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Strategic Competency Mapping for Performance Optimization: Insights from Small-Scale Manufacturing Firms in Nagpur

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Abstract

The current competitive industry requires small-scale manufacturing industries to optimize workforce performance for achieving higher productivity and sustainable practices. The study conducts a systematic assessment of strategic competency mapping as a means to enhance performance results for small-scale manufacturing businesses in Nagpur. Organizational goals together with employee competency identification processes and competency assessment create operational efficiency that generates business growth. The research uses a combined quantitative survey data and qualitative interview methodology to analyze competency frameworks together with skill gaps alongside their relationship to performance metrics. The adoption of formal competency mapping systems creates multiple benefits which improve employee performance alongside organizational performance metrics as well as enabling precise training programs and better job-role blending and talent management strategies. The research demonstrates essential obstacles that prevent small-scale businesses from implementing competency frameworks yet recommends productive methods to overcome those barriers. This research promotes workforce optimization studies together with specific guidelines that help government leaders and manufacturing industry directors and human resources professionals in their work.

Keywords: Competency Mapping, Workforce Optimization, Performance Management, Small-Scale Industries, Manufacturing, Human Resource Development

Introduction

A recognition of the importance of developing competent workforce has become imperative against the background of the fast evolving small scale manufacturing industry environment. Competency mapping has become one of the most effective frameworks for matching the skills of employees with the organizational goals in order increase organizational performance. This paper is relevant in the concept of small and generic sectors of Nagpur where the problem of resource scarcity and lack of skilled labour especially affects productivity; competency mapping can improve the workforce in the organization and thus the Organization's performance.

Competency mapping is the systematic process of identifying KSAs needed to perform duties within an organization or within particular positions. Thus, utilizing this approach has many benefits such as: By taking the approach, businesses can be able to achieve the right manpower planning that will help in the use of manpower and identifying the areas that need more staff with certain skill sets, ability to establish training programs to help improve on the skills of their employees. Additionally, CBA improve organizational succession planning, role upgrade, and planning, all aspects that will help an organization to grow.

However, there are several drawbacks of using competency mapping for the small-scale manufacturing enterprises in Nagpur which are as follows: Limited Availability of Advanced HR Tools and Techniques: The small-scale manufacturing enterprises lack the capital investment to acquire new HR tools and techniques to map the competency in the organization. The purpose of this study is to explore the significance of competency mapping in the improvement of organisational and employee productivity with particular reference to small scale manufacturing industries in Nagpur. The study aims at identifying, if at all, how the process of competency mapping can be conducted, the difficulties that may be encountered while implementing the process and the results or changes noted in the overall performance indicators.

Literature review

The strategic tool known as competency mapping draws substantial interest from businesses because it boosts both employer performance and business results especially within the

manufacturing industry. The literature review investigates contemporary research conducted since 2020 to evaluate competency mapping practices in small-scale manufacturing businesses focusing on studies about Nagpur India.

Competency Mapping in Indian Manufacturing

A thorough study into competency mapping and training needs assessment approached the Indian manufacturing industry according to Chouhan and Srivastava (2020). Studying employee competence areas led researchers to recognize personal capacity and acquired knowledge as key performance determinants. The research demonstrated that businesses need specialized training methods to build essential competencies which leads to improved organizational success.

Competency Mapping in Small-Scale Manufacturing Industries in Nagpur

The research of Waiker et al. (2022) investigated how employees' competency mapping and output management works in Nagpur-based small-scale manufacturing industries. Their research demonstrated that organizations need to recognize and develop particular capabilities which produce better market competitiveness along with better adaptability capabilities. The authors stressed that proper job analysis provides necessary information to identify needed competencies that guide the production of effective job descriptions and training protocols.

Strategic Implementation of Competency Mapping

The article by Johri (2014) demonstrated how manufacturing companies apply competency mapping as an HR tool strategically within their industry sector. The examination performed before 2020 continues to offer significant insights regarding organization-wide implementation of competency mapping to achieve desired results and obtain employee commitment. The study consisted of conducting surveys among Pimpri-Chinchwad manufacturing organizations in Pune to demonstrate how competency mapping works in similar industrial sectors.

Competency Mapping and Training Needs Assessment

Indian manufacturing sector research by Chouhan and Srivastava (2020) undertook a detailed investigation of competency mapping along with training needs assessment methodology. The research established competency domains related to HR practitioners through exploratory followed by confirmatory factor analysis models. Changes in workplace performance show personal and technical competencies stand as essential elements for individual success thus organizations should direct their training toward these areas.

Conclusion

The literature review shows that competency mapping plays a highly important role in improving performance in the field of manufacturing. It is with respect to these arguments that the analyses stress that in order to identify the precise competencies required for the jobs, these jobs will have to be analysed comprehensively and specific training programmes be designed accordingly. It has been perceived that competency mapping can greatly enhance the overall performance of the employee as well as the organization of small-scale manufacturing industries located in Nagpur.

Objectives of the study

- To analyze the role of competency mapping in optimizing workforce performance in small-scale manufacturing industries in Nagpur.
- To assess the relationship between employee competency levels and organizational productivity.
- To identify the challenges faced by small-scale manufacturers in implementing competency mapping.

Hypothesis

Null Hypothesis (H_0): There is no significant relationship between employee competency levels and organizational productivity in small-scale manufacturing industries in Nagpur.

Alternative Hypothesis (H_1): There is a significant relationship between employee competency levels and organizational productivity in small-scale manufacturing industries in Nagpur.

Research Methodology

In testing the correlation between employee competency level and organizational productivity, this research will use an mixed research approach in the analysis of the situations in the small-scale manufacturing industries in Nagpur. This quantitative study involves administration of questionnaires to employees and managers with a view of assessing competency mapping practices, levels of competencies and performance results. Residents' perceptions of competency frameworks and their effect on productivity is determined using a structured questionnaire with a Likert scale. Other forms of data include semi-structured interviews with experts comprising of the personnel of the human resource department and other industry specialists regarding generic and operational competency-based workforce planning and its work implementation. Analytical research design is employed to examine the correlation between competency levels and organizational productivity where descriptive research design is followed and method of data analysis involves Pearson's correlation coefficient and regression analysis. The targeted respondents are chosen from different small-scale manufacturing units randomly using a stratified technique done in Nagpur city. Secondary research through industry reports, articles and especially HR documents are also used to support argument in this study. The ethical concerns such as consent and disclosure are well upheld. Theresearch paradigm also ensures that the objectives of the study are achieved through identifying the impact of competency mapping in workforce and organisational performance optimisation.

Data analysis and discussion

Descriptive Statistics Table

Variable	Mean	Standard Deviation	Minimum	Maximum
Employee Competency Score (out of 100)	72.5	10.8	45	95
Training & Development Index (1-5)	3.8	0.9	2.0	5.0
Job Performance Rating (1-10)	7.6	1.4	4.0	10.0
Productivity Score (out of 100)	78.2	9.6	50	96
Years of Work Experience	8.4	4.2	1	22
Employee Satisfaction Index (1-5)	4.1	0.8	2.5	5.0

The descriptive statistics will be useful in comparing the potential dimensions that influence competency standards of employees and organizational productivity of the small-scale manufacturing industries in Nagpur. Specifically, mean of Employee Competency Score is 72.5 and standard deviation is 10.8, which implies that the majority of the employees possess moderate levels of competency but the dispersion is relatively high. From the Training and Development Index, it can be concluded that the perceived training opportunities by the employees are considered to be satisfactory although there is still potential for enhancement as the mean score is 3.8 (SD = 0.9).

The mean of Job Performance Rating is 7.6 out of 10 on a standard deviation scale of 1.4 which mean that overall the employees perform well but not at the equal standards. The Productivity Score (mean= 78.2, SD = 9.6) indicates that there is a reasonably high level of organization output , ranging from the lowest of the possible score of 50 to as high a score as 96 denoting that some of the firms under investigation may be producing much more than others.

The Years of Work Experience (M = 8.4;SD = 4.2) demonstrates that the respondents have different years of work experience, starting from 1 year and up to 22 years. Finally, it consists of Employee Satisfaction Index which mean is 4.1, standard deviation is 0.8 meaning that overall employee job satisfaction is acceptable but certain employee are dissatisfied.

Thus, it could be inferred that competency levels, training hours, job performance and productivity are in a positive correlation. The values for the standard deviations are moderate to some extent showing that there is variation that can be quantified with the use of correlation

and regression models to test the level of the relation. Thus, the outcomes of the analysis stress the significance of competency mapping and the implementation of proper training interventions with a view to facilitate workforce optimization and organizational performance improvement.

Correlation Analysis

	Employee Competency Score	Productivity Score	Sig. (2-tailed)
Employee Competency Score	1.000	0.092	-
Productivity Score	0.092	1.000	0.228

If we have to measure how much contribution does the Employee Competency Score impart to the Productivity Score, then the value is very low with a coefficient of positive correlation 0.092. This means that although the projection has revealed that the competency levels of the employees have a small direct influence over the productivity of the organization, the relationship between the two is not very strong. The test statistic used is 1.202, while the p-value of the test is 0.228 which implies that there is no trend between the level of competency among employees and productivity because the p-value not less than 0.05 at 5% significance level.

Based on the findings of this study, it could therefore be concluded that there is insufficient evidence that argues that higher employee competency improves productivity among the small-scale manufacturing industries in Nagpur. It may indicate that other factors such as the conditions in their market, the practices adopted by managers or the availability of resources may be affecting productivity not from the competency levels of the employees.

The findings may be extended by conducting more extensive research with a considerably bigger sample size and/or by including other factors into the equation, which would give a much broader insight into the specifics of organizational productivity. However, it would be useful to further explore other factors that may influence productivity and give more insight into the correlation of productivity with competencies of employees by applying multiple regression analysis.

Conclusion of the Study

Therefore, the purpose of this study was to establish the correlation between the competency level of employee and organizational productivity with special reference to small-scale manufacturing industries in Nagpur. With the help of the results derived from the descriptive statistics and correlation coefficient analysis, the following conclusions can be made here.

Employee Competencies: It is apparent from the above results that the employees of the small scale manufacturing industries of Nagpur are found to be moderate to highly competent and competencies also differ slightly in the sampled population. Most of the respondents considered that the extremity of training and developments was acceptable, implying that competency development is valued, yet there remains room for improvement in regards to training.

Organizational Productivity: This was established to have remained rather high among the organizations while a slight difference was noted in some organizations within the industries. This indicates that despite the current positive performances among many small scale firms, there are a number of firms that have possibilities for improving the level of their productivity through efficient management of workforce.

Pearson's correlation test showed that there is magnitude of positive correlation between the level of competency of the employees and organizational productivity , albeit low, = 0.092. However, the level of confidence calculated to be equal to 0.228 means that these correlation is not statistically meaningful, meaning that employee competencies alone determines productivity in these industries or sectors.

Possible or probably: Despite revealing no significant correlation between competency and productivity, the study indicates that some factors like management, resource availability, and market forces might have a more profound impact on the productivity.

Future Research Implications: In this study, authors therefore encourage the use of other variables like organizational culture, leadership, and/or external market which would provide more light to enhance the understanding of drag factors in relation to productivity. Also, a bigger sample size or repeated cross-sectional studies might offer more sound findings on the ability of individual competences to predict organizational performance over some time.

Therefore, even though the ELM continues to be a key tenet of workforce management, incorporating sustainable competency mapping skills, it has been established that organizational productivity in the small manufacturing firms in Nagpur is shaped by several factors other than competency mapping. The research suggested that competency mapping practices must be embraced together with other human resource management practices like leadership and corporate resources in the sector to gain major improvements in performance.

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