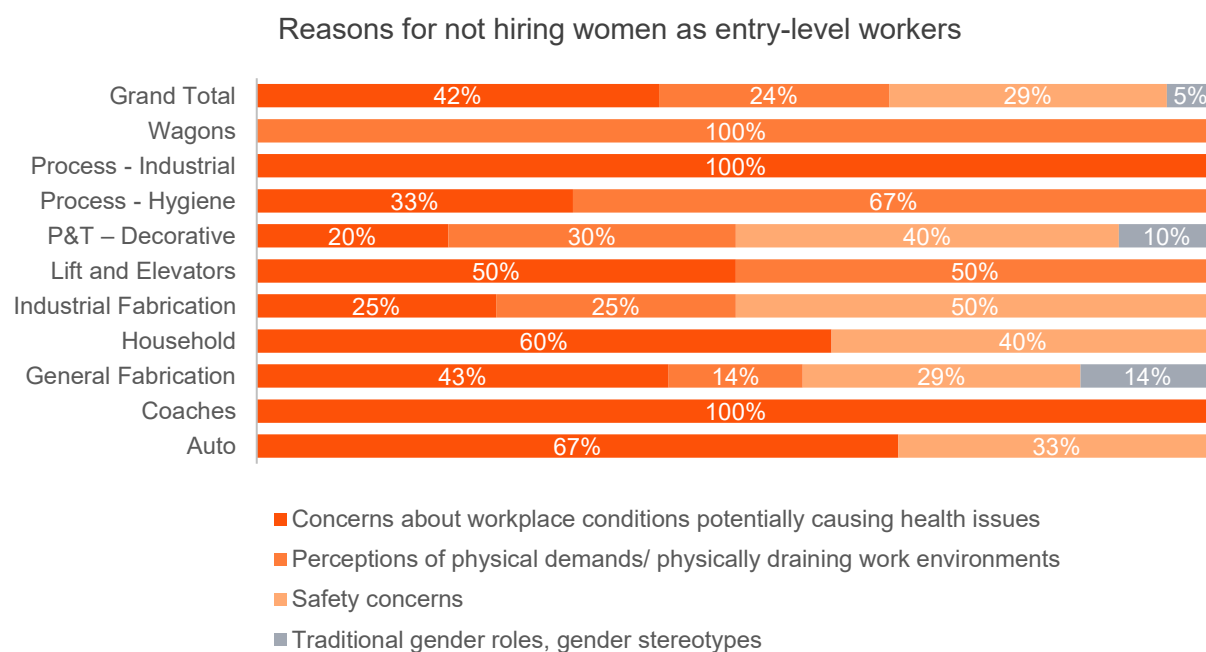
Figure 122: Hiring of women as entry-level workers



- Nearly ~85% employers hire women as entry level workers, which represents a positive trend towards an increased participation of women in the workforce.

Theme 40: Major barriers in the hiring of women as entry level workers

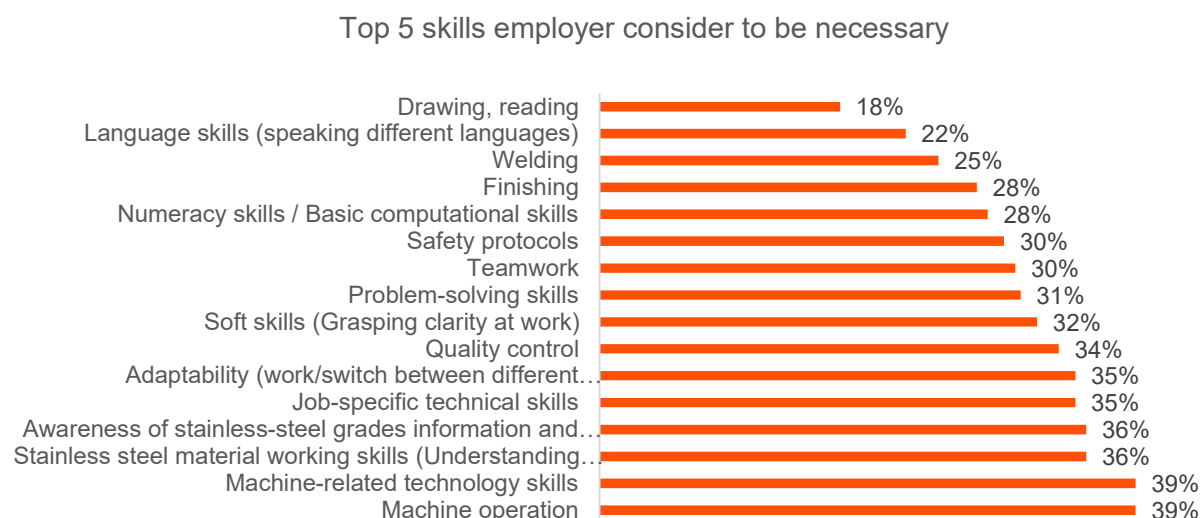
Figure 123: Reasons for not hiring women as entry-level workers



- Out of the 38 employers who do not hire women as entry level workers, 42% of them have reported concerns about workplace conditions potentially causing health issues and 30% have indicated safety concerns as the top 2 reasons for not hiring women.

Theme 41: Top 5 skills employers consider to be the necessary skills in entry-level workers to work effectively in stainless-steel segments and fabrication

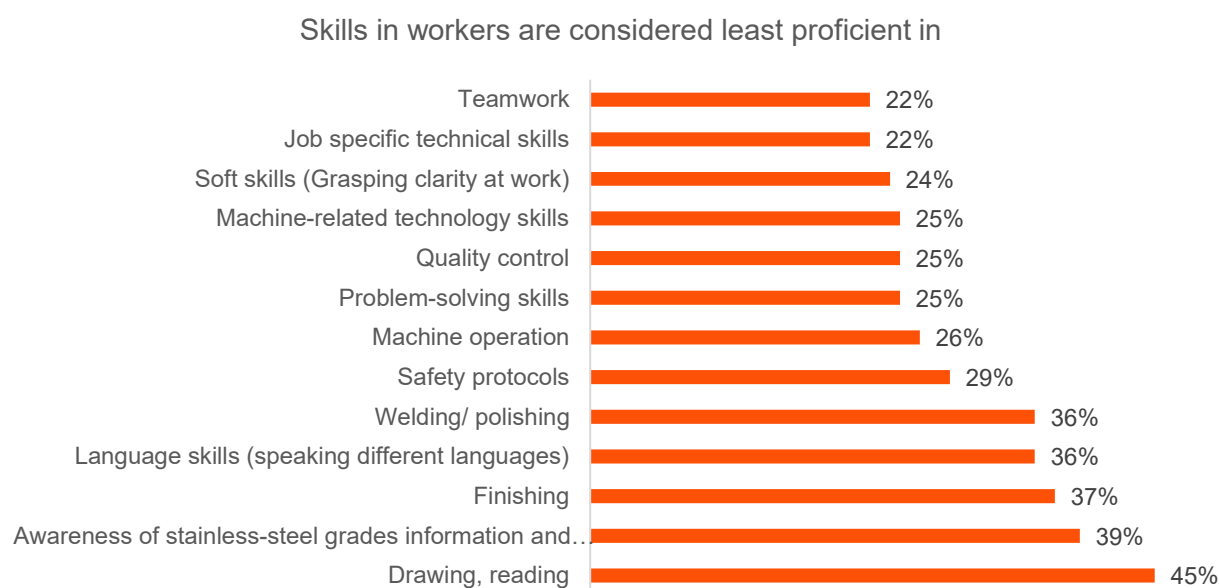
Figure 124: Top 5 skills employer consider to be necessary



- The top 5 skills considered necessary in entry level workers in stainless-steel segments and fabrication are core technical skills, including machine related skills, machine operations, awareness of SS grades, SS material working skills and job specific technical skills. This highlights the critical importance of trained manpower in technical skills, followed by expertise in quality control and soft skills.

Theme 42: Important skills in which workers are considered least proficient in

Figure 125: Skills in which workers are considered least proficient in

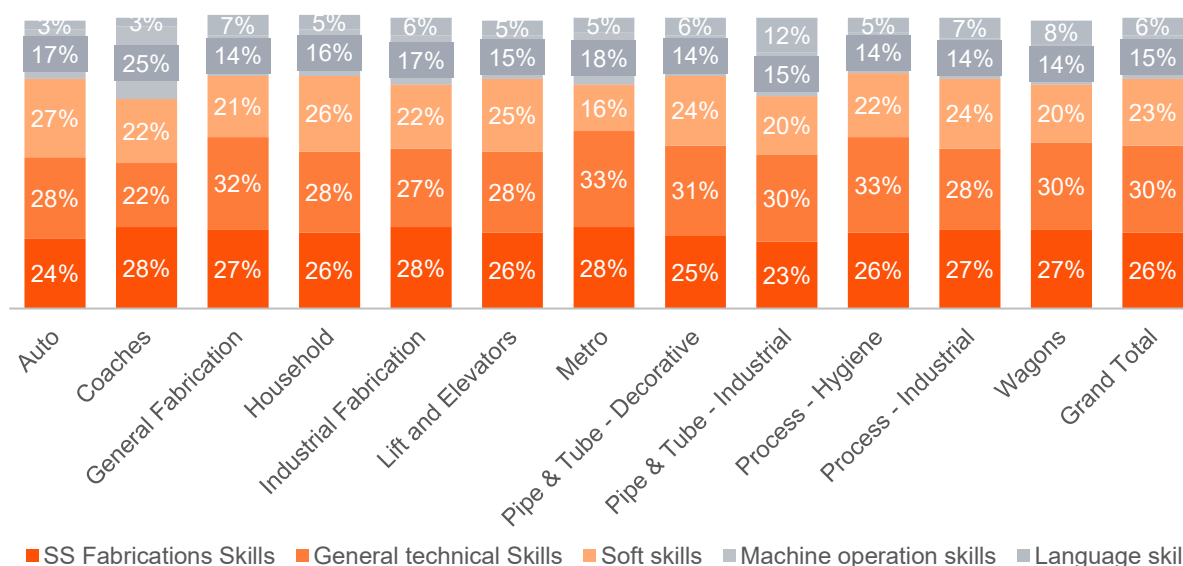


- The above graph showcases the current skill gap in the workforce indicating a need for training of workers in basic drawings, awareness of SS grades, material, welding, polishing and finishing.

Theme 43: Category analysis of top skills by employers in stainless-steel segments and fabrication

Figure 126: Category analysis of top skills in SS segments and fabrication

Category analysis of top skills in SS segments and fabrication

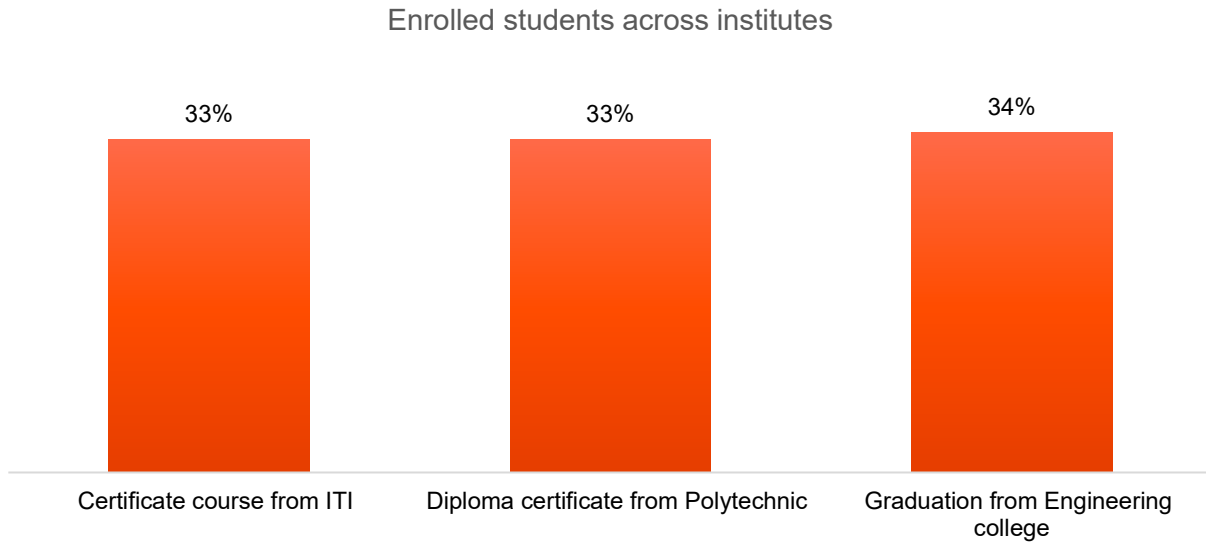


- Across all industry segments, SS Fabrications Skills and General Technical Skills are prioritized, indicating the industry's heavy focus on technical expertise.
- There is consistency in skill percentage requirements across all the segments, suggesting a uniformity in skill demands across these industries.
- Please note the above analysis is the Category wise analysis at segment level of Q59,60 and 61 which are as follows:
 - Q59: What are the top 5 skills you consider to be the necessary skills in entry-level workers to work effectively in stainless-steel segments and fabrication?
 - Q60: What are the top 5 skills you consider workers least proficient in, within the stainless-steel segments and fabrication?
 - Q61: Which skills training do you propose to provide generally by your organization for the workers?

3.4. Students

Theme 1: Distribution of student enrolment by institute type

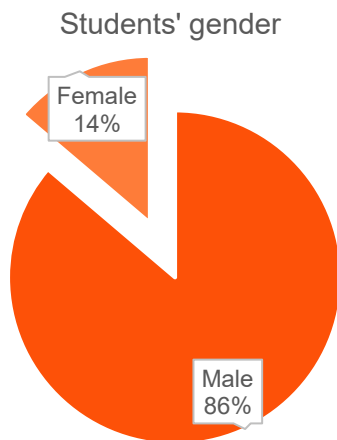
Figure 127: Enrolled students across institutes



- Enrollment is nearly evenly distributed across all three institute types, reflecting diverse pathways into the steel industry.
- Graduation from engineering colleges (34%), suggests a strong interest in formal degree programs.
- Certificate courses from ITIs and diploma programs from polytechnics each account for 33%, indicating a balanced demand for vocational training.

Theme 2: Gender of students

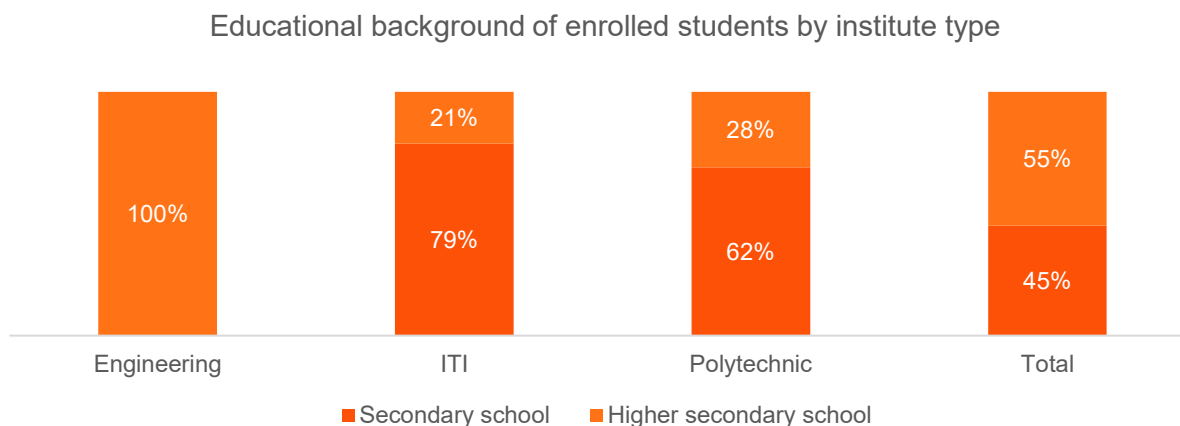
Figure 128: Student's gender



- With male students comprising 86% and female students only 14%, there is a significant gender gap in training programs.
- This should also be noted on the shop floor, where female representation remains negligible, highlighting the need to encourage more women to join this occupation.

Theme 3: Highest completed education of students across Engineering colleges, ITIs, and Polytechnic institutes

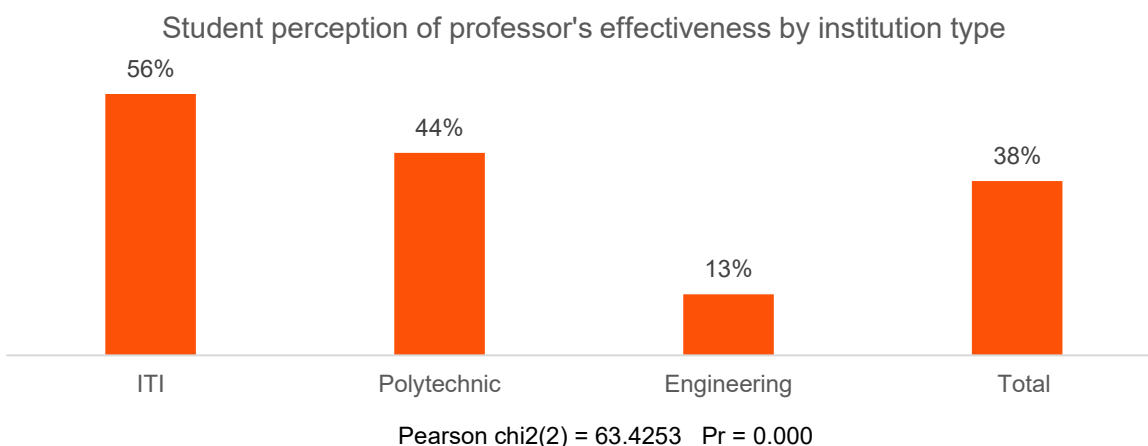
Figure 129: Educational background of enrolled students by institute type



- All engineering students come from higher secondary backgrounds (100%), indicating entry into the program post-12th grade.
- ITI students largely come from secondary school (79%), with fewer progressing through higher secondary (21%).
- Polytechnic students are mixed but lean toward secondary school (62%) over higher secondary (28%).

Theme 4: Student perception of professors' effectiveness in teaching stainless steel concepts

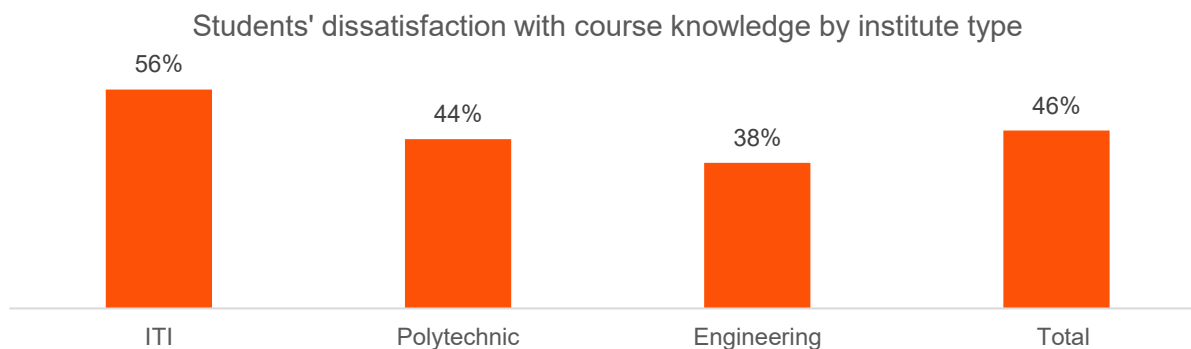
Figure 130: Student perception of professor's effectiveness by institution type



- Approximately 38% of students feel that professors are not teaching effectively.
- This concern is highest in ITIs (56%) and Polytechnics (44%), pointing to gaps in instructional delivery. Engineering students report much lower dissatisfaction (13%), indicating relatively stronger teaching standards.
- The chi-square test confirms a significant link between institution type and student perception of teaching effectiveness.

Theme 5: Student satisfaction with course and guest lecture content on stainless steel

Figure 131: Students' dissatisfaction with course knowledge by institute type

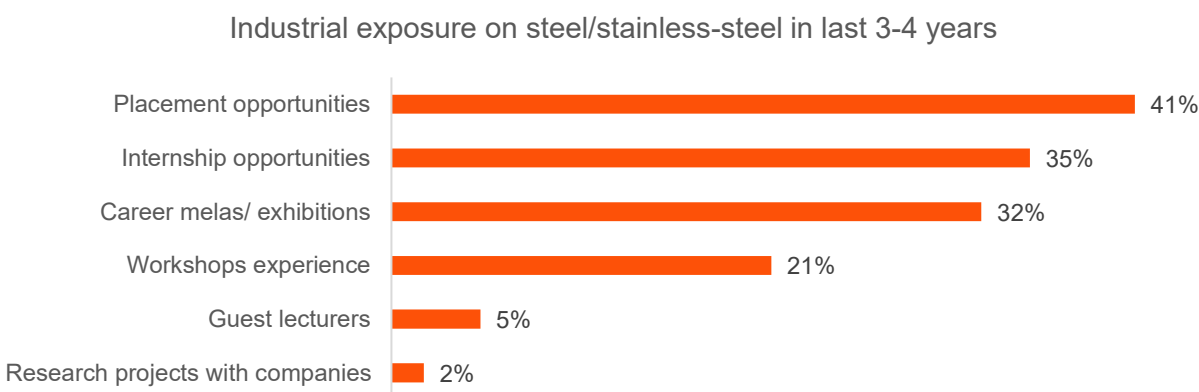


Pearson $\chi^2(2) = 11.2167$ Pr = 0.004

- Almost half of the students (46%) are not satisfied with the knowledge they receive through different courses at their institute.
- Most unsatisfied students are in ITIs (56%) and polytechnics (44%), reflecting the overall dissatisfaction with professors.
- 38% of students are unsatisfied within engineering institutions.
- The chi-square confirms the interlinkages between the type of institution and the satisfaction students receive from different courses offered there.
- Stainless Academy has effectively identified the need to redesign the courses in the stainless-steel ecosystem, presenting a significant opportunity to address existing gaps.

Theme 6: Exposure to the stainless steel/steel industry over the last 3-4 years

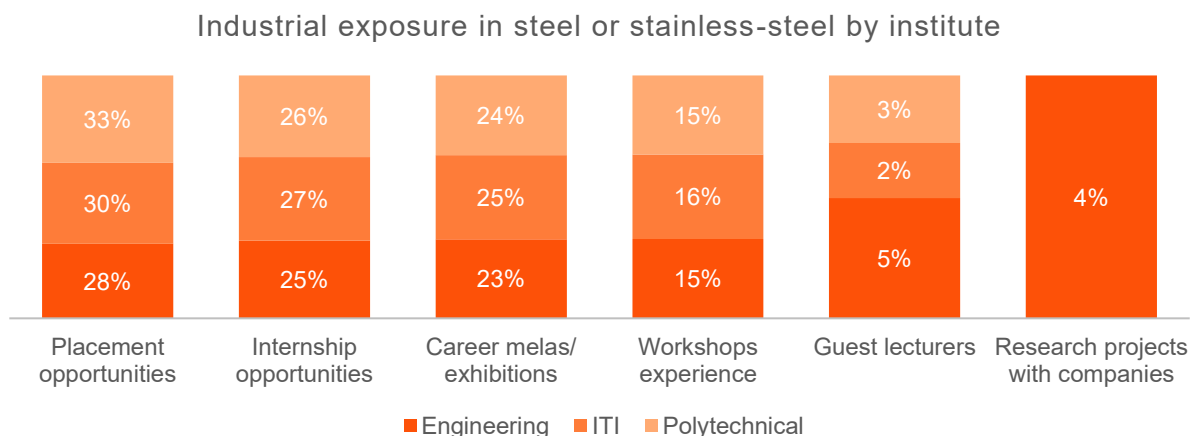
Figure 132: Industrial exposure to steel/stainless steel in last 3-4 years



- All students have had some form of industry exposure in the past 3–4 years.
- Placement opportunities were the primary source of exposure (41%), followed by internships (35%) and participation in career melas/exhibitions (32%).
- Workshops (21%) and guest lectures were less frequent forms of exposure.
- Given their potential to effectively ignite student interest and awareness in skilling and reskilling, Stainless Academy can collaborate with institutes to strengthen these formats.

Theme 7: How are students from Engineering, ITI, and Polytechnic institutes exposed to industry?

Figure 133: Industrial exposure in steel or stainless steel by institute

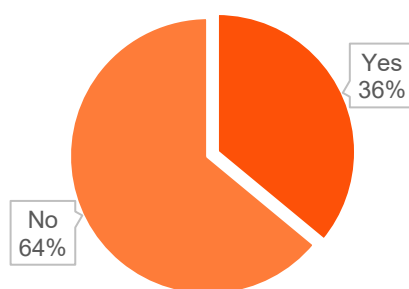


- Placement opportunities were the primary source of exposure, especially in Polytechnic (33%), followed by ITI (30%) and Engineering (28%).
- Internships rank second, with high prevalence in ITI (27%) and Polytechnic (26%), slightly ahead of Engineering (25%).
- Career melas/exhibitions offer moderate exposure (23–25%) across all institute types.
- Workshop experience accounts for 15–16%, indicating limited hands-on institutional collaborations.
- Guest lectures are minimal, particularly in ITI and Polytechnic (3%), and only slightly more in Engineering (5%).
- Research project exposure is rare across the board, ranging from 2% to 4%.

Theme 8: Extent to which educational institutions conduct guest lectures focused on SS topics

Figure 134: Institutions conducted guest lectures on stainless steel

Institutions conducted guest lectures on stainless steel



- Majority of the institutions (64%) do not conduct guest lectures on stainless steel.
- There were only 36% of institutions that have conducted guest lectures on stainless steel.

- There was an association between awareness of stainless steel, as demonstrated by knowledge about Jindal steel, and participation in guest lectures on stainless steel, as indicated by chi-square statistics.
- Therefore, utilizing guest lectures could be an effective strategy for Stainless Academy.

Theme 9: Students with certification or training program related to stainless-steel fabrication

Figure 135: Students with certification or have attended training program related to SS Fabrication

Students with certification or have attended training program related to stainless steel fabrication

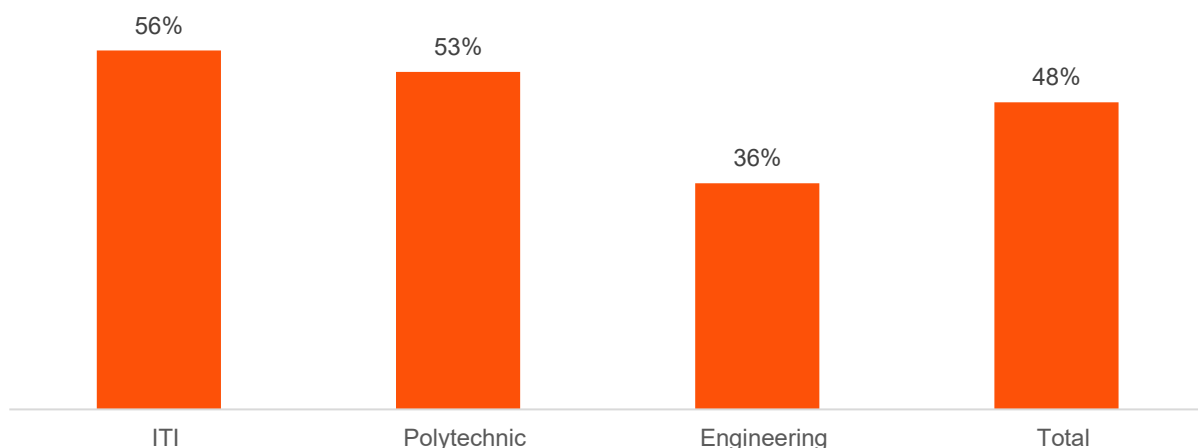


- 52% of students have received formal training or certification, indicating a modest level of professional exposure to fabrication techniques.
- 48% remain uncertified, suggesting a nearly equal divide and highlighting the opportunity to scale structured training.
- This balance highlights the need for expanded access to certification programs, particularly for institutions aiming to improve skilling outcomes and employability.

Theme 10: Proportion of students across Engineering, Polytechnic, and ITI institutes who lack formal certification or training in stainless steel fabrication

Figure 136: Students with no certification or have not attended any training in SS Fabrication

Students with no certification or have not attended any training in SS fabrication

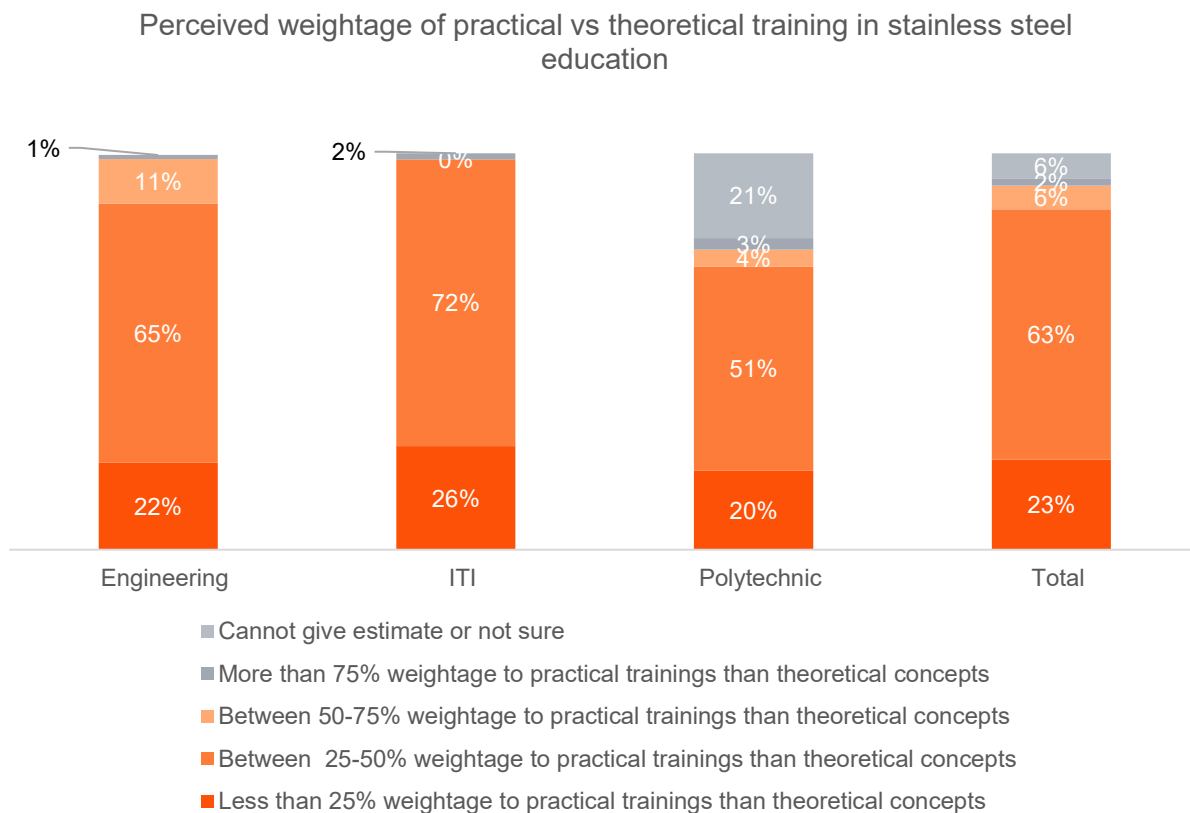


Pearson $\chi^2(2) = 15.1536$ Pr = 0.001

- ITI students demonstrate the largest gap, with 56% indicating they have not received any formal certification or training.
- Polytechnic students follow closely (53%), suggesting similar constraints in training access.
- Engineering students (compared to ITI and Polytechnic) fare slightly better, with 36% remaining uncertified, indicating that more than one-third have not received formal certification.
- Overall, nearly half the student population (48%) lacks certification or training, revealing significant room for improvement in skilling efforts.
- The chi-square test confirms a statistically significant difference in certification status across institute types.

Theme 11: Weightage of practical training vs theoretical module on stainless steel training

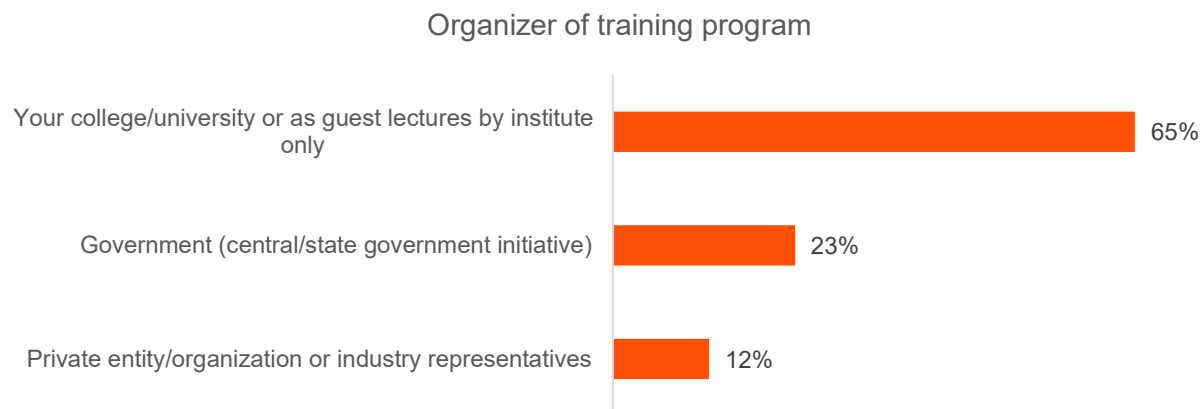
Figure 137: Perceived weightage of practical vs theoretical training in stainless steel education



- Student perceptions vary widely, even within the same institute on the weightage of practical and theoretical training.
- Majority of students (63%) believe practical content forms 25–50% of their modules, while 23% report less than 25%.
- This variation suggests no standardized structure or clear demarcation between theory and practice.
- An effort can bridge this gap by co-developing training formats that balance practical and theoretical components, aligned with industry expectations.

Theme 12: Organizer of training programs

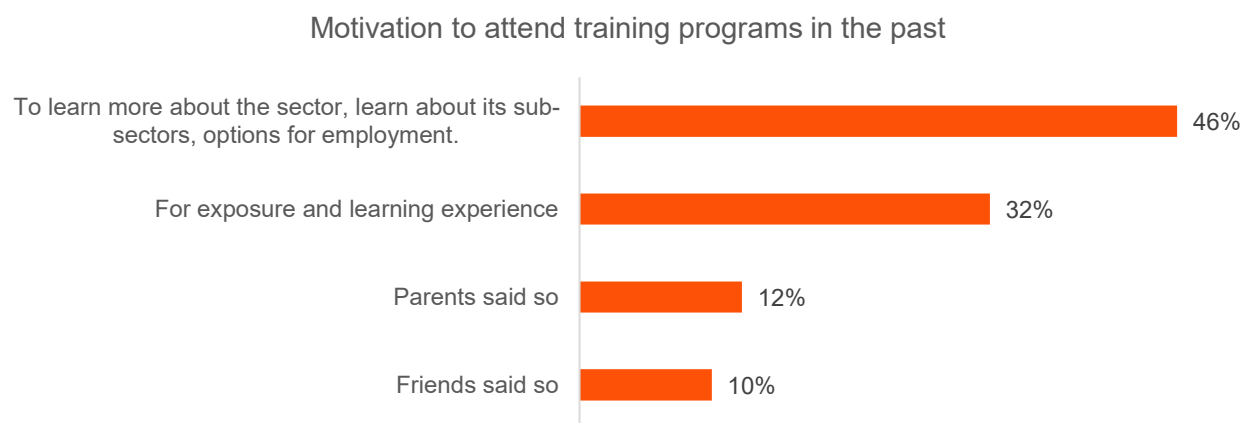
Figure 138: Organizer of the training program



- Majority of the training programs are managed and organized by the institutions themselves (65%) followed by government initiatives, 23%.
- There are only 12% private entity/organization or industry representatives who have organized the training programs for the students.
- Stainless Academy has an excellent opportunity to play an important role as a private player to provide training independently or in collaboration with these institutions.

Theme 13: Student's motivation for attending training program in the past

Figure 139: Motivation to attend training programs in the past



- Among all responses received about the motivation for attending training programs, the leading reason, at 46%, was to learn about the sector/subsector and options for employment. The second leading motivation, at approximately 32%, was to gain exposure and learning experience.
- There are about 22% of responses who attained training either because their parents or friends suggested to attain training. This indicates that as Stainless Academy intensifies its program more students will join over time.
- While offering the training program, Stainless Academy should prioritize these motivations.

Theme 14: Influence of students' past training experience on their interest in pursuing additional certification or skill development

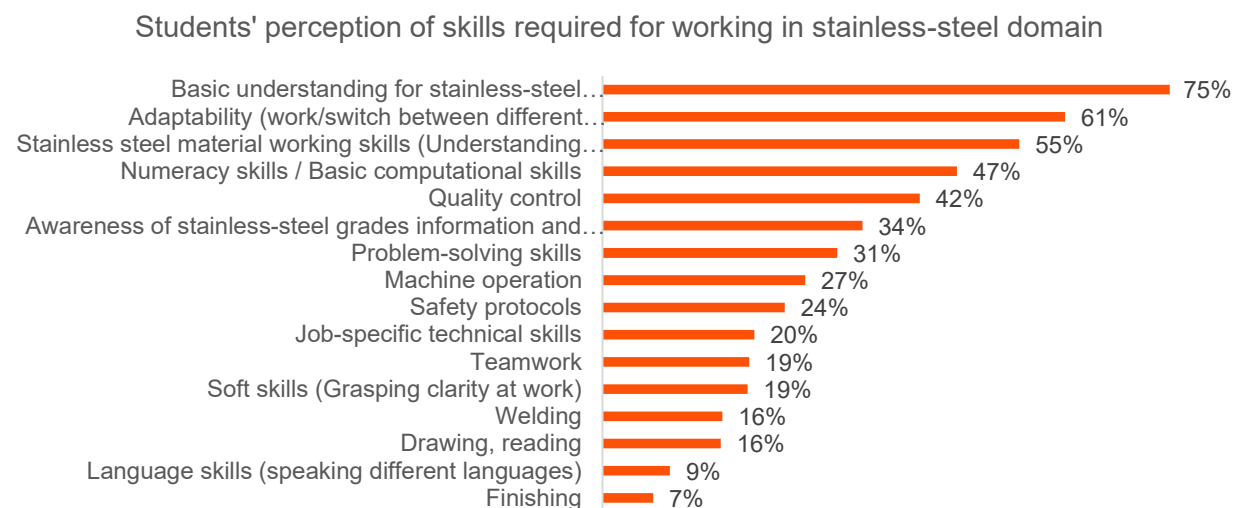
Table 7: Pursuing additional training based on influence of previous training

Existing certificate or have attended any training program related to Stainless Steel fabrication?	Wish to attain new/further training/skill development certificate/training Stainless Steel fabrication?	
	Yes	No
No	61%	26%
Yes	39%	74%
Total	100%	100%
Pearson chi2(1) = 53.7158 Pr = 0.000		

- Among students without prior training, 61% express interest in further training, while 26% do not.
- Among those with prior training, 74% are not interested in additional training, while 39% express interest.
- This suggests that students without prior exposure are more motivated to upskill, possibly due to perceived gaps in readiness or employability. The association between prior training and interest in further skill development is statistically significant.

Theme 15: Students' perception of skills required for working in stainless-steel domain

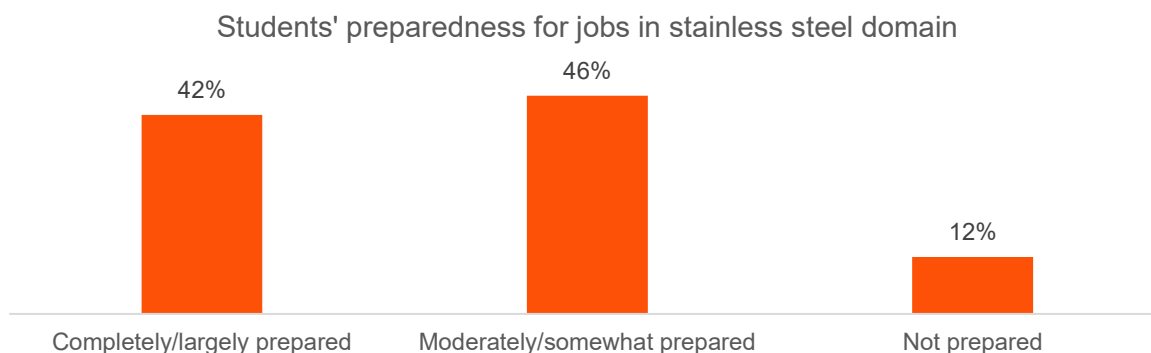
Figure 140: Students' perception of skills required for working in stainless-steel domain



- **Top 5 skills required to work in stainless steel (student's perception):**
 - ✓ Basic understanding of the stainless-steel manufacturing process (75% of students).
 - ✓ Adaptability (61% of students).
 - ✓ Stainless steel metalworking skills (54% of students).
 - ✓ Basic numerical and computational skills (47% of students).
 - ✓ Quality control skills (42% of students).
 - ✓ Safety protocols were ranked as the 9th highest priority skill set for the job.

Theme 16: Students' preparedness for jobs in stainless steel domain

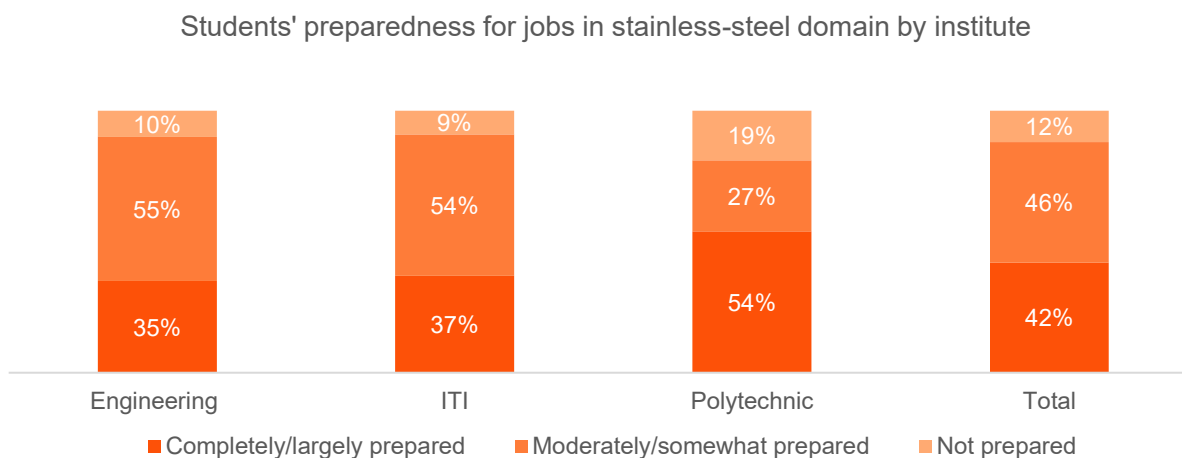
Figure 141: Students' preparedness for jobs in stainless steel domain



- 42% of students feel completely or largely prepared to take up jobs in the stainless-steel sector.
- Another 46% of students report moderate or partial readiness, indicating hesitancy and lower confidence levels. This group could benefit from targeted confidence-building and skill reinforcement, especially through practical training.

Theme 17: Students' preparedness for jobs in stainless-steel domain by institutions

Figure 142: Students' preparedness for jobs in stainless-steel domain by institute

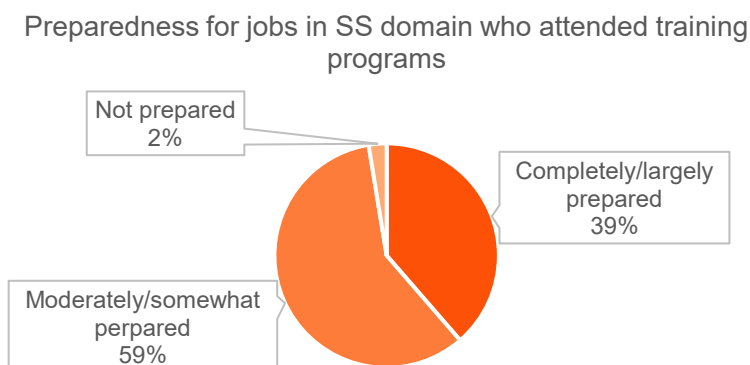


Pearson $\chi^2(4) = 32.6024$ Pr = 0.000

- Student perceptions of job readiness vary significantly across institution types.
- Polytechnic students report the highest level of complete preparedness (54%), suggesting stronger confidence or more practical exposure.
- In contrast, Engineering and ITI students show higher proportions of moderate preparedness (54–55%), indicating partial readiness and potential gaps in confidence or training depth.
- Unpreparedness is particularly evident pronounced among Polytechnic students (19%), compared to 9-10% in Engineering and ITI,
- The chi-square test indicated a statistically significant difference in perceived job preparedness across institute types.

Theme 18: Students' preparedness for jobs in SS domain who attended training programs

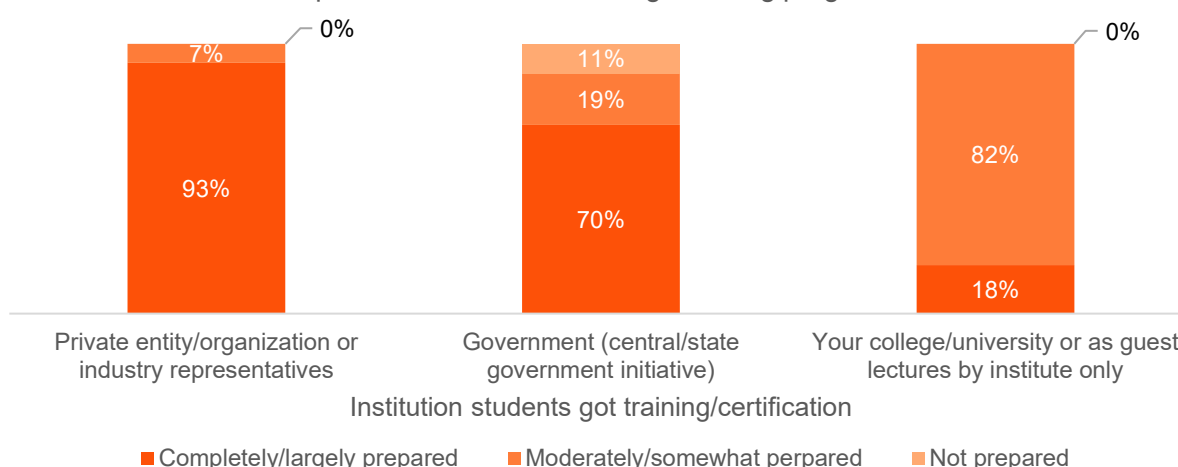
Figure 143: Preparedness for jobs in SS domain among students who attended training programs



- 59% of students who attended training programs feel moderately or somewhat prepared for jobs in the stainless-steel sector. This suggests that a large group of students lack full confidence in their job readiness, despite receiving training.

Figure 144: Preparedness of students across institutions

Training from private institutions boosts the students' confidence for job compared to Government/college training programs

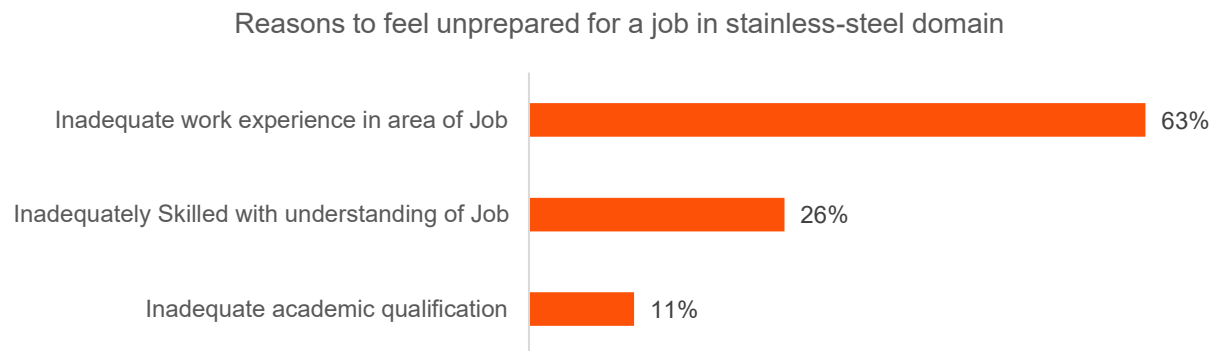


Pearson $\chi^2(4) = 113.4487$ Pr = 0.000

- When the data is disaggregated by training provider, distinct patterns can be identified:
 - Over 93% of students trained by private entities feel completely or largely prepared, with none reporting as unprepared.
 - Approx. 70% of students trained through government programs feel completely prepared.
 - In contrast, only about 18% of students trained by their own institutions feel completely or moderately prepared, indicating relatively weaker impact.
- These trends highlight the critical role of the private sector in boosting students' job readiness.
- There is significant scope for collaboration between technical education institutes and Stainless Academy to build a stronger, more aligned skilling ecosystem.

Theme 19: Reason for feeling unprepared for a job in stainless-steel domain

Figure 145: Reasons to feel unprepared for a job in stainless-steel domain

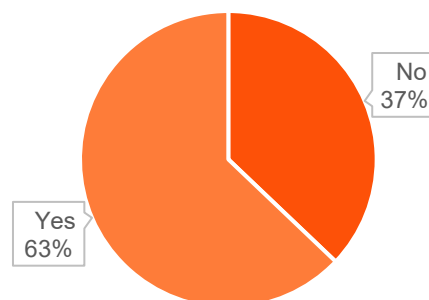


- Inadequate work experience is the leading reason, cited by 63% of students, reflecting limited exposure to industry-relevant tasks or environments.
- 26% of students attribute their unpreparedness to a lack of job-specific skills or understanding, suggesting gaps in hands-on training or applied knowledge.
- Only 11% of students attributed inadequate academic qualifications, indicating that formal education is perceived as less of a barrier than practical experience.
- These findings suggest that real-world exposure and skill-oriented training should be prioritized to enhance students' confidence and job preparedness.

Theme 20: Students' willingness to pursue additional training or skill enhancement in stainless steel-related domains

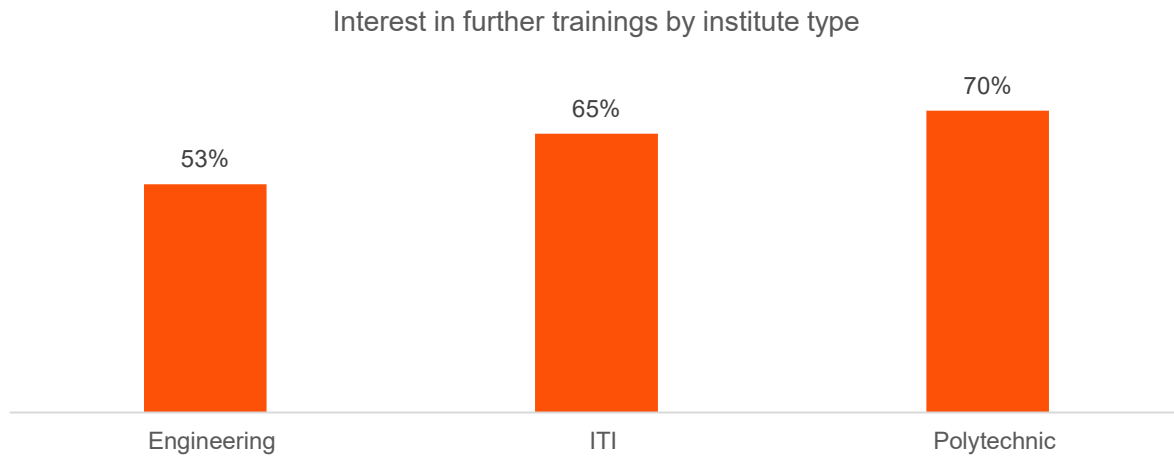
Figure 146: Wish to attain further training/skill in stainless-steel domain

Wish to attain further training/skill in stainless-steel domain



- 63% of students express interest in gaining new or further training in stainless-steel, indicating strong demand for continued skill development and learning opportunities.
- 37% of students are not interested in pursuing additional training in stainless steel, which may stem from limited awareness, perceived irrelevance, or lack of access.

Figure 147: Interest in further training by institute type

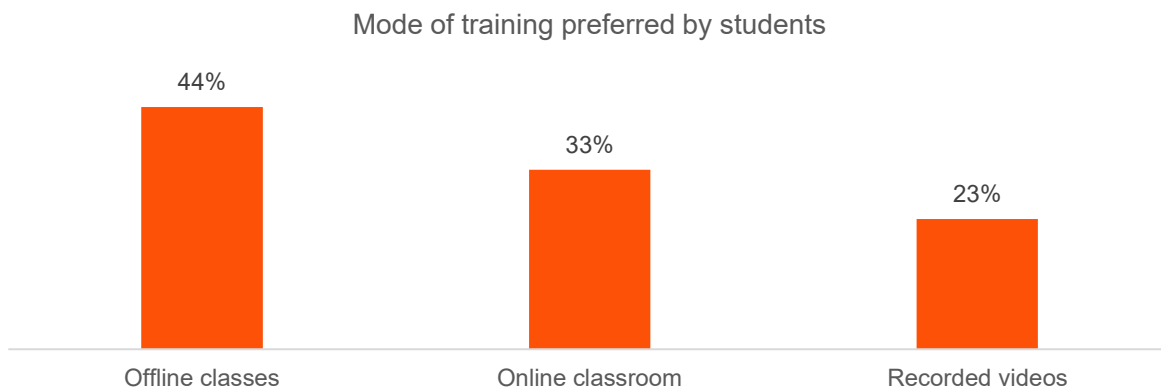


Pearson chi2(2) = 9.9828 Pr = 0.007

- Polytechnic students show the largest interest (70%) in further training, followed by ITI students (65%), and Engineering students (53%).
- The chi-square test confirms a statistically significant difference in interest levels across institute types.

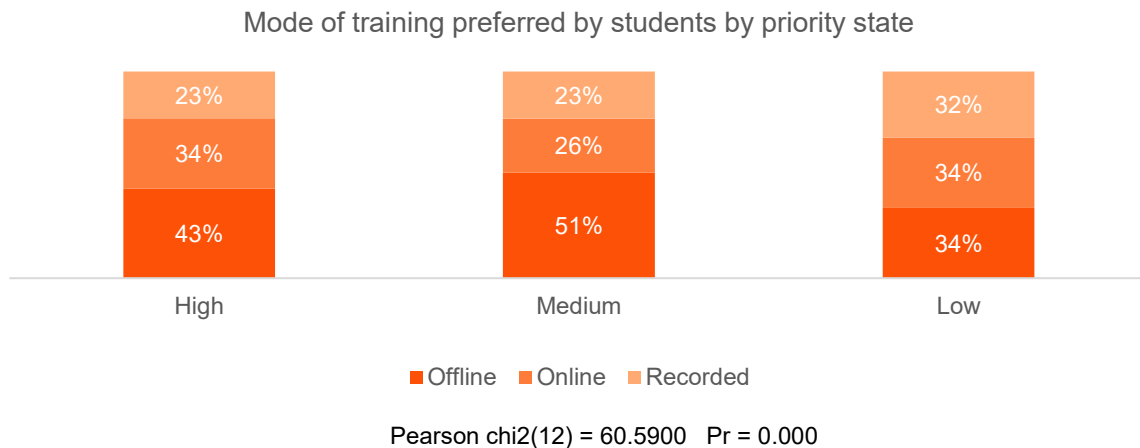
Theme 21: Preferred mode of training

Figure 148: Mode of training preferred



- Offline classes are the preferred mode (44%), indicating a strong inclination toward face-to-face interaction and hands-on learning environments.
- Online classrooms rank second (33%), suggesting openness to remote and real-time engagement.
- Recorded video sessions are least preferred (23%), likely due to limited real-time support and reduced opportunity for clarification or practice.

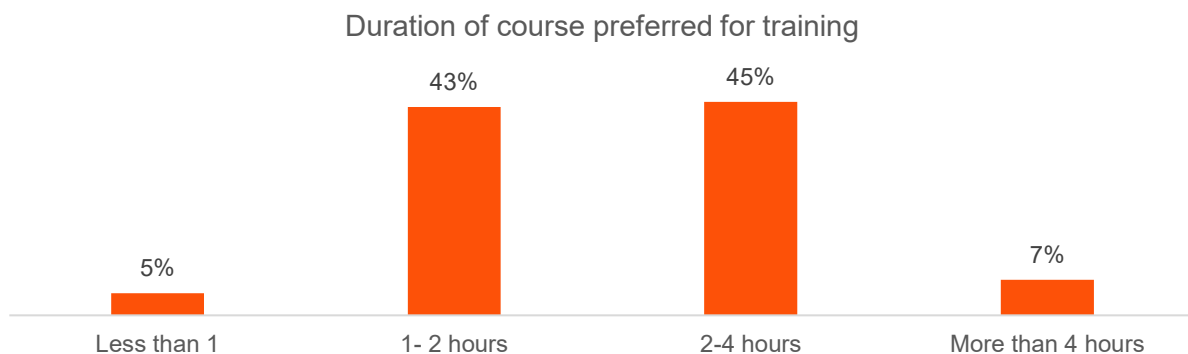
Figure 149: Mode of training preferred by students by priority state



- Offline training is predominantly preferred across all states, especially in medium-priority states (51%) and high-priority states (43%), indicating a strong demand for face-to-face, hands-on learning.
- In low-priority states, preferences are more evenly split: Offline (34%), Online (34%), and Recorded (32%).
- Online training ranks second in high-priority states (34%).
- The chi-square test confirms a statistically significant difference in mode preferences across priority state categories.

Theme 22: Students' preferences regarding the ideal duration for training sessions in SS fabrication

Figure 150: Duration of course preferred for training



- Short-format training is highly preferred, with a combined 88% of students opting for sessions up to 4 hours:
 - 2–4-hour courses are highly popular (45%).
 - 1–2-hour formats (43%), indicate a clear lean toward manageable and time-efficient modules.
- Only 7% of students prefer longer sessions exceeding 4 hours, suggesting a limited appetite for extended training blocks.
- Just 5% of students prefer sessions shorter than 1 hour.

Theme 23: Students priority when envisioning the ideal training experience for SS industry roles

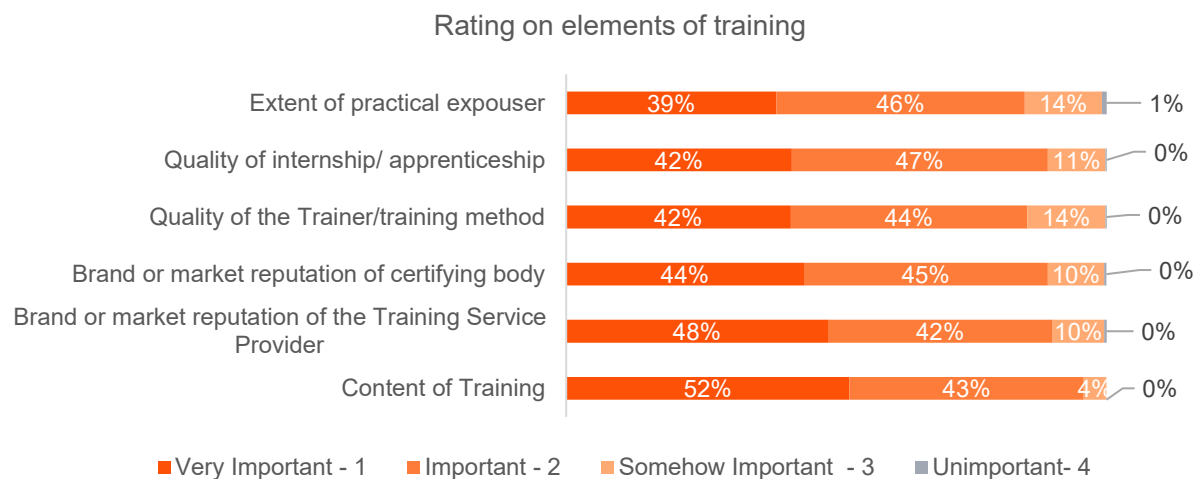
Figure 151: Expectation from future training programs



- The foremost expectation from future training programs is improved technical skills specific to stainless-steel (23%), indicating a strong need for industry-relevant expertise.
- Better understanding industry standards and practices ranks second (20%), suggesting students value structured and professional alignment.
- Internship and apprenticeship opportunities (17%) reflect demand for real-world exposure and on-the-job learning.
- Other key expectations include:
 - Career guidance (10%) and networking (10%), indicates a desire for long-term growth.
 - Exposure to new technologies (9%) highlights curiosity about innovations shaping the sector.
- Certification (6%) and job placement prospects in SS (5%) are less prioritized but still relevant.

Theme 24: Rating on different elements of training

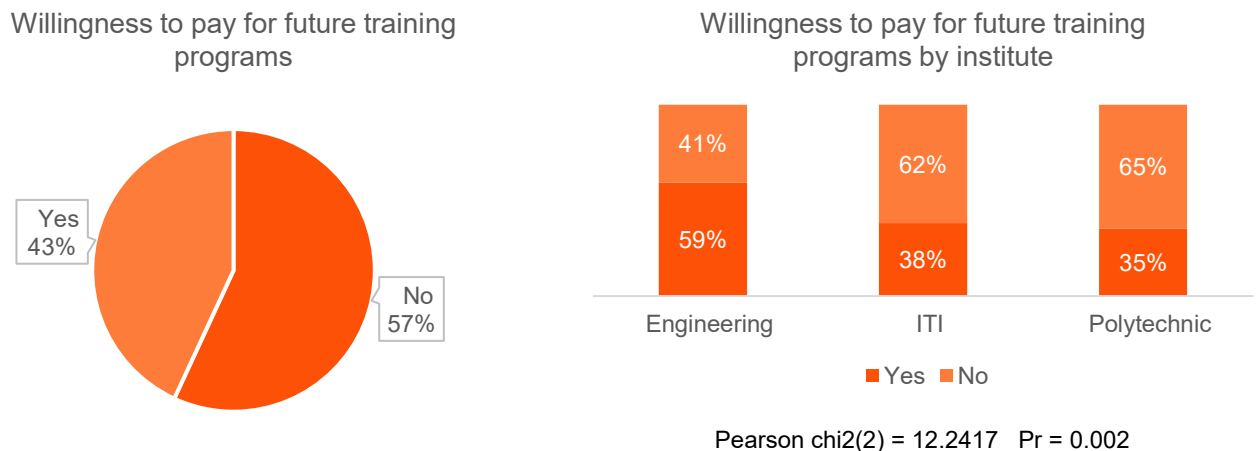
Figure 152: Rating on elements of training



- Training content stands out as the top valued element, with 52% of students rating it as "very important" and an additional 43% of students marking it "important", showing that relevance and depth of curriculum are central to students.
- Market reputation is crucial, with both the training provider (48%) and the certifying body (44%) receiving high "very important" ratings, indicating that branding and credibility significantly influence perceived employability.
- Students also value practical exposure (39%) and internship/apprenticeship quality (42%), suggesting hands-on experience is critical but slightly behind institutional reputation and content.
- Trainer quality and methodology (42%) also rank high, confirming that delivery methods impact perceived effectiveness.
- Elements rated "unimportant" are negligible (all below 1%), reinforcing that students see all listed factors as relevant, though some are clearly prioritized more.

Theme 25: Willingness to pay for future training programs

Figure 153: Willingness to pay for future training programs



- Among students interested in future training, only 43% are willing to pay for it, suggesting a limited financial readiness despite enthusiasm.
- At the institutional level:
 - 71% of Polytechnic students express interest in future training, but only 35% are willing to pay.
 - For ITI students, 38% show willingness to pay.
 - In contrast, around 60% of Engineering students who wish to pursue further training are willing to invest financially.
- The lower willingness to pay among ITI and Polytechnic students may reflect greater financial constraints compared to Engineering students, along with other interlinked factors such as perceived return on investment or accessibility.

4. Findings and Recommendations

4.1. Key Recommendations – Segment Wise

Area	Key Findings	Focused Recommendations	Type of Recommendation
Segment 1: Independent Fabricators			
Technical Understanding	- 45% fabricators face challenge in understanding basic drawings or comprehending basic technical drawings.	Offer a training module, focusing on basic technical drawings.	New Areas and Programs
Process-related	- 70% fabricators reported that Cutting, Welding, Polishing techniques are topics they would find highly beneficial for skill development training.	Develop short training modules for key processes "Welding ", "Cutting" and "Polishing".	New Areas and Programs
Material Knowledge and Usage	- 65% fabricators seek information on availability of right raw materials, which grade to use etc. - While 97% fabricators use SS, 81% fabricators also work with mild steel, indicating its popularity.	Enhance training module that focuses on materials knowledge and grade specifications, emphasizing benefits of using Stainless-steel.	Existing Content enhancements
Learning methods and past participation in training programs	- Beyond JSL's FTP program, only 25% fabricators have participated in formal training programs. - 40% of unskilled fabricators learn on their own, while 36% learn on the job; 60% of semi-skilled and 64% of skilled fabricators acquire skills primarily through on-the-job training.	Incorporate online/hybrid options within existing programs and collaborate with local training partners. Additionally, JSL's loyalty app can be utilized so that workers can learn at their own pace.	New Areas and Programs
Entrepreneurship drive	- 76% of self-employed fabricators wish to continue their business. - 58% of wage-salaried fabricators are eager to start their own business and become independent.	Initiate an entrepreneurship program to expand business avenues for self-employed fabricators and train wage-salaried fabricators in entrepreneurship basics to launch their business.	New Areas and Programs

Area	Key Findings	Focused Recommendations	Type of Recommendation
Segment 1: Independent Fabricators			
Safety Practices	- 93% of fabricators use safety tools at work - 37% fabricators reported Health & Safety as a useful training topic	Enhance existing modules on safety practices	Existing Content enhancements

Area	Key Findings	Focused Recommendations	Type of Recommendation
Segment 2: Organized Workers			
Past training programs	- Skill development is largely on-the-job, with only 18% as formally certified - Cutting, Safety and Welding are considered useful topics from past training programs	Develop short training modules for key processes "Cutting", "Safety" and "Welding "	New Areas and Programs
Quality issues	- Workers face notable challenges, especially in managing defects (12%) and lack of finishing (11%)	Offer a training module on Quality Control on enhancing finishing techniques and defect management.	New Areas and Programs
Technical Challenges	- Workers face technical challenges in fabricating complex structures (11%) and executing welding & cutting process (5%), with identified support needs highlighting fabrication training (16%), process-related training (8%), and team management (9%).	Enhance training modules to address fabrication, welding, and cutting challenges, while strengthening process-related skills and team management capabilities.	Existing Content enhancements
Awareness about social security benefits schemes.	- In terms of support needs, awareness about social security benefits (2.8%) received the least attention.	Sensitize on social security benefits by integrating a module on relevant Government schemes.	New Areas and Programs
Safety Practices	- Safety practices are emphasized, with all workers using safety tools (100%)	Enhance safety training to address high demand for safety skills and enhance workplace safety standards.	Existing Content enhancements
Mode of learning	- In-person training is preferred by 91% workers.	Focus on in-person sessions, supplemented	New Areas and Programs

Area	Key Findings	Focused Recommendations	Type of Recommendation
Segment 2: Organized Workers			
	- Despite 90% workers possessing a smartphone, yet only 23% workers use social media for learning, - WhatsApp (98%) is widely used for learning, followed by YouTube (94%) and Facebook (90%)	by digital options such as WhatsApp, YouTube and Facebook. Additionally, JSL's loyalty app can be leveraged.	

Area	Key Findings	Focused Recommendations	Type of Recommendation
Segment 3: Employers			
Emphasis on Technical Skills Requirement	- One of the top three skills for which wage premium is being paid is machine related tech skills (38%) - 65% of the employers said that machine operator is a key emerging job role. - According to 29% employers, machine operator is also a hard to fill job role. - 25% employers propose skill training in machine operations and machine related tech skills and 20% in welding/polishing. - Machine operations and related tech skills are one of the important skills that are necessary for workers to work in SS (40%) - Finishing (~40%) and welding/polishing (~35%) are the skills in which workers are least proficient in.	Design training programs focused on machine operation and other technical skills <i>(impact on all sectors)</i>	New Areas and Programs
		Enhance modules for key processes Welding, Cutting, Finishing and Polishing <i>[impact on following sectors - Coaches, Metro, Process (Industrial and Hygiene) and Wagons]</i>	Existing Content enhancements
Wage Premium	- 85% employers are willing to pay a wage premium for technically certified workers.	Enhance the module of safety training <i>(impact on all sectors except Coaches segment)</i>	Existing Content enhancements

Area	Key Findings	Focused Recommendations	Type of Recommendation
Segment 3: Employers			
	- Top 3 skills for which wage premium is being paid by employers are safety skills, functional skills, and machine related technical skills.	Design a module on Functional Skills <i>(impact on General Fabrication, Household, P&T – Industrial and Process Industrial sectors)</i>	New Areas and Programs
		Design training programs focused on machine operation and other technical skills <i>(impact on all sectors)</i>	New Areas and Programs
Significance of Quality Control in SS Domain	- The top hard to fill job role in SS domain is QC staff (37%) - QC is one of the important skills that is necessary to work in SS domain (20%) - It is one of the skill training programs proposed by 20% of the employers for the workers of their organizations.	Offer a Quality Control training as it ensures product consistency and customer satisfaction. <i>(impact on all sectors except metro and coaches)</i>	New Areas and Programs
Relevance of Soft Skills in SS domain	- According to 24% employers, it is one of the skills sets where workers are least proficient in - 20% employers propose skill training in adaptability for the workers - 35% employers said that adaptability is one of the important skills sets necessary to work in SS domain	Integrate modules of soft skills such as adaptability, teamwork, problem solving skills <i>(impact on all sectors)</i>	New Areas and Programs
Training Willingness and Preferences	- Only 46% of employers wish to impart training, indicating a moderate level of interest across all the segments - 30% of the employers can spare at least 1-2 hours daily for training of their workforce	- Enhance outreach to promote Stainless Academy's training programs, boosting employer awareness and engagement across all sectors.	New Areas and Programs

Area	Key Findings	Focused Recommendations	Type of Recommendation
Segment 3: Employers			
	and prefer in person mode of training.	- Introduce short term offline trainings <i>(impact on all sectors)</i>	
Awareness around SS grades and material knowledge	- 20% of employers propose skill training on awareness of SS grades information and material knowledge - According to 35% employers, it is the skill that is necessary for workers to effectively work in SS domain. - It is one of the skillsets where workers are least proficient in (40%)	Strengthen the content of the existing presentation/module on fundamentals of SS <i>(impact on all sectors)</i>	Existing Content enhancements
Upcoming technologies and Impact of Technology on skill set of workers	- Computer Operations, Automated Cutting and Fabrication Technology are the top 3 skillset that will be required in the workers in future due to advanced technological changes - Computerized manufacturing leads as the prominent upcoming technology across all the segments with ~65%	Offer a training program on Computerized Manufacturing (including product designs) <i>(impact on all sectors)</i>	New Areas and Programs
		Offer a training program on Computerized Operations) <i>(impact on following sectors – General fabrication, Household, Industrial Fabrication, Lift & Elevators, P&T(D), Process, Metro and Wagons)</i>	New Areas and Programs
		Design a training program on Automated cutting <i>(impact on General Fabrication, Household, Industrial Fabrication, Process – Industrial and Wagons)</i>	New Areas and Programs

Area	Key Findings	Focused Recommendations	Type of Recommendation
Stakeholder 4: Students			
Employment Preparedness and Practical Skills	- Majority of students perceive themselves as somewhat prepared for employment opportunities, with 42% feeling adequately prepared. - Strong preference for practical over theoretical skills, with 71% of engineering, 85% of polytechnic, and 68% of ITI students prioritizing technical skills. Practical content constitutes only 25-50% of curricula.	Organize industry visits, seminars, workshops, and joint projects with professionals to deepen practical skills development.	New Areas and Programs
		Restructure curricula to enhance practical content and align with industry needs.	Existing Content enhancements
Industry Standards and Technical Skills	- 67% of students express interest in manufacturing processes and enhanced technical skills, with 80% of engineering students expecting comprehensive industrial knowledge.	Provide specialized sessions on manufacturing technologies and guidance on industry standards to improve technical competencies	New Areas and Programs
Access and Training Opportunities	- Financial and geographic constraints affect access to training for 43% and 67% of students, respectively.	Facilitate online and localized training centres and promote accessible, high-quality programs to improve training reach and enrolment.	New Areas and Programs
Soft Skills and Educator Effectiveness	- Soft skills like clarity at work (58%) and adaptability (61%) are prioritized by polytechnic students. - 44% of polytechnic and 56% of ITI students feel professors' teaching effectiveness is lacking.	Incorporate soft skills modules like effective communication and active listening in curricula. <i>(impact on Polytechnic and ITI Students)</i>	Existing Content enhancements
		Evaluate and strengthen educator training programs to address delivery gaps and improve learning experience for the students. <i>(impact on Polytechnic and ITI Students)</i>	New Areas and Programs

Area	Key Findings	Focused Recommendations	Type of Recommendation
Stakeholder 4: Students			
Safety Protocols and Career Guidance	- Safety protocols are a concern for 46% of ITI students, alongside high motivation (63%) for career guidance and internships.	Integrate comprehensive safety training into curricula and establish mentorship networks connecting students with industry professionals for career advice and guidance. <i>(impact on ITI students)</i>	New Areas and Programs

Summary of Key Recommendations – Segment Wise

Independent Fabricators

- Enhance training module on material knowledge, SS grade specifications and benefits
- Develop short training modules for key processes "Welding", "Cutting" and "Polishing"
- Offer a training module covering technical drawings.
- Enhance existing programs by incorporating online/hybrid options and collaborating with local training partners. Additionally, leverage JSL's loyalty app for self-paced learning.
- Initiate an Entrepreneurship program to expand business avenues for self-employed fabricators and train wage-salaried fabricators on entrepreneurship basics.
- Enhance existing safety training

Organized Workers

- Develop short training modules for Cutting, Safety, Welding.
- Offer a training program on Quality Control to enhance finishing techniques.
- Enhance training modules to address fabrication, welding, and cutting challenges, while strengthening process-related skills and team management capabilities.
- Sensitize on social security benefits by integrating a module on relevant Govt. schemes.
- Enhance safety training
- Emphasize in-person sessions; use WhatsApp, YouTube, Facebook, JSL's loyalty app for learning.

Employers

- Offer training programs in machine operation & related technology including Fabrication technology
- Incorporate soft skills in training programs
- Enhance modules/presentation of Fundamentals of SS
- Create training programs on Automated cutting
- Introduce training on Computerised Manufacturing
- Develop training program on Computer operations
- Develop a training program in Quality Control.
- Enhance safety practices training.
- Design a module on functional skills.
- Enhance training modules in cutting, welding, finishing and polishing.

Students

- Organize regular industry visits and workshops to increase employment preparedness.
- Restructure curricula for polytechnic and engineering students to increase practical content (currently only 25-50%).
- Provide specialized sessions on manufacturing technologies for enhanced technical skills and standards.
- Facilitate online learning and localized training centers to overcome geographic constraints (impacting 67% of students)
- Evaluate and improve the Training of Trainers program to address gaps felt by ITI and polytechnic students.

4.2. Key Recommendations - Employer segment

Key Findings	Focused Recommendations
A) Auto Segment	
- Top priority skill training proposed by employers is in Adaptability (33%) followed by Safety protocols, Machine-related technology skills, and Quality control (23% each). - Least Proficient Skills of workers are Awareness of stainless-steel grades (52%), Machine-related technology skills (47%), Drawing, reading (38%), Welding/polishing (33%), Language skills (19%). - Safety skills (61%) and functional skills (44%) receive the highest wage premium by the employers, prioritizing safety and operational capabilities. - QC Staff (61%) and Machine Operators (38%) are hard to fill job roles, underscoring a demand for quality assurance and operational expertise.	- Offer training in machine-related technology. - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction. - Strengthen the content of the existing presentation on "Fundamentals of SS" - Enhance safety training along with functional skills modules. - Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving)

Key Findings	Focused Recommendations
B) Coaches Segment	
- Machine operation and Awareness of stainless-steel grades information (66% each) gained the highest priority in skill training, indicative of a strong need for operational knowledge and material understanding. - Least Proficient Skills of workers are Machine operation, Teamwork (66% each), Drawing/reading, Finishing, Welding/polishing (33% each) - Additional skills on which wage premium is being paid are Machine-related technical skills and safety (both at 100%), highlighting the emphasis on technical proficiency and safety standards. - Hard to fill job roles are Experienced Cutting Workers (66%) and Fabricator Helpers (33%), indicating a need for skilled labor in precision tasks.	- Strengthen the content of the existing presentation on "Fundamentals of SS" - Develop technical training programs that delve into complex machine operations with teamwork exercises to improve collaborative productivity. - Enhance safety training. - Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving.) - Develop short training modules on welding, cutting, polishing and finishing

Key Findings	Focused Recommendations
C) General Fabrication Segment	
- Top skill training programs proposed focuses on Awareness of stainless-steel grades information (29%), Adaptability (27%) and Quality control (27%) - Quality control (49%), Machine operation (41%), Job-specific technical skills (34%), Numeracy/Basic computational skills and Adaptability (both at 32%) are the important skills that are necessary for workers - Least Proficient Skills are Awareness of stainless-steel grades (46%), Drawing, reading (44%), Language skills (41%), Finishing (39%), and Quality control (37%). - Safety skills (88%) and functional skills (53%) are prioritized for wage premiums indicating their importance in maintaining safe and efficient production.	- Design a module on numeracy/basic computational skills - Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving). - Develop technical training programs that delve into complex machine operations and other job specific technical skills including Fabrication technology - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction. - Strengthen the content of the existing presentation on "Fundamentals of SS" - Enhance a safety skill training with a module on functional skills.
- Predominantly needs Computer Operations (100%) and Automated Cutting (50%) skills in future due to tech advancements - Computerized Manufacturing (83%) and Automation (50%) are the top upcoming technology critical for enhancing production efficiency and precision. - Fabrication Technology Technicians (83%) and Automation Specialists (66%) are the emerging job roles to meet increasing digital manufacturing needs. - Fabricator Helpers (29%) and Machine Operators (36%) top the list of hard-to-fill roles, highlighting operational labor shortages.	- Develop short term programs on computerized manufacturing. - Create a training on computer operations - Create training on automated cutting

Key Findings	Focused Recommendations
D) Household Segment	
- Top training programs proposed by employers are in Quality control (35%), Machine-related technology skills (29%) and Awareness of SS grades information (25%), indicating a need for quality-focused and tech-oriented skills. - Top Important Skills necessary for workers are Problem-solving skills (45%), Awareness of	- Strengthen the content of the existing presentation on "Fundamentals of SS" - Enhance safety skill training with an integrated module of functional skills.

Key Findings	Focused Recommendations
D) Household Segment	
stainless-steel grades information (41%), Machine operation (38%), Finishing (35%), and Stainless-steel material working skills (32%). - Least Proficient Skills in workers are Drawing, reading (41%), Welding/polishing, Machine operation (both at 38%) and Finishing (32%). - Safety skills (64%) and functional skills (48%) emerge as the leading skills for wage premium.	- Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction. - Develop training programs that delve into complex machine operations and technical skills - Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving.)
- Both Automated Cutting and Computer Operations (100%) are the skillsets that will be required in the workers due to tech changes. - Automation and Computerized Manufacturing, both at (66%) are the upcoming technologies, highlighting a shift towards streamlined, tech-driven production. - Analysts and Automation Specialists (both at 100%) are the top emerging job roles. - Fabricator Helpers (38%) and Experienced Cutting Workers (32%) are difficult to fill job roles stressing the importance of skilled manufacturing support.	- Develop short term programs on computerized manufacturing to enhance production efficiency and precision. - Create a training on computer operations - Create trainings on automated cutting

Key Findings	Focused Recommendations
E) Industrial Fabrication Segment	
- Employers place the highest priority on skill training programs in Machine operation (36%) and Machine-related technology skills (32%). - Top important skills that are necessary in workers are Job-specific technical skills, Machine operation (both at 44%), Awareness of stainless-steel grades information, Machine-related technology skills (both at 40%) and soft skills (40%) - Top Least Proficient Skills of workers are Drawing, reading, Finishing and Language skills (each at 44%), Awareness of stainless-steel grades (36%) and Machine operation (28%).	- Strengthen the content of the existing presentation on "Fundamentals of SS" - Enhance safety skill training. - Develop technical training programs that delve into complex machine operations and technical skills - Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving).

Key Findings	Focused Recommendations
E) Industrial Fabrication Segment	
- Safety skills (85%) and machine-related technical skills (45%) are the additional skills for which a wage premium is being paid.	
- Strong emphasis on skillset such as Automated Cutting and Computer Operations (100% each) due to technological changes - Automation and Computerized Manufacturing (100% each) are the upcoming technologies - Machine Operators and QC Analysts (100% each) are the top emerging job roles. crucial for ensuring high manufacturing standards and operational excellence. - Skilled Welders (52%) and QC Staff (48%) tops the list of hard to fill job roles, reflecting a focus on specialized skills and quality control.	- Develop short term programs on computerized manufacturing - Create trainings in the areas of automated cutting - Create a training on computer operations - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction.

Key Findings	Focused Recommendations
F) Lift & Elevators Segment	
- High emphasis on Adaptability and Job specific technical skills (both at 44%) as skills training programs proposed by employers - Top Skills that are necessary in workers are Awareness of stainless-steel grades information (77%), Machine-related technology skills (66%), Soft skills, (44%), and Finishing (33%) - Least Proficient Skills of workers are Job-specific technical skills (55%), Machine operation (44%), Finishing (33%), Safety protocols and Language skills (both at 11%). - Safety skills (62%) and functional skills (50%) attract premiums, reflecting their role in adhering to safety regulations and maintaining operational standards.	- Strengthen the content of the existing presentation on "Fundamentals of SS" - Introduce a safety skill training along with the module of functional skills - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction. - Develop training programs that delve into complex machine operations and technical skills - Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving).
- Balance between Computer Operations and Data Analytics (50% each) as the skillset required in workers due to tech changes reflects the need for technical and analytical abilities to improve system functionality and safety. - Balanced perception between Automation, Automated Packaging, and Automated Quality	- Develop short term programs on computer operations - Create training on Automated packaging

Key Findings	Focused Recommendations
F) Lift & Elevators Segment	
Check (50% each) as upcoming technologies points to multifaceted improvements in efficiency. - Analysts (100%) and Automation Specialists (50%) are the prominent emerging job roles - Machine Operators (44%) and Fabricator Helpers (33%) are the top hard to fill job roles	

Key Findings	Focused Recommendations
G) Metro Segment	
- Prioritizes Drawing reading, Welding/Polishing, and Numeracy skills/Basic computational skills (60% each) as the skills training programs proposed by employers - Top Skills that are necessary in workers are Awareness of stainless-steel grades information, Machine operation, Machine-related technology skills (each at 60%), Finishing and Soft skills (each at 40%). - Least Proficient Skills of workers are Welding/polishing (40%), Soft skills (40%), Drawing/reading, Machine-related technology skills (20%), and Finishing (20%). - Functional skills peg at 40%, and computer/digital skills at 20%, as additional skills for which wage premium is being paid.	- Develop technical training programs that delve into complex machine operations and technical skills - Develop short training modules on welding, polishing and finishing - Strengthen the content of the existing presentation on "Fundamentals of SS" - Design modules of functional skills, computer/digital skills and numeracy skills. - Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving)
- Skills in Computer Operations, Data Analytics, and Fabrication Technology are critical (100% each) due to tech changes, reinforcing a comprehensive digital integration for infrastructure optimization. - Automated Packaging (100%) and Computerized Product Design (100%) are the top upcoming technologies - Analysts and Automation Specialists, both at 100%, are the key emerging job roles. - The top hard to fill job roles are Skilled Welders (60.00%) and CAD Operators (20.00%), which are essential for handling complex projects.	- Create a training on computer operations including computerized product design - Develop training programs on automated packaging. - Create a module on data analytics

Key Findings	Focused Recommendations
H) Pipe & Tube (P&T) - Industrial Segment	
- Key area in which training programs are proposed by employers are Problem-solving skills followed by Quality control (both at 60%), highlighting a strong need for analytical, quality-oriented training. - Top Skills that are necessary in workers are Job-specific technical skills (80%), Machine-related technology skills (80%), Machine operation (40%), Numeracy skills/Basic computational skills (40%) and Safety protocols (40%). - Least Proficient Skills for workers are Language skills (80%), Drawing, reading (60%), Welding/polishing (60%), Finishing (40%) and Awareness of stainless-steel grades (20%) - Adaptability (50%) and functional skills (50%) are the key additional skills receiving wage premiums. - Experienced Fitters (60%) and Skilled Welders (40%) are the hard to fill job roles, emphasizing a dearth of specialized skill sets.	- Strengthen the content of the existing presentation on "Fundamentals of SS" - Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving). - Develop training programs that delve into complex machine operations and technical skills - Design modules on numeracy/basic computational skills and functional skills - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction.

Key Findings	Focused Recommendations
I) Pipe & Tube (P&T) - Decorative Segment	
- Machine operation is emphasized (29%) along with Quality control and Stainless-steel material working skills (22% each) as the skills training programs proposed by the employers - Top Skills that are necessary in workers are Adaptability (41%), Job-specific technical skills, Quality control (both at 39%), Machine operation (37%) and Awareness of stainless-steel grades information (29%) - Top Least Proficient Skills of workers are Drawing, reading (47%), Language skills (41%), Awareness of stainless-steel grades (37%), Finishing (35%), Welding/polishing (31%). - Functional skills (55%) and safety skills (55%) are the top additional skills for which wage premium is being paid.	- Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving). - Strengthen the content of the existing presentation on "Fundamentals of SS" - Enhance safety skill training along with functional skill module. - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction. - Develop training programs that delve into complex machine operations and technical skills including fabrication technology

Key Findings	Focused Recommendations
I) Pipe & Tube (P&T) - Decorative Segment	
- Skillset required in workers due to tech changes in the future are Computer Operations (69%) and Fabrication Technology (46%), indicating an investment in precision and digital processes. - Automation and Computerized Manufacturing (both at 53%) are the top upcoming technologies. - Machine Operators (84%) and Fabrication Technology Technicians (61%) are the key emerging job roles. - Skilled Welders (39%) and Machine Operators (20%) lead in the category of hard to fill job roles, indicating the need for technical and precise manufacturing skills.	- Develop short term programs on Computerized manufacturing to enhance production efficiency and precision. - Create a training on computer operations

Key Findings	Focused Recommendations
J) Process - Hygiene Segment	
- Highest priority on Adaptability (42%) and Machine operation (23%) as the proposed skills training programs - Top Skills necessary in workers are Machine-related technology skills (42.86%), Soft skills (42%), Quality control (42%), Awareness of stainless-steel grades information (33%) and Job-specific technical skills (33%). - Top Least Proficient Skills of workers are Awareness of stainless-steel grades (23%), Drawing, reading (57%), Finishing (47%), Soft skills (23%), Welding/polishing (57%). - Safety skills (70%) and functional skills (75%) tops the list of additional skills for which wage premium is being paid, highlighting the importance of safety in process management.	- Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving) - Strengthen the content of the existing presentation on "Fundamentals of SS" - Enhance safety skill training along with a module on functional skills - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction. - Develop technical training programs that delve into complex machine operations and technical skills including fabrication technology - Develop short training modules on welding, polishing and finishing
- Skillset required in workers due to tech changes are in Computer Operations (100%) and Quality Checking skill, highlighting essential operational and digital expertise. - Computerized Manufacturing (100%) and Automation (50%) are the top upcoming technologies in the segment.	- Develop short term programs on computerized manufacturing - Create a training on computer operations - Develop specific modules on cutting

Key Findings	Focused Recommendations
J) Process - Hygiene Segment	
- Emerging job roles due to tech changes are Fabrication Technology Technicians (100%) and Automation Specialists (50%) - QC Staff (42.86%) and Experienced Cutting Workers (33.33%) are hard to fill job roles.	

Key Findings	Focused Recommendations
K) Process – Industrial Segment	
- Highest priority is given to skills training programs on Awareness of stainless-steel grades information and Problem-solving skills (both at 35%) - Top important skills that are necessary in workers are Machine-related technology skills (50%), Quality control (45%), Machine operation (40%), Safety protocols (25%) and Stainless-steel material working skills (40%). - Top Least Proficient Skills in workers are Awareness of stainless-steel grades (70%), Drawing, reading (45%), Finishing (40%), Machine operation (10%), Welding/polishing (35%). - Safety skills (72%) and functional skills (55%) command premiums, crucial for maintaining industrial standards and efficiency.	- Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving). - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction. - Strengthen the content of the existing presentation on “Fundamentals of SS” - Enhance training in safety skills along with a module on functional skills - Develop technical training programs that delve into complex machine operations and technical skills - Develop short training modules on welding, polishing and finishing
- Automated Cutting, Computer Operations, and Data Analytics (each 66%) are the Skillset required in workers due to tech changes - Computerized Manufacturing and Computerized Product Design (both at 66%) are the top upcoming technologies. - Analysts (100%) and Automation Technicians (66%) are the top emerging job roles, indicating a shift towards tech-driven process improvements. - Skilled Welders (55%) and QC Staff (25%) are hard to fill job roles, reflecting a need for quality and welding proficiency.	- Create trainings in Automated cutting - Create a training on computer operations - Develop short term programs on computerized manufacturing including computerized product design

Key Findings	Focused Recommendations
L) Wagons Segment	
- Skills training in Welding/Polishing (33%) and Stainless-steel material working skills (28%) are highly prioritized by the employers - Top Skills necessary in workers are Job-specific technical skills (47%), Machine operation (42%), Adaptability (42%), Problem-solving skills (38%) and Awareness of stainless-steel grades information (38%). - Least Proficient Skills of workers are Drawing, reading (52%), Finishing (42%), Language skills (42%) Welding/polishing (33%) and Awareness of stainless-steel grades (28%) - Safety skills (73%) and teamwork (53%) are highly valued additional skills for which employers are paying wage premiums.	- Design a module on soft skills (such as Adaptability, Teamwork and Problem Solving). - Strengthen the content of the existing presentation on "Fundamentals of SS" - Enhance safety skill training with teamwork exercises to improve collaborative productivity. - Develop technical training programs that delve into complex machine operations and technical skills including fabrication technology - Develop short training modules on welding, polishing and finishing
- Fabrication Technology (100%) and Automated Cutting are the Skillset required in workers due to tech changes. - Top upcoming technology are Automated Quality Check and Computerized Manufacturing (100% each) signal prioritizing quality assurance and digital manufacturing excellence. - Fabrication Technology Technicians and Analysts (100% each) tops the list of emerging job roles. - Hard to fill job roles in this segment are QC Staff (23%) and Machine Operators (23%), which are crucial for maintaining production quality and efficiency.	- Develop short term programs on computerized manufacturing to enhance production efficiency and precision. - Create training on automated cutting. - Offer a course on QC training as it ensures product reliability, consistency and customer satisfaction.

Summary of Recommendations – Employer segments

Based on the employer segment-wise mapping of program recommendations, the recommended training programs can be prioritized by the Stainless Academy.

Table 8: Recommendations summary across employer segments (1/2)

Recommendations	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators
Training in Machine related Technology (Machine ops, Fabrication technology)						
Training in Computerized Manufacturing (Product design/CAD)						
Training on Quality Control						
Short modules on welding, cutting, polishing and finishing						
Modules on Soft Skills						
Training on Automated Operations (Packaging)						
Training on Automated Operations (Cutting)						
Training in Computer Operations						
Module on Functional skills						
Safety training						
Enhancing the existing module/ presentation on SS Fundamental						

Table 9: Recommendations summary across employer segments (2/2)

Recommendations	Metro	P&T – Decorative	P&T – Industrial	Process – Hygiene	Process – Industrial	Wagons
Training in Machine related Technology (Machine ops, Fabrication technology)						
Training in Computerized Manufacturing (Product design/CAD)						
Training on Quality Control						
Short modules on welding, cutting, polishing and finishing						

Recommendations	Metro	P&T – Decorative	P&T – Industrial	Process – Hygiene	Process – Industrial	Wagons
Modules on Soft Skills						
Training on Automated Operations (Packaging)						
Training on Automated Operations (Cutting)						
Training in Computer Operations						
Module on Functional skills						
Safety training						
Enhancing the existing module/ presentation on SS Fundamental						

5. Annexure

5.1. Annexure A: Detailed Sampling Methodology

The detailed steps undertaken during the sampling methodology stage are elaborated below:

1) Selection of geographies

Nine priority states were identified for the study based on a rigorous evaluation of economic growth, steel demand potential, working age population, and the availability of training infrastructure. Each parameter was assigned a specific weightage, reflecting the strategic priorities of the Stainless Academy and the broader stainless-steel industry.

Table 10: Parameter selection criteria and rationale for geographic selection

Indicator	Rationale	Definition
Economic Growth	Economic growth is a critical indicator of a state's overall economic health and its capacity to support and sustain industrial activities, including the stainless-steel sector. States with higher economic growth are likely to have better infrastructure, resources, and market potential, making them prime candidates for targeted training and development initiatives.	Economic growth is measured based on the projected Gross Domestic Product (GDP) for each state for the fiscal year 2023-24.
Steel Demand Potential	Steel demand potential serves as a proxy for stainless steel demand due to the lack of specific state-wise stainless steel demand data. Understanding the general steel demand helps identify regions with a high potential for converting steel users to stainless steel users, thereby expanding the market for stainless steel products.	Steel demand potential is assessed based on the data provided in the World Steel Association Report (2018).
Training Infrastructure	The availability and quality of training infrastructure are crucial to developing a skilled workforce capable of meeting the industry's needs. By assessing the existing training facilities, the study can identify regions with strong educational and vocational training support, which are essential for effective skill development in the stainless-steel sector.	Training infrastructure is evaluated based on the following components: • NSDC Centers: Availability of National Skill Development Corporation centers offering stainless steel-related courses. • ITI Courses: Number of Industrial Training Institutes offering courses in Fabrication and Production & Manufacturing. • AICTE-Approved Colleges: Presence of All India Council for Technical Education-approved Engineering and Polytechnic Colleges offering

Indicator	Rationale	Definition
		Degree/Diploma courses in Metal/Metallurgy.
Working Age Population	The working age population is a crucial factor in determining the availability of a labor force capable of participating in training programs and contributing to the industry. States with a larger working age population offer a greater pool of potential trainees and workers, which is essential for workforce development in the stainless-steel sector.	The working age population is defined as the segment of the population aged 15-64 years.

An evaluation of 29 states was conducted based on the aforementioned parameters to identify top-ranking states that could potentially offer the optimal ecosystem for the expansion activities of Stainless Academy.¹

Table 11: Geographic Selection Criteria

Parameters	High	Medium High	Medium Low	Low
Economic growth	Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, West Bengal	Assam, Bihar, Chhattisgarh, Haryana, Jharkhand, Kerala, Madhya Pradesh, Odisha, Punjab	Goa, Himachal Pradesh, J&K, Manipur, Meghalaya, Sikkim, Uttarakhand	Arunachal Pradesh, Mizoram, Nagaland, Tripura
Steel Demand Potential	Gujarat, Haryana, Maharashtra	Andhra Pradesh, Chhattisgarh, Jharkhand, Karnataka, Odisha, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand	Arunachal Pradesh, Assam Bihar, Goa, Himachal Pradesh, J&K, Kerala, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tripura, West Bengal	

¹ Key Considerations for the parameters:

- Economic growth is calculated based on projected State GDP for FY 2023-24; Economic growth (in INR lakhs crores): <0.4: Low, 0.4 – 3.9: Medium Low; 4 – 13.9: Medium High; >14: High. Given the unavailability of state wise SS demand data and potential of converting steel users to SS, we have considered steel demand potential as a parameter. Steel demand potential is based on the World Steel Association Report (2018). Training infrastructure is based on (a) Availability of NSDC centers offering SS-related courses (SS Tubing Technician, Fitter Fabrication, Tool & Die Maker, MIG/MAG/GMAW, Senior Manual Metal Arc Welder, Welder, Industrial Welder), (b) No of ITIs offering courses on Fabrication and production & manufacturing (Trades include Draughtsman, Fitter, Machinist (Grinder), Machinist, Tool & Die Maker (Press Tools, Jigs and Fixtures)), (c) AICTE approved Engineering & Polytechnic Colleges that offer Degree / Diploma on Metal / Metallurgy
- Training infrastructure (no of institute): <100: Low, 100-350: Medium Low, 350-600: Medium High, >600: High. Working age population (lakhs): <11: Low, 11-150: Medium Low, 150-400: Medium High, >400: High.
- Source: NSDC, NCVT MIS, AICTE, World Steel Association, Forbes India, PwC Analysis

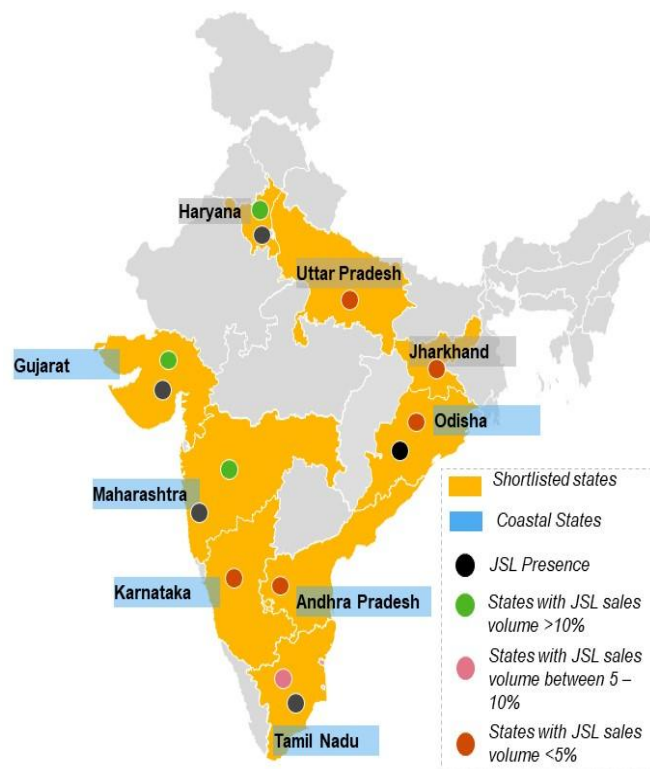
Parameters	High	Medium High	Medium Low	Low
Training infrastructure	Bihar, Karnataka , Madhya Pradesh, Maharashtra , Odisha , Rajasthan, Uttar Pradesh	Andhra Pradesh , Gujarat , Haryana , Jharkhand , Tamil Nadu , West Bengal	Chhattisgarh, Himachal Pradesh, Kerala, Punjab, Telangana, Uttarakhand	Arunachal Pradesh, Assam, Goa, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura
Working age population	Bihar, Gujarat , Karnataka , Madhya Pradesh, Maharashtra , Rajasthan, Tamil Nadu , Uttar Pradesh , West Bengal	Andhra Pradesh , Assam, Chhattisgarh, Haryana , Jharkhand , Kerala, Punjab, Odisha , Telangana	Goa, Himachal Pradesh, J&K, Manipur, Meghalaya, Nagaland, Tripura, Uttarakhand	Arunachal Pradesh, Mizoram, Sikkim

2) Prioritization of states for the survey

Based on the evaluation indicators mentioned above, nine states were shortlisted and subsequently ranked according to their prioritization for program implementation. Furthermore, a weighted average method was employed to categorize these nine states into High-priority, Medium-priority, and Low-priority groups. Each criterion was assigned a specific weightage (in %) to accurately reflect its relative importance.

The criterion includes parameters such as JSL presence, presence of steel and stainless-steel clusters, MSME units, employment levels, training infrastructure, and government support. Special considerations are also made for states with strategic beneficiary segments. This multi-faceted approach ensures a robust and data-driven method for selecting states that offer the optimal environment for the expansion activities of the Stainless Academy.

Figure 154: Priority states shortlisted



3) Sample size calculation

a. Sample group for Employers

Based on the simple ratio method for states (5:4:3) the sample size for employers was determined as illustrated below:

Table 12: Detailed sample group for demand side: Employers

Sample/Prioritization in State	High	Medium	Low
Number of states	5	3	1
Ratio of samples	5	4	3
Total Samples	156	75	19
Sample/State	31	25	19

The sample size for employers was further categorized into 12 key segments based on the sectoral nature of their work. This segmentation was vital for acquiring detailed segment-specific insights, enabling Stainless Academy to strategically prioritize future programs for segments requiring greater attention. The 12 priority segments identified are: Auto, Coaches, General Fabrication, Household, Industrial Fabrication, Lift & Elevators, Metro, Process-Hygiene, Process-Industrial, Pipe & Tube- Decorative, Pipe & Tube- Industrial and Wagons/Railways.

b. Sample group for Independent fabricators, Organized workers and Students

Based on the simple ratio method for states (5:4:3), the sample sizes for the other three stakeholder groups (independent fabricators, organized workers, and students) were determined, as illustrated below:

Table 13: Detailed sample group for supply side: Fabricators, workers and students

Sample/Prioritization in State	High	Medium	Low
Number of states	5	3	1
Ratio of samples	5	4	3
Total Samples	1000	480	120
Sample/State	200	160	120

Per unit beneficiary	200	160	120
Independent fabricators	70	60	45
Organized workers	70	60	45
Students	60	40	30

4) Identification of beneficiaries – Independent Fabricators

The enumerators were tasked with coordinating with 605 fabricators to facilitate their participation in the TNA study across 9 priority states. Stainless Academy had already established a presence in seven of these states through their Fabricators Training Program (FTP), engaging independent fabricators. Upon a thorough examination of the FTP database, four cities in each state with the highest concentration of fabricators were shortlisted, resulting in the identification of 3,770 independent fabricators to participate in the Training Needs Assessment (TNA) survey. Enumerators reached out to the fabricators from the FTP database based on their availability for participation in the study. For the remaining two states, Tamil Nadu and Andhra Pradesh, where the FTP database was unavailable, Stainless Academy provided guidance and established eligibility criteria to ensure the accurate identification of independent fabricators.

Table 14: Beneficiaries identified for Independent Fabricators sample

Category	High-priority states				Medium-priority states		Low priority state	Additional fabricators to be identified		TOTAL
	Gujarat	Haryana	Uttar Pradesh	Odisha	Maharashtra	Karnataka	Jharkhand	Tamil Nadu	Andhra Pradesh	
Target - Independent fabricators	93	93	93	93	74	74	55	15	15	605
4 Cities selected with max. FTP data	167	610	1548	344	528	231	336	6	9	3770
Name of 4 cities shortlisted & data available in the city	Ahmedabad (38), Rajkot (30), Junagadh (99)	Punjab (124), Hissar (130), Karnal (172), Narwana (184)	Agra (405), Kanpur (738), Varanasi (405)	Bhubaneswar (17), Anugul (72), Keonjhar (140), Raiganj (115)	Pune (38), Latur (266), Nanded (224)	Belgaum (231)	Hazaribagh (122), Ranchi (214)	Chennai	Amravati	

5) Identification of beneficiaries – Organized Workers

The enumerators were tasked with coordinating with 575 workers to facilitate their participation in the TNA study across 9 priority states. The approach agreed upon for identifying organized workers involved mobilizing them through select employers in each state as part of the Training Needs Assessment (TNA) survey. By focusing on a segment-wise strategy, workers from these employers offered valuable perspectives on both the demand and supply aspects across various SS segments. This approach ensured that organized workers across the 12 segments were comprehensively covered, providing a holistic understanding of the SS industry landscape.

6) Identification of beneficiaries – Employers

The enumerators were tasked with coordinating with 250 employers to facilitate their participation in the TNA study across 9 priority states. The employer database of 1,347 employers was aggregated from two sources: customer database of JSL and JSSL. These employers were active enterprises engaged in fabrication work within the stainless-steel industry. Stainless Academy categorized them into 12 key segments based on the sectoral nature of their work. This segmentation was pivotal in obtaining detailed,

segment-specific insights, allowing Stainless Academy to identify which segments required increased focus and to understand the specific training needs highlighted by stakeholders.

Table 15: Beneficiaries identified for Employers sample

Segment	High-priority states					Medium-priority states			Low priority state	TOTAL
	Gujarat	Haryana	Tamil Nadu	Uttar Pradesh	Odisha	Andhra Pradesh	Maharashtra	Karnataka	Jharkhand	
Sample Target	31	32	31	31	31	25	25	25	19	250
Auto	5	7	3	2	0	0	4	0	0	21
Coaches	1	1	1	0	0	0	0	0	0	3
General Fabrication	7	5	7	5	3	0	6	7	1	41
Household	7	5	5	5	0	2	3	3	1	31
Industrial Fabrication	2	3	6	6	3	3	2	0	0	25
Lift and Elevators	1	2	1	2	0	0	2	1	0	9
Metro	2	1	1	0	0	0	0	1	0	5
P&T-Decorative	8	2	2	5	11	1	5	6	8	48
P&T - Industrial	1	1	0	1	0	0	2	0	0	5
Process Hygiene	1	3	2	4	0	6	3	2	0	21
Process - Industrial	2	4	2	2	1	2	3	3	1	20
Railways/ Wagons	1	6	6	5	0	1	1	1	0	21
Final Sample	38	40	36	37	18	15	31	24	11	250

7) Identification of beneficiaries – Students

The enumerators were tasked with coordinating with 450 students to facilitate their participation in the TNA study across 9 priority states. The survey aimed to gather valuable insights from current students and recent alumni (within two years), either aspiring to advance in the stainless-steel industry or having enrolled in relevant steel courses. Targeted participants hailed from engineering colleges, Government ITIs, and Polytechnics within the 9 states. Stainless Academy leveraged existing partnerships with leading academic institutions in four states – Government Polytechnic Hisar (Haryana), NIT Trichy (Tamil Nadu), IIT BHU (Uttar Pradesh), Government ITI Jajpur, and Government Polytechnic Jajpur (Odisha), while also reaching out to new institutions. The study focused on students (current or alumni) from the following courses: a) final or third-year students in Mechanical or Metallurgical Engineering, or those aspiring toward stainless steel electives, b) recent alumni from the mentioned courses, enrolled in steel-related education, and c) Students or alumni from the last batch pursuing welder's or fitter's courses in the case of ITI.

Table 16: Beneficiaries identified for Students sample

State	Students – targets (total)	Engineering	Polytechnic	ITI
Gujarat	60	20	20	20
Haryana	60	20	20	20
Tamil Nadu	60	20	20	20
Uttar Pradesh	60	20	20	20
Odisha	60	20	20	20
Andhra Pradesh	40	14	13	13
Maharashtra	40	14	13	13
Karnataka	40	14	13	13
Jharkhand	30	10	10	10
TOTAL	450	152	149	149

5.2. Annexure B: Data Tabulation

5.2.1. Independent fabricators

1) Process experience in stainless steel amongst states

Work experience in stainless steel (count) (multiple choice question)										
Products	Andhra Pradesh - 17	Gujarat - 94	Haryana - 102	Jharkhand - 56	Karnataka - 82	Maharashtra - 74	Odisha - 96	Tamil Nadu - 15	Uttar Pradesh - 93	Grand Total - 629
Sales & Supply	-	-	1	1	-	2	10	-	10	24
Polishing	2	49	76	43	81	70	64	3	79	467
Welding	12	84	95	54	82	71	69	13	79	559
Cutting	12	84	81	55	82	70	85	15	80	564

Work experience in stainless steel (% state/column-wise) (multiple choice question)										
Row Labels	Andhra Pradesh	Gujarat	Haryana	Jharkhand	Karnataka	Maharashtra	Odisha	Tamil Nadu	Uttar Pradesh	Grand Total
Sales & Supply	0%	0%	1%	2%	0%	3%	10%	0%	11%	4%
Polishing	12%	52%	75%	77%	99%	95%	67%	20%	85%	74%
Welding	71%	89%	93%	96%	100%	96%	72%	87%	85%	89%
Cutting	71%	89%	79%	98%	100%	95%	89%	100%	86%	90%

2) Total work experience in stainless steel industry

Total work experience in stainless steel industry (count)										
	Andhra Pradesh - 17	Gujarat - 94	Haryana - 102	Jharkhand - 56	Karnataka - 82	Maharashtra - 74	Odisha - 96	Tamil Nadu - 15	Uttar Pradesh - 93	Grand Total - 629
Less than 1 year - 2 years	17	78	30	49	1	3	11	-	3	192
3-5 years	-	16	26	5	46	17	31	-	22	163
5-10+ years	-	-	46	2	35	54	54	15	68	274

Total work experience in stainless steel industry (% state/column-wise)										
	Andhra Pradesh	Gujarat	Haryana	Jharkhand	Karnataka	Maharashtra	Odisha	Tamil Nadu	Uttar Pradesh	Grand Total
Less than 1 year - 2 years	100%	83%	30%	88%	1%	4%	11%	-	3%	30%
3-5 years	-	17%	25%	8%	56%	23%	32%	-	24%	26%
5-10+ years	-	-	45%	4%	43%	73%	57%	100%	73%	44%

3) Highest education qualification

Highest Education Qualification (count)										
Products	Andhra Pradesh - 17	Gujarat - 94	Haryana - 102	Jharkhand - 56	Karnataka - 82	Maharashtra - 74	Odisha - 96	Tamil Nadu - 15	Uttar Pradesh - 93	Grand Total
Below Class X - Class XII	17	77	91	42	69	52	75	3	64	490
Diploma certificate from ITI or Polytechnic	-	15	7	1	12	14	4	7	1	61
Graduation from Engineering/ non-Engineering college and Post Graduation	-	2	4	13	1	8	17	5	28	78

Highest Education Qualification (% state/column-wise)										
Products	Andhra Pradesh	Gujarat	Haryana	Jharkhand	Karnataka	Maharashtra	Odisha	Tamil Nadu	Uttar Pradesh	Grand Total
Less than secondary school	94%	15%	31%	4%	28%	11%	0%	7%	8%	16%
Secondary school (Class X)	6%	46%	36%	27%	34%	30%	51%	0%	43%	37%
Higher secondary school (Class XII)	0%	21%	22%	45%	22%	30%	27%	13%	18%	24%
Diploma certificate from ITI	0%	11%	6%	2%	15%	8%	4%	7%	1%	7%
Diploma certificate from Polytechnic	0%	5%	1%	0%	0%	11%	0%	40%	0%	3%
Graduation from Engineering college	0%	1%	1%	4%	1%	5%	2%	20%	3%	3%
Graduation from non-Engineering college	0%	0%	0%	13%	0%	3%	11%	13%	23%	7%
Beyond graduation/Post-Graduation	0%	1%	3%	7%	0%	3%	4%	0%	4%	3%

4) Products within stainless steel that fabricators work on

Products within stainless steel you are working on (count)										
Products	Tamil Nadu – 15	Andhra Pradesh-17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana – 102	Grand Total - 629
Gates	9	13	55	72	82	86	62	76	88	543
Grills	6	14	46	68	80	84	46	75	78	497
Railings	5	14	55	70	81	84	51	76	14	450
Furniture	-	1	35	42	62	40	54	19	8	261
Tables	2	-	15	52	58	45	44	25	6	247
Chairs/ Stools	2	-	14	46	37	31	31	15	11	187
Ladders	6	-	2	34	3	39	28	30	4	146
Racks and Cabinet	4	-	-	7	1	18	11	44	5	90
Structural frames	9	-	-	1	-	18	4	50	3	85
Food counters	-	-	-	1	1	15	-	16	2	35
Pipes and accessories	1	-	-	-	-	5	-	19	-	25
Swings	-	-	-	2	-	6	13	-	2	23
Cladding embellishments	-	-	-	2	-	-	1	-	-	3

Products within stainless steel you are working on (% age)										
Products	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
Gates	1%	2%	9%	11%	13%	14%	10%	12%	14%	86%
Grills	1%	2%	7%	11%	13%	13%	7%	12%	12%	79%
Railings	1%	2%	9%	11%	13%	13%	8%	12%	2%	72%
Furniture	0%	0%	6%	7%	10%	6%	9%	3%	1%	41%
Tables	0%	0%	2%	8%	9%	7%	7%	4%	1%	39%
Chairs/ Stools	0%	0%	2%	7%	6%	5%	5%	2%	2%	30%
Ladders	1%	0%	0%	5%	0%	6%	4%	5%	1%	23%
Racks and Cabinet	1%	0%	0%	1%	0%	3%	2%	7%	1%	14%
Structural frames	1%	0%	0%	0%	0%	3%	1%	8%	0%	14%
Food counters	0%	0%	0%	0%	0%	2%	0%	3%	0%	6%
Pipes and accessories	0%	0%	0%	0%	0%	1%	0%	3%	0%	4%
Swings	0%	0%	0%	0%	0%	1%	2%	0%	0%	4%
Cladding embellishments	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

5) Challenges faced by fabricators

What are the challenges you face in your day-to-day activities? (Count)										
Products	Andhra Pradesh - 17	Gujarat - 94	Haryana - 102	Jharkhand - 56	Karnataka - 82	Maharashtra - 74	Odisha - 96	Tamil Nadu - 15	Uttar Pradesh - 93	Grand Total - 629
Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	17	92	16	47	72	29	93	5	56	427
Issue related to understanding basic drawings or comprehending basic engineering terms	4	45	62	36	42	28	37	1	30	285
In process of welding, cutting (Process related)	-	4	21	14	34	27	1	2	36	139
While executing and installing/ commissioning/ Maintenance the product	-	2	1	11	34	14	1	2	13	78
Basic Numerical skills	-	1	4		28	12	3	2	7	57
Issues such as challenges with fasteners, Nuts & Bolts, Accessories etc. at the use or maintenance levels	-	1	4	1	15	15	1	-	9	46
Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	-	3	3	3	6	19	1	1	8	44
Customer management related	-	-	9	-	-	8	1	4	10	32
Access to finance	-	1	8	-	5	4	3		4	25
No challenges faced	-	-	-	-	-	-	-	3	-	3

What are the challenges you face in your day-to-day activities? (%age column-wise)										
Products	Andhra Pradesh	Gujarat	Haryana	Jharkhand	Karnataka	Maharashtra	Odisha	Tamil Nadu	Uttar Pradesh	Grand Total
Availability of desired type of raw material i.e., of specific grade, size (Material related)	100%	98%	16%	84%	88%	39%	97%	33%	60%	68%
Issue related to understanding basic drawings or comprehending basic engineering terms	24%	48%	61%	64%	51%	38%	39%	7%	32%	45%
In the process of welding, cutting (Process related)	0%	4%	21%	25%	41%	37%	1%	13%	39%	22%
While executing and installing/ commissioning/ Maintenance the product	0%	2%	1%	20%	41%	19%	1%	13%	14%	12%
Basic Numerical skills	0%	1%	4%	0%	34%	16%	3%	13%	8%	9%
Issues such as challenges with fasteners, Nuts & Bolts, Accessories etc. at the use or maintenance levels	0%	1%	4%	2%	18%	20%	1%	0%	10%	7%
Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	0%	3%	3%	5%	7%	26%	1%	7%	9%	7%
Customer management related	0%	0%	9%	0%	0%	11%	1%	27%	11%	5%
Access to finance	0%	1%	8%	0%	6%	5%	3%	0%	4%	4%
No challenges faced	0%	0%	0%	0%	0%	0%	0%	20%	0%	0.5%

6) Use of safety tools at work

Do you use safety tools at work? (count)										
	Tamil Nadu - 15	Andhra Pradesh - 17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana - 102	Grand Total - 629
No	-	-	-	-	-	19	1	23	-	43
Yes	15	17	56	74	82	74	93	73	102	586

Do you use safety tools at work? (%age row/state-wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
No	-	-	-	-	-	3%	0%	4%	-	7%
Yes	2%	3%	9%	12%	13%	12%	15%	11%	16%	93%

7) Types of safety tools used at work

What types of the listed safety tools at work do you use on a regular basis? (count)

	Tamil Nadu – 15	Andhra Pradesh – 17	Jharkhand – 56	Maharashtra – 74	Karnataka – 82	Uttar Pradesh – 74	Gujarat – 93	Odisha – 73	Haryana – 102	Grand Total – 586
Welding helmets	12	1	34	61	82	47	50	57	91	435
Welding gloves	13	5	47	66	80	56	45	27	13	352
Safety Goggles	2	-	9	55	67	60	29	67	20	309
Jackets	3	14	51	70	69	9	70	-	4	290
Nose Mask / Respiratory Mask	6	7	49	69	40	57	37	4	13	282
Safety shoes	14	-	7	54	53	35	12	29	16	220
Apron	1	-	12	47	4	15	28	-	-	107

What types of the listed safety tools at work do you use on a regular basis? (MCQ) (%age column/state-wise)

	Tamil Nadu – 15	Andhra Pradesh – 17	Jharkhand – 56	Maharashtra – 74	Karnataka – 82	Uttar Pradesh – 74	Gujarat – 93	Odisha – 73	Haryana – 102	Grand Total – 586
Welding helmets	80%	6%	61%	82%	100%	64%	54%	78%	89%	74%
Welding gloves	87%	29%	84%	89%	98%	76%	48%	37%	13%	60%
Safety Goggles	13%	0%	16%	74%	82%	81%	31%	92%	20%	53%
Jackets	20%	82%	91%	95%	84%	12%	75%	0%	4%	49%
Nose Mask / Respiratory Mask	40%	41%	88%	93%	49%	77%	40%	5%	13%	48%
Safety shoes	93%	0%	13%	73%	65%	47%	13%	40%	16%	38%
Apron	7%	0%	21%	64%	5%	20%	30%	0%	0%	18%

8) Awareness towards Government schemes

Have you received any benefit under schemes? (MCQ count)

Products	Andhra Pradesh – 17	Gujarat – 94	Haryana – 102	Jharkhand – 56	Karnataka – 82	Maharashtra – 74	Odisha – 96	Tamil Nadu – 15	Uttar Pradesh – 93	Grand Total
Not affiliated with any government schemes	1	9	100	16	70	61	95	14	90	456
Training related – PMKVY, DDU-GKY, Pradhan Mantri YUVA Yojana	15	70	1	38	5	8	-	-	-	137
Vishwakarma Yojana	2	59	1	35	7	6	1	1	3	115

Have you received any benefit under schemes? (%age column-wise)

Products	Andhra Pradesh – 17	Gujarat – 94	Haryana – 102	Jharkhand – 56	Karnataka – 82	Maharashtra – 74	Odisha – 96	Tamil Nadu – 15	Uttar Pradesh – 93	Grand Total
Not affiliated with any government schemes	6%	10%	98%	29%	85%	82%	99%	93%	97%	72%
Training related – PMKVY, DDU-GKY, Pradhan Mantri YUVA Yojana	88%	74%	1%	68%	6%	11%	0%	0%	0%	22%
Vishwakarma Yojana	12%	63%	1%	63%	9%	8%	1%	7%	3%	18%

Which of the Government schemes or livelihood related schemes are you aware of? (count)

	Andhra Pradesh – 17	Gujarat – 94	Haryana – 102	Jharkhand – 56	Karnataka – 82	Maharashtra – 74	Odisha – 96	Tamil Nadu – 15	Uttar Pradesh – 93	Grand Total – 629
Pradhan Mantri Awas Yojana	1	52	11	34	37	6	90	-	47	278
Pradhan Mantri Jeevan Jyoti Bima Yojana	15	59	9	38	37	10	40	-	52	260
MUDRA loans or PM Mudra Yojana (of Dept of Finance)	-	32	10	30	54	2	78	-	47	253
Not aware of any government scheme	2	7	91	9	2	57	5	15	37	225
SFURTI Scheme (of Dept. of MSME)	-	1	3	14	52	-	-	-	47	117
Credit Guarantee Funds Trust for Micro and Small Enterprise (CGTMSE)	-	1	2	3	10	2	-	-	23	41
Stand up Scheme	-	-	1	-	15	-	-	-	5	21
Kalia Yojana	-	-	-	-	-	-	6	-	-	6

Which of the Government schemes or livelihood related schemes are you aware of? (%age column-wise)										
	Andhra Pradesh	Gujarat	Haryana	Jharkhand	Karnataka	Maharashtra	Odisha	Tamil Nadu	Uttar Pradesh	Grand Total
Pradhan Mantri Awas Yojana	6%	55%	11%	61%	45%	8%	94%	0%	51%	44%
Pradhan Mantri Jeevan Jyoti Bima Yojana	88%	63%	9%	68%	45%	14%	42%	0%	56%	41%
MUDRA loans or PM Mudra Yojana (of Dept of Finance)	0%	34%	10%	54%	66%	3%	81%	0%	51%	40%
Not aware of any government scheme	12%	7%	89%	16%	2%	77%	5%	100%	40%	36%
SFURTI Scheme (of Dept. of MSME)	0%	1%	3%	25%	63%	0%	0%	0%	51%	19%
Credit Guarantee Funds Trust for Micro and Small Enterprise (CGTMSE)	0%	1%	2%	5%	12%	3%	0%	0%	25%	7%
Stand up Scheme	0%	0%	1%	0%	18%	0%	0%	0%	5%	3%
Kalia Yojana	0%	0%	0%	0%	0%	0%	6%	0%	0%	1%

9) Areas of support identified for Stainless Academy

In what ways do you want your income/business opportunities to get enhanced through Stainless Academy support? Vs Work experience in Stainless-Steel (%age column-wise)							
	Less than 1 year	1-2 years	3-4 years	4-5 years	5-10 years	10+ years	Grand Total
Information on availability of the right raw materials, which grade to use, etc.	69%	61%	67%	74%	68%	50%	65%
Sources of procuring Stainless-steel	67%	48%	55%	60%	42%	44%	52%
Fabrication-related training	26%	28%	42%	44%	37%	31%	34%
Lead generation training	12%	12%	31%	22%	19%	10%	17%
Process related trainings	3%	12%	13%	14%	21%	14%	14%
Customer relation management training	0%	7%	13%	8%	14%	22%	11%
Team management training	0%	2%	4%	14%	9%	7%	6%
Safety practices	0%	1%	4%	9%	11%	7%	6%
Awareness about social security benefits schemes, etc.	0%	0%	0%	1%	6%	6%	3%
Basic toolkit	0%	0%	0%	2%	3%	3%	2%

10) Usage of stainless steel and other materials

Do you use stainless steel or not? (count)										
	Tamil Nadu - 15	Andhra Pradesh - 17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana - 102	Grand Total - 629
No	-	-	-	-	-	-	-	-	19	19
Yes	15	17	56	74	82	93	94	96	83	610

Do you use stainless steel or not? (%age row/state-wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
No	-	-	-	-	-	-	-	-	3%	3%
Yes	2%	3%	9%	12%	13%	15%	15%	15%	13%	97%

Why don't you use SS? [MCQ: From 19 respondents (3%) who responded No] (count)										
Responses								Haryana - 19	Grand Total - 19	
Not knowing about the right grade stainless steel to use, or where to get it or understand the supply of that								5	5	
Does not get any orders for stainless-steel products								19	19	

Why don't you use SS? [MCQ: From 19 respondents (3%) who responded No] (%age)										
Responses								Haryana	Grand Total	
Not knowing about the right grade stainless steel to use, or where to get it or understand the supply of that								26%	26%	
Does not get any orders for stainless-steel products								100%	100%	

Do you use any other metal/material apart from stainless-steel? (count)

	Tamil Nadu – 15	Andhra Pradesh - 17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana - 102	Grand Total - 629
No	-	-	1	33	-	14	2	9	15	74
Yes	15	17	55	41	82	79	92	87	87	555

Do you use any other metal/material apart from stainless-steel? (%age column/state-wise)

	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
No	-	-	2%	45%	-	15%	2%	9%	15%	12%
Yes	100%	100%	98%	55%	100%	85%	98%	91%	85%	88%

11) Additional materials with which fabricators work beyond stainless steel

Other materials worked on (count)

Products	Fabricators not from JSL database	Fabricators from JSL database	Grand Total
GI Sheet	5	10	15
Wood	-	54	54
Glass	-	84	84
Brass	80	61	141
Copper	85	87	172
Aluminum	44	194	238
Mixed alloys	83	163	246
Mild Steel	108	341	449
Grand Total	113	442	555

Other materials worked on (% age)

Products	Fabricators not from JSL database	Fabricators from JSL database	Grand Total
GI Sheet	1%	2%	3%
Wood	0%	10%	10%
Glass	0%	15%	15%
Brass	14%	11%	25%
Copper	15%	16%	31%
Aluminum	8%	35%	43%
Mixed alloys	15%	29%	44%
Mild Steel	19%	61%	81%
Grand Total	20%	80%	100%

12) Awareness of the source/brand of the metal raw material

Are you aware of the source/brand of the metal raw material? (count)

	Tamil Nadu – 15	Andhra Pradesh - 17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana - 102	Grand Total - 629
No	1	-	2	3	-	8	1	-	11	26
Yes	14	17	54	71	82	85	93	96	91	603

Are you aware of the source/brand of the metal raw material? (%age column/state-wise)

	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
No	7%	0%	4%	4%	0%	9%	1%	0%	11%	4%
Yes	93%	100%	96%	96%	100%	91%	99%	100%	89%	96%

Can you name the brand which you are aware of? (count) (asked to those 603 fabricators who answered Yes in previous question)

	Tamil Nadu - 14	Andhra Pradesh - 17	Jharkhand - 54	Maharashtra - 71	Karnataka - 82	Uttar Pradesh - 85	Haryana - 91	Gujarat - 93	Odisha - 96	Grand Total - 603
Jindal Stainless	13	14	54	68	82	85	76	77	96	565
Tata Steel	12	5	35	60	79	42	61	58	94	446
JSW Steel	14	-	25	62	81	21	23	42	94	362
Steel Authority of India Limited (SAIL)	1	12	41	61	80	17	34	49	27	322
VISA Steel	2	-	1	44	8	11	5	21	72	164
Bhushan Steel	-	-	-	40	-	16	7	2	93	158
Vedanta	-	-	-	39	-	12	-	6	95	152
Essar Steel India	3	-	-	14	-	14	6	2	73	112
Hindalco Industries	1	1	-	23	1	-	1	-	59	86
Rashtriya Ispat Nigam Ltd. (RINL)	-	-	-	7	-	3	-	-	3	13
Export brand from China or Vietnam	1	-	-	3	-	-	5	-	1	10
AM/NS India	-	1	-	8	-	-	-	-	1	10

Can you name the brand which you are aware of? (%age state/column wise)

	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Haryana	Gujarat	Odisha	Grand Total
Jindal Stainless	93%	82%	100%	96%	100%	100%	84%	83%	100%	94%
Tata Steel	86%	29%	65%	85%	96%	49%	67%	62%	98%	74%
JSW Steel	100%	0%	46%	87%	99%	25%	25%	45%	98%	60%
Steel Authority of India Limited (SAIL)	7%	71%	76%	86%	98%	20%	37%	53%	28%	53%
VISA Steel	14%	0%	2%	62%	10%	13%	6%	23%	75%	27%
Bhushan Steel	0%	0%	0%	56%	0%	19%	8%	2%	97%	26%
Vedanta	0%	0%	0%	55%	0%	14%	0%	6%	99%	25%
Essar Steel India	21%	0%	0%	20%	0%	16%	7%	2%	76%	19%
Hindalco Industries	7%	6%	0%	32%	1%	0%	1%	0%	61%	14%
Rashtriya Ispat Nigam Ltd. (RINL)	0%	0%	0%	10%	0%	4%	0%	0%	3%	2%
Export brand from China or Vietnam	7%	0%	0%	4%	0%	0%	6%	0%	1%	2%
AM/NS India	0%	6%	0%	11%	0%	0%	0%	0%	1%	2%

Other brands named by fabricators who are aware of Jindal Stainless

Other brands known to JSL-aware fabricators (n-565, MCQ) (Count)	
Tata Steel	429
JSW Steel	348
Steel Authority of India Limited (SAIL)	300
VISA Steel	157
Bhushan Steel	154
Vedanta	148
Essar Steel India	108
Hindalco Industries	85
Rashtriya Ispat Nigam Ltd. (RINL)	12
Export brand from China or Vietnam	10
AM/NS India	9
Grand Total	565

Other brands known to JSL-aware fabricators (n-565, MCQ) (%age)	
Tata Steel	76%
JSW Steel	62%
Steel Authority of India Limited (SAIL)	53%
VISA Steel	28%
Bhushan Steel	27%
Vedanta	26%
Essar Steel India	19%
Hindalco Industries	15%
Rashtriya Ispat Nigam Ltd. (RINL)	2%
Export brand from China or Vietnam	2%
AM/NS India	2
Grand Total	100%

13) Applicability of ARC welding in fabricators' work

Is welding applicable at your work? (count)										
	Tamil Nadu – 15	Andhra Pradesh - 17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana - 102	Grand Total - 629
No	0%	0%	1%	0%	0%	2%	0%	3%	1%	8%
Yes	2%	3%	8%	12%	13%	12%	15%	12%	16%	92%

What kind of welding you are practicing at the moment? (n=580 who responded Yes) (count)										
	Tamil Nadu - 13	Andhra Pradesh - 17	Jharkhand - 51	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 78	Gujarat - 92	Odisha - 75	Haryana - 98	Grand Total - 580
ARC Welding (electrode, stick)	6	7	48	67	70	50	62	75	85	470
TIG Welding (Gas, Argon)	6	7	1	5	12	26	23		13	93
Brazing			1	1		2	6			10
MIG Welding	1	3	1	1			1			7

What kind of welding you are practicing at the moment? (n=580 who responded Yes) (%age state/column wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
ARC Welding (electrode, stick)	46%	41%	94%	91%	85%	64%	67%	100%	87%	81%
TIG Welding (Gas, Argon)	46%	41%	2%	7%	15%	33%	25%	0%	13%	16%
Brazing	0%	0%	2%	1%	0%	3%	7%	0%	0%	2%
MIG Welding	8%	18%	2%	1%	0%	0%	1%	0%	0%	1%

14) Usage of JSL raw material/products

Have you used raw materials/ products of Jindal Stainless? (count)										
	Tamil Nadu – 15	Andhra Pradesh - 17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana - 102	Grand Total - 629
No	1	1	2	1	-	-	3	-	23	31
Yes	14	16	54	73	82	93	91	96	79	598

Have you used raw materials/ products of Jindal Stainless? (%age column/state-wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
No	7%	6%	4%	1%	0%	0%	3%	0%	23%	5%
Yes	93%	94%	96%	99%	100%	100%	97%	100%	77%	95%

What are the reasons for using Jindal Stainless raw materials/ products? (count)										
	Tamil Nadu – 14	Andhra Pradesh - 16	Jharkhand – 54	Maharashtra - 73	Karnataka – 82	Uttar Pradesh – 93	Gujarat - 91	Odisha – 96	Haryana - 79	Grand Total - 598
Better quality	14	3	49	60	61	79	56	86	16	424
Availability of the right raw material	-	13	5	13	21	14	35	6	63	170
Customer demand	-	-	-	-	-	-	-	4	-	4

What are the reasons for using Jindal Stainless raw materials/ products? (%age column/state-wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
Better quality	100%	19%	91%	82%	74%	85%	62%	90%	20%	71%
Availability of the right raw material	-	81%	9%	18%	26%	15%	38%	6%	80%	28%
Customer demand	-	-	-	-	-	-	-	4%	-	1%

What are the reasons for using non-Jindal Stainless raw materials/ products? (count)							
	Tamil Nadu – 1	Andhra Pradesh – 1	Jharkhand – 2	Maharashtra – 1	Gujarat – 3	Haryana – 23	Grand Total – 31
Low awareness, not knowing how to get Jindal stainless steel	1	-	-	-	3	15	19
Lower price	-	1	2	-	-	5	8
Better quality of non-Jindal stainless steel companies' products/services	-	-	-	-	-	3	3
Rate issues	-	-	-	1	-	-	1

What are the reasons for using non-Jindal Stainless raw materials/ products? (%age column/state-wise)							
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Gujarat	Haryana	Grand Total
Low awareness, not knowing how to get Jindal stainless steel	100%	-	-	-	100%	65%	61%
Lower price	-	100%	100%	-	-	22%	26%
Better quality of non-Jindal stainless steel companies' products/services	-	-	-	-	-	13%	10%
Rate issues	-	-	-	100%	-	-	3%

15) Workers employed in the workshop

How many workers are employed in your workshop? (count)										
	Tamil Nadu – 15	Andhra Pradesh – 17	Jharkhand – 56	Maharashtra – 74	Karnataka – 82	Uttar Pradesh – 93	Gujarat – 94	Odisha – 96	Haryana – 102	Grand Total – 629
1-2 workers	1	13	18	39	16	27	33	3	49	199
3-5 workers	4	4	36	18	52	44	60	22	47	287
6-10 workers	7	-	2	12	13	19	1	50	4	108
11-20 workers	2	-	-	5	-	3	-	21	2	33
More than 20 workers	1	-	-	-	1	-	-	-	-	2

How many workers are employed in your workshop? (%age column-wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
1-2 workers	7%	76%	32%	53%	20%	29%	35%	3%	48%	32%
3-5 workers	27%	24%	64%	24%	63%	47%	64%	23%	46%	46%
6-10 workers	47%	0%	4%	16%	16%	20%	1%	52%	4%	17%
11-20 workers	13%	0%	0%	7%	0%	3%	0%	22%	2%	5%
More than 20 workers	7%	0%	0%	0%	1%	0%	0%	0%	0%	0.3%

16) Average monthly income of the workshop

What is the average monthly income of your workshop? (count)										
	Tamil Nadu – 15	Andhra Pradesh – 17	Jharkhand – 56	Maharashtra – 74	Karnataka – 82	Uttar Pradesh – 93	Gujarat – 94	Odisha – 96	Haryana – 102	Grand Total – 629
Less than INR 25,000	-	16	5	26	-	2	4	-	12	65
INR 25,001 - INR 50,000	1	1	44	19	-	14	20	28	47	174
INR 50,001 - INR 75,000	4	-	7	16	10	39	45	40	35	196
INR 75,001 - INR 1,00,000	2	-	-	11	45	32	24	5	7	126
More than INR 1,00,000	8	-	-	2	27	6	1	23	1	68

How many workers are employed in your workshop? (%age column-wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
Less than INR 25,000	0%	94%	9%	35%	0%	2%	4%	0%	12%	10%
INR 25,001 - INR 50,000	7%	6%	79%	26%	0%	15%	21%	29%	46%	28%
INR 50,001 - INR 75,000	27%	0%	13%	22%	12%	42%	48%	42%	34%	31%
INR 75,001 - INR 1,00,000	13%	0%	0%	15%	55%	34%	26%	5%	7%	20%
More than INR 1,00,000	53%	0%	0%	3%	33%	6%	1%	24%	1%	11%

17) Independent fabricator's average monthly income

What is your average monthly income? (count)										
	Tamil Nadu - 15	Andhra Pradesh - 17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana - 102	Grand Total - 629
Less than INR 10,000	-	16	4	24	-	14	1	-	8	67
INR 10,001 - INR 25,000	1	1	40	22	4	42	15	52	45	222
INR 25,001 - INR 50,000	4	-	12	17	38	27	44	33	38	213
INR 50,001 - INR 75,000	10	-	-	9	35	9	33	7	11	114
INR 75,000 - 1,00,000	-	-	-	2	5	1	1	4	-	13

What is your average monthly income? (%age state/column wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
Less than INR 10,000	0%	94%	7%	32%	0%	15%	1%	0%	8%	11%
INR 10,001 - INR 25,000	7%	6%	71%	30%	5%	45%	16%	54%	44%	35%
INR 25,001 - INR 50,000	27%	0%	21%	23%	46%	29%	47%	34%	37%	34%
INR 50,001 - INR 75,000	67%	0%	0%	12%	43%	10%	35%	7%	11%	18%
INR 75,000 - 1,00,000	0%	0%	0%	3%	6%	1%	1%	4%	0%	2%

18) Average monthly SS consumption in your workshop

What is the average monthly consumption of stainless steel in your workshop? (count)										
	Tamil Nadu - 15	Andhra Pradesh - 17	Jharkhand - 56	Maharashtra - 74	Karnataka - 82	Uttar Pradesh - 93	Gujarat - 94	Odisha - 96	Haryana - 102	Grand Total - 629
Less than 500 kg	3	16	6	16	17	21	9	-	55	143
500 kg – 1 tonne	5	1	42	25	49	19	31	2	34	208
1 – 2 tonne	3	-	8	20	12	28	42	25	9	147
2 – 5 tonne	3	-	-	12	4	18	9	38	2	86
More than 5 tonne	1	-	-	1	-	7	3	31	2	45

What is the average monthly consumption of stainless steel in your workshop? (%age state/column wise)										
	Tamil Nadu	Andhra Pradesh	Jharkhand	Maharashtra	Karnataka	Uttar Pradesh	Gujarat	Odisha	Haryana	Grand Total
Less than 500 kg	20%	94%	11%	22%	21%	23%	10%	0%	54%	23%
500 kg – 1 tonne	33%	6%	75%	34%	60%	20%	33%	2%	33%	33%
1 – 2 tonne	20%	0%	14%	27%	15%	30%	45%	26%	9%	23%
2 – 5 tonne	20%	0%	0%	16%	5%	19%	10%	40%	2%	14%
More than 5 tonne	7%	0%	0%	1%	0%	8%	3%	32%	2%	7%

19) Workers employed in workshop VS Average monthly income of your workshop

How many workers are employed in your workshop? VS What is the average monthly income of your workshop?(count)						
	Less than INR 25,000	INR 25,001 - INR 50,000	INR 50,001 - INR 75,000	INR 75,001 - INR 1,00,000	More than INR 1,00,000	Grand Total
1-2 workers	57	81	37	18	6	199
3-5 workers	8	62	103	87	27	287
6-10 workers	-	23	42	16	27	108
11-20 workers	-	8	14	5	6	33
More than 20 workers	-	-	-	-	2	2
Grand Total	65	174	196	126	68	629

How many workers are employed in your workshop? VS What is the average monthly income of your workshop?(% column-wise)						
	Less than INR 25,000	INR 25,001 - INR 50,000	INR 50,001 - INR 75,000	INR 75,001 - INR 1,00,000	More than INR 1,00,000	Grand Total
1-2 workers	88%	47%	19%	14%	9%	32%
3-5 workers	12%	36%	53%	69%	40%	46%
6-10 workers	0%	13%	21%	13%	40%	17%
11-20 workers	0%	5%	7%	4%	9%	5%
More than 20 workers	0%	0%	0%	0%	3%	0%

How many workers are employed in your workshop? VS What is average monthly consumption of SS in your workshop?(count)

	Less than 500 kg	500 kg – 1 tonne	1 – 2 tonne	2 – 5 tonne	More than 5 tonne	Grand Total
1-2 workers	110	57	17	12	3	199
3-5 workers	32	135	87	27	6	287
6-10 workers	1	15	35	39	18	108
11-20 workers		1	7	7	18	33
More than 20 workers			1	1		2
Grand Total	143	208	147	86	45	629

How many workers are employed in your workshop? VS What is average monthly consumption of SS in your workshop? (% column-wise)

	Less than 500 kg	500 kg – 1 tonne	1 – 2 tonne	2 – 5 tonne	More than 5 tonne	Grand Total
1-2 workers	77%	27%	12%	14%	7%	32%
3-5 workers	22%	65%	59%	31%	13%	46%
6-10 workers	1%	7%	24%	45%	40%	17%
11-20 workers	0%	0%	5%	8%	40%	5%
More than 20 workers	0%	0%	1%	1%	0%	0%

5.2.2. Organized workers

1) Work experience in stainless steel industry

Work Experience in Stainless Steel (count)														
Work Experience	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others	Grand Total
<1 year	5	1	13	8	10	2	1	4	-	3	2	4	-	53
1-2 years	1	-	13	6	4	2	2	17	3	1	2	2	3	56
3-4 years	16	2	33	18	16	8	6	60	5	13	21	19	16	233
4-5 years	10	1	14	19	11	2	2	35	1	10	8	4	5	122
5-10 years	3	1	13	7	4	3	-	29	3	17	5	6	2	93
10+ years	1	-	2	-	3	-	-	4	-	5	2	1	-	18
Grand Total	36	5	88	58	48	17	11	149	12	49	40	36	26	575

Work Experience in Stainless Steel (%)														
Work Experience	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others	Grand Total
<1 year	14%	20%	15%	14%	21%	12%	9%	3%	0%	6%	5%	11%	0%	9%
1-2 years	3%	0%	15%	10%	8%	12%	18%	11%	25%	2%	5%	6%	12%	10%
3-4 years	44%	40%	38%	31%	33%	47%	55%	40%	42%	27%	53%	53%	62%	41%
4-5 years	28%	20%	16%	33%	23%	12%	18%	24%	8%	20%	20%	11%	19%	21%
5-10 years	8%	20%	15%	12%	8%	18%	0%	20%	25%	35%	13%	17%	8%	16%
10+ years	3%	0%	2%	0%	6%	0%	0%	3%	0%	10%	5%	3%	0%	3%

2) Education profile of the organized workers

Education profile of the respondents (count)														
Education Qualification	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others	Grand Total
Less than secondary school	-	-	1	1	2	-	-	3	-	3	-	-	1	11
Secondary school (Class X)	-	-	5	3	1	-	1	12	-	10	6	2	5	45
Higher secondary school (Class XII)	-	-	13	7	7	2	3	29	-	14	8	5	10	98
Diploma certificate from ITI	2	1	16	8	8	-	2	52	7	9	9	6	6	126
Diploma certificate from Polytechnic	16	3	31	26	19	8	5	35	2	7	13	17	1	183
Graduation from non-Engineering college	8	-	11	7	4	2	-	8	1	4	-	3	2	50
Graduation from Engineering college	10	1	11	6	7	5	-	7	2	2	4	3	1	59
Beyond 1 graduation/Post-Graduation	-	-	-	-	-	-	-	3	-	-	-	-	-	3
Grand Total	36	5	88	58	48	17	11	149	12	49	40	36	26	575

Education profile of the respondents (percentage)														
Education Qualification	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others	Grand Total
Less than secondary school	0%	0%	1%	2%	4%	0%	0%	2%	0%	6%	0%	0%	4%	2%
Secondary school (Class X)	0%	0%	6%	5%	2%	0%	9%	8%	0%	20%	15%	6%	19%	8%
Higher secondary school (Class XII)	0%	0%	15%	12%	15%	12%	27%	20%	0%	29%	20%	14%	38%	17%
Diploma certificate from ITI	6%	20%	18%	14%	17%	0%	18%	35%	58%	18%	23%	17%	23%	22%
Diploma certificate from Polytechnic	44%	60%	35%	45%	40%	47%	46%	24%	17%	14%	33%	47%	4%	32%
Graduation from non-Engineering college	22%	0%	13%	12%	8%	12%	0%	5%	8%	8%	0%	8%	8%	9%
Graduation from Engineering college	28%	20%	13%	10%	15%	29%	0%	5%	17%	4%	10%	8%	4%	10%
Beyond 1 graduation/Post-Graduation	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	1%

3) Challenges faced by Organizer Workers

Challenge faced by the respondents (count)						
Key Challenges	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators
Difficulty in managing personal and professional life due to demanding work hours	3	1	8	7	4	2
Lack of operational knowledge, do not know how to use materials/products, etc.	4	-	17	6	7	2
In the process of welding, cutting or while executing the process (Process/Fabrication related)	2	2	20	9	4	4
Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	7	2	29	12	7	5
Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	8	-	26	12	10	7
Misunderstandings or lack of clear instructions from supervisors	11	2	30	12	17	5
Tight deadlines causing stress and rushed work	14	3	28	19	19	9
Lack of finishing in the final product	19	1	35	21	26	7
Difficulty in fabricating complex structures	16	3	32	21	23	7
Managing defects or rework which affects productivity	18	2	41	26	20	8
Handling heavy materials or equipment leading to physical strain	27	2	56	42	36	12
Grand Total	129	18	322	187	173	68

Challenge faced by the respondents (count)							
Key Challenges	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others
Difficulty in managing personal and professional life due to demanding work hours	-	26	1	12	10	7	2
Lack of operational knowledge, do not know how to use materials/products, etc.	4	30	4	9	3	3	1
In the process of welding, cutting or while executing the process (Process/Fabrication related)	2	32	1	15	10	7	4
Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	1	30	2	9	10	4	1
Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	-	37	4	11	6	8	1
Misunderstandings or lack of clear instructions from supervisors	3	37	7	11	18	10	1
Tight deadlines causing stress and rushed work	2	55	8	26	23	12	14
Lack of finishing in the final product	5	55	8	25	18	7	7
Difficulty in fabricating complex structures	1	62	4	19	14	13	20
Managing defects or rework which affects productivity	5	46	8	24	17	17	18
Handling heavy materials or equipment leading to physical strain	11	125	8	41	29	28	24
Grand Total	34	535	55	202	158	116	93

Challenge faced by the respondents (percentage)						
Key Challenges	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators
Difficulty in managing personal and professional life due to demanding work hours	2%	6%	3%	4%	2%	3%
Lack of operational knowledge, do not know how to use materials/products, etc.	3%	0%	5%	3%	4%	3%
In the process of welding, cutting or while executing the process (Process/ Fabrication related)	2%	11%	6%	5%	2%	6%
Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	5%	11%	9%	6%	4%	7%
Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	6%	0%	8%	6%	6%	10%
Misunderstandings or lack of clear instructions from supervisors	9%	11%	9%	7%	10%	7%
Tight deadlines causing stress and rushed work	11%	17%	9%	10%	11%	13%
Lack of finishing in the final product	15%	6%	11%	11%	15%	10%
Difficulty in fabricating complex structures	12%	17%	10%	11%	13%	10%
Managing defects or rework which affects productivity	14%	11%	13%	14%	12%	12%
Handling heavy materials or equipment leading to physical strain	21%	11%	17%	23%	21%	18%

Challenge faced by the respondents (percentage)							
Key Challenges	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others
Difficulty in managing personal and professional life due to demanding work hours	0%	5%	2%	6%	6%	6%	2%
Lack of operational knowledge, do not know how to use materials/products, etc.	12%	6%	7%	5%	2%	3%	1%
In the process of welding, cutting or while executing the process (Process/ Fabrication related)	6%	6%	2%	7%	6%	6%	4%
Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	3%	6%	4%	5%	6%	4%	1%
Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	0%	7%	7%	5%	4%	7%	1%
Misunderstandings or lack of clear instructions from supervisors	9%	7%	13%	5%	11%	9%	1%
Tight deadlines causing stress and rushed work	6%	10%	15%	13%	15%	10%	15%
Lack of finishing in the final product	15%	10%	15%	12%	11%	6%	8%
Difficulty in fabricating complex structures	3%	12%	7%	9%	9%	11%	21%
Managing defects or rework which affects productivity	15%	9%	15%	12%	11%	15%	19%
Handling heavy materials or equipment leading to physical strain	32%	23%	15%	20%	18%	24%	26%

4) Awareness about JSL

Brand awareness of JSL (count)														
Awareness about JSL	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others	Grand Total
Aware about JSL	30	3	75	46	38	15	9	140	11	44	36	26	24	498
Unaware of JSL	6	2	13	12	10	2	2	9	1	5	4	10	2	77
Grand Total	36	5	88	58	48	17	11	149	12	49	40	36	26	575

Brand awareness of JSL (count)														
Awareness about JSL	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others	Grand Total
Aware about JSL	83%	60%	85%	79%	79%	88%	82%	94%	100%	90%	90%	72%	92%	87%
Unaware of JSL	17%	40%	15%	21%	21%	12%	18%	6%	0%	10%	10%	28%	8%	13%

5) Affiliation with Government schemes

Benefits of Govt. Scheme													
Affiliation with Government Schemes	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Others
Not affiliated to any government schemes	27	4	68	37	31	9	10	3	98	8	33	31	25
Training – PMKVY	9	1	19	20	16	7	1	20	50	2	16	9	11
Vishwakarma Yojana	-	-	1	1	6	1	-	19	5	2	4	-	-

Not affiliated to any government schemes	75%	80%	77%	64%	59%	53%	91%	7%	64%	67%	62%	78%	69%
Training – PMKVY	25%	20%	22%	35%	30%	41%	9%	48%	33%	17%	30%	23%	31%
Vishwakarma Yojana	0%	0%	1%	2%	11%	6%	0%	45%	3%	17%	8%	0%	0%

5.2.3. Employers

1) Recruitment trends

Mode of Recruitment (Count) – (Multiple Choice)													
	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T – Decorative - 48	P&T – Industrial - 5	Process – Hygiene - 21	Process – Industrial - 20	Wagons - 21	Grand Total - 250
Off-campus Open-Market (Labour On their own comes given new machines, or presses news they get – daily wage workers)	18	1	31	23	18	7	5	43	3	17	18	18	202
Off-Campus Employee personal referral	17	1	27	21	16	6	3	34	4	13	14	15	171
Organization's Referrals	14	3	26	18	18	5	2	33	5	16	14	15	169
Campus (Educational Institutions)	14	3	25	16	17	7	4	32	3	16	17	10	164
Off-Campus Job-Portals	14	2	27	17	14	7	3	25	4	13	11	8	145
Off-Campus Manpower Agencies	14	1	19	16	15	7	1	28	4	12	13	8	138

Mode of Recruitment (Percentage) (Multiple Choice)													
	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T - Decorative	P & T - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Campus (Educational Institutions)	66%	100%	61%	51%	68%	78%	80%	67%	60%	76%	85%	47%	66%
Off-Campus Employee personal referral	80%	33%	66%	68%	64%	67%	60%	71%	80%	62%	70%	71%	68%
Off-Campus Job-Portals	66%	66%	66%	55%	56%	78%	60%	52%	80%	62%	55%	38%	58%
Off-Campus Manpower Agencies	66%	33%	46%	51%	60%	78%	20%	58%	80%	57%	65%	38%	55%
Off-campus Open-Market (Labour On their own comes given new machines, or presses news they get – daily wage workers)	85%	33%	75%	74%	72%	78%	100%	90%	60%	81%	90%	86%	81%
Organization's Referrals	66%	100%	63%	58%	72%	55%	40%	69%	100%	76%	70%	71%	67%

2) Employer's preference of educational institutes for recruiting entry level workers

Educational Institutes for Recruitment (Multiple Choice) From 164 respondents as the remaining 86 did not respond													
	Auto - 14	Coaches - 3	General Fabrication - 25	Household - 16	Industrial Fabrication - 17	Lift and Elevators - 7	Metro - 4	P&T - Decorative - 32	P&T - Industrial - 3	Process - Hygiene - 16	Process - Industrial - 17	Wagons - 10	Grand Total - 164
Engineering colleges	9	2	17	13	12	6	3	25	2	14	11	10	124
Institutions providing diploma level certifications (Other than ITIs/ Polytechnics)	9	2	15	13	12	4	2	26	3	9	15	8	118
General arts/science/commerce colleges/university	11	1	14	13	14	4	2	26	3	9	13	7	117
Polytechnics	8	2	14	11	10	4	4	20	3	8	8	8	100
ITI (Industrial Training Institutes)	9	2	11	12	12	4	3	19	2	7	9	8	98
Short term skill development training Institutes	4	1	10	6	8	2	1	17	3	8	11	5	76
No such education institutes/colleges background	1	-	2	-	-	-	-	-	-	1	-	-	4

Educational Institutes for Recruitment (Multiple Choice) From 164 respondents as the remaining 86 did not respond													
	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T - Decorative	P&T - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Engineering colleges	64%	66%	68%	81%	70%	85%	75%	78%	66%	87%	64%	100%	75%
General arts/science/commerce colleges/university	78%	33%	56%	81%	82%	57%	50%	81%	100%	56%	76%	70%	71%
Institutions providing diploma level certifications (Other than ITIs/ Polytechnics)	64%	66%	60%	81%	70%	57%	50%	81%	100%	56%	88%	80%	72%
ITI (Industrial Training Institutes)	64%	66%	44%	75%	70%	57%	75%	59%	66%	43%	53%	80%	60%
No such education institutes/colleges background	7%	0%	8%	0%	0%	0%	0%	0%	0%	6%	0%	0%	2%
Polytechnics	57%	66%	56%	69%	59%	57%	100%	62%	100%	50%	47%	80%	61%
Short term skill development training Institutes	28%	33%	40%	37%	47%	29%	25%	53%	100%	50%	64%	50%	46%

3) Baseline education requirement for entry-level workers

Minimum Educational Qualification for Entry Level Workers (Single Choice)													
	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T - Decorative - 48	P&T - Industrial - 5	Process - Hygiene - 21	Process - Industrial - 20	Wagons - 21	Grand Total - 250
Ability to read and write (Basic Literate)	-	-	1	-	2	-	-	3	-	2	2	-	10
Beyond Graduation	-	-	-	-	-	-	-	-	-	-	-	1	1
Certificate from ITI	2	1	2	1	3	2	-	5	1	3	-	1	21
Diploma certificate from Polytechnic	5	1	8	12	7	-	1	9	-	3	4	7	57
Elementary education (1-8 grade)	1	-	4	2	2	-	-	4	-	3	1	3	20
Graduation	2	-	5	6	3	3	2	5	1	1	2	5	35
Higher secondary school (11-12 grade)	9	-	9	4	2	1	2	8	-	3	3	3	44
Primary education (1-5 grade)	-	-	-	-	-	-	-	-	-	1	-	-	1
Secondary (9-10 grade)	2	1	12	6	6	3	-	14	3	5	8	1	61

Minimum Educational Qualification for Entry Level Workers (Single Choice)													
	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Ability to read and write [Basic Literate]	0%	0%	2%	0%	8%	0%	0%	6%	0%	9%	10%	0%	4%
Beyond Graduation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0.4%
Certificate from ITI	9%	33%	4%	3%	12%	22%	0%	10%	20%	14%	0%	5%	8%
Diploma certificate from Polytechnic	23%	33%	19%	39%	28%	0%	20%	19%	0%	14%	20%	33%	23%
Elementary education (1-8 grade)	4%	0%	9%	6%	8%	0%	0%	8%	0%	14%	5%	14%	8%
Graduation	9%	0%	12%	19%	12%	33%	40%	10%	20%	5%	10%	24%	14%
Higher secondary school (11-12 grade)	43%	0%	21%	13%	8%	11%	40%	17%	0%	14%	15%	14%	18%
Primary education (1-5 grade)	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0.4%
Secondary (9-10 grade)	9%	33%	29%	19%	24%	33%	0%	29%	60%	24%	40%	5%	24%

4) Recruitment challenges faced by Employers while recruiting Entry level workers

Recruitment Challenges of Employers (Multiple Choice)													
	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro 5	P&T - Decorative - 48	P&T - Industrial - 5	Process - Hygiene 21	Process - Industrial 20	Wagons - 21	Grand Total - 250
Candidates' demand for accommodation	2	-	5	4	4	-	-	7	-	1	3	2	28
Candidates' demand for higher wages beyond organization's policy and general market practice	8	1	12	8	11	3	2	23	5	6	10	5	94
Candidates' demand for transportation	1	-	6	5	3	-	-	6	2	6	4	3	36
Competing organizations are paying higher wages/ salaries	7	-	8	3	7	3	1	5	-	1	2	4	41
High rate of attrition/uncertainty among temporary and/or contractual employees.	2	-	3	2	2	1	-	5	-	3	2	-	20
Lack of appropriate educational institutions (with relevant courses) for campus recruitments within vicinity.	14	2	22	14	16	3	3	37	3	17	14	9	154
Lack of interest among candidates to migrate or travel long distance from other Districts within the state	3	1	4	6	2	1	-	6	-	6	6	3	38
Lack of required soft skills e.g. communication/leadership among prospective candidates	12	1	22	16	16	6	3	29	3	12	10	11	141
Limited availability of appropriately trained/ technically skilled personnel/ workers.	18	2	32	23	24	7	4	37	5	15	16	17	200
Local candidates' lack time discipline after recruitment	3	1	4	8	4	2	1	3	-	5	3	1	35
Perception that local candidates do not report to the organization/ company even after accepting the job offer/concluding	10	1	8	11	6	4	2	8	1	4	3	2	60

Recruitment Challenges of Employers (Multiple Choice)														
	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T – Decorative	P&T – Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total	
Candidates' demand for accommodation	9%	0%	12%	13%	16%	0%	0%	14%	0%	4%	15%	9%	11%	
Candidates' demand for higher wages beyond organization's policy and general market practice	38%	33%	29%	26%	44%	33%	40%	48%	100%	28%	50%	23%	38%	
Candidates' demand for transportation	5%	0%	14%	16%	12%	0%	0%	12%	40%	28%	20%	14%	14%	
Competing organizations are paying higher wages/ salaries	33%	0%	19%	10%	28%	33%	20%	10%	0%	4%	10%	19%	16%	
High rate of attrition/uncertainty among temporary and/or contractual employees.	9%	0%	7%	6%	8%	11%	0%	10%	0%	14%	10%	0%	8%	
Lack of appropriate educational institutions (with relevant courses) for campus recruitments within vicinity.	66%	67%	54%	45%	64%	33%	60%	77%	60%	80%	70%	43%	62%	
Lack of interest among candidates to migrate or travel long distance from other Districts within the state	14%	33%	10%	19%	8%	11%	0%	12%	0%	28%	30%	14%	15%	
Lack of required soft skills e.g. communication/leadership among prospective candidates	57%	33%	54%	51%	64%	66%	60%	60%	60%	57%	50%	52%	56%	
Limited availability of appropriately trained/ technically skilled personnel/ workers.	86%	66%	78%	74%	96%	78%	80%	77%	100%	71%	80%	81%	80%	
Local candidates' lack time discipline after recruitment	14%	33%	10%	26%	16%	22%	20%	6%	0%	24%	15%	5%	14%	
Perception that local candidates do not report to the organization/ company even after accepting the job offer/concluding	47%	33%	19%	35%	24%	44%	40%	16%	20%	19%	15%	9%	24%	

5) Recruitment practices – Regularity

Regularity of recruitment from TVET Institutions (count)														
	Y/N	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T – Decorative - 48	P&T – Industrial - 5	Process – Hygiene - 21	Process – Industrial - 20	Wagons - 21	Grand Total - 250
ITIs	Yes	14	3	30	25	20	7	5	35	4	15	15	16	189
	No	7	-	11	6	5	2	-	13	1	6	5	5	61
Polytechnics	Yes	19	3	35	29	23	8	5	43	5	16	17	20	233
	No	2	-	6	2	2	1	-	5	-	5	3	1	27
Engineering	Yes	18	3	34	24	22	8	4	34	4	15	17	18	201
	No	3	-	7	7	3	1	1	14	1	6	3	3	49

Regularity of recruitment from TVET Institutions (%)														
	Y/N	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
ITIs	Yes	66%	100%	73%	80%	80%	77%	100%	73%	80%	71%	75%	76%	75%
	No	33%	0%	26%	19%	20%	22%	0%	27%	20%	28%	25%	23%	24%
Polytechnics	Yes	90%	100%	85%	93%	92%	89%	100%	89%	100%	76%	85%	95%	89%
	No	9%	0%	14%	6%	8%	11%	0%	10%	0%	24%	15%	4%	11%
Engineering	Yes	85%	100%	83%	77%	88%	89%	80%	71%	80%	71%	85%	85%	80%
	No	14%	0%	17%	22%	12%	11%	20%	29%	20%	28%	15%	14%	20%

6) Challenges of Recruiting entry level workers from TVET institutions

Recruitment Challenges Across TVET Institutions (count)								
	Inability to apply knowledge to real-world scenarios effectively	Inadequate communication and teamwork skills.	Inadequate technical skills	Insufficient problem-solving and critical thinking abilities.	Limited adaptability to new technologies and industry trends.	Weak foundation in fundamental concepts and theoretical knowledge.	Others	Grand Total - 137
ITIs	6	22	20	28	5	4	-	61
Polytechnics	-	16	10	20	7	1	1	27
Engineering	10	30	21	38	15	8	2	49

Recruitment Challenges Across TVET Institutions (%)							
	Inability to apply knowledge to real-world scenarios effectively.	Inadequate communication and teamwork skills.	Inadequate technical skills	Insufficient problem-solving and critical thinking abilities.	Limited adaptability to new technologies and industry trends.	Weak foundation in fundamental concepts and theoretical knowledge.	Others
ITIs	10%	36%	32%	45%	8%	6%	-
Polytechnics	-	59%	37%	74%	25%	4%	4%
Engineering	20%	61%	42%	77%	30%	16%	4%

7) Women in entry-level roles in stainless steel industry

Hiring of women as entry-level workers (count)													
	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T – Decorative - 48	P&T – Industrial - 5	Process – Hygiene - 21	Process – Industrial - 20	Wagons - 21	Grand Total - 250
No	3	1	7	5	4	2	-	10	-	3	2	1	38
Yes	18	2	34	26	21	7	5	38	5	18	18	20	212

Hiring of women as entry-level workers (%)													
	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
No	14%	33%	17%	16%	16%	22%	0%	21%	0%	14%	10%	5%	15%
Yes	86%	67%	83%	84%	84%	78%	100%	79%	100%	86%	90%	95%	85%

8) Major barriers in the hiring of women as entry level workers

Reasons for not hiring women as entry-level workers (count): From the 38 respondents who do not hire women

	Auto - 3	Coaches - 1	General Fabrication - 7	Household - 3	Industrial Fabrication - 4	Lift and Elevators - 2	P&T - Decorative - 10	Process - Hygiene - 3	Process - Industrial - 2	Wagons - 1	Grand Total - 38
Concerns about workplace conditions potentially causing health issues	2	1	3	3	1	1	2	1	2	-	16
Perceptions of physical demands/ physically draining work environments	-	-	1	-	1	1	3	2	-	1	9
Safety concerns	1	-	2	2	2	-	4	-	-	-	11
Traditional gender roles, gender stereotypes	-	-	1	-	-	-	1	-	-	-	2

Reasons for not hiring women as entry-level workers (%): From the 38 respondents who do not hire women

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	P&T - Decorative	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Concerns about workplace conditions potentially causing health issues	67%	100%	43%	60%	25%	50%	20%	33%	100%	0%	42%
Perceptions of physical demands/ physically draining work environments	0%	0%	14%	0%	25%	50%	30%	67%	0%	100%	24%
Safety concerns	33%	0%	29%	40%	50%	0%	40%	0%	0%	0%	29%
Traditional gender roles, gender stereotypes	0%	0%	14%	0%	0%	0%	10%	0%	0%	0%	5%

9) Status of past training programs for workers in SS fabrication

Organization of Training Programs in last 3 years

	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T - Decorative - 48	P&T - Industrial - 5	Process - Hygiene - 21	Process - Industrial - 20	Wagons - 21	Grand Total - 250
No	10	3	18	9	12	5	1	22	4	9	10	10	113
Yes	11	-	23	22	13	4	4	26	1	12	10	11	137

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
No	48%	100%	44%	29%	48%	56%	20%	46%	80%	43%	50%	48%	45%
Yes	52%	0%	56%	71%	52%	44%	80%	54%	20%	57%	50%	52%	55%

10) Type of training programs organized by employers

Type of Training Programs Organized (Multiple Choice)
From 137 respondents who said yes to the trainings conducted by their organisations in last 3 years

	Auto - 11	General Fabrication - 23	Household - 22	Industrial Fabrication - 13	Lift and Elevators - 4	Metro - 4	Pipe & Tube - Decorative - 26	Pipe & Tube - Industrial - 1	Process - Hygiene - 12	Process - Industrial - 10	Wagons - 11	Grand Total - 137
Full-time trainings	5	5	7	5	2	2	8	-	4	4	2	44
Outside work hours/ flexible hours trainings	-	7	5	3	1	-	6	-	4	2	-	28
Part-time trainings	10	16	17	12	4	3	21	1	7	7	10	108

	Auto	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Full-time trainings	45%	22%	32%	38%	50%	50%	31%	0%	33%	40%	18%	32%
Outside work hours/ flexible hours trainings	0%	30%	23%	23%	25%	0%	23%	0%	33%	20%	0%	20%
Part-time trainings	91%	70%	77%	92%	100%	75%	81%	100%	58%	70%	91%	79%

11) Themes of training programs organized by employers

Themes and Topics Covered under the Training Programs (Multiple Choice) From 137 respondents who said yes to the trainings conducted by their organisations in last 3 years												
	Auto - 11	General Fabrication - 23	Household - 22	Industrial Fabrication - 12	Lift and Elevators - 4	Metro - 4	Pipe & Tube - Decorative - 26	Pipe & Tube - Industrial - 1	Process - Hygiene - 12	Process - Industrial - 10	Wagons - 11	Grand Total - 137
Business excellence related learnings such as Kaizen, TPM, for work productivity gains.	8	13	15	10	2	1	19	1	7	7	7	90
Ecosystem-related (about the sector, segments, products, job market customer – different options, etc.)	9	17	16	12	3	3	20	1	10	6	10	107
Job-specific technical skills	2	9	3	4	1		13	-	4	3	1	40
Process related	4	12	10	8	3	2	16	-	8	5	5	73
Soft skills related	3	8	11	7		1	15	-	7	5	4	61

	Auto	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Business excellence related learnings such as Kaizen, TPM, for work productivity gains.	73%	57%	68%	77%	50%	25%	73%	100%	58%	70%	64%	66%
Ecosystem-related (about the sector, segments, products, job market customer – different options, etc.)	82%	74%	73%	92%	75%	75%	77%	100%	83%	60%	91%	78%
Job-specific technical skills	18%	39%	14%	31%	25%	0%	50%	0%	33%	30%	9%	29%
Process related	36%	52%	45%	62%	75%	50%	62%	0%	67%	50%	45%	53%
Soft skills related	27%	35%	50%	54%	0%	25%	58%	0%	58%	50%	36%	45%

12) Current training level of the workforce of employers

Percentage of workers who can be classified as Trained													
	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T - Decorative - 48	P&T - Industrial - 5	Process - Hygiene - 21	Process - Industrial - 20	Wagons -21	Grand Total - 250
11-25%	9	-	11	13	9	1	-	13	-	6	8	8	78
26-50%	1	1	16	6	6	3	1	20	3	10	8	4	79
Less than 10%	11	1	13	12	10	4	4	13	1	3	4	9	85
More than 50%	-	1	1	-	-	1	-	2	1	2	-	-	8

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
11-25%	43%	0%	27%	42%	36%	11%	0%	27%	0%	29%	40%	38%	31%
26-50%	5%	33%	39%	19%	24%	33%	20%	42%	60%	48%	40%	19%	32%
Less than 10%	52%	33%	32%	39%	40%	44%	80%	27%	20%	14%	20%	43%	34%
More than 50%	0%	33%	2%	0%	0%	11%	0%	4%	20%	10%	0%	0%	3%

13) Investment by employers in training and development (allocation of funding)

Allocation of Funds by the Organization for Training and Development													
	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T – Decorative - 48	P&T – Industrial - 5	Process – Hygiene - 21	Process – Industrial - 20	Wagons - 21	Grand Total - 250
No	4	1	7	2	5	1		7	-	1	1	5	34
Yes	17	2	34	29	20	8	5	41	5	20	19	16	216

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
No	19%	33%	17%	6%	20%	11%	0%	15%	0%	5%	5%	24%	13%
Yes	81%	67%	83%	94%	80%	89%	100%	85%	100%	95%	95%	76%	86%

14) Investment by employers in training and development (% allocation of funding)

Percentage of Annual Budget for Training and Development From 216 respondents who said their organisations allocate budget													
	Auto - 17	Coaches - 2	General Fabrication - 34	Household - 29	Industrial Fabrication - 20	Lift and Elevators - 8	Metro -5	P&T - Decorative - 41	P&T - Industrial - 5	Process - Hygiene - 20	Process - Industrial - 19	Wagons - 16	Grand Total - 216
1-3%	10	1	13	14	10	3	1	19	2	8	7	7	95
4-6%	-	-	3	-	-	1	1	3	-	1	2	2	13
Less than 1%	7	1	15	12	10	4	3	14	3	10	9	7	95
More than 6%	-	-	3	3	-	-	-	5	-	1	1	-	13

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
1-3%	59%	50%	38%	48%	50%	37%	20%	46%	40%	40%	37%	44%	44%
4-6%	0%	0%	9%	0%	0%	12%	20%	7%	0%	5%	10%	12%	6%
Less than 1%	41%	50%	44%	41%	50%	50%	60%	34%	60%	50%	47%	44%	44%
More than 6%	0%	0%	9%	10%	0%	0%	0%	12%	0%	5%	5%	0%	6%

15) Further interest of employers in providing trainings to their workers

Willingness to Provide Additional Training (count)													
	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T - Decorative - 48	P&T - Industrial - 5	Process - Hygiene - 21	Process - Industrial - 20	Wagons - 21	Grand Total - 250
No	11	3	23	15	15	4	1	25	4	11	12	11	135
Yes	10	-	18	16	10	5	4	23	1	10	8	10	115

Willingness to Provide Additional Training (%)													
	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
No	52%	100%	56%	48%	60%	44%	20%	52%	80%	52%	60%	52%	54%
Yes	48%	0%	44%	51%	40%	55%	80%	47%	20%	47%	40%	47%	46%

16) Duration of training programs for the workforce

Daily hours the organization can spare for training or workers From the 115 respondents who expressed willingness to provide additional training programs												
	Auto - 10	General Fabrication - 18	Household - 16	Industrial Fabrication - 10	Lift and Elevators - 5	Metro - 4	P&T – Decorative - 23	P&T- Industrial - 1	Process – Hygiene - 10	Process – Industrial - 8	Wagons - 10	Grand Total - 115
1-2 hours	8	11	9	7	4	1	15	1	6	6	8	76
2-4 hours	1	5	5	2	1	2	5	-	3	2	2	28
Less than 1 hour	1	1	-	1	-	1	1	-	1	-	-	6
More than 4 hours	-	1	2	-	-	-	2	-	-	-	-	5

	Auto	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
1-2 hours	80%	61%	56%	70%	80%	25%	65%	100%	60%	75%	80%	66%
2-4 hours	10%	27%	31%	20%	20%	50%	22%	0%	30%	25%	20%	24%
Less than 1 hour	10%	5%	0%	10%	0%	25%	4%	0%	10%	0%	0%	5%
More than 4 hours	0%	5%	12%	0%	0%	0%	9%	0%	0%	0%	0%	4%

17) Type of training programs for the workforce

Preferred training mode From the 115 respondents who expressed willingness to provide additional training programs												
	Auto - 10	General Fabrication - 18	Household - 16	Industrial Fabrication - 10	Lift and Elevators - 5	Metro - 4	P&T - Decorative - 23	P&T - Industrial - 1	Process - Hygiene - 10	Process - Industrial - 8	Wagons - 10	Grand Total - 115
Offline classes/ in-person based	10	12	12	8	3	3	18	1	8	5	9	89
Online classroom based	-	4	2	2	2	1	4	-	2	2	1	20
Recorded videos	-	2	2	-	-	-	1	-	-	1	-	6

	Auto	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Offline classes/ in-person based	100%	66%	75%	80%	60%	75%	78%	100%	80%	62%	90%	77%
Online classroom based	0%	22%	12%	20%	40%	25%	17%	0%	20%	25%	10%	17%
Recorded videos	0%	11%	12%	0%	0%	0%	4%	0%	0%	12%	0%	5%

18) Employers offering wage premiums to more qualified workers

Willingness to pay wage premium for more qualified / technically certified workers													
	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T – Decorative - 48	P&T – Industrial - 5	Process – Hygiene - 21	Process – Industrial - 20	Wagons - 21	Grand Total - 250
No	3	1	7	6	5	1	-	5	1	1	2	6	38
Yes	18	2	34	25	20	8	5	43	4	20	18	15	212

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T - Decorative	P&T - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
No	14%	33%	17%	19%	20%	11%	0%	10%	20%	5%	10%	28%	15%
Yes	86%	66%	83%	80%	80%	89%	100%	90%	80%	95%	90%	71%	85%

19) Reasons for employers to pay wage premium

Reasons for willingness to pay a wage premium (Multiple Choice)													
From the 212 respondents who are willing to pay wage premium													
	Auto - 18	Coaches - 2	General Fabrication - 34	Household - 25	Industrial Fabrication - 20	Lift and Elevators - 8	Metro - 5	P&T – Decorative - 43	P&T – Industrial - 4	Process – Hygiene - 20	Process – Industrial - 18	Wagons - 15	Grand Total - 212
If workers have completed relevant short term training courses/vocational courses	16	2	29	21	18	6	3	41	4	17	16	15	188
Workers have hands-on training experience.	11	2	21	16	14	5	2	34	3	18	12	7	145
Workers possess technical skills	16	2	29	18	19	6	4	31	4	17	14	14	174

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T – Decorative	P&T – Industrial	Process – Hygiene	Process – Industrial	Wagons	Grand Total
If workers have completed relevant short term training courses/vocational courses	89%	100%	85%	84%	90%	75%	60%	95%	100%	85%	89%	100%	88%
Workers have hands-on training experience.	61%	100%	61%	64%	70%	62%	40%	79%	75%	90%	66%	46%	68%
Workers possess technical skills	88%	100%	85%	72%	95%	75%	80%	72%	100%	85%	78%	93%	82%

20) Skills for which wage premium is being paid by the employers

Type of Skills for which Wage Premium is currently being Paid by the Employers (Open Ended: Multiple Choice Possible)																											
From the 212 respondents who are willing to pay wage premium																											
	Auto - 18		Coaches - 2		General Fabrication - 34		Household - 25		Industrial Fabrication - 20		Lift and Elevators - 8		Metro - 5		P&T - Decorative - 43		P&T - Industrial - 4		Process - Hygiene - 20		Process - Industrial - 18		Wagons - 15		Grand Total - 212		
Adaptability	5	1	12	5	8	3			15	2	8	8	3	70													
Computer/Digital Skills	6	1	5	7	7	5	1	6	1	5	2	3	49														
Functional Skills	8	1	18	12	9	4	2	24	2	15	10	9	114														
Machine related technical skills	6	2	15	8	9	2	1	21	2	5	5	3	79														
Problem Solving Ability	1	1	2	2	-	-	2	4	2	1	1	2	18														
Problem Solving Skills	4	-	5	6	1	1	1	6	-	3	3	2	32														
Safety Skills	11	-	30	16	17	5	5	24	2	14	13	11	148														
Soft Skills	6	-	4	12	5	2	1	12	-	2	5	3	52														
Team Work	5	-	10	6	2	2	1	11	-	3	3	8	51														

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T - Decorative	P&T - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Adaptability	27%	50%	35%	20%	40%	37%	0%	34%	50%	40%	44%	20%	33%
Computer/Digital Skills	33%	50%	15%	28%	35%	62%	20%	14%	25%	25%	11%	20%	23%
Functional Skills	44%	50%	53%	48%	45%	50%	40%	55%	50%	75%	55%	60%	53%
Machine related technical skills	33%	100%	44%	32%	45%	25%	20%	48%	50%	25%	27%	20%	37%
Problem Solving Ability	5%	50%	6%	8%	0%	0%	40%	9%	50%	5%	5%	13%	8%
Problem Solving Skills	22%	0%	14%	24%	5%	12%	20%	13%	0%	15%	16%	13%	15%
Safety Skills	61%	0%	88%	64%	85%	62%	100%	55%	50%	70%	72%	73%	69%
Soft Skills	33%	0%	11%	48%	25%	25%	20%	27%	0%	10%	27%	20%	24%
Team Work	28%	0%	29%	24%	10%	25%	20%	25%	0%	15%	16%	53%	24%

21) Impact of advanced technology on job roles and organization's operations

Do you feel advanced technology will impact job roles and your operations?														
	Auto - 21		Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T – Decorative – 48	P&T – Industrial – 5	Process – Hygiene - 21	Process – Industrial - 20	Wagons - 21	Grand Total - 250
No	21	3		35	28	24	7	4	35	5	19	17	20	218
Yes	-	-		6	3	1	2	1	13	-	2	3	1	32

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
No	100%	100%	85%	90%	96%	78%	80%	73%	100%	90%	85%	95%	87%
Yes	0%	0%	14%	9%	4%	22%	20%	27%	0%	9%	15%	4%	12%

22) New upcoming technologies due to technological advancement

Upcoming technologies in Segment (Open Ended)										
From the 32 respondents who said that tech advancement will affect job roles and operations										
	General Fabrication - 6	Household - 3	Industrial Fabrication - 1	Lift and Elevators - 2	Metro - 1	Pipe & Tube - Decorative - 13	Process - Hygiene - 2	Process - Industrial - 3	Wagons - 1	Grand Total - 32
Automated Packaging	1	1	-	1	1	6	-	1	-	11
Automated Quality Check	1	1	-	1	-	5	-	-	1	9
Automation	3	2	1	1	-	7	1	1	-	16
Computerized Manufacturing	5	2	1	1	-	7	2	2	1	21
Computerized Product Design	1	-	-	-	1	1	1	2	-	6
Quality Check	1	-	-	-	-	-	-	-	-	1

Upcoming technologies in Segment (Open Ended) (%)										
From the 32 respondents who said that tech advancement will affect job roles and operations										
	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Automated Packaging	16%	33%	0%	50%	100%	46%	0%	33%	0%	34%
Automated Quality Check	16%	33%	0%	50%	0%	38%	0%	0%	100%	28%
Automation	50%	66%	100%	50%	0%	53%	50%	33%	0%	50%
Computerized Manufacturing	83%	66%	100%	50%	0%	53%	100%	66%	100%	65%
Computerized Product Design	16%	0%	0%	0%	100%	7%	50%	66%	0%	18%
Quality Check	16%	0%	0%	0%	0%	0%	0%	0%	0%	3%

23) Emerging job roles due to technological advancement

Emerging job roles in next 5 years (Open Ended)										
From the 32 respondents who said that tech advancement will affect job roles and operations										
	General Fabrication - 6	Household - 3	Industrial Fabrication - 1	Lift and Elevators - 2	Metro - 1	Pipe & Tube - Decorative - 13	Process - Hygiene - 2	Process - Industrial 3	Wagons - 1	Grand Total - 32
Analyst	3	3	-	2	1	7	1	3	1	21
Automation Specialist	4	3	-	1	1	6	2	2	1	20
Automation Technician	1	2	-	1	1	5	-	2	-	12
Fabrication Technology Technician	5	1	1	1	-	8	2	1	1	20
Machine Operator	4	1	1	1	-	11	1	2	-	21
QC Analyst	2	-	1	1	-	7	-	1	-	12

	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T - Decorative	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Analyst	50%	100%	0%	100%	100%	53%	50%	100%	100%	65%
Automation Specialist	66%	100%	0%	50%	100%	46%	100%	66%	100%	62%
Automation Technician	16%	66%	0%	50%	100%	38%	0%	66%	0%	37%
Fabrication Technology Technician	83%	33%	100%	50%	0%	61%	100%	33%	100%	62%
Machine Operator	66%	33%	100%	50%	0%	84%	50%	66%	0%	65%
QC Analyst	33%	0%	100%	50%	0%	53%	0%	33%	0%	37%

24) Potential redundant job roles due to technological advancement

Job roles expected to become redundant in next 5 years (Open Ended)										
From the 32 respondents who said that tech advancement will affect job roles and operations										
	General Fabrication - 6	Household - 3	Industrial Fabrication - 1	Lift and Elevators - 2	Metro - 1	Pipe & Tube - Decorative - 13	Process - Hygiene - 2	Process - Industrial 3	Wagons - 1	Grand Total - 32
Helpers	5	-	-	-	-	6	2	-	1	14
Labourers	3	3	1	-	1	4	-	3	1	16
Management	-	-	-	-	-	1	-	-	-	1
Manual Cutter	6	3	1	1	-	9	1	2	-	23
Manual Fitter	-	1	-	1	-	4	1	-	-	7
Manual Packaging	4	3	1	2	1	10	2	-	-	23
Manual Polishing	-	-	-	1	1	3	1	1	1	8
Manual Welder	6	2	1	1	1	9	1	3	1	25

Job roles expected to become redundant in next 5 years (Open Ended) (%)										
From the 32 respondents who said that tech advancement will affect job roles and operations										
	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Helpers	83%	0%	0%	0%	0%	46%	100%	0%	100%	43%
Labourers	50%	100%	100%	0%	100%	30%	0%	100%	100%	50%
Management	0%	0%	0%	0%	0%	7%	0%	0%	0%	3%
Manual Cutter	100%	100%	100%	50%	0%	69%	50%	66%	0%	71%
Manual Fitter	0%	33%	0%	50%	0%	30%	50%	0%	0%	21%
Manual Packaging	66%	100%	100%	100%	100%	76%	100%	0%	0%	71%
Manual Polishing	0%	0%	0%	50%	100%	23%	50%	33%	100%	25%
Manual Welder	100%	66%	100%	50%	100%	69%	50%	100%	100%	78%

25) Skills required by workers to stay relevant in the industry

Skillset required due to technological advancement in next 3 years (Open Ended)										
From the 32 respondents who said that tech advancement will affect job roles and operations										
	General Fabrication - 6	Household - 3	Industrial Fabrication - 1	Lift and Elevators - 2	Metro - 1	Pipe & Tube - Decorative - 13	Process - Hygiene - 2	Process - Industrial 3	Wagons - 1	Grand Total - 32
Automated Cutting	3	3	1	1	1	6	-	2	1	18
Computer Operations	6	3	1	1	-	9	2	2	-	24
Data Analytics	3	-	-	1	1	2	-	2	-	9
Fabrication Technology	1	-	-	1	1	6	-	2	1	12
Quality Checker	2	-	-	1	-	5	2	-	-	10

	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Automated Cutting	50%	100%	100%	50%	100%	46%	0%	66%	100%	56%
Computer Operations	100%	100%	100%	50%	0%	69%	100%	66%	0%	75%
Data Analytics	50%	0%	0%	50%	100%	15%	0%	66%	0%	28%
Fabrication Technology	16%	0%	0%	50%	100%	46%	0%	66%	100%	37%
Quality Checker	33%	0%	0%	50%	0%	38%	100%	0%	0%	31%

26) Analysis of Top skills by Employers in stainless-steel segments and fabrication

Category wise analysis at segment level of Q59,60 and 61 which are as follows:

Q59: What are the top 5 skills you consider to be the necessary skills in entry-level workers to work effectively in stainless-steel segments and fabrication?

Q60: What are the top 5 skills you consider workers least proficient in, within the stainless-steel segments and fabrication?

Q61: Which skills training do you propose to provide generally by your organization for the workers?

Skills	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Awareness of stainless-steel grades information and material knowledge	21	4	46	32	24	12	4	38	3	14	26	19	243
Stainless steel material working skills (Understanding the properties of stainless-steel, including how to cut, bend, weld)	15	1	21	13	15	4	2	29	5	11	11	11	138
Finishing	12	2	31	26	19	6	4	36	2	18	12	19	187
Welding	11	3	33	28	24	5	6	39	4	23	16	17	209
SS Fabrications Skills (Total)	59	10	131	99	82	27	16	142	14	66	65	66	777
SS Fabrications Skills (%)	24%	28%	27%	26%	28%	26%	28%	25%	23%	26%	27%	27%	26%
Job-specific technical skills	11	1	27	21	21	11	4	39	5	18	12	21	191
Quality control	15	3	46	26	14	6	4	42	5	19	15	9	204
Safety protocols	17	1	28	24	16	5	3	42	2	20	18	15	191
Numeracy skills / Basic computational skills	13	1	20	9	10	2	3	17	2	9	8	12	106
Drawing, reading	14	2	34	23	19	5	5	33	4	17	15	16	187
General technical Skills (Total)	70	8	155	103	80	29	19	173	18	83	68	73	879
General technical Skills (%)	28%	22%	32%	28%	27%	28%	33%	31%	30%	33%	28%	30%	30%
Adaptability (work/switch between different segments, tasks)	17	0	24	17	10	6	0	29	2	15	9	15	144
Soft skills (Grasping clarity at work)	16	1	29	26	19	7	4	34	4	14	15	10	179
Problem-solving skills	12	3	29	28	16	5	2	37	5	12	17	14	180
Teamwork	22	4	20	25	20	8	3	34	1	14	18	11	180
Soft skills (Total)	67	8	102	96	65	26	9	134	12	55	59	50	683
Soft skills (%)	27%	22%	21%	26%	22%	25%	16%	24%	20%	22%	24%	20%	23%
Machine operation	20	5	38	30	27	8	5	43	3	14	16	17	226
Machine-related technology skills	23	4	30	28	22	7	5	39	6	21	18	18	221
Machine operation skills (Total)	43	9	68	58	49	15	10	82	9	35	34	35	447
Machine operation skills (%)	17%	25%	14%	16%	17%	15%	18%	14%	15%	14%	14%	14%	15%
Language skills (speaking different languages) -(Total)	8	1	34	18	17	5	3	36	7	13	16	20	178
Language skills (%)	3%	3%	7%	5%	6%	5%	5%	6%	12%	5%	7%	8%	6%
Grand Total	247	36	490	374	293	102	57	567	60	252	242	244	2964

27) Top 5 job roles in stainless steel domain based on hiring in last 5 years

Top 5 job roles or occupations in which maximum workers were hired, in the past 5 years? - Count (Open Ended)

Job Roles	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Bending Workers	2	-	11	7	3	2	3	10	-	3	2	5	48
Cutting Workers	13	2	22	20	11	7	3	30	3	10	11	5	137
Forming Workers	4	1	7	9	2	-	1	4	2	1	3	1	35
Fitters	2	1	7	3	4	1	-	7	2	6	3	-	36
Laser Cutting Workers	1	-	1	2	1	1	-	2	-	-	-	-	8
Molding Workers	4	-	5	3	4	-	-	5	1	4	4	-	30
Milling Workers	-	-	-	-	-	-	-	1	-	1	-	1	3
Material Handlers	1	-	7	7	5	2	-	5	-	4	6	1	38
Polishing Workers	3	1	10	3	2	1	-	9	-	6	3	3	41
Welding Workers	15	3	26	20	21	5	4	38	4	11	15	13	175
Electrical Workers	-	-	-	-	-	-	1	-	-	-	-	-	1
Engineer	-	-	1	-	-	-	-	1	-	-	-	-	2
Chemical Controller Worker	-	-	-	-	-	-	-	-	-	1	-	-	1
Machine Operators	3	-	4	3	5	2	-	4	1	2	4	10	38
Machine Technician	5	1	5	5	7	2	-	7	1	2	1	5	41
Maintenance Workers	-	-	7	2	4	2	-	4	-	2	2	-	23
QC Workers	1	-	1	2	2	-	-	2	-	1	1	-	10
Technician	-	-	-	1	-	-	-	-	-	-	-	-	1
Test Engineers	-	-	-	-	-	-	-	-	-	-	-	7	7
Mixing Workers	-	-	-	-	-	-	-	1	-	-	-	-	1
Logistics and Inventory Workers	1	-	2	1	1	-	1	4	1	4	2	6	23
Logistics Workers	5	-	4	1	1	1	1	6	-	5	6	14	44
Computer Operator	-	-	1	1	-	-	-	1	-	-	-	-	3
Helpers	3	-	3	3	2	-	1	4	-	2	3	2	23
Grand Total	21	3	41	31	25	9	5	48	5	21	20	21	250

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

Top 5 job roles or occupations in which maximum workers were hired, in the past 5 years? - Percentage (Open Ended)

Job Roles	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Bending Workers	10%	0%	27%	23%	12%	22%	60%	21%	0%	14%	10%	24%	19%
Laser Cutting Workers	5%	0%	2%	6%	4%	11%	0%	4%	0%	0%	0%	0%	3%
Moulding Workers	19%	0%	12%	10%	16%	0%	0%	10%	20%	19%	20%	0%	12%
Cutting Workers	62%	67%	54%	65%	44%	78%	60%	63%	60%	48%	55%	24%	55%
Milling Workers	0%	0%	0%	0%	0%	0%	0%	2%	0%	5%	0%	5%	1%
Polishing Workers	14%	33%	24%	10%	8%	11%	0%	19%	0%	29%	15%	14%	16%
Fitters	10%	33%	17%	10%	16%	11%	0%	15%	40%	29%	15%	0%	14%
Forming Workers	19%	33%	17%	29%	8%	0%	20%	8%	40%	5%	15%	5%	14%
Welding Workers	71%	100%	63%	65%	84%	56%	80%	79%	80%	52%	75%	62%	70%
Material Handlers	5%	0%	17%	23%	20%	22%	0%	10%	0%	19%	30%	5%	15%
Engineer	0%	0%	2%	0%	0%	0%	0%	2%	0%	0%	0%	0%	1%
Machine Operators	14%	0%	10%	10%	20%	22%	0%	8%	20%	10%	20%	48%	15%
Machine Technician	24%	33%	12%	16%	28%	22%	0%	15%	20%	10%	5%	24%	16%
Maintenance Workers	0%	0%	17%	6%	16%	22%	0%	8%	0%	10%	10%	0%	9%
Electrical Workers	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Chemical Controller Worker	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%
QC Workers	5%	0%	2%	6%	8%	0%	0%	4%	0%	5%	5%	0%	4%
Technician	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Test Engineers	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	3%
Computer Operator	0%	0%	2%	3%	0%	0%	0%	2%	0%	0%	0%	0%	1%
Helpers	14%	0%	7%	10%	8%	0%	20%	8%	0%	10%	15%	10%	9%
Logistics and Inventory Workers	5%	0%	5%	3%	4%	0%	20%	8%	20%	19%	10%	29%	9%
Logistics Workers	24%	0%	10%	3%	4%	11%	20%	13%	0%	24%	30%	67%	18%
Mixing Workers	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

28) Job roles in stainless steel domain which are hard to fill

Top 5 hard-to-fill occupations or job roles in your organization? - Count (Open Ended)

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T - Decorative	P&T - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Bending Workers	3	-	5	1	-	1	-	5	-	4	1	5	25
Experienced Cutting Workers	3	2	8	10	8	2	1	9	-	7	4	4	58
Experienced Fitters	1	-	5	1	4	1	-	6	3	2	1	4	28
Fabricator Helpers	6	1	12	12	9	3	-	13	2	3	4	7	72
Folding Workers	1	-	2	1	4	2	1	3	-	1	2	-	17
Forming Workers	-	-	-	-	-	1	-	1	1	1	2	-	6
Circle Cutting Expert	-	-	-	1	-	-	-	-	-	-	-	-	1
Material Handlers	-	-	2	-	2	-	1	1	-	2	1	-	9
Pipe Cutters	1	-	2	2	-	-	1	-	-	-	-	-	6
Polishing workers	3	-	3	3	2	2	-	5	1	3	-	4	26
Product Shining Workers	1	-	8	2	-	1	-	5	-	1	2	2	22
Skilled Welders	4	1	10	8	13	2	-	19	2	10	11	3	83
Steel Wire Cutters	-	-	4	-	-	-	-	1	-	-	1	-	6
Molding Workers	-	-	-	-	1	-	-	3	-	2	-	1	7
Machine Operators	8	1	15	11	3	4	3	10	1	6	4	5	71
Machinist	-	-	3	1	1	1	-	-	-	-	2	2	10
Maintenance Technician	3	1	6	4	4	3	-	9	-	3	4	3	40
Mechanical Engineer	-	-	-	1	-	-	-	2	1	1	-	2	7
Specialist Engineers	3	-	8	5	4	2	3	7	2	-	3	5	42
Maintenance Engineer	-	-	-	1	-	-	-	2	-	-	1	-	4
QC Staff	13	3	16	13	12	-	1	15	2	9	5	5	94
Site Foreman	-	-	-	-	-	-	-	-	-	-	1	-	1
Technicians	5	-	4	6	4	1	1	7	-	-	2	4	34
Experienced Supervisors	2	-	1	1	-	-	-	1	-	-	-	-	5
CAD Engineers	1	-	-	1	-	-	-	-	-	-	2	2	6
Packaging Workers	1	-	-	2	-	-	-	5	-	3	1	1	13
CAD Operators	-	-	2	1	-	-	1	3	-	1	2	1	11
Computer Operator	-	-	1	-	-	-	-	-	-	-	-	1	2
Crane Operator	-	-	1	-	-	-	-	-	-	-	-	-	1
Helpers	-	-	2	1	-	1	1	5	-	2	2	2	16
Hygiene I/c	-	-	-	-	-	-	-	-	-	1	-	-	1
Loader	3	-	1	1	2	-	-	1	-	-	1	-	9
Logistics Workers	-	-	2	3	5	-	1	5	-	2	3	-	21
Grand Total	21	3	41	31	25	9	5	48	5	21	20	21	250

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

Top 5 hard-to-fill occupations or job roles in your organization? - Percentage (Open Ended)													
	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	P&T – Decorative	P&T Industrial	Process – Hygiene	Process – Industrial	Wagons	Grand Total
Bending Workers	14%	0%	12%	3%	0%	11%	0%	10%	0%	19%	5%	23%	10%
Experienced Cutting Workers	14%	66%	19%	32%	32%	22%	20%	18%	0%	33%	20%	19%	23%
Experienced Fitters	4%	0%	12%	3%	16%	11%	0%	12%	60%	9%	5%	19%	11%
Fabricator Helpers	28%	33%	29%	38%	36%	33%	0%	27%	40%	14%	20%	33%	28%
Folding Workers	4%	0%	4%	3%	16%	22%	20%	6%	0%	4%	10%	0%	6%
Forming Workers	0%	0%	0%	0%	0%	11%	0%	2%	20%	4%	10%	0%	2%
Circle Cutting Expert	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Material Handlers	0%	0%	4%	0%	8%	0%	20%	2%	0%	9%	5%	0%	3%
Pipe Cutters	4%	0%	4%	6%	0%	0%	20%	0%	0%	0%	0%	0%	2%
Polishing workers	14%	0%	7%	9%	8%	22%	0%	10%	20%	14%	0%	19%	10%
Product Shining Workers	4%	0%	19%	6%	0%	11%	0%	10%	0%	4%	10%	9%	8%
Skilled Welders	19%	33%	24%	25%	52%	22%	0%	39%	40%	47%	55%	14%	33%
Steel Wire Cutters	0%	0%	9%	0%	0%	0%	0%	2%	0%	0%	5%	0%	2%
Molding Workers	0%	0%	0%	0%	4%	0%	0%	6%	0%	9%	0%	4%	2%
Machine Operators	38%	33%	36%	35%	12%	44%	60%	20%	20%	28%	20%	23%	28%
Machinist	0%	0%	7%	3%	4%	11%	0%	0%	0%	0%	10%	9%	4%
Maintenance Technician	14%	33%	14%	12%	16%	33%	0%	18%	0%	14%	20%	14%	16%
Mechanical Engineer	0%	0%	0%	3%	0%	0%	0%	4%	20%	4%	0%	9%	2%
Specialist Engineer	14%	0%	19%	16%	16%	22%	60%	14%	40%	0%	15%	23%	16%
Maintenance Engineer	0%	0%	0%	3%	0%	0%	0%	4%	0%	0%	5%	0%	1%
QC Staff	61%	100%	39%	41%	48%	0%	20%	31%	40%	42%	25%	23%	37%
Site Foreman	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Technicians	23%	0%	9%	19%	16%	11%	20%	14%	0%	0%	10%	19%	13%
Experienced Supervisors	9%	0%	2%	3%	0%	0%	0%	2%	0%	0%	0%	0%	2%
CAD Engineers	4%	0%	0%	3%	0%	0%	0%	0%	0%	0%	10%	9%	2%
Packaging Workers	4%	0%	0%	6%	0%	0%	0%	10%	0%	14%	5%	4%	5%
CAD Operators	0%	0%	4%	3%	0%	0%	20%	6%	0%	4%	10%	4%	4%
Computer Operator	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%
Crane Operator	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Helpers	0%	0%	4%	3%	0%	11%	20%	10%	0%	9%	10%	9%	6%
Hygiene I/c	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%
Loader	14%	0%	2%	3%	8%	0%	0%	2%	0%	0%	5%	0%	3%
Logistics Workers	0%	0%	4%	9%	20%	0%	20%	10%	0%	9%	15%	0%	8%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

29) Skilling programs proposed by employers to empower their workers

Skills training proposed by Employers to be provided by their organizations – Count (Multiple Choice)													
Skilling Programs	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Awareness of stainless-steel grades information and material knowledge	5	2	12	8	5	2	-	6	2	2	7	5	56
Finishing	1	-	4	5	3	-	1	4	-	3	1	3	25
Job specific technical skills	3	1	5	6	7	4	1	10	-	4	3	4	48
Stainless steel material working skills (Understanding the properties of stainless-steel, including how to cut, bend, weld)	6	1	8	3	3	2	-	11	2	4	3	6	49
Welding/Polishing	3	1	10	6	8	1	2	10	-	5	5	7	58
Machine operation	4	2	9	6	9	2	1	14	-	5	6	4	62
Machine-related technology skills	5	-	10	9	8	1	1	10	1	5	4	7	61
Drawing reading	2	-	7	3	2	1	3	4	1	3	2	2	30
Quality control	5	-	11	11	5	1	1	10	3	5	3	3	58
Adaptability	7	-	11	7	3	4	-	9	-	9	1	6	57
Numeracy skills/ Basic computational skills	3	-	7	4	4	-	3	6	-	4	2	2	35
Problem-solving skills	2	1	5	4	3	1	-	9	3	3	7	3	41
Language skills (speaking different languages)	2	-	4	2	3	3	1	7	-	2	3	4	33
Safety protocols	5	-	5	6	3	2	-	11	-	6	4	3	45
Soft skills	4	-	8	6	4	1	-	9	1	-	4	2	39
Teamwork	6	1	7	6	5	2	1	11	-	3	4	2	48
Grand Total	21	3	41	31	25	9	5	48	5	21	20	21	250

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

Skills training proposed by Employers to be provided generally by their organizations – Percentage (Multiple Choice)

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Awareness of stainless-steel grades information and material knowledge	23%	66%	29%	25%	20%	22%	0%	12%	40%	9%	35%	23%	22%
Finishing	4%	0%	9%	16%	12%	0%	20%	8%	0%	14%	5%	14%	10%
Job specific technical skills	14%	33%	12%	19%	28%	44%	20%	20%	0%	19%	15%	19%	19%
Stainless steel material working skills (Understanding the properties of stainless-steel, including how to cut, bend, weld)	28%	33%	19%	9%	12%	22%	0%	22%	40%	19%	15%	28%	19%
Welding/Polishing	14%	33%	24%	19%	32%	11%	40%	20%	0%	23%	25%	33%	23%
Drawing reading	9%	0%	17%	9%	8%	11%	60%	8%	20%	14%	10%	9%	12%
Machine operation	19%	66%	21%	19%	36%	22%	20%	29%	0%	23%	30%	19%	24%
Machine-related technology skills	23%	0%	24%	29%	32%	11%	20%	20%	20%	23%	20%	33%	24%
Quality control	23%	0%	26%	35%	20%	11%	20%	20%	60%	23%	15%	14%	23%
Adaptability	33%	0%	26%	22%	12%	44%	0%	18%	0%	42%	5%	57%	22%
Language skills (speaking different languages)	9%	0%	9%	6%	12%	33%	20%	14%	40%	9%	15%	19%	13%
Numeracy skills/ Basic computational skills	14%	0%	17%	12%	16%	0%	60%	12%	0%	19%	10%	9%	14%
Problem-solving skills	9%	33%	12%	12%	12%	11%	0%	18%	60%	14%	35%	14%	16%
Safety protocols	23%	0%	12%	19%	12%	22%	0%	22%	0%	28%	20%	14%	18%
Soft skills	19%	0%	19%	19%	16%	11%	0%	18%	20%	0%	20%	9%	15%
Teamwork	28%	33%	17%	19%	20%	22%	20%	22%	0%	14%	20%	9%	19%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

30) Important skills considered necessary in entry-level workers

Top 5 skills considered necessary in entry-level workers to work effectively in stainless-steel segments and fabrication? - Count (Multiple choice)

Important Skills	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Awareness of stainless-steel grades information and material knowledge	15	13	10	7	3	14	-	7	5	8	89
Drawing, reading	9	7	6	1	1	6	-	2	4	3	44
Finishing	11	11	5	3	2	15	-	5	3	7	69
Machine operation	17	12	11	2	3	18	2	6	8	9	98
Machine-related technology skills	11	12	10	6	3	15	4	9	10	7	98
Stainless steel material working skills (Understanding the properties of stainless-steel, including how to cut, bend, we	13	10	12	2	2	18	3	7	8	5	89
Welding	10	10	8	2	2	14	1	6	4	3	62
Adaptability (work/switch between different segments, tasks)	13	10	7	2	-	20	2	6	8	9	87
Numeracy skills / Basic computational skills	13	5	6	2	-	11	2	5	6	10	71
Problem-solving skills	14	14	5	2	1	15	1	5	6	8	77
Soft skills (Grasping clarity at work)	13	11	10	4	2	11	1	9	3	5	80
Teamwork	9	9	8	4	-	14	1	6	8	6	76
Job-specific technical skills	14	9	11	2	1	19	4	7	7	10	87
Language skills (speaking different languages)	13	7	3	1	1	9	1	6	5	7	56
Quality control	20	5	6	3	2	19	1	9	9	3	84
Safety protocols	8	10	7	2	2	18	2	8	5	5	74
Grand Total	41	31	25	9	5	48	5	21	20	21	250

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

Top 5 skills considered necessary in entry-level workers to work effectively in stainless-steel segments and fabrication? – (%)
(Multiple choice)

Important Skills	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Awareness of stainless-steel grades information and material knowledge	36%	41%	40%	77%	60%	29%	0%	33%	25%	38%	35%
Drawing, reading	21%	22%	24%	11%	20%	12%	0%	9%	20%	14%	17%
Finishing	26%	35%	20%	33%	40%	31%	0%	23%	15%	33%	27%
Machine operation	41%	38%	44%	22%	60%	37%	40%	28%	40%	42%	39%
Machine-related technology skills	26%	38%	40%	66%	60%	31%	80%	42%	50%	33%	39%
Stainless steel material working skills (Understanding the properties of stainless-steel, including how to cut, bend, weld)	31%	32%	48%	22%	40%	37%	60%	33%	40%	23%	35%
Welding	24%	32%	32%	22%	40%	29%	20%	28%	20%	14%	24%
Adaptability (work/switch between different segments, tasks)	31%	32%	28%	22%	0%	41%	40%	28%	40%	42%	34%
Numeracy skills / Basic computational skills	31%	16%	24%	22%	0%	22%	40%	23%	30%	47%	28%
Problem-solving skills	34%	45%	20%	22%	20%	31%	20%	23%	30%	38%	30%
Soft skills (Grasping clarity at work)	31%	35%	40%	44%	40%	22%	20%	42%	15%	23%	32%
Teamwork	21%	29%	32%	44%	0%	29%	20%	28%	40%	28%	30%
Job-specific technical skills	34%	29%	44%	22%	20%	39%	80%	33%	35%	47%	34%
Language skills (speaking different languages)	31%	22%	12%	11%	20%	18%	20%	28%	25%	33%	22%
Quality control	48%	16%	24%	33%	40%	39%	20%	42%	45%	14%	33%
Safety protocols	19%	32%	28%	22%	40%	37%	40%	38%	25%	23%	29%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

31) Skills in which workers are considered least proficient

Top 5 skills in which workers are considered to be least proficient in, within the stainless-steel segments and fabrication? - Count
(Multiple Choice)

Skills	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Awareness of stainless-steel grades information and material knowledge	11	-	19	11	9	3	1	18	1	5	14	6	98
Finishing	5	1	16	10	11	3	1	17	2	10	8	9	93
Job specific technical skills	5	-	8	6	3	5	2	10	1	7	2	7	56
Welding/ polishing	7	1	13	12	8	2	2	15	3	12	7	7	89
Machine operation	7	2	12	12	7	4	1	11	1	3	2	4	66
Machine-related technology skills	10	1	9	7	4	-	1	14	1	7	4	4	62
Drawing, reading	8	1	18	13	11	3	1	23	3	12	9	11	113
Quality control	4	2	15	10	3	2	1	13	1	5	3	3	62
Language skills (speaking different languages)	4	-	17	9	11	1	1	20	4	5	8	9	89
Problem-solving skills	5	1	10	10	8	2	1	13	1	4	4	3	62
Safety protocols	6	-	15	8	6	1	1	13	-	6	9	7	72
Soft skills (Grasping clarity at work)	1	1	8	9	5	2	2	14	2	5	8	3	60
Teamwork	6	2	4	10	7	2	2	9	-	5	6	3	56
Grand Total	21	3	41	31	25	9	5	48	5	21	20	21	250

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

**Top 5 skills in which workers are considered to be least proficient in, within the SS segments and fabrication? - Percentage
(Multiple Choice)**

Skills	Auto	Coaches	General Fabrication	House hold	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Awareness of stainless-steel grades information and material knowledge	52%	0%	46%	35%	36%	33%	20%	37%	20%	23%	70%	28%	39%
Finishing	23%	33%	39%	32%	44%	33%	20%	35%	40%	47%	40%	42%	37%
Job specific technical skills	23%	0%	19%	19%	12%	55%	40%	20%	20%	33%	10%	33%	22%
Welding/ polishing	33%	33%	31%	38%	32%	22%	40%	31%	60%	57%	35%	33%	35%
Machine operation	33%	66%	29%	38%	28%	44%	20%	22%	20%	14%	10%	19%	26%
Machine-related technology skills	47%	33%	21%	22%	16%	0%	20%	29%	20%	33%	20%	19%	24%
Drawing, reading	38%	33%	43%	41%	44%	33%	20%	47%	60%	57%	45%	52%	45%
Quality control	19%	66%	36%	32%	12%	22%	20%	27%	20%	23%	15%	14%	24%
Language skills (speaking different languages)	19%	0%	41%	29%	44%	11%	20%	41%	80%	23%	40%	42%	35%
Problem-solving skills	23%	33%	24%	32%	32%	22%	20%	27%	20%	19%	20%	14%	24%
Safety protocols	28%	0%	36%	25%	24%	11%	20%	27%	0%	28%	45%	33%	28%
Soft skills (Grasping clarity at work)	4%	33%	19%	29%	20%	22%	40%	29%	40%	23%	40%	14%	24%
Teamwork	28%	66%	9%	32%	28%	22%	40%	18%	0%	23%	30%	14%	22%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

SS Fabrication related core Job Roles

SS Fabrication related non-core job roles

Miscellaneous/Soft Skills

32) Factors behind hard-to-fill job positions

Reasons for the job roles being hard to fill - Count (Multiple Choice)

	Auto - 21	Coaches - 3	General Fabrication - 41	Household - 31	Industrial Fabrication - 25	Lift and Elevators - 9	Metro - 5	P&T - Decorative - 48	P&T - Industrial - 5	Process - Hygiene - 21	Process - Industrial - 20	Wagons - 21	Grand Total - 250
Intense or physically demanding working conditions	2	-	1	1	3	-	-	4	-	2	2	2	17
Lack of interest/ appetite among local youth to take up such jobs	9	1	22	13	10	3	3	13	3	14	9	11	111
Lack of skilled manpower for these job roles locally	12	1	12	7	9	2	1	20	1	13	10	2	90
Lack of social approval for women candidates to take on such jobs locally	9	1	12	11	6	3	2	14	1	4	5	3	71
Lack of soft skills i.e. communication, customer service behaviour	9	1	9	4	11	4	-	13	1	7	6	5	70
Lack of technical skills or educational qualifications for these job roles	9	2	21	10	12	4	1	15	3	9	8	10	104

Reasons for the job roles being hard to fill - Percentage (Multiple Choice)

	Auto	Coaches	General Fabrication	Household	Industrial Fabrication	Lift and Elevators	Metro	Pipe & Tube - Decorative	Pipe & Tube - Industrial	Process - Hygiene	Process - Industrial	Wagons	Grand Total
Intense or physically demanding working conditions	9%	0%	2%	3%	12%	0%	0%	8%	0%	9%	10%	9%	6%
Lack of interest/ appetite among local youth to take up such jobs	42%	33%	53%	41%	40%	33%	60%	27%	60%	66%	45%	52%	44%
Lack of skilled manpower for these job roles locally	57%	33%	29%	22%	36%	22%	20%	41%	20%	61%	50%	9%	36%
Lack of social approval for women candidates to take on such jobs locally	42%	33%	29%	35%	24%	33%	40%	29%	20%	19%	25%	14%	28%
Lack of soft skills i.e. communication, customer service behaviour	42%	33%	21%	12%	44%	44%	0%	27%	20%	33%	30%	23%	28%
Lack of technical skills or educational qualifications for these job roles	42%	66%	51%	32%	48%	44%	20%	31%	60%	42%	40%	47%	41%

5.2.4. Students

1) Awareness about JSL

Awareness About JSL									
	Engineering - 132	ITI – 149	Polytechnic - 169	Total – 450	Aware of JSL	Engineering – 102	ITI – 78	Polytechnic – 84	Total – 274
Aware about JSL	102	78	94	274	Institutes with JSL's presence	30	-	35	65
Unaware about JSL	30	71	75	176	Institutes without JSL's presence	72	78	59	209
	Engineering	ITI	Polytechnic	Total	Aware of JSL	Engineering	ITI	Polytechnic	
Aware about JSL	77%	52%	56%	61%	Institutes with JSL's presence	75%	-	58%	
Unaware about JSL	23%	48%	44%	39%	Institutes without JSL's presence	78%	52%	54%	

2) Awareness about Stainless-steel

Awareness About Stainless Steel							
Awareness about Stainless Steel	Engineering – 132		ITI – 149		Polytechnic – 169		
	Count	Percentage	Count	Percentage	Count	Percentage	
Awareness of Material	116	88%	115	77%	112	66%	
Applicability of Stainless Steel	49	37%	37	25%	45	27%	
Corrosion related benefits	33	25%	36	24%	41	24%	
Popularly called as 'Green Material'	40	30%	47	32%	34	20%	

Awareness about Stainless Steel	Engineering (%)		ITI (%)		Polytechnic (%)		
	Institutes with JSL's presence (40)	Institutes without JSL's presence (92)	Institutes with JSL's presence (0)	Institutes without JSL's presence (149)	Institutes with JSL's presence (60)	Institutes without JSL's presence (109)	
Awareness of Material	78%	75%	-	77%	77%	75%	
Applicability of Stainless Steel	18%	41%	-	25%	35%	26%	
Corrosion related benefits	20%	25%	-	24%	15%	31%	
Popularly called as 'Green Material'	68%	13%	-	32%	13%	25%	

3) Experience about training in stainless steel

Received formal training in SS				
	Engineering - 132	ITI – 149	Polytechnic - 169	Total – 450
Received Training	78	65	90	233
Not Received Training	54	84	79	217
	Engineering	ITI	Polytechnic	Total
Received Training	59%	44%	53%	52%
Not Received Training	41%	56%	47%	48%

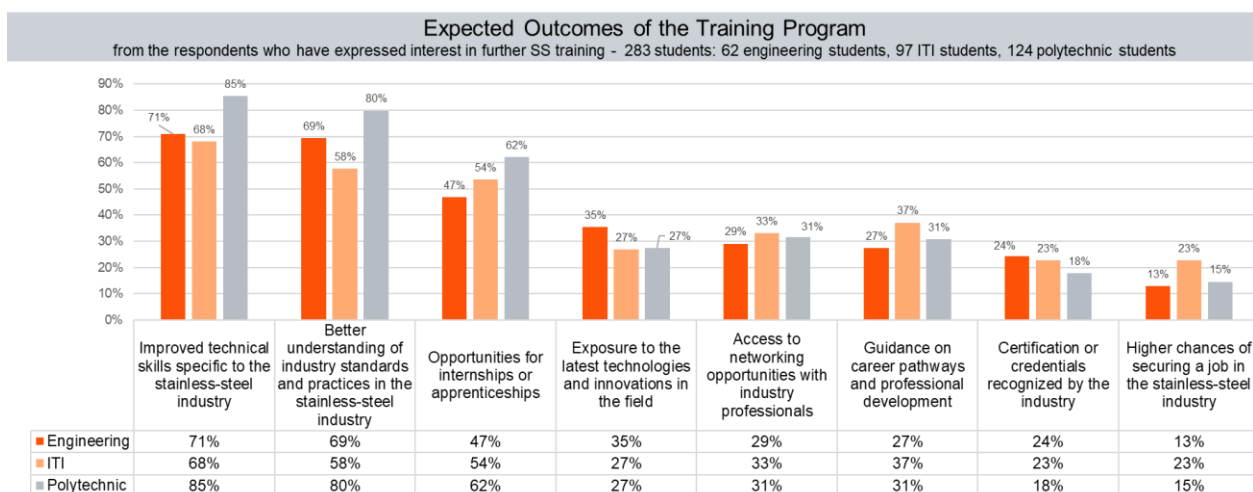
Motivation to attend training program from the respondents who have undergone SS training - 233 students: 76 Engineering Students, 65 ITI Students and 90 Polytechnic Students				
	Engineering – 78	ITI – 65	Polytechnic – 90	
To learn more about the sector, learn about its sub-sectors, options for employment	76	64	77	
For exposure and learning experience	50	40	59	
Friends said so	11	11	26	
Parents said so	2	27	25	
	Engineering	ITI	Polytechnic	Total
To learn more about the sector, learn about its sub-sectors, options for employment	97%	98%	86%	93%
For exposure and learning experience	64%	62%	66%	64%
Friends said so	14%	17%	29%	21%
Parents said so	3%	42%	28%	23%

4) Training aspirations in stainless steel

Future Interest in SS Training				
Further Interest in SS Training	Engineering – 132	ITI – 149	Polytechnic – 169	Total – 450
Yes	62	97	124	283
No	70	52	45	167

Further Interest in SS Training	Engineering	ITI	Polytechnic	Total
Yes	47%	65%	73%	63%
No	53%	35%	27%	37%

5) Expected Outcomes from Training in Stainless Steel



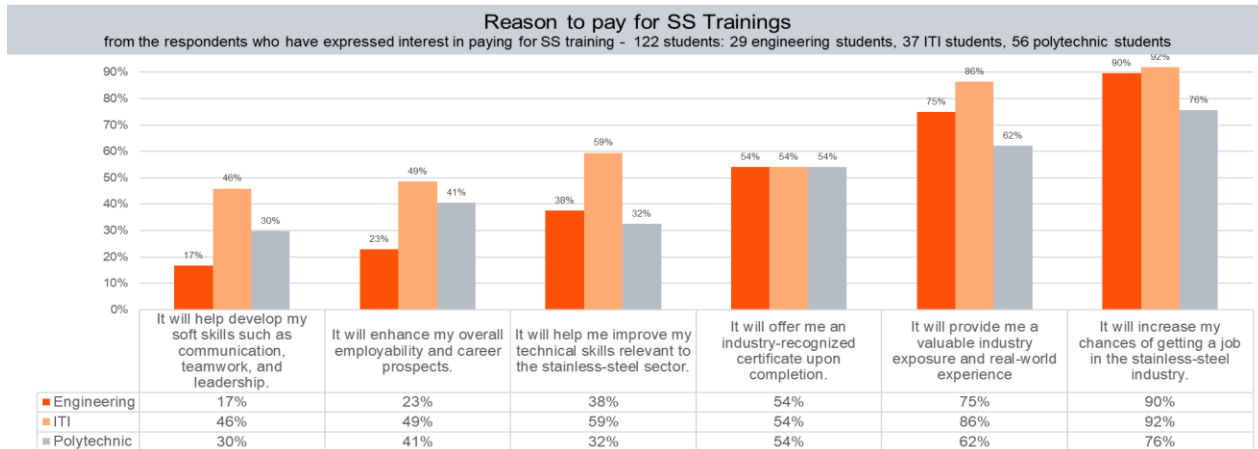
6) Key Challenges to meet training aspirations in Stainless Steel

Major challenges/ constraints to enroll in SS related programs						
Major Challenges/ Constrains)	Engineering – 132		ITI – 149		Polytechnic – 169	
	Count	Percentage	Count	Percentage	Count	Percentage
Non-availability of such training in the neighborhood	89	67%	103	69%	111	66%
Financial constraints to pay the fees	44	33%	62	42%	88	52%
Lengthy and long drawn process	43	33%	66	44%	99	59%
Absence of time for training (either over-worked or other commitments – social, professional etc.)	38	29%	36	24%	37	22%
Absence of quality training service providers/ trainers	32	24%	24	16%	27	16%
Absence of flexibility in time – say part-time or evening or weekend only courses	23	17%	24	16%	37	22%
Community does not support it	20	15%	6	4%	28	17%
Do not have enough support from my immediate family	14	11%	25	17%	30	18%
I do not have support/ permission from spouse	14	11%	1	1%	11	7%
Family responsibilities (household chores, taking care of children etc.)	11	8%	7	5%	15	9%

7) Willingness to pay for training in stainless steel

Willingness to pay for SS Trainings				
from the respondents who have expressed interest in further SS training - 283 students: 62 engineering students, 97 ITI students, 124 polytechnic students				
	Engineering – 62	ITI – 97	Polytechnic – 124	Total – 283
Willing to Pay	29	37	56	122
Not willing to pay	33	60	68	161

	Engineering	ITI	Polytechnic	Total
Willing to Pay	47%	38%	45%	43%
Not willing to pay	53%	62%	55%	57%



8) Essential skills required in stainless steel sector from the respondent's perspective

Category	Skills Considered Important by Students	Engineering – 132		ITI – 149		Polytechnic – 169	
		Count	Percentage	Count	Percentage	Count	Percentage
SS Technical Skills	Stainless Steel metal working skills (Understanding the properties of stainless steel, including how to cut, bend, weld)	78	59%	108	72%	139	82%
	Basic understanding for stainless-steel manufacturing process and its application in downstream employers.	89	67%	94	63%	99	59%
	Drawing, reading	29	22%	62	42%	86	51%
	Machine operation	39	30%	37	25%	44	26%
	Finishing	13	10%	29	19%	37	22%
	Welding/ Polishing	20	15%	34	23%	33	20%
Soft Skills	Awareness of stainless-steel grades information and material knowledge	39	30%	17	11%	14	8%
	Soft skills (Grasping clarity at work)	19	14%	71	48%	98	58%
	Adaptability (work/switch between different segments, tasks)	81	61%	59	40%	56	33%
	Teamwork	21	16%	62	42%	55	33%
	Language skills (speaking different languages)	9	7%	16	11%	35	21%
	Problem-solving skills	41	31%	44	30%	25	15%
Miscellaneous	Numeracy skills / Basic computational skills	62	47%	8	5%	9	5%
	Job specific technical skills	21	16%	36	24%	44	26%
	Safety protocols	28	21%	57	38%	41	24%
	Quality control	71	54%	11	7%	30	18%

5.3. Annexure C: Survey tools

1) Quantitative Questionnaire for Independent Fabricators

Jindal Stainless has commissioned a Training Needs Assessment (TNA) aimed at gaining insights into the dynamics of labour demand and supply across select sectors within the State while it is on the path to actualize the vision of Stainless Academy to build awareness and capability on Stainless Steel across the ecosystem. To achieve this objective, we have designed this structured survey questionnaire. This survey focuses on engaging with workers and/or fabricators, functioning as independent fabricators, working within stainless steel or steel fabrication across key stainless steel products such as Gates, Railings, Grills, Furniture, Tables, Chairs/ Stools, Ladders, Swings, Racks & Cabinets, Food counters, Structural Frames, across the nine selected states (i.e., 5 high-priority states – Gujarat, Tamil Nadu, Haryana, Odisha, and Uttar Pradesh; 3 medium-priority states – Maharashtra, Karnataka and Andhra Pradesh; and 1 low priority state – Jharkhand). The objectives of this workers' survey encompass a broad spectrum, including gaining an understanding of their work experience and job understanding, critical skills requirements and training needs. Additionally, the survey seeks to explore workers' awareness of the existing skilling and training ecosystem for the stainless-steel sector.

You have been randomly chosen to contribute to this survey, and we kindly request your cooperation in providing details about your work, skill training related information and/or perceptions, as applicable. Please be assured that your responses will be treated with utmost confidentiality and privacy, accessible only to the research team, Jindal Stainless, and are for the designated TNA purpose. Participation in this survey is entirely voluntary, and you retain the option to opt out at any stage. We sincerely appreciate your consideration in participating in this vital study. Thank you.

Are you willing to participate in the survey? If YES, please start the survey. If NO, please end the survey.

Time: 15-20 minutes

General guidance and purpose for the Interviewer (Enumerator) note:

- To gain insight into the educational, skill level and training status of individuals aged 15 to 59 nationwide, with a particular emphasis on stainless-steel fabrication.
- The data provided by the respondent will solely be utilized for the Jindal Stainless study and will be maintained with the utmost confidentiality.
- **Target Audience (for the enumerator):** To specify the respondent profile in the survey catchment area by following categories- the workers should be self-employed/ own account workers in stainless steel or steel area or as independent fabricators.

Section A: This section consists of enquiries related to demographic details of the respondent – To Be filled by Surveyor by self.

S No.	Description	Option	Code	Skip
1.		Gujarat	1	
		Tamil Nadu	2	

S No.	Description	Option	Code	Skip
	In which state is the respondent currently located? (Only one code) (To be filled by the enumerator)	Haryana Odisha Uttar Pradesh Maharashtra Karnataka Andhra Pradesh Jharkhand	3 4 5 6 7 8 9	
2.	In which city is the respondent currently located? (To be filled by the enumerator)	_____ (City name to be filled as per the updated sampling strategy).		
3.	What is the area type in which the respondent lives in? (Only one code)	Rural Urban Semi-Urban	1 2 3	
4.	What is the pin code of the area where the respondent resides in?	_____ (6 digits numeric)		

Section B: This section consists of enquiries related to the respondent profile - To Be filled by Surveyor by self through interview.

SI No.	Description	Option	Code	Skip
5.	What is your full name? (Only text allowed)	_____		
6.	Please provide your phone number. (10-digit phone number)	_____		
7.	Please provide your email ID?	_____@_____		Skip if not applicable
8.	What is your gender? (Only one code)	Male Female Others	1 2 3	
9.	What is your completed age? Note: it should be within 15-59 years.	_____ (in years)		
10.	Would you classify yourself as unskilled worker or semi-skilled or skilled worker?	Unskilled worker (Little or no independent judgement / previous experience although familiar with occupational environment) Semi-skilled worker (Defined nature of work wherein the major requirement is not for	1 2	

SI No.	Description	Option	Code	Skip
	(Only one code)	judgement or skill but for proper discharge of duties)		
		Skilled worker (Exercise considerable independent judgement and discharge his duties with responsibility)	3	
11.	Do you have an Aadhar number	Yes	1	
		No	0	
12.	How many family members do you have?	_____ (in numbers)		
13.	Do you have children?	Yes	1	
		No	2	Skip to Q15
14.	Do your children go to school?	Yes	1	
		No	0	
15.	What is your highest completed qualification? (Only one code)	Less than secondary school	1	
		Secondary school (Class X)	2	
		Higher secondary school (Class XII)	3	
		Diploma certificate from ITI	4	
		Diploma certificate from Polytechnic	5	
		Graduation from Engineering college	6	
		Graduation from non-Engineering college	7	
		Beyond 1 graduation/Post-Graduation	8	
		Others, specify _____	99	
16.	Can you share your total work experience?	Less than 1 year	1	
		1-2 years	2	
		3-4 years	3	
		More than 5 years	4	
		5-10 years	5	
		More than 10 years	6	
17.	What kind of work you have had work experience in, within steel? Note: more than 1 option possible.	Cutting	1	
		Welding	2	
		Polishing	3	
		Others, please specify _____	99	
18.	What kind of work you have had work experience in, within stainless-steel? Note: more than 1 option possible.	Cutting	1	
		Welding	2	
		Polishing	3	
		Others, please specify _____	99	
19.	Which products within stainless steel you are fabricating? Note: at the most 6 options to be told.	Gates	1	
		Railings	2	
		Grills	3	
		Furniture	4	
		Tables	5	
		Chairs/ Stools	6	

SI No.	Description	Option	Code	Skip
		Ladders	7	
		Swings	8	
		Racks and Cabinet	9	
		Cladding embellishments	12	
		Food counters	13	
		Structural frames	14	
		Others, please specify _____	99	
20.	Can you share your total work experience in Stainless steel industry?	Less than 1 year	1	
		1-2 years	2	
		3-4 years	3	
		4- 5 years	4	
		5-10 years	5	
		More than 10 years	6	
		Not applicable	0	

Section C: This section consists of enquiries of segment details and awareness of stainless steel and Jindal Stainless.

SI No.	Description	Option	Code	Skip
21.	Do you use stainless steel or not?	Yes	1	Skip to Q23
		No	2	
22.	Why don't you use stainless steel? (Note: Multiple codes possible.)	Not knowing anything about stainless-steel	1	
		Not aware of the kind of stainless-steel products or never used as well.	2	
		Unaware of stainless-steel fabrication processes involved.	3	
		Not knowing about the right grade stainless steel to use, or where to get it or understand the supply of that	4	
		Not aware about the applications of stainless-steel	5	
		Does not get any orders for stainless-steel products	6	
23.	Do you use any other metal/materials than stainless steel in the fabrication? (Note: Single code)	Yes	1	Skip to Q25
		No	2	
24.	What are all the metals/materials you work with, for day-to-day activities?	Mild Steel (PM 32, 38, MS tool grades)	1	
		Copper	2	
		Brass	3	
		Mixed alloys	4	
		Aluminum	5	

SI No.	Description	Option	Code	Skip
	(Note: Multiple codes possible.)	Glass	6	
		Wood	7	
		Others, please specify _____	99	
25.	Do you use safety tools at work?	Yes	1	Continue to Q26 and skip to Q28
		No	2	Skip to Q27
26.	What types of the listed safety tools at work do you use on a regular basis? (Note: Multiple codes possible)	Jackets	1	
		Nose Mask / Respiratory Mask	2	
		Welding gloves	3	
		Welding helmets	4	
		Apron	5	
		Safety Goggles	6	
		Safety shoes	7	
		Others, please specify _____	99	
27.	What are the reasons for you to not use safety tools at work?	Not having the available safety tools	1	
		Not knowing how to use the safety tools	2	
		It becomes too uncomfortable or tough to work using these safety tools	3	
		The safety tools and equipment are not proper or authentic, avoid using them.	4	
		Do not have the habit of using safety tools	5	
28.	Are you aware of the source/brand of the metal raw material? (Note: Single code)	Yes	1	
		No	2	
29.	Can you name the brand which you are aware of? (Note: Multiple codes possible)	Jindal Stainless	1	
		Steel Authority of India Limited (SAIL)	2	
		Tata Steel	3	
		JSW Steel	4	
		VISA Steel	5	
		Vedanta	6	
		Bhushan Steel	7	
		Essar Steel India	8	
		Rashtriya Ispat Nigam Ltd. (RINL)	9	
		Hindalco Industries	10	
		AM/NS India	11	
		Export brand from China or Vietnam	12	

SI No.	Description	Option	Code	Skip
		Others, please specify _____	99	
30.	What are the challenges you face in your day-to-day activities? (Note: Multiple codes possible)	Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	1	
		Issue related to understanding basic drawings or comprehending basic engineering terms	2	
		In the process of welding, cutting (Process related)	3	
		While executing and installing/ commissioning/ Maintenance the product	4	
		Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	5	
		Issues such as challenges with fasteners, Nuts & Bolts, Accessories etc. at the use or maintenance levels	6	
		Basic Numerical skills	7	
		Access to finance	8	
		Customer management related	9	
		Other challenges, please specify _____	99	
31.	Is welding applicable at your work?	Yes	1	
		No	2	Skip to Q33
32.	What kind of welding you are practicing at the moment?	ARC Welding (electrode, stick)	1	
		TIG Welding (Gas, Argon)	2	
		Brazing	3	
		MIG Welding	4	
		Others, please specify _____	99	
33.	Have you received any benefit under these schemes? – To be captured only if it was in Fabrication/ manufacturing. (Note: Multiple codes possible)	Training related – PMKVY, DDU-GKY, MMKSY, PMYVVA, etc.	1	
		Vishwakarma Yojana	2	
		Not affiliated with any government schemes	3	
		Another scheme, please specify _____	99	
34.	Have you used raw materials/ products of Jindal Stainless?	Yes	1	Go to Q35 then skip to Q37
		No	2	Skip to Q36
35.		Availability of the right raw material	1	

SI No.	Description	Option	Code	Skip
	What are the reasons for using Jindal Stainless raw materials/ products?	Better quality	2	
		Other reasons, please specify _____	99	
36.	What are the reasons for using non-Jindal Stainless products/ services?	Lower price	1	
		Low awareness, not knowing how to get Jindal stainless steel	2	
		Better quality of non-Jindal stainless steel companies' products/services	3	
		Other reasons, please specify _____	99	
37.	Which of the following government schemes or livelihood related schemes are you aware of?	Jeevan Beema	1	
		Awaz Yojana	2	
		MUDRA loans or PM Mudra Yojana (of Dept. of Finance)	3	
		SFURTI Scheme (of Dept. of MSME)	4	
		Credit Guarantee Funds Trust for Micro and Small Enterprise (CGTMSE)	5	
		Stand up Scheme	6	
		Not aware of any government scheme	0	
		Any other scheme, please specify _____	99	
38.	How many workers are employed in your workshop?	1-2 workers	1	
		3-5 workers	2	
		6-10 workers	3	
		11-20 workers	4	
		More than 20 workers	5	
39.	What is the average monthly income of your workshop?	Less than ₹25,000	1	
		₹25,001 - ₹50,000	2	
		₹50,001 - ₹75,000	3	
		₹75,001 - ₹1,00,000	4	
		More than ₹1,00,000	5	
40.	What is your average monthly income?	Less than ₹10,000	1	
		₹10,001 - ₹25,000	2	
		₹25,001 - ₹50,000	3	
		₹50,001 - ₹75,000	4	
		₹75,001 - ₹1,00,000	5	
		More than ₹1,00,000	6	
41.	What is the average monthly consumption of stainless steel in your workshop?	Less than 500 kg	1	
		500 kg – 1 tonne	2	
		1 – 2 tonne	3	
		2 – 5 tonne	4	
		More than 5 tonne	5	

Section D: This section consists of enquiries related to skilling, career aspirations, and training needs

SI No.	Description	Option	Code	Skip																														
42.	From where have you learnt general fabrication related to mild steel fabrication? (Multiple choice question)	From organized programs/courses	1																															
		On the job (from a mentor/senior)	2																															
		On your own	3																															
43.	From where have you learnt stainless steel fabrication processes? (Multiple choice question)	From organized programs/courses	1																															
		On the job (from a mentor/senior)	2																															
		On your own	3																															
44.	Have you participated in training programs related to steel or stainless-steel fabrication? Which One?	Yes, in steel fabrication	1																															
		Yes, in stainless-steel fabrication	2																															
		No, not participated in any training for steel or stainless-steel fabrication	3	Skip to Q50																														
45.	Who organized the particular training program you attended, related to steel or stainless-steel fabrication?	Organized by the government (central/state government initiative)	1																															
		Organized by private entity/organization (including your own organization)	2																															
		Organized by academic institutions	3																															
		Organized by Jindal Stainless	4																															
		Self-applied on online portals	5																															
46.	Can you name the organization (with location-state, district) whose certificate/training program you undertook as mentioned in the previous question?	<table border="1"> <thead> <tr> <th>No</th><th>Type of training provider</th><th>Name (Company / Scheme)</th><th>State</th><th>City</th><th>How long was the training (no of hours/ days)?</th></tr> </thead> <tbody> <tr> <td>1</td><td>Govt. entity/</td><td></td><td></td><td></td><td></td></tr> <tr> <td>2</td><td>Private company</td><td></td><td></td><td></td><td></td></tr> <tr> <td>3</td><td>Academic institution</td><td></td><td></td><td></td><td></td></tr> <tr> <td>4</td><td>Online portal</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	No	Type of training provider	Name (Company / Scheme)	State	City	How long was the training (no of hours/ days)?	1	Govt. entity/					2	Private company					3	Academic institution					4	Online portal						
No	Type of training provider	Name (Company / Scheme)	State	City	How long was the training (no of hours/ days)?																													
1	Govt. entity/																																	
2	Private company																																	
3	Academic institution																																	
4	Online portal																																	
47.	What was the motivation to receive the previous	To learn more about the day-to-day work	1																															
		Need to change job	2																															

SI No.	Description	Option	Code	Skip
	question's stated training program/s? (Note: Multiple Responses Possible)	Need to change the kind of work currently but want to work in stainless steel	3	
		Parents said so	4	
		Friends said so	5	
		For better salary	6	
		Other reasons, please specify _____	99	
48.	Please elaborate on the topics covered under the training programme, which you found most useful? At most 3 options can be mentioned.	1. _____ 2. _____ 3. _____		
49.	In terms of benefits derived from the training you did, select the options which apply in your case. Note: multiple codes possible.	Potential of creating avenues for more remunerative employment options	1	
		Efficiency of your fabrication process improved post the training	2	
		Enhancement in your earnings post attending the training	3	
		Others, please specify _____	99	
50.	Do you wish to attain a training/skill development certificate in Stainless steel in future?	Yes	1	
		No	2	Skip to Q55
51.	What are your perceived benefits from training which you may undertake? (Note: Multiple Responses Possible)	Improve yourself at work	1	
		Expect increased wages	2	
		For career transition/development	3	
		To learn more about stainless steel	4	
		Other reasons, please specify _____	99	
52.	How much time over a day you can spare for training?	Less than 1 hour	1	
		1-2 hours	2	
		2-4 hours	3	
		More than 4 hours	4	
		More than 6 hours	5	
53.	What mode of training is preferred?	Offline classes/ in-person based	1	
		Recorded videos	2	
		Online classroom based.	3	

SI No.	Description	Option	Code	Skip
		Others, please specify _____	99	
54.	What topics for a skill development training you would find most beneficial?	Latest cutting and polishing	1	
		Latest welding techniques	2	
		Quality control for better results in final products	3	
		Safety practices	4	
		Equipment operation and maintenance	5	
		Information on SS accessories (SS fastener, nuts, bolts)	6	
		Business management and customer service	7	
		Others, please specify _____	99	
55.	What are your work-related aspirations?	I am currently wage salaried, and want to continue the job	1	
		I am currently wage salaried but want to start my own business/self employed	2	
		I am currently running my business/self-employed but want to attain a job	3	
		I am currently running my business and want to continue my business	4	
		No Aspiration	5	
		Don't know/Unsure	6	
		Other, please specify _____	99	
56.	Based on your previously mentioned nature of career aspirations, what are the key factors determining career aspirations? Please mention the top 3 factors at the maximum. (Note: Multiple Responses Possible)	Flexible work contract	1	
		Availability of social protection benefits (disability, maternity/paternity benefits etc.)	2	
		Provision of decent pay	3	
		Well-defined and followed working hours (i.e., decent work-life balance)	4	
		Opportunities for continuous learning and upskilling	5	
		Sense of purpose/impact on society/ respect from society	6	
		Diversity and inclusion	7	

SI No.	Description	Option	Code	Skip
		Well-being programs and incentives	8	
		Location i.e., close to residence	9	
		Job security	10	
		Growth prospects	11	
		Others, please specify _____	99	
57.	Based on your previously mentioned nature of career aspirations, What factors inhibit your career aspirations? (Note: Multiple Responses Possible)	Lack of not knowing about the sector well	1	
		Lack of market awareness	2	
		Lack of fundings	3	
		Lack of education	4	
		Lack of tools and equipments	5	
		Lack of understanding of market	6	
		Other reasons, please specify _____	99	
58.	In what ways do you want your income/business opportunities to get enhanced through Stainless Academy support? (Note: Multiple Responses Possible)	Information on availability of the right raw materials, which grade to use, etc.	1	
		Sources of procuring Stainless-steel	2	
		Fabrication-related training	3	
		Lead generation training	4	
		Process related trainings	5	
		Team management training	6	
		Customer relation management training	7	
		Safety practices	8	
		Basic toolkit	9	
		Awareness about social security benefits schemes, etc.	10	
		Not Applicable (as the respondent is wage employed)	0	
		Others, please specify _____	99	

Section E: This section consists of enquiries related to digital literacy and financial literacy

SI No.	Description	Option	Code	Skip
59.	Do you have a smartphone, which you may use for work?	Yes	1	Skip to Q61
		No	2	Skip to Q61

SI No.	Description	Option	Code	Skip
		Sharing with someone, specify	3	Continue to Q60
60.	If you share a smartphone with someone, can you access it whenever you want for work?	Yes	1	
		No	0	
61.	Do you use any of the social media platforms for learning at work?	Yes	1	Skip to Q63
		No	2	
62.	Which ones of the listed social media platforms do you use for raising your knowledge/training? (Note: Multiple Responses Possible)	Facebook	1	
		WhatsApp	2	
		YouTube	3	
		None	4	
		Other, please specify _____	99	
63.	Do you use BHIM/UPI for online payment/transfer?	Yes	1	
		No	0	
64.	Do you have your own/shared bank account?	Yes, own account	1	
		Yes, sharing account.	2	
		No, don't have	3	
65.	Do you have insurance-health/life related?	Yes	1	
		No	0	

2) Quantitative Questionnaire for Organized Workers

Jindal Stainless has commissioned a Training Needs Assessment (TNA) aimed at gaining insights into the dynamics of labour demand and supply across select sectors within the State while it is on the path to actualize the vision of Stainless Academy to build awareness and capability on Stainless Steel across the ecosystem. To achieve this objective, we have designed this structured survey questionnaire. This survey focuses on engaging with workers and/or fabricators, functioning either as organized or as independent fabricators, working within stainless steel or steel fabrication across 5 segments (i.e. Architecture Building and Construction, Automobile, Railway & Transport (ART), Process industry, Holloware industry, and Consumer Durables) across the nine selected states (i.e., 5 high-priority states – Gujarat, Tamil Nadu, Haryana, Odisha, and Uttar Pradesh; 3 medium-priority states – Maharashtra, Karnataka and Andhra Pradesh; and 1 low priority state – Jharkhand). The objectives of this workers' survey encompass a broad spectrum, including gaining an understanding of their work experience and job understanding, critical skills requirements and training needs. Additionally, the survey seeks to explore workers' awareness of the existing skilling and training ecosystem for the stainless-steel sector.

You have been randomly chosen to contribute to this survey, and we kindly request your cooperation in providing details about your work, skill training related information and/or perceptions, as applicable. Please be assured that your responses will be treated with utmost confidentiality and privacy, accessible only to the research team, Jindal Stainless, and are for the designated TNA purpose. Participation in this survey is

entirely voluntary, and you retain the option to opt out at any stage. We sincerely appreciate your consideration in participating in this vital study. Thank you.

Are you willing to participate in the survey? If YES, please start the survey. If NO, please end the survey.

Time: 15-20 minutes

General guidance and purpose for the Interviewer (Enumerator) note:

- To gain insight into the educational, skill level and training status of individuals aged 15 to 59 nationwide, with a particular emphasis on stainless-steel fabrication.
- The data provided by the respondent will solely be utilized for the Jindal Stainless study and will be maintained with the utmost confidentiality.
- **Target Audience (for the enumerator):** To specify the respondent profile in the survey catchment area by following categories- In the case of organized sector, the workers should be wage and/or salaried employed in Stainless Steel fabrication industry/MSME and in case of not an organized sector, the workers should be self-employed/own account workers in stainless steel or steel area or as independent fabricators.

Section A: This section consists of enquiries related to demographic details of the respondent – To Be filled by Surveyor by self.

S No.	Description	Option	Code	Skip
1.	In which state is the respondent currently located? (Only one code) (To be filled by the enumerator)	Gujarat Tamil Nadu Haryana Odisha Uttar Pradesh Maharashtra Karnataka Andhra Pradesh Jharkhand	1 2 3 4 5 6 7 8 9	
2.	In which district is the respondent currently located? (To be filled by the enumerator)	(District name to be filled as stated in Annexure list's table 1).		
3.	In which cluster is the respondent currently located? (To be filled by the enumerator)	(Cluster name to be filled as stated in Annexure list's table 2).		
4.	What is the area type in which the respondent lives in? (Only one code)	Rural Urban Semi-Urban	1 2 3	

S No.	Description	Option	Code	Skip
5.	What is the pin code of the area where the respondent resides in?	_____ (6 digits numeric)		

Section B: This section consists of enquiries related to the respondent profile - To Be filled by Surveyor by self through interview.

SI No.	Description	Option	Code	Skip
6.	What is your full name? (Only text allowed)	_____		
7.	Please provide your phone number? (10-digit phone number)	_____		
8.	Please provide your email ID?	_____@_____		Skip if not applicable
9.	What is your gender? (Only one code)	Male	1	
		Female	2	
		Others	3	
10.	What is your completed age? Note: it should be within 15-59 years.	_____ (in years)		
11.	Would you classify yourself as unskilled worker or semi-skilled or skilled worker? (Only one code)	Unskilled worker (Little or no independent judgement / previous experience although familiar with occupational environment)	1	
		Semi-skilled worker (Defined nature of work wherein the major requirement is not for judgement or skill but for proper discharge of duties)	2	
		Skilled worker (Exercise considerable independent judgement and discharge his duties with responsibility)	3	
12.	Do you have an Aadhar number	Yes	1	
		No	0	
13.	How many family members do you have?	_____ (in numbers)		
14.	Do you have children?	Yes	1	Skip to Q16
		No	2	
15.	Do your children go to school?	Yes	1	
		No	0	
16.	What is your highest completed qualification? (Only one code)	Less than secondary school	1	
		Secondary school (Class X)	2	
		Higher secondary school (Class XII)	3	
		Diploma certificate from ITI	4	

SI No.	Description	Option	Code	Skip
		Diploma certificate from Polytechnic	5	
		Graduation from Engineering college	6	
		Graduation from non-Engineering college	7	
		Beyond 1 graduation/Post-Graduation	8	
		Others, specify	99	
17.	Can you share your total work experience?	Less than 1 year	1	
		1-2 years	2	
		3-4 years	3	
		More than 5 years	4	
		5-10 years	5	
		More than 10 years	6	
18.	What kind of work you have had work experience in, within steel? Note: more than 1 option possible.	Cutting	1	
		Welding	2	
		Polishing	3	
		Circle cutting	4	
		Pressing	5	
		Die maker	6	
		Moulding	7	
		Packaging	8	
		Others, please specify _____	99	
19.	What kind of work you have had work experience in, within stainless-steel? Note: more than 1 option possible.	Cutting	1	
		Welding	2	
		Polishing	3	
		Circle cutting	4	
		Pressing	5	
		Die maker	6	
		Moulding	7	
		Packaging	8	
		Others, please specify _____	99	
20.	Which products within stainless steel/steel you are working on? Note: at the most 3 option to be told.	1. _____ 2. _____ 3. _____		
21.	Can you share your total work experience in Stainless steel industry?	Less than 1 year	1	
		1-2 years	2	
		3-4 years	3	
		Less than 5 years	4	
		5-10 years	5	
		More than 10 years	6	
		Not applicable	0	
22.	What is your current status or what type of work you are associated with?	Independent Fabricators (self-employed)	1	Continue with Section C then go to Section E

SI No.	Description	Option	Code	Skip
	(Note for the surveyor – working as wage salaried means being in organized sector. Working as self-employed, own-account worker means independent fabricator)	Organized worker/Fabricator (wage employed)	2	Go to Section D then to Section E

Section C: *[To be asked to only the Independent Fabricators or workers]* - This section consists of enquiries of segment details and awareness of stainless steel and Jindal Stainless.

SI No.	Description	Option	Code	Skip
23.	Do you use stainless steel or not?	Yes	1	Skip to Q25
		No	2	
24.	Why don't you use stainless steel? (Note: Multiple codes possible.)	Not knowing anything about stainless-steel	1	
		Not aware of the kind of stainless-steel products or never used as well.	2	
		Unaware of stainless-steel fabrication processes involved.	3	
		Not knowing about the right grade stainless steel to use, or where to get it or understand the supply of that	4	
		Not aware about the applications of stainless-steel	5	
		Does not get any orders for stainless-steel products	6	
25.	Do you use any other metal/materials than stainless steel in the fabrication? (Note: Single code)	Yes	1	Skip to Q27
		No	0	
26.	What are all the metals/materials you work with, for day-to-day activities? (Note: Multiple codes possible.)	Mild Steel (PM 32, 38 , MS tool grades)	1	
		Copper	2	
		Brass	3	
		Mixed alloys	4	
		Aluminum	5	
		Glass	6	
		Wood	7	
		Others, please specify _____	99	
27.	Do you use safety tools at work?	Yes	1	Continue to Q28

SI No.	Description	Option	Code	Skip
				and skip to Q30
		No	2	Skip to Q29
28.	What types of the listed safety tools at work do you use on a regular basis? (Note: Multiple codes possible)	Jackets	1	
		Nose Mask / Respiratory Mask	2	
		Welding gloves	3	
		Welding helmets	4	
		Apron	5	
		Safety Goggles	6	
		Safety shoes	7	
		Others, please specify _____	99	
29.	What are the reasons for you to not use safety tools at work?	Not having the available safety tools	1	
		Not knowing how to use the safety tools	2	
		It becomes too uncomfortable or tough to work using these safety tools	3	
		The safety tools and equipment are not proper or authentic, avoid using them.	4	
		Do not have the habit of using safety tools	5	
30.	Are you aware of the source/brand of the metal raw material? (Note: Single code)	Yes	1	Skip to Q32
		No	0	
31.	If yes to the previous question, can you name the brand which you are aware of? (Note: Multiple codes possible)	Jindal Stainless	1	
		Steel Authority of India Limited (SAIL)	2	
		Tata Steel	3	
		JSW Steel	4	
		VISA Steel	5	
		Export brand from China or Vietnam	6	
		Others, please specify _____	99	
32.	What are the challenges you face in your day-to-day activities? (Note: Multiple codes possible)	Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	1	
		Issue related to understanding basic drawings or comprehending basic engineering terms	2	
		In the process of welding, cutting (Process related)	3	
		While executing and installing/ commissioning/ Maintenance the product	4	

SI No.	Description	Option	Code	Skip
		Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	5	
		Issues such as challenges with fasteners, Nuts & Bolts, Accessories etc. at the use or maintenance levels	6	
		Basic Numerical skills	7	
		Access to finance	8	
		Customer management related	9	
		Other challenges, please specify _____	99	
33.	Is welding applicable at your work?	Yes	1	
		No	2	Skip to Q35
34.	What kind of welding you are practicing at the moment?	ARC Welding (electrode, stick)	1	
		TIG Welding (Gas, Argon)	2	
		Brazing	3	
		MIG Welding	4	
		Others, please specify _____	99	
35.	Have you received any benefit under these schemes? – To be captured only if it was in Fabrication/ manufacturing. (Note: Multiple codes possible)	Training related – PMKVY, DDU-GKY, MMKSY, PMYVVA, etc.	1	
		Vishwakarma Yojana	2	
		Not affiliated with any government schemes	3	
		Another scheme, please specify _____	99	
36.	Have you heard of Jindal Stainless?	Yes	1	Go to Q37 then skip to Q39
		No	2	Skip to Q38
37.	What are the reasons for using Jindal Stainless raw materials/ products?	Availability of the right raw material	1	
		Better quality	2	
		Other reasons, please specify _____	99	
38.	What are the reasons for using non-Jindal Stainless products/ services?	Lower price	1	
		Low awareness, not knowing how to get Jindal stainless steel	2	
		Better quality of non-Jindal stainless steel companies' products/services	3	
		Other reasons, please specify _____	99	
39.	Which of the following government schemes or	Jeevan Beema	1	
		Awaz Yojana	2	
		MUDRA loans or PM Mudra Yojana	3	

SI No.	Description	Option	Code	Skip
	livelihood related schemes are you aware of?	(of Dept. of Finance)		
		SFURTI Scheme (of Dept. of MSME)	4	
		Credit Guarantee Funds Trust for Micro and Small Enterprise (CGTMSE)	5	
		Stand up Scheme	6	
		Not aware of any government scheme	0	
		Any other scheme, please specify _____	99	

Section D: [To be asked to only the Organized workforce] - This section consists of enquiries of segment details and awareness of stainless steel, Jindal Stainless.

SI No.	Description	Option	Code	Skip
40.	Do you use safety tools at work?	Yes	1	Continue to Q41 and skip to Q43
		No	2	Skip to Q42
41.	What types of the listed safety tools at work do you use on a regular basis? (Note: Multiple codes possible.)	Jackets	1	
		Nose Mask / Respiratory Mask	2	
		Welding gloves	3	
		Welding helmets	4	
		Apron	5	
		Safety Goggles	6	
		Safety shoes	7	
		Others, please specify _____	99	
42.	What are the reasons for you to not use safety tools at work?	Not having the available safety tools	1	
		Not knowing how to use the safety tools	2	
		It becomes too uncomfortable or tough to work using these safety tools	3	
		The safety tools and equipments are not proper or authentic, avoid using them.	4	
43.	What are the challenges you face in your day-to-day activities?	Handling heavy materials or equipment leading to physical strain	1	
		Difficulty in fabricating complex structures	2	
		Lack of finishing in the final product	3	

SI No.	Description	Option	Code	Skip
		Tight deadlines causing stress and rushed work	4	
		Managing defects or rework which affects productivity	5	
		Misunderstandings or lack of clear instructions from supervisors	6	
		Difficulty in managing personal and professional life due to demanding work hours	7	
		In the process of welding, cutting or while executing the process (Process/ Fabrication related)	8	
		Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	9	
		Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	10	
		Lack of operational knowledge, do not know how to use materials/products, etc.	11	
		Others, please specify _____	99	
44.	Have you received any benefit under these schemes? – To be captured only if it was in Fabrication/ manufacturing (Note: Multiple codes possible)	Training – PMKVY	1	
		Vishwakarma Yojana	2	
		Not affiliated to any government schemes	0	
		Another scheme, please specify _____	99	
45.	Have you heard of Jindal Stainless?	Yes	1	
		No	0	

Section E: This section consists of enquiries related to skilling, career aspirations, and training needs – applicable to both organized workforce and independent fabricators/ workers

SI No.	Description	Option	Code	Skip
46.	From where have you learnt general fabrication related to mild steel fabrication? (Multiple choice question)	From organized programs/courses	1	
		On the job (from a mentor/senior)	2	
		On your own	3	
47.	From where have you learnt stainless steel fabrication processes? (Multiple choice question)	From organized programs/courses	1	
		On the job (from a mentor/senior)	2	
		On your own	3	

SI No.	Description	Option	Code	Skip
48.	Have you obtained any certificates or participated in programs related to stainless steel fabrication?	Yes	1	
		No	2	Skip to Q54
49.	Who organized the particular certificate you attained or the training program you attended, related to stainless steel fabrication?	Organized by the government (central/state government initiative)	1	
		Organized by private entity/organization (including your own organization)	2	
		Organized by academic institutions	3	
		Organized by Jindal Stainless	4	
		Self-applied on online portals	5	
50.	Can you name the organization (with location-state, district) whose certificate/training program you undertook as mentioned in the previous question?	_____		
51.	What was the motivation to receive the previous question's stated training program/s? (Note: Multiple Responses Possible)	To learn more about the day-to-day work	1	
		Need to change job	2	
		Need to change the kind of work currently but want to work in stainless steel	3	
		Parents said so	4	
		Friends said so	5	
		For better salary	6	
		Other reasons, please specify _____	99	
52.	Please elaborate on the topics covered under the training programme, which you found most useful? At most 3 options can be mentioned.	1. _____ 2. _____ 3. _____		
53.	In terms of benefits derived from the training you did, select the options which apply in your case. Note: multiple codes possible.	Potential of creating avenues for more remunerative employment options	1	
		Efficiency of your fabrication process improved post the training	2	

SI No.	Description	Option	Code	Skip
		Enhancement in your earnings post attending the training	3	
		Others, please specify _____	99	
54.	Do you wish to attain a training/skill development certificate in Stainless steel in future?	Yes	1	
		No	2	Skip to Q58
55.	What are your perceived benefits from training which you may undertake? (Note: Multiple Responses Possible)	Improve yourself at work	1	
		Expect increased wages	2	
		For career transition/development	3	
		To learn more about stainless steel	4	
		Other reasons, please specify _____	99	
56.	How much time over a day you can spare for training?	Less than 1 hour	1	
		1-2 hours	2	
		2-4 hours	3	
		More than 4 hours	4	
		More than 6 hours	5	
57.	What mode of training is preferred?	Offline classes/ in-person based	1	
		Recorded videos	2	
		Online classroom based.	3	
		Others, please specify _____	99	
58.	What are your work-related aspirations?	I am currently wage salaried, and want to continue the job	1	
		I am currently wage salaried but want to start my own business/self employed	2	
		I am currently running my business/self-employed but want to attain a job	3	
		I am currently running my business and want to continue my business	4	
		No Aspiration	5	
		Don't know/Unsure	6	
		Other, please specify _____	99	
59.	Based on your previously mentioned nature of career aspirations, what are the key	Flexible work contract	1	
		Availability of social protection benefits (disability, maternity/paternity benefits etc.)	2	

SI No.	Description	Option	Code	Skip
	factors determining career aspirations? Please mention the top 3 factors at the maximum. (Note: Multiple Responses Possible)	Provision of decent pay	3	
		Well-defined and followed working hours (i.e., decent work-life balance)	4	
		Opportunities for continuous learning and upskilling	5	
		Sense of purpose/impact on society/ respect from society	6	
		Diversity and inclusion	7	
		Well-being programs and incentives	8	
		Location i.e., close to residence	9	
		Job security	10	
		Growth prospects	11	
		Others, please specify _____	99	
60.	Based on your previously mentioned nature of career aspirations, What factors inhibit your career aspirations? (Note: Multiple Responses Possible)	Lack of not knowing about the sector well	1	
		Lack of market awareness	2	
		Lack of fundings	3	
		Lack of education	4	
		Lack of tools and equipments	5	
		Lack of understanding of market	6	
		Other reasons, please specify _____	99	
61.	In what ways do you want your income/business opportunities to get enhanced through Stainless Academy support? (Note: Multiple Responses Possible)	Information on availability of the right raw materials, which grade to use, etc.	1	
		Sources of procuring Stainless-steel	2	
		Fabrication-related training	3	
		Lead generation training	4	
		Process related trainings	5	
		Team management training	6	
		Customer relation management training	7	
		Safety practices	8	
		Basic toolkit	9	
		Awareness about social security benefits schemes, etc.	10	
		Not Applicable (as the respondent is wage employed)	0	
		Others, please specify _____	99	

Section F: This section consists of enquiries related to digital literacy and financial literacy - applicable to both organized and independent fabricators/ workers

SI No.	Description	Option	Code	Skip
62.	Do you have a smartphone, which you may use for work?	Yes	1	Skip to Q64
		No	2	Skip to Q64
		Sharing with someone, specify	3	Continue to Q63
63.	If you share a smartphone with someone, can you access it whenever you want for work?	Yes	1	
		No	0	
64.	Do you use any of the social media platforms for learning at work?	Yes	1	Skip to Q66
		No	2	
65.	Which ones of the listed social media platforms do you use for raising your knowledge/training? (Note: Multiple Responses Possible)	Facebook	1	
		WhatsApp	2	
		YouTube	3	
		None	4	
		Other, please specify _____	99	
66.	Do you use BHIM/UPI for online payment/transfer?	Yes	1	
		No	0	
67.	Do you have your own/shared bank account?	Yes, own account	1	
		Yes, sharing account.	2	
		No, don't have	3	
68.	Do you have insurance-health/life related?	Yes	1	
		No	0	

3) Quantitative Questionnaire for Employers

Jindal Stainless has commissioned a Training Needs Assessment aimed at gaining insights into the dynamics of labour demand and supply across select sectors within the State while it is on the path to actualize the vision of Stainless Academy to build awareness and capability on stainless steel across the ecosystem. To achieve this objective, we have designed this structured survey questionnaire. This survey focuses on engaging employers within downstream spread across 5 segments (i.e. Architecture Building and Construction, Automobile, Railway & Transport (ART), Process industry, Holloware industry, and Consumer Durables) to understand their overall labour demand and skilling requirements in stainless steel fabrication across the nine selected states (i.e., 5 high-priority states – Gujarat, Tamil Nadu, Haryana, Odisha, and Uttar Pradesh; 3 medium-priority states – Maharashtra, Karnataka and Andhra Pradesh; and 1 low priority state – Jharkhand). The objectives of this employers survey encompass a broad spectrum, including gaining an understanding of their hiring practices, critical skills requirements and identifying job roles and trades in high demand (at present and in the immediate future) within the selected segments.

Additionally, the survey seeks to explore employers' practices related to awareness, training, information sessions for entry-level workers, understand employers' perceptions regarding the skills preparedness of graduates from ITIs/Polytechnics and Engineering colleges, as well as evaluate the industry's awareness of the existing skilling ecosystem.

Your organization has been randomly chosen to contribute to this survey, and we kindly request your cooperation in providing details about the workforce in your organization, recruitment methods, skilling requirements, and training provisions. Please be assured that your responses will be treated with utmost confidentiality and privacy, accessible only to the research team, Jindal Stainless, and are for the designated TNA purpose. Participation in this survey is entirely voluntary, and you retain the option to opt out at any stage. We sincerely appreciate your consideration in participating in this vital study. Thank you.

Are you willing to participate in the survey? If YES, please start the survey. If NO, please end the survey.

Time: 20-25 minutes

General guidance and purpose for the Interviewer (Enumerator) note: To gain insight into the organisation profile, hiring and training mechanism and current and future talent demand of industry across segments and select states within the stainless-steel downstream.

Section A: This section consists of enquiries related to demographic details of the respondent – To Be filled by Surveyor by self

S No.	Description	Option	Code	Skip
1.	In which state is the respondent currently located? (Only one code)	Gujarat	1	
		Tamil Nadu	2	
		Haryana	3	
		Odisha	4	
		Uttar Pradesh	5	
		Maharashtra	6	
		Karnataka	7	
		Andhra Pradesh	8	
		Jharkhand	9	
2.	In which district is the respondent currently located? (Only 1 code)	_____ (District name to be filled as stated in Annexure list's table 1).		
3.	In which cluster is the respondent currently located? (Only 1 code)	_____ (Cluster name to be filled as stated in Annexure list's table 2).		
4.	What is the area type in which the respondent is in? (Only one code)	Rural	1	
		Urban	2	
		Semi-Urban	3	
5.	What is the pin code of the area where the respondent resides in?	_____ (6 digits numeric)		

Section B: This section consists of enquiries related to the respondent and organization's profile and segment information – To Be filled by Surveyor by self through interview.

S. No.	Description	Option	Code	Skip
6.	What is your full name? (Only text allowed)	_____		
7.	What is your gender? (Only one code)	Male	1	
		Female	2	
		Others	3	
8.	Please provide your contact number? (10-digit phone number)	_____		
9.	Please provide your Email ID?	_____@_____		
10.	What is your current designation within this organization? (Only one code)	Founder/ Co-Founder/CEO/ CFO/Partner / Director/ Promoter	1	
		Human Resources (HR) Department Head or Manager or Admin-Head	2	
		Other, please specify _____	3	
11.	Is this your organization's Head office?	Yes	1	Skip to Q13
		No	2	
12.	Kindly specify the location (state and district) of Headquarter Operations	State _____ District _____		
13.	Do you have any manufacturing facilities other than this across India?	Yes	1	Skip to Q16
		No	2	
14.	Where are your manufacturing facilities located? (Only one code)	Within the same state	1	
		In other states within India	2	
		Both in the same state and across India	3	
15.	How many manufacturing facilities do you have across India?	_____ (in numbers)		
16.	How long have you been associated with/ employed in this industry?	Less than 5 years	1	
		5-10 years	2	
		10-20 years	3	
		More than 20 years	4	
17.	Given the type of products your organization is manufacturing, in which sector/s does it primarily operate? (Note: Multiple Responses Possible)	Architecture Building and Construction	1	
		Automobile	2	
		Railways	3	
		Transport	4	
		Consumer Goods	5	
		Holloware	6	
		Food Processing & Packaging	7	

S. No.	Description	Option	Code	Skip
		Pharmaceuticals	8	
		Medical Equipments	9	
		Petrochemical & Power	10	
		Cement	11	
		Paper	12	
18.	How would you describe the size or scale of operations of your organization? (Only one code)	Large (last year's turnover exceeded INR 250 crores)	1	
		Medium (last year's turnover did not exceed INR 250 crores but exceeded INR 50 crores)	2	
		Small (last year's turnover did not exceed INR 50 crores, but exceeded INR 5 crores)	3	
		Micro-Enterprise (last year's turnover did not exceed INR 5 crores)	4	
19.	What are the activities worked upon on a day-to-day basis in your firm? (Note: Multiple Responses Possible)	Grinding machines	1	
		Laser cutting	2	
		Folding	3	
		Engraving	4	
		Welding	5	
		Polishing	6	
		Drilling	7	
		Cutting	8	
		Buffing	9	
		Bending	10	
		Forging	11	
		Sharing machine	12	
		Draw press	13	
		Power presses	14	
		Tool machines, Tool grinder	15	
		Tool room	16	
		Lace machine	17	
		Shaper	18	
		Milling	19	
		Circle cutting	20	
		VMC Vertical milling center	21	
		Packaging	22	

S. No.	Description	Option	Code	Skip
		Use a combination of different processes	23	
		Others, please specify _____	99	
20.	What are the digital tools used on a day-to-day basis in your firm? (Note: Multiple Responses Possible)	CAD software (Computer aided design)	1	
		CAM software (Computer aided manufacturing)	2	
		CNC machine (Computer numerical control)	3	
		3D modelling and simulation software	4	
		Inventory Management Systems	5	
		PLC programming tools	6	
		ERP systems (Enterprise Resource Planning)	7	
		Others, please specify _____	99	
21.	What are the challenges you face in your organization's day-to-day activities?	In the process of welding, cutting , polishing, finished products (Process related)	1	
		While executing the process (fabrication related)	2	
		Shortage of tools, not appropriate tools, specific nuts/bolts (Eco-system related)	3	
		Availability of desired type of raw material i.e., of specific grade, size etc. (Material related)	4	
		Others, please specify _____	99	

Section C: This section is for evaluating employers hiring of candidates – sources, patterns and challenges. To Be filled by Surveyor by self through interview.

S. No.	Description	Option	Code	Skip
22.	How do you recruit the entry level workers in your organization? (Multiple codes possible)	Organization's Referrals	1	Go to Q24
		Campus (Educational Institutions)	2	Continue with Q23
		Off-campus Open-Market (Labour On their own comes given new machines, or presses news they get – daily wage workers)	3	Go to Q24
		Off-Campus Employee personal referral	4	
		Off-Campus Job-Portals	5	
		Off-Campus Manpower Agencies	6	

S. No.	Description	Option	Code	Skip
		Others, please specify _____	99	
23.	From which educational institutions do you typically recruit your workers engaged in the manufacturing process? (Multiple codes possible)	No such education institutes/colleges background	1	
		General arts/science/commerce colleges/university	2	
		Engineering colleges	3	
		ITI (Industrial Training Institutes)	4	
		Polytechnics	5	
		Institutions providing diploma level certifications (Other than ITIs/ Polytechnics)	6	
		Short term skill development training Institutes	7	
		Others, please specify _____	99	
24.	What is the minimum education qualification for the entry level workers in your organization? (Only one code)	Ability to read and write [Basic Literate]	1	
		Primary education (1-5 grade)	2	
		Elementary education (1-8 grade)	3	
		Secondary (9-10 grade)	4	
		Higher secondary school (11-12 grade)	5	
		Certificate from ITI	6	
		Diploma certificate from Polytechnic	7	
		Graduation	8	
		Beyond Graduation	9	
		Others, please specify _____	99	
25.	How do you determine the capability of workers while selecting them? (Multiple codes possible)	Interview	1	
		Employability assessment test	2	
		Test of soft skills or other relevant skills required for the job level	3	
		Rely on professional degree/ diploma or short- term course certifications	4	
		Prior work experience in similar industry or similar work in other industry	5	
		Others, please specify _____	99	
26.	What are the key challenges faced while recruiting entry level candidates for jobs in your organization? (Multiple codes possible)	Limited availability of appropriately trained/ technically skilled personnel/ workers.	1	
		Lack of appropriate educational institutions (with relevant courses) for campus recruitments within vicinity.	2	

S. No.	Description	Option	Code	Skip
		Lack of required soft skills e.g. communication/leadership among prospective candidates	3	
		Candidates' demand for higher wages beyond organization's policy and general market practice	4	
		Candidates' demand for transportation	5	
		Candidates' demand for accommodation	6	
		Lack of interest among candidates to migrate or travel long distance from other Districts within the state	7	
		Local candidates' lack time discipline after recruitment	8	
		Perception that local candidates do not report to the organization/ company even after accepting the job offer/concluding the recruitment process	9	
		Competing organizations are paying higher wages/ salaries	10	
		High rate of attrition/uncertainty among temporary and/or contractual employees.	11	
		Others, please specify _____	99	
27.	Do you regularly recruit entry-level candidates from ITIs?	Yes	1	
		No	2	Go to Q29
28.	Were you satisfied with the recruits from ITIs in terms of skills, and required educational ability?	Very satisfied	1	Go to Q30
		Satisfied	2	Go to Q30
		Dissatisfied	3	
		Very dissatisfied	4	
29.	What are the main reasons for not recruiting/ dissatisfaction from ITIs? (Multiple codes possible)	Inadequate technical skills	1	
		Insufficient problem-solving and critical thinking abilities.	2	
		Inadequate communication and teamwork skills.	3	
		Limited adaptability to new technologies and industry trends.	4	
		Weak foundation in fundamental concepts and theoretical knowledge.	5	
		Inability to apply knowledge to real-world scenarios effectively.	6	

S. No.	Description	Option	Code	Skip
		Not applicable (they hire from ITIs)	0	
		Others, please specify	99	
30.	Do you regularly recruit entry-level candidates from Polytechnics?	Yes	1	
		No	2	Go to Q32
31.	Were you satisfied with the recruits from Polytechnics in terms of skills, and required educational ability?	Very satisfied	1	Go to Q33
		Satisfied	2	Go to Q33
		Dissatisfied	3	
		Very dissatisfied	4	
32.	What are the main reasons for not recruiting/ dissatisfaction from Polytechnics? (Multiple codes possible)	Inadequate technical skills	1	
		Insufficient problem-solving and critical thinking abilities.	2	
		Inadequate communication and teamwork skills.	3	
		Limited adaptability to new technologies and industry trends.	4	
		Weak foundation in fundamental concepts and theoretical knowledge.	5	
		Inability to apply knowledge to real-world scenarios effectively.	6	
		Not applicable (they hire from Polytechnics)	0	
		Others, please specify	99	
33.	Do you regularly recruit entry-level candidates from Engineering colleges?	Yes	1	
		No	2	Go to Q35
34.	Were you satisfied with the recruits from the engineering colleges in terms of skills and required educational ability?	Very satisfied	1	Go to Q36
		Satisfied	2	Go to Q36
		Dissatisfied	3	
		Very dissatisfied	4	
35.	What are the main reasons for not recruiting/ dissatisfaction from Engineering colleges? (Multiple codes possible)	Inadequate technical skills	1	
		Insufficient problem-solving and critical thinking abilities.	2	
		Inadequate communication and teamwork skills.	3	
		Limited adaptability to new technologies and industry trends.	4	
		Weak foundation in fundamental concepts and theoretical knowledge.	5	
		Inability to apply knowledge to real-world scenarios effectively.	6	
		Not applicable (they hire from Engineering colleges)	0	

S. No.	Description	Option	Code	Skip
		Others, please specify _____	99	
36.	What kind of job roles within stainless-steel fabrication area you have the maximum number of workers? (Note: more than 1 option possible)	Welding related	1	
		Cutting related	2	
		Transport related	3	
		Repairing related	4	
		Material handling – helpers	5	
		Bending related	6	
		Forming related	7	
		Others, please specify _____	99	
37.	Which are the top 5 job roles or occupations in which you hired the maximum workers in your organization, in the past 5 years? Note: job roles related to stainless steel products only. At least 3 choices can be mentioned	1. _____ 2. _____ 3. _____ 4. _____ 5. _____		
38.	Which are the top 5 hard-to-fill occupations or job roles in your organization? Note: job roles related to stainless steel products only. At least 3 choices can be mentioned.	1. _____ 2. _____ 3. _____ 4. _____ 5. _____		
39.	Why are the mentioned job roles hard to fill? (Multiple codes possible) At most 5 choices can be mentioned.	Lack of skilled manpower for these job roles locally	1	
		Lack of interest/ appetite among local youth to take up such jobs	2	
		Lack of technical skills or educational qualifications for these job roles	3	
		Lack of social approval for women candidates to take on such jobs locally	4	
		Lack of soft skills i.e. communication, customer service behaviour	5	
		Intense or physically demanding working conditions	8	
		Others, please specify _____	99	
40.	Do you hire women as entry-level workers (shop floor	Yes	1	Skip to Q42
		No	2	Go to Q41

S. No.	Description	Option	Code	Skip
	workers) in your organization?			
41.	What are the major reasons for not hiring women as entry-level workers (shop floor workers) in your organization?	Concerns about workplace conditions potentially causing health issues	1	
		Perceptions of physical demands/ physically draining work environments	2	
		Safety concerns	3	
		Traditional gender roles, gender stereotypes	4	
		Other reasons, please specify	99	
42.	Imagine two people at an entry-level job, with the exact same educational qualifications and work experience, would you pay a higher wage for more qualified/ technically certified worker?	Yes	1	Go to Q46
		No	2	
43.	For what reasons would you pay a higher wage to workers if they possess higher qualification, skills or have completed any of the following? (Multiple codes possible)	Workers possess technical skills	1	
		Workers have hands-on training experience.	2	
		If workers have completed relevant short term training courses/vocational courses	3	
		Others specify _____	99	
		No particular reasons	0	Go to Q46
44.	Imagine two people at entry-level job, with exact same educational qualifications and work experience, but one person has additional skills (as mentioned in previous question) In such a scenario, what wage premium (in %), as an average idea, will you provide to the person with additional skills? (Only one code)	1-5% more than normal wage	1	
		6-10% more than the normal wage	2	
		11-15% more than normal wage	3	
		16-25% more than normal wage	4	
		26% and more than normal wage	5	
45.	Can you specifically mention the type of additional skills or knowledge for which wage	1. _____ 2. _____ 3. _____		

S. No.	Description	Option	Code	Skip
	premium is paid by your organization? At most 2-3 points can be mentioned.			

Section D: This section is to understand the employers' training facilities, skill training and capacity building for their employees

SI No.	Description	Option	Code	Skip
46.	What percentage of your workforce can be categorized as trained manpower?	Less than 10%	1	
		11-25%	2	
		26-50%	3	
		More than 50%	4	
47.	How would you rate the importance of having trained manpower in your fabrication processes?	Extremely important	1	
		Very important	2	
		Moderately important	3	
		Slightly important	4	
		Not important	5	
48.	Does your organization allocate funds specifically for employee training and development?	Yes	1	
		No	2	
49.	If yes, what percentage of your annual budget is dedicated to training and development?	Less than 1%	1	
		1-3%	2	
		4-6%	3	
		More than 6%	4	
50.	How have you encouraged the learning of Stainless-Steel operations to entry-level workers?	From a coworker/colleague	1	
		To learn from organized programs/courses	2	
		To learn them on the job	3	
		Self-learn	4	
		Others, please specify _____	99	
51.	Did your organization do any certification programs or organize any training programs for stainless-steel fabrication for your workers in the past 3 years?	Yes	1	Skip to Q56
		No	2	
52.	Were the above training programs that were provided to your workers, mandatory?	Yes	1	
		No	0	
53.	What type of training (in terms of time structure of learning	Part-time trainings	1	
		Full-time trainings	2	

SI No.	Description	Option	Code	Skip
	engagement) does your organization typically do for the workers? Note: multiple codes possible.	Outside work hours/ flexible hours trainings If others, please specify _____	3 99	
54.	Can you specify the typical themes and topics under the training programs provided by your organization to your workers? Note: multiple codes possible.	Ecosystem-related (about the sector, segments, products, job market customer – different options, etc.) Soft skills related Business excellence related learnings such as Kaizen, TPM, for work productivity gains. Process related Job-specific technical skills Others, please specify _____	1 2 3 4 5 99	
55.	Given the training/ certification programs provided by your organization as mentioned in previous questions, what are the type of benefits you perceive as catering to the workers and organization, as a whole? Note: multiple codes possible.	Overall understanding on how the unit should function got enhanced, given that the training content was customized to the needs of the MSME units. Monthly income of the factory/unit increased post the training programme. Trainings resulted in a better workplace creation (such as - reduction in health hazards, increased awareness on health and safety practices, etc.) Improved functioning of the overall enterprise (such as - better workplace creation, reduction in health hazards, increased awareness on health and safety practices, etc. especially for large sized employers such as railways). Others, please specify _____	1 2 3 4 99	
56.	Do you wish to impart training or provide skill development certificate at your organization's level?	Yes No	1 2	Skip to Q59
57.	How much time over a day can the organization spare for workers training?	Less than 1 hour 1-2 hours 2-4 hours More than 4 hours More than 6 hours	1 2 3 4 5	

SI No.	Description	Option	Code	Skip
58.	What training mode would be chosen for imparting training especially for stainless-steel fabrication for your organization's employees?	Offline classes/ in-person based	1	
		Recorded videos	2	
		Online classroom based	3	
		Others, please specify _____	99	
59.	What are the top 5 skills you consider to be the necessary skills in entry-level workers to work effectively in stainless-steel segments and fabrication?	Adaptability (work/switch between different segments, tasks)	1	
		Numeracy skills / Basic computational skills	2	
		Stainless steel material working skills (Understanding the properties of stainless-steel, including how to cut, bend, weld, shape)	3	
		Awareness of stainless-steel grades information and material knowledge	4	
		Welding	5	
		Drawing, reading	6	
		Quality control	7	
		Safety protocols	8	
		Machine operation	9	
		Problem-solving skills	10	
		Job-specific technical skills	11	
		Language skills (speaking different languages)	12	
		Soft skills (Grasping clarity at work)	13	
		Teamwork	14	
		Finishing	15	
		Machine-related technology skills	16	
		Others, please specify _____	99	
60.	What are the top 5 skills you consider workers least proficient in, within the stainless-steel segments and fabrication?	Adaptability (work/switch between different segments, tasks)	1	
		Numeracy skills / Basic computational skills	2	
		Stainless steel material working skills (Understanding the properties of stainless-steel, including how to cut, bend, weld, shape)	3	
		Awareness of stainless-steel grades information and material knowledge	4	
		Welding/ polishing	5	
		Drawing, reading	6	
		Quality control	7	
		Safety protocols	8	

SI No.	Description	Option	Code	Skip
		Machine operation	9	
		Problem-solving skills	10	
		Job specific technical skills	11	
		Language skills (speaking different languages)	12	
		Soft skills (Grasping clarity at work)	13	
		Teamwork	14	
		Finishing	15	
		Machine-related technology skills	16	
		Others, please specify _____	99	
61.	Which skills training do you propose to provide generally by your organization for the workers? Note: MCQs. Mention top 3 rank-wise	Adaptability	1	
		Numeracy skills/ Basic computational skills	2	
		Stainless steel material working skills (Understanding the properties of stainless-steel, including how to cut, bend, weld shape)	3	
		Awareness of stainless-steel grades information and material knowledge	4	
		Welding/Polishing	5	
		Drawing reading	6	
		Quality control	7	
		Safety protocols	8	
		Machine operation	9	
		Problem-solving skills	10	
		Job specific technical skills	11	
		Language skills (speaking different languages)	12	
		Soft skills	13	
		Teamwork	14	
		Finishing	15	
		Machine-related technology skills	16	
		Others, please specify _____	99	

Section E: This section assesses employers' technology use and their awareness vis-à-vis future of work and evolving skill sets for workers as per technological changes and advancements

S. No.	Question	Options	Code	Skip
62.	Does your organization adopt and use any form of technology in regular work activities? Note: Digital technologies can be considered along with non-digital technologies, including CNCs, PLCs, machines with automated facilities, electronic tools, devices, systems, digital payments apps or online forms etc. and resources which generate, store or process data. Digital tools may also include social media, mobile phones, multimedia, for work related instructions/communications.	Yes	1	
		No	2	Skip to Q67
63.	What kinds of digital tools do your organization's entry-level workers use from any of the listed tools in day-to day work? Note: multiple codes possible.	PLCs (Programmable Logic Controllers)	1	
		CNCs (Computer Numerical Control) machines	2	
		Tablets/Laptops/Computers for work	3	
		Smart phones for work	4	
		No digital tools/services at work	0	
		Others, please specify _____	99	
64.	As per you, are the workers adequately equipped with the right skills or the required know-how to use digital tools at work?	Yes	1	
		No	0	
65.	What is the current extent of technological adoption in your organization's business activity? (Only one code)	Very high (75-100% of tasks within jobs are automated)	1	
		High (50-75% of tasks within jobs are automated)	2	
		Medium (25-50% of tasks within jobs are automated)	3	
		Low (0-25% of tasks within jobs are automated)	4	
		No technological adoption	0	
66.		For cost reduction	1	

S. No.	Question	Options	Code	Skip
	Why have you introduced technology such as digitalization or advanced machines, etc.in your organization? (Multiple choice)	For quality enhancement in manufacturing or producing goods or services.	2	
		For service delivery enhancement (i.e. Distributing/ organizing delivery of goods or services to customers).	3	
		For productivity enhancement	4	
		Others, please, specify _____	99	
67.	Does your organization attribute that technology changes, advancements such as robotics and automation will impact the job roles or changes your workers and organization's day to day work activities?	Yes	1	Continue with Q68
		No	2	End of survey
68.	What kind of technologies you perceive as new/upcoming within your segment, due to digitalization and expected technological changes in future 3 years? Note: at least 2 to 3 responses may be mentioned.	1. _____ 2. _____ 3. _____		
69.	What is the expected extent of technological adoption in your organization's business activity, in next three years? (Only one code)	Very high (75-100% of tasks within jobs are automated)	1	
		High (50-75% of tasks within jobs are automated)	2	
		Medium (25-50% of tasks within jobs are automated)	3	
		Low (0-25% of tasks within jobs are automated)	4	
		No technological adoption	0	
70.	What kind of future outlook in terms of impacts due to technology related developments, changes do you think will be caused in your organization in the next three years?	Automated machines or new technologies	1	
		Job-losses among medium-skilled workers who performed somewhat technology-dependent roles	2	
		Emergence of new job-roles emerged with specialized skills requirement	3	

S. No.	Question	Options	Code	Skip
	(Multiple codes possible)	Emergence of new job-roles with a greater use of digital skills like AI, ML, internet of things, etc.	4	
		Workforce size expansion/reduction owing technological advancements	5	
		A rise in 'hybrid' jobs combining transversal skills (simplify the language) with a basic level of digital fluency	6	
		More efficient processes leading to productivity gains	7	
		Process related changes (in welding / cutting / polishing, etc.)	8	
		Others, please specify _____	99	
71.	According to you, what are certain new job roles expected to emerge in next 5 years due to technological changes? Note: job roles related to stainless steel products only. at least 3 job roles may be mentioned.	1. _____ 2. _____ 3. _____ 4. _____ 5. _____		
72.	According to you, what are the top 5 job roles in your organization that will become redundant in the next 3 years, due to advancement in technology? Note: job roles related to stainless steel products only. Note: at least 3 job roles may be mentioned.	1. _____ 2. _____ 3. _____ 4. _____ 5. _____		
73.	What kind of skill sets would you/your organization require in the workers due to digitalization and expected technological changes in future 3 years? Note: at least 2 skills or trainings may be mentioned.	1. _____ 2. _____ 3. _____		

4) Quantitative Questionnaire for Students

Jindal Stainless has commissioned a Training Needs Assessment aimed at gaining insights into the dynamics of labour demand and supply across select sectors within the State while it is on the path to actualize the vision of Stainless Academy to build awareness and capability on Stainless across the ecosystem. To achieve this objective, we have designed this structured survey questionnaire. This survey is designed to gather valuable insights from students – either as aspirants wanting to work ahead in the stainless steel OR as alumni (less than 2 years) who enrolled with courses relevant to steel or stainless steel. These students would be belonging to Engineering colleges, Government ITIs, Polytechnics across the nine selected states (i.e., 5 high-priority states – Gujarat, Tamil Nadu, Haryana, Odisha, and Uttar Pradesh; 3 medium-priority states – Maharashtra, Karnataka and Andhra Pradesh; and 1 low priority state – Jharkhand). The objective of this survey is to gather detailed and accurate information on the current skill levels, training needs, and career aspirations of students. This data will help the Stainless Academy design and implement effective training programs that align with industry requirements and support students in achieving their professional goals in the stainless-steel sector. By understanding your needs and expectations, we aim to bridge the gap between academic education and industry demands, ultimately fostering a skilled and competent workforce for the future.

You have been randomly chosen to contribute to this survey, and we kindly request your cooperation in providing details about your socio-economic educational details, skilling and training needs and perceptions for stainless steel fabrication landscape in India. Please be assured that your responses will be treated with utmost confidentiality and privacy, accessible only to the research team, Jindal Stainless, and are for the designated TNA purpose. Participation in this survey is entirely voluntary, and you retain the option to opt-out at any stage. We sincerely appreciate your consideration in participating in this vital study. Thank you.

Are you willing to participate in the survey? If YES, please start the survey. If NO, please end the survey.

Time: 12-15 minutes

General guidance and purpose for the Interviewer (Enumerator) note: To gain insight into the educational, skill level and training status of individuals aged 15 to 29 years across Engineering colleges, ITIs, and Polytechnics in the selected states.

Section A: This section consists of enquiries related to the demographic details of the respondent – To be filled by Surveyor by self.

S No.	Description	Option	Code	Skip
1.	In which state is the respondent currently located? (Only one code) (To be filled by the enumerator)	Gujarat	1	
		Tamil Nadu	2	
		Haryana	3	
		Odisha	4	
		Uttar Pradesh	5	
		Maharashtra	6	
		Karnataka	7	
		Andhra Pradesh	8	
		Jharkhand	9	

S No.	Description	Option	Code	Skip
2.	In which district is the respondent currently located? (To be filled by the enumerator)	_____ (District name to be filled as per stated in Annexure list's table 1).		
3.	What is the area type in which the respondent lives? (Only one code)	Rural	1	
		Urban	2	
		Semi-Urban	3	

Section B: This section consists of enquiries related to the respondent profile - To Be filled by Surveyor by self through interview.

SI No.	Description	Option	Code	Skip
4.	What is your full name? (Only text allowed)			
5.	Please provide your Institute name, with location (state, district)			
6.	Please provide your phone number. (10-digit phone number)			
7.	Please provide your email ID?	_____@_____		
8.	What is your gender? (Only one code)	Male	1	
		Female	2	
		Others	3	
9.	What is your completed age (in years)? (Restrict it to be between 15 - 29 years)	_____ (in years)		
10.	Do you have Aadhar number	Yes	1	
		No	0	
11.	What is your highest completed qualification? (Only one code)	Less than secondary school	1	
		Secondary school (Class X)	2	
		Higher secondary school (Class XII)	3	
		Diploma certificate from ITI	4	
		Diploma certificate from Polytechnic	5	
		Graduation from Engineering college	6	
		Graduation from non-Engineering college	7	
		Post-Graduation	8	
		Others, please specify _____	99	
12.		Certificate course from ITI	1	

SI No.	Description	Option	Code	Skip
	What is the current educational course/study you are pursuing or your educational status?	Diploma certificate course from Polytechnic	2	
		Graduation degree from Engineering college	3	
		Alumni (less than 2 years) who opted for stainless steel or steel related electives	4	
13.	In which year are you undergoing your academic course as mentioned in the previous question? (Only one code)	1 st year	1	
		2 nd year	2	
		3 rd year	3	
		4 th year	4	
		Not applicable as he/she is alumni	5	
		Other, please specify	99	
14.	Have you migrated currently from your hometown?	Yes	1	
		No	0	
15.	Are you interested/willing to migrate for work?	Yes	1	
		No	2	Skip to Q17
16.	Which state or union territory (s) will you be willing to migrate to? (At most 5 options can be selected)	Andaman and Nicobar Islands	1	
		Andhra Pradesh	2	
		Arunachal Pradesh	3	
		Assam	4	
		Bihar	5	
		Chandigarh	6	
		Chhattisgarh	7	
		Dadra and Nagar Haveli, Daman and Diu	8	
		Delhi	9	
		Goa	10	
		Gujarat	11	
		Haryana	12	
		Himachal Pradesh	13	
		Jammu and Kashmir	14	
		Jharkhand	15	
		Karnataka	16	
		Kerala	17	
		Ladakh	18	
		Lakshadweep	19	
		Madhya Pradesh	20	
		Maharashtra	21	
		Manipur	22	
		Meghalaya	23	

SI No.	Description	Option	Code	Skip
		Mizoram	24	
		Nagaland	25	
		Odisha	26	
		Puducherry (Pondicherry)	27	
		Punjab	28	
		Rajasthan	29	
		Sikkim	30	
		Tamil Nadu	31	
		Telangana	32	
		Tripura	33	
		Uttar Pradesh	34	
		Uttarakhand	35	
		West Bengal	36	

Section C: This section is to understand students' knowledge of Jindal Stainless Steel and exposure to Stainless steel

SI No.	Description	Option	Code	Skip
17.	Have you heard of Jindal Stainless?	Yes	1	
		No	0	Skip to Q19
18.	Are you aware of the types of products manufactured by Jindal Stainless? List the ones that you are aware of.	1. _____ 2. _____ 3. _____		
19.	What kind of aspects you are aware regarding Stainless Steel? (Note: multiple codes possible)	Awareness of the material Corrosion related benefits Applicability of stainless steel Popularly called as 'Green Material' More prominent use as compared to regular steel Others, please specify _____	1 2 3 4 5 99	
20.	Is stainless steel better than other metals to work with or you noted challenges while using or knowing about its products ?	Yes (i.e., stainless steel is better than other metals) No (i.e., challenges noted with stainless steel awareness/usage of products)	1 0	
21.	At your institute, did your Professors know effectively of imparting learnings on	Yes (broadly, understood all concepts and practical sessions taught)	1	

SI No.	Description	Option	Code	Skip
	Stainless Steel?	No (didn't understand at all)	2	
		Not applicable (not attended training or learning from teachers/professors on stainless steel)	0	
22.	How much industry exposure in the Stainless-Steel/ or Steel sector have you experienced in the past 3-4 years? Note: MCQs/ multiple choice questions.	Placement opportunities	1	
		Internship opportunities	2	
		Career melas/ exhibitions	3	
		Workshops experience	4	
		Guest lecturers	5	
		Industry visits	6	
		Research projects with companies (such as Tata Steel, ArcelorMittal Nippon Steel or AM/NS)	7	
		Not Applicable (Have not had any exposure to Stainless steel/ steel)	0	
		Others, please specify _____	99	
23.	Does your institute conduct guest lectures on Stainless Steel knowledge of the sector by industry experts?	Yes	1	
		No	0	
24.	Were you satisfied with the knowledge received through the different courses provided at the institute or through guest lectures on stainless steel ?	Yes	1	
		No	2	
		Not applicable (not attended training or learning from teachers/professors on stainless steel)	0	

Section D: This section consists of enquiries related to understanding the beneficiary's experiences such as internships or apprenticeships, level of training experience, their skills level and further interest.

SI No.	Description	Option	Code	Skip
25.	Have you done any internship opportunities in the stainless-steel field? Or is it planned?	Yes	1	
		No	0	
	Note: This question is <u>to be asked to only</u> Engineering college students.			

SI No.	Description	Option	Code	Skip
26.	Have you done an apprenticeship in Stainless Steel field? Or is it planned? Note: This question <u>to be asked only</u> to ITI/Polytechnics students. <u>NOT</u> ask to Engineering colleges students.	Yes	1	
		No	0	
27.	Do you have any certificate or have attended any training program related to Stainless Steel fabrication?	Yes	1	Skip to Q33
		No	2	
28.	Who organized the particular certificate you have attained or program you have attended, related to Stainless Steel fabrication?	Organized by the government (central/state government initiative)	1	
		Organized by private entity/organization or industry representatives	2	
		Organized by your college/university or as guest lectures by institute only	3	
		Self-applied on online portals or for the training program	4	
29.	If you attended any training program, what was the motivation to receive those programs?	To learn more about the sector, learn about its sub-sectors, options for employment.	1	
		Parents said so	2	
		Friends said so	3	
		For exposure and learning experience	4	
		Other reasons, please specify _____	99	
30.	What was the duration of the training program/course you recently did?	Short term course (less than 3 months)	1	
		Medium term course (3-6 months)	2	
		Long term course (more than 6 months)	3	
		Others, please specify _____	99	
31.	How has the previously mentioned questions' training programme benefitted you?	Increased knowledge and understanding of the subject	1	
		Improved skill sets	2	
		Benefit of certification	3	
		Industrial exposure	4	
		Enhanced placement opportunities	5	
		Others, please specify _____	99	

SI No.	Description	Option	Code	Skip
32.	What was the weightage on practical training versus theoretical modules teachings on stainless steel training during the attended training programs/courses?	Less than 25% weightage to practical trainings than theoretical concepts	1	
		Between 25-50% weightage to practical trainings than theoretical concepts	2	
		Between 50-75% weightage to practical trainings than theoretical concepts	3	
		More than 75% weightage to practical trainings than theoretical concepts	4	
		Cannot give estimate or not sure	0	
33.	Do you wish to attain new/further training/skill development certificate/training Stainless Steel fabrication?	Yes	1	Skip to Q40
		No	2	
34.	What mode of training is preferred?	Offline classes/ in-person based	1	
		Recorded videos	2	
		Online classroom based.	3	
		Others, please specify	99	
35.	How much time over a day you can spare for training?	Less than 1 hour	1	
		1-2 hours	2	
		2-4 hours	3	
		More than 4 hours	4	
		More than 6 hours	5	
36.	What outcome do you expect from the training programs?	Improved technical skills specific to the stainless-steel industry	1	
		Better understanding of industry standards and practices in the stainless-steel industry	2	
		Opportunities for internships or apprenticeships	3	
		Access to networking opportunities with industry professionals	4	
		Guidance on career pathways and professional development	5	
		Certification or credentials recognized by the industry	6	
		Exposure to the latest technologies and innovations in the field	7	
		Higher chances of securing a job in the stainless-steel industry	8	
37.	Will you be willing to pay for this training program?	Yes	1	Continue to Q38

SI No.	Description	Option	Code	Skip
		No	2	Skip to Q39
38.	If you answered "Yes" to being willing to pay for the course, please indicate the reasons why you would be interested in paying for the training program. (Select all that apply)	It will increase my chances of getting a job in the stainless-steel industry.	1	
		It will provide me a valuable industry exposure and real-world experience	2	
		It will offer me an industry-recognized certificate upon completion.	3	
		It will help me improve my technical skills relevant to the stainless-steel sector.	4	
		It will enhance my overall employability and career prospects.	5	
		It will help develop my soft skills such as communication, teamwork, and leadership.	6	
39.	Please rate the following elements of training in terms of their importance in your decision-making with respect to the training course related to Stainless Steel. Very Important- 1 Important- 2 Somehow Important- 3 Unimportant- 4	Content of the training	1	
		Brand or market standing (reputation) of the Training Service Provider	2	
		Brand or market reputation of the certifying body	3	
		Quality of the trainer and/or training delivery methodology	4	
		Extent of practical exposure/ experience	5	
		Quality of internship/ apprenticeship (incl. duration, market reputation of the employer, contents covered within the internship, etc.	6	
40.	What are the major challenges/ constraints that would stop you from undergoing training programme related to Stainless Steel? (Multiple Response Question)	Financial constraints to pay the fees	1	
		Non-availability of such training in the neighborhood	2	
		Lengthy and long drawn process	3	
		Community does not support it	4	
		Do not have enough support from my immediate family	5	
		I do not have support/ permission from spouse	6	
		Family responsibilities (household chores, taking care of children etc.)	7	
		Absence of quality training service providers/ trainers	8	

SI No.	Description	Option	Code	Skip
		Absence of flexibility in time – say part-time or evening or weekend only courses	9	
		Absence of time for training (either over-worked or other commitments – social, professional etc.)	10	
		Others, please specify	99	
41.	What are the top 5 skills necessary as per you for working in Stainless Steel segments and fabrication?	Basic understanding for stainless-steel manufacturing process and its application in downstream employers.	1	
		Adaptability (work/switch between different segments, tasks)	2	
		Numeracy skills / Basic computational skills	3	
		Stainless Steel metal working skills (Understanding the properties of stainless steel, including how to cut, bend, weld, shape)	4	
		Awareness of stainless-steel grades information and material knowledge	5	
		Welding/ Polishing	6	
		Drawing, reading	7	
		Quality control	8	
		Safety protocols	9	
		Machine operation	10	
		Problem-solving skills	11	
		Job specific technical skills	12	
		Language skills (speaking different languages)	13	
		Soft skills (Grasping clarity at work)	14	
		Teamwork	15	
		Finishing	16	
		Others, please specify	99	
42.	How prepared do you feel for taking up a job in Stainless Steel?	Completely Prepared	1	
		Largely Prepared	2	
		Moderately Prepared	3	
		Somewhat prepared	4	
		Not Prepared	5	
		No Answer/ Don't Know	6	
43.	What are the reasons for feeling prepared in Stainless Steel?	Adequate academic qualification	1	
		Adequately Skilled with understanding of Job	2	

SI No.	Description	Option	Code	Skip
	(Multiple Response Question)	Adequate work experience in area of Job	3	
		Not applicable	0	
		Others, please specify _____	99	
44.	What are the reasons for feeling unprepared Stainless Steel?	Inadequate academic qualification	1	
	(Multiple Response Question)	Inadequately Skilled with understanding of Job	2	
		Inadequate work experience in area of Job	3	
		Not applicable	0	
		Others, please specify _____	99	

Section E: This section consists of enquiries to understand the career aspirations related to education and work of students pursuing education and their gig work interests.

SI No.	Description	Option	Code	Skip
45.	What are your aspirations related to further education?	To pursue beyond graduation or B.Tech. such as masters/post-graduation, Ph.D. in general/non-stainless-steel subjects	1	
		To pursue beyond graduation or B.Tech. such as masters/post-graduation, Ph.D. in general/non-stainless-steel subjects	2	
		No further higher education aspirations	0	
46.	What are your work-related aspirations (Or aspirations to work/do job)?	I am currently student in the final year, looking for placement opportunities	1	
		I want to start my own business/self employed	2	
		I am currently student in 1 st year/2 nd year/3 rd year - looking for placement opportunities	3	
		I want to continue my family's business	4	
		Stay at home	5	
		I want to prepare for government exams	6	
		Don't know/Unsure	7	
		Other, specify _____	99	
		Flexible work contract	1	

SI No.	Description	Option	Code	Skip
47.	Based on your previously mentioned choice of career aspiration, what are the key factors determining career aspirations? Please mention the top 3 factors (Multiple Responses Possible)	Availability of social protection benefits (disability, maternity/paternity benefits etc.)	2	
		Provision of decent pay	3	
		Well-defined and followed working hours (i.e., decent work-life balance)	4	
		Opportunities for continuous learning and upskilling	5	
		Sense of purpose/impact on society	6	
		Diversity and inclusion	7	
		Well-being programs and incentives	8	
		Location i.e., close to residence	9	
		Job security	10	
		Social Prestige/Recognition, Family acceptance	11	
		Growth prospects	12	
		Others, please specify	99	
48.	Do you find self-employed/entrepreneurs work jobs attractive? Note: This is to be asked <u>ONLY</u> to the ITI and Polytechnics students, <u>NOT</u> for engineering college students	Yes	1	
		No	0	
49.	How would you rate the accessibility to career counselling services for prospective jobs in Stainless Steel?	Very inadequate	1	
		Somewhat inadequate	2	
		Neither adequate nor inadequate	3	
		Somewhat adequate	4	
		Very adequate	5	
		Unaware / Don't Know	6	
50.	If you have access to career counselling mechanisms, what guidance have received/will prefer, for prospective jobs in Stainless Steel? (Multiple Response Question)	Information on relevant vacancies	1	
		Advice on how to look for a job	2	
		Guidance on applying for desirable jobs	3	
		Guidance on applying for training or educational programmes	4	
		Placement for jobs	5	

SI No.	Description	Option	Code	Skip
		Placement in educational programmes	6	
		Others, please specify _____	99	
51.	According to you, what are some of the main steps that can help address the mismatch between youth aspirations and job market realities?	Government action and favorable economic policies	1	
		Career counselling and mentoring opportunities	2	
		More investment in new hires by the private sector	3	
		Quality apprenticeships and internships	4	
	(Multiple Response Question)	On the job trainings	5	
		Specific skilling strategies and skill development programmes	6	
		Incorporating vocational training and technical skills in school curriculum	7	
		Companies providing skilling and upskilling opportunities to employees	8	
		Promotion of entrepreneurship by the government	9	
		Data systems to streamline information on vacancies	10	
		Don't know	11	
		Others, please specify _____	99	

Section F: This section consists of enquiries related to digital literacy and financial literacy

SI No.	Description	Option	Code	Skip
52.	Do you have a smartphone, which you may use for studies/work?	Yes	1	Skip to Q54
		No	2	Skip to Q54
		Sharing with someone, specify	3	Continue to Q53
53.	If sharing with someone, can you access the smartphone whenever you want?	Yes	1	
		No	0	
54.	Do you use any of the social media platforms for academic work-related learnings?	Yes	1	
		No	2	Skip to Q56
55.		Facebook	1	

SI No.	Description	Option	Code	Skip
	Which ones of the listed social media platforms do you use for raising your knowledge/training of Stainless-Steel involved in academic learnings?	WhatsApp	2	
		YouTube	3	
		None	4	
		Other, please specify _____	99	
56.	Do you know how to open bank account, savings, etc.?	Yes	1	
		No	0	
		No	0	

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