

# An Empirical Study of Mediating Role of Skill Development on Operator Satisfaction: With Special Reference to SMEs Manufacturing Sector

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**Abstract:** Skilling plays an important role in pushing economic growth rate to a higher trajectory and Skill development can be perceived as an instrument that improves labor efficiency, enhances labor contribution to the overall production of Manufacturing sector. With the changing economic environment, demand for better quality products and services has given rise to huge demand for skilled operator in Small and Medium scale enterprises. In order to retain the skilled workforce, operator satisfaction survey can play a major role on the way of attaining Skill Development at SME sector in Indian context.

The study based on empirical work, examines the key influencing factors in relate to Skill Development on the operators' satisfaction level at SMEs of Manufacturing sector. Training and Development, Job Skill and Motivation were used as Skill Development antecedents to know the intensity on the operator satisfaction level. The results reveal the perception and views of operators towards each factor and the existence of the significance difference between the factors. The paper provides in depth insights about demographic profiles of the operators working in Precision Component Manufacturing enterprises. The findings of the research can benefit the enterprises and policy makers by interweaving skill development in their policy and procedures to achieve operator satisfaction and to attain performance excellence in the global market.

**Keywords:** SMEs, Skill Development, Operator Satisfaction

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## I. Introduction

Today, the world is more inclined towards the industries which are technologically advanced and have highly skilled workforce. Investing in education has a considerable positive effect on the growth of exports (UNIDO 2013), and a more skilled workforce is generally related to a higher share of manufactured exports in total merchandise exports. As India transitions to becoming a manufacturing hub, the sector grew at 7.7 percent in 2017. As per MOSPI<sup>1</sup> manufacturing sector has shown a considerable growth at CAGR<sup>2</sup> of 7.32 percent between 2012 to 2017 financial year. To continue at the current pace, India needs to strengthen one of its core micro factors which in turn strengthen its foundation, one of them being the Small & Medium Enterprises (SMEs). SMEs is proving to be one of the upcoming sectors of developing India through their major share in the domestic production, significant export earnings, low investment requirements, employment generation, effective contribution to foreign exchange and low import intensive operations.

For any labor-intensive SMEs, experienced and efficient skilled operators are considered as a valuable asset. In today's technological world, CNC machine and systems require acute human supervision and maintenance to operate efficiently. For more effective and efficient operation of manufacturing equipment, greater should be the existence of skilled workforce to operate the machines (Powel, 2003). Skill development initiatives undertaken by enterprises can be raised to next level through satisfaction surveys at operators' levels. Operator satisfaction survey helps to determine and analyze their satisfaction levels with acquired skillset, work environment, training programs and reward schemes. A satisfied operator can be a greater resource in achieving customer satisfaction, developing quality products, increase in production and attaining operational excellence.

The purpose of the present study is to determine the intensity of the Skill Development factors that affect operator satisfaction. This in turn help to raise their satisfaction levels of the operators to perform their jobs efficiently and effectively.

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<sup>1</sup>Ministry of Statistics and Programme Implementation

<sup>2</sup>Compound Annual Growth Rate

## **II. Review of Literature**

To sustain competitive advantage and development in emerging world trade environment, SMEs in India are restructuring their strategies and capabilities. The government are also evolving policies, strategies and modes of implementation to encourage and support SMEs for their growth, capacity building and international competitiveness.

Skill Development India Survey 2016, conducted by FICCI along with Konrad Adenauer Stiftung finds that the skill development ecosystem in India is inclined towards a formal education system with limited vocational training. As per the survey, though vocational training is at dismal state higher education system is also not in better position grappling with issues related to scale and quality. It is also observed that amongst the informally trained workforce, the percentage of unemployed is low (below 5%) for most of the trades except for certain trades like fitter (10.7%) and 'engineering trades other than civil and computer trades' (12.2%).

A survey conducted by SHRM<sup>3</sup> (2014) on Employee job satisfaction and engagement of 600 US employees figured out eight possible areas for measurement viz., career development, relationship with management, compensation benefits, work environment and so on. Though compensation/pay is normally considered as top priority but it was observed that many workers are also motivated and inspired by the relationship they have with their peers and the ability to use their skills in their jobs.

Employees performance enhances when they work hard towards organizational benefits and feel satisfied about their jobs. Hence Employee satisfaction is highly influential on job performance (Massod., *et al*, 2014). The study also identified strong negative relationship between the Employee satisfaction and turnover intentions. The switching or changing organizations decreases as the employees' satisfaction level increases.

Ashwin and Anand (2014) in their study on impact of quality of work life on the overall satisfaction of employee in manufacturing sector analyzed job satisfaction as the most important factor followed by adequate and fair compensation. The study indicated the skill development has direct relationship with the increase in performance-based incentives and job promotion as well as job security. Skill development programs and training programs helps in enhancing the human capacities for organizations to grow.

Training heavily influence an employee to learn how to be more effective at work by modifying his knowledge, skills or attitudes through the continuous learning experience to achieve a successful performance. The study conducted by Vasudevan (2014) examined the effect of training on the work commitment, job satisfaction and job performance. The four components of training used for study were training commitment, training needs assessment, training contents and delivery approaches and training evaluation.

Schmidt (2007) in his study examined the relationship between satisfaction with employer provided workplace training and overall job satisfaction of customer contact representatives. Time spent in training, training methodologies and content were determined to be significant with job training satisfaction. Employees were more satisfied with the training methodologies that they most preferred and helped them to learn.

The present study intends to fill the gap considering Skill Development as the mediating factor in measuring operator satisfaction level separately and to know the significance difference between the factors.

## **III. Significance of The Study**

Small scale industries rarely conduct operator satisfaction survey for limited number of operators, due to lack of time and capital. Though employers are aware of the fact that skilled operators are the main assets for any enterprise, but often disregard the need of valuing operators' satisfaction. The study tries to evaluate the views and perceptions of an operator towards the importance of skills at current job and the initiatives taken by the enterprises.

The General purpose of present research is to recognize the skill development factors that affect the satisfaction level of an operator in an enterprise and up to what extent they influence their satisfaction level. With regard to skill development at operators' level, three factors viz., Job skill factor, Motivational factor and Training and Development factor were chosen as the antecedents to know their effect on the satisfaction level of operators.

## **IV. Objectives of The Study**

1. To analyse the demographic profiles of operators at manufacturing enterprises
2. To identify the influencing Skill Development factors that affect the satisfaction levels of the operators

### **Hypothesis:**

Ho: There exists no significance difference between the Skill Development factors affecting operator satisfaction in Manufacturing enterprises.

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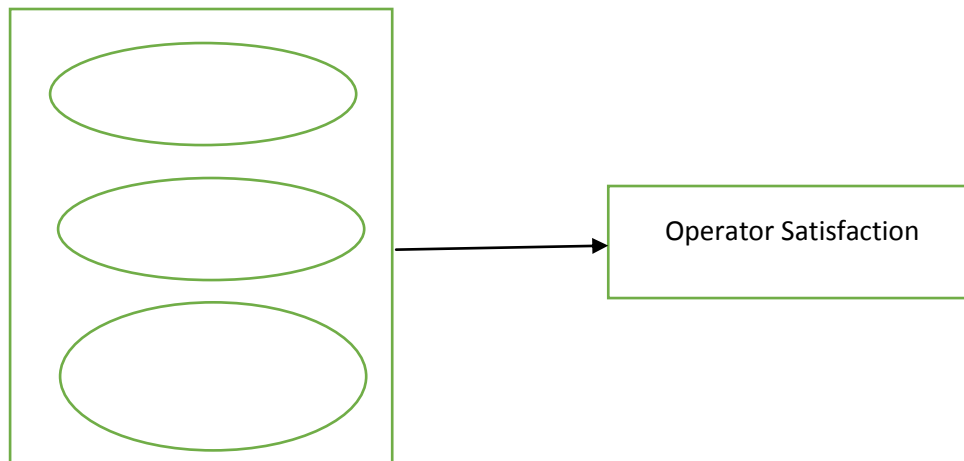
<sup>3</sup>Society for Human Resource Management

### **Determinants of Operator satisfaction**

Operators play a vital role in the operations of the Manufacturing enterprises. They are the key persons for developing quality products, on-time delivery, zero defects, ensuring optimum level of performance and increased production of an enterprise. Skilled or well-trained operator proves to be an asset for any labour intensive sector.

The term operator satisfaction can be determined through the fact that how an operator feel, think and perceive about his own skills, required job skills, skill-based training and initiatives taken by the enterprise. The present study figures out three factors as the determinants of the operators' satisfaction in relation towards Skill Development as shown in figure 1.

Skill Related Factors



**Fig 1: Conceptual framework**

**Job skill:** A complete knowledge of job description, key responsibilities, skills required for current job, new skills etc., will drive an operator to attain satisfaction level with present job. This also helps in clarifying the ambiguity pertaining to the current job.

**Motivation:** Motivation acts as a tool for an enterprise to retain the skilled operator through bringing a sense of belongingness by reward and recognition programs. This helps in reducing the attrition rates and operators can focus their mind and capabilities on performing their job as effectively and efficiently as possible.

**Training and development:** To sustain in the competitive global market, Manufacturing enterprises need to produce quality products with minimal skilled operators. Training helps an operator to continuously improve his skills, knowledge and provides a better understanding about his or her job. This in turn will develop his or her career and helps in raising their satisfaction level.

### **Scope of the study**

The present study is confined to Small and Medium scale manufacturing sector in Peenya Industrial Area, Bangalore Karnataka. The scope of the study is limited to the objectives defined in the study. Peenya Industrial Area is a hub of Medium and Small-scale industries comprising of various sectors like Electronics, Precision component manufactures, Electrical services, Textile, Chemical manufacturing units per se., Respondents are restricted to operators of SMEs specifically, Precision Components Manufacturing sector.

Precision machined components finds its space in aerospace, defense, medical devise manufacturing and other critical industries that require parts made with highest emphasis on quality. To attain exact precision, this sector requires heavy investment in advanced technology and skilled workforce.

### **Limitations of The Study**

- The study is limited to enterprises that come under Medium and Small-scale industries in Peenya Industrial Area Bangalore, Karnataka.
- The study is confined only to operators of Precision Components Manufactures.
- It is assumed that the respondents have provided genuine inputs and reflect true experience.
- Responses were taken only from those who agreed to give their valuable inputs.

### V. Research Methodology

**Type of research:** The present research is an empirical study and is based on primary data. A structured questionnaire was adopted for collecting primary data. Secondary sources include information from the journals, periodicals, magazines and related websites.

**Research tool:** The survey tool is in the form of a questionnaire developed based on three sub scales measuring Motivational factors, Job Skill factors and Training and Development factors. The items in the subscales were analyzed using a five-point Likert scale ranging from 1= ‘Strongly Disagree’, 2= ‘Disagree’, 3=‘Neutral’, 4=‘Agree’ and 5=‘Strongly Agree’ to measure the overall satisfaction of operator. Other than English, local language used for questionnaire is ‘Kannada’ as most of the respondents were not compatible with English language.

**Sample design:** Out of total universe population, samples are selected using purposive sampling method. Of all the sectors, study is confined to Precision Components Manufacturing sector of Small and Medium scale enterprises. Samples of 320 operators from various enterprises were collected for the present research.

**Mode of data collection:**

- Enterprises were selected through the database of Peenya Industries Association (PIA).
- Enterprises are approached with a brief description of the research theme. Initially, rapport was established with the respondent and he/she was made aware that they were part of research work and his/her co-operation to the fullest extent would make the research meaningful.
- Respondents are interviewed personally and administered through questionnaire.
- The respondent was asked to give his/her opinion freely. Any doubts raised by the respondents were clarified so as to gain honest answers.
- In certain cases, the questionnaire was translated into the vernacular languages so as to facilitate right understanding of the concept.

**Data analyzing method:** The data generated from the variables are used to measure perception and satisfaction level of an operators on all three factors. MS word, Excel and Power point applications have been used to tabulate and present the data. The usage of Descriptivestatistics helps to identify the regular pattern of the demographic profiles of the operators. Inferential statistics such as ‘Chi-Test’ is used to find out the existence of significance difference between the Skill Development factors that affect operator satisfaction level.

### VI. Results and Discussion

**Reliability Analysis:** A pre-test was undertaken using 50 responses to check the reliability and validity of the questionnaire. In present study, Cronbach Alpha ranges from 0.63 to 0.69 for the sub-scales used to identify the internal consistency among the items as shown in table 1.

**Table1:** Reliability Analysis

Scale	Items	Cronbach Alpha
Job Skills Factor	5	0.636
Motivational Factor	5	0.642
Training and Development Factor	5	0.692

**Demographic profiles of an operators**

Demographic data as shown in table 2 gives clear picture of variables like age, education level and work experience of operators with mean and standard deviation at Manufacturing enterprises.

**Table 2:** Demographic profile of operators

	Frequency	Percentage	Mean	SD
<b>Age</b>				
Below 20	11	3.4	3.13	0.99
21-25	69	21.8		
26-30	148	46.7		
31-35	61	19.2		
36-40	25	7.9		
Above 40	6	1.9		
<b>Education</b>			2.83	0.88
High School	42	13.2		
SSLC	111	35.0		
ITI	118	37.2		
Diploma	38	12.0		
Graduate	11	3.4		
<b>Experience</b>				
<=1	18	5.6		
2-5	96	30.3		

6-10	146	46.1	2.55	0.95
11-15	47	14.8		
Above 15	13	4.1		

**Interpretation:** As most Manufacturing enterprises involve mechanical jobs, women operators are rarely found. Hence, the present study encompasses only men operators. 47 percent of the respondents belong to age group 26 to 30 years while 87 percent respondents lie in age group of 21 to 35 years. This clearly indicates the presence of younger workforce of generation Y<sup>4</sup>. It is observed that much preference is given to the ITI<sup>5</sup>(37 %) candidates, as they are well versed with practical knowledge. Respondents with SSLC<sup>6</sup> (35%) qualification are also recruited who then can be converted to skilled worker on providing suitable training. Respondents with Highschool (13%) and Diploma (12%) background are at minimal number in Small and Medium enterprises. Majority (76%) of the respondents have work experience in the range of 2 to 10 years, 15 percent with 11 to 15 years, only 6 percent with less than or equal to 1 year and mere 4 percent above 15 years of experience. This indicates enterprises comprises of operators with 6 to 10 years of experienced (46%) younger workforce.

**Descriptive statistics on Skill Development Factors**

**Table 3:** Satisfaction with JobSkill factors

Sl No	Factors	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Weighted Total
1	Effective use of skills	6	10	17	85	199	1412
2	Knowledge of key responsibilities	8	12	7	72	208	1381
3	Job description accurately reflecting daily work basis	7	18	24	88	180	1367
4	Possession of Skills needed for current job	6	11	3	84	213	1438
5	Opportunities to learn new skills	5	15	26	174	97	1294
	Percentage	2%	4%	4.8%	31.9%	56.9%	Avg-1378.4

**Interpretation:** The data of table3 denotes the satisfaction level of operator in relate to Job Skill factors. 57 percent and 32 percent of the respondents are ‘strongly satisfied’ and ‘satisfied’ with the factors of skills related to current job. Operators strongly agree that they have skills needed for current job and just agree with that fact that they get opportunities to learn new skills.The weighted average satisfaction of job skill factor is 1378.4.

**Table 4:**Satisfaction with Motivational factors

Sl No	Factors	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Weighted Total
1	Job promotions based on performance	9	13	37	162	96	1412
2	Recognition	12	21	29	179	76	1381
3	Reward for exceeding goals	15	22	64	173	43	1367
4	Opportunity to Assess owned skills	21	5	41	113	140	1438
5	Feedback from higher authorities	8	9	31	171	98	1294
	Percentage	4%	4.4%	12.7%	50.2%	28.5%	Avg-1253.6

**Interpretation:** Employers and supervisors make constant effort to motivate the operators in enhancing their skill level in order to attain performance excellence of both enterprise and employees. The efforts can be seen in above table 4 through analysing the satisfaction level of Motivational factors. 50 percent of the respondents are ‘satisfied’, 29 percent are ‘highly satisfied’, 13 percent remain neutral and 8 percent disagree with this factor.

**Table 5:** Satisfaction with Training and Development

Sl. No	Factors	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Weighted Total
1	Excellent training programme at enterprise	8	7	18	130	154	1366
2	Relevant to current job	2	5	19	107	179	1392
3	On-job-training	2	3	23	139	150	1383
4	Industrial training	12	13	147	91	54	1113
5	Training for newly inducted employees	10	12	31	176	88	1271
	Percentage	2.10%	2.50%	15%	40.60%	39.50%	Avg-1305

<sup>4</sup>Respondents born between 1981 and 1994.

<sup>5</sup>Industrial Training Institute

<sup>6</sup>Secondary School Leaving Certificate

**Interpretation:** Training and development is the platform for operators to attain the required skills by reducing skill gap and taking their career to next level. It was observed from table 5 that respondents were satisfied with the work done by the enterprises towards skill-based training. Almost 41 percent were ‘satisfied’ and 40 percent were ‘highly satisfied’ with the current Training and Development activities at the enterprises. Mere 5 percent of the respondents were not satisfied with the above factor. The value of weighted average of Training and development factor is 1305.

**Table 6:** Net Satisfaction level

Parameters	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Quality total
Job skill factors	32	66	77	503	897	1575
Motivational factors	65	70	202	798	453	1588
Training and Development	34	40	238	643	625	1580
Total	131	176	517	1944	1975	4743
Percentage	2.80%	3.70%	10.90%	41%	41.60%	

**Interpretation:** Table 6 collates all the three subscales viz., Job Skill factors, Motivational factors and Training and Development factors. Respondents are ‘highly satisfied’ with Job Skill factors. Low satisfaction among respondents was observed in Motivational factors of the enterprise. Respondents showed neutral satisfaction for Training and Development factor.

**Hypothesis testing**

Inferential statistics is used to test null hypothesis Ho. ‘Chi square test’ is applied for the factors to determine the significance level. After running through Excel, the obtained value of ‘Chi-square’ is 6.69 at 5% significance level. This clearly indicates that there is significance difference between the factors of operators’ satisfaction in Manufacturing enterprise. Hence, the present study rejects null hypothesis.

**VII. Conclusion**

The objective of the research was to know the satisfaction level of operator at different angles in relation with Skill Development. The purpose was to determine the existence of significance difference between the Skill Development factors and to identify how deeply it impacts the satisfaction level of the operators individually. Hence, skill related factors viz., Training and Development, Job Skills and Motivation were selected as antecedents for the research to study the operator satisfaction level in Manufacturing sector. The demographic profiles of the respondents clearly indicate the presence of Gen Y workforce lying in the age group of 21 to 35 years. Operators with SSLC qualification are much preferred next to ITI candidates. Majority of the operators are with work experience 2 to 10 years thus, constituting a younger workforce in Small and Medium enterprises.

Operators are more satisfied with the Job Skill factors (93%) when compared to other two factors. This clearly indicates operators are well versed with the job description and key responsibilities on daily basis. They strongly believe that they have the skills required for the job. The lowest satisfaction level reported by operators is under Motivational factors. It is observed that the operators are not satisfied with the reward and recognition programs conducted by the enterprises. In fact, operators are just satisfied with the Training and Development activities within the enterprise. However, they show their dissatisfaction or strongly disregard the concept of industrial training given by the enterprises.

The findings clearly indicate that there is a high significance difference among all the three Skill Development factors that affects the satisfaction level of an operator. Each factor has its own impact on the operator satisfaction level in the Manufacturing enterprises.

The results of the survey may help the enterprises and the policy makers to enhance the satisfaction level of the operators to build a framework for Skill Development programs and retaining the skilled workforce for better future.

**Suggestions**

- A spontaneous effort has to be carried out by the enterprise to raise the satisfaction level of operator through fair and equitable pay. Promotion system has to be refined through transparency to enhance their motivation level to perform even better. Reward and recognition schemes to be improvised based on the dedication on their work.
- Amidst the challenges faced by SMEs, enterprises should make effort to improve their communication with operators’ indicating their willingness towards their skill development.
- Regular and constructive feedback by the higher management may boost the operator’s skills, loyalty and taking up challenging job.

- Training sessions has to be periodically arranged for operators for improving the skills required to perform the jobs. This in turn may help in better job performance, deriving a positive feeling of satisfaction. Hence, education about one's job is vital in providing training to the individual enhancing his or her satisfaction level and performance as well.

### **Future Scope:**

- More antecedents could be added to define the significance of Skill Development factors in relation to operator satisfaction.
- The study can be undertaken in other segments such as construction, IT/ITES, Textiles, Food products, Auto and auto components per se.,
- The study was conducted in Bangalore city only but can also be done across cities in large scope.

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