

A Study on Role Based Competency Mapping and Skill Gap Assessment for Key Job Positions at Pyung Hwa India Private Limited

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Abstract:

This study examines role-based competency mapping and skill gap assessment at Pyung Hwa India Private Limited. It focuses on how well employee competencies match job requirements in order to improve productivity and efficiency. Competency mapping helps identify the skills and abilities needed for each role, while skill gap assessment highlights the difference between existing and required competencies. The study aims to evaluate the clarity of job roles, identify skill gaps among employees, and assess their awareness of responsibilities. Data was collected through structured questionnaires and supported by secondary sources. The findings show that most employees clearly understand their roles, indicating effective communication within the organization. However, some employees lack certain technical and behavioral skills, which may impact performance. The study concludes that although the company has a strong competency framework, there is a need for continuous skill development through training, regular assessment, and performance management. Addressing these gaps will enhance employee performance and support overall organizational growth.

Keywords: Competency Mapping, Skill Gap Assessment, Employee Performance, Training and Development, Job Roles and Responsibilities
Organizational Efficiency, Human Resource Management

I. INTRODUCTION

In today's competitive business environment, organizations focus on improving employee performance to achieve higher productivity and efficiency. One effective approach is role-based competency mapping, which identifies the knowledge, skills, and abilities required for each job role. Along with this, skill gap assessment helps in understanding the difference between the existing competencies of employees and the required standards. This study examines the alignment between employee competencies and job requirements at Pyung Hwa India Private Limited. It aims to evaluate how clearly job roles are defined, assess employees' understanding of their responsibilities, and identify skill gaps in key job positions. The study uses data collected through questionnaires and secondary sources to analyze these aspects. The findings help in understanding the effectiveness of current competency practices and highlight areas where improvement is needed. This research emphasizes the importance of continuous training, performance management, and competency development to enhance employee efficiency and support overall organizational growth.

II. REVIEW OF LITERATURE

Previous studies highlight the importance of competency mapping and skill gap assessment in improving employee performance and organizational efficiency. Research by Singh and Gupta (2020) and Siddiqui and Waiker (2024) shows that competency mapping helps align employee skills with job requirements, leading to better productivity. Several studies also indicate that lack of continuous training and unclear job roles are major causes of skill gaps. Many researchers, including Goupil et al. (2022) and Valença et al. (2024), found that there is often a mismatch between education and industry requirements, which results in competency gaps. Similarly, studies in manufacturing and Industry 4.0 environments (Froschauer et al., 2022; Reddy and Kumar, 2025) emphasize the growing need for technical, digital, and analytical skills. These studies suggest that organizations must adopt continuous learning and upskilling strategies to meet changing industry demands. Further research highlights that competency mapping not only identifies skill gaps but also supports training, talent management, and succession planning (Mehta and Joshi, 2025; Gupta and Sharma, 2025). Studies by Kaur and Singh (2024) and Bose and Chatterjee (2025) show that competency-based training programs are more effective than traditional methods in improving employee performance. Recent studies (Lenton et al., 2025; Obi et al., 2025; Joshi, 2025) emphasize the impact of digital transformation and artificial intelligence on workforce skills, creating new competency requirements. These studies stress the need for continuous reskilling and advanced competency frameworks. Overall, the literature concludes that competency mapping is a strategic tool for identifying skill gaps, enhancing employee capabilities, and achieving organizational goals in a dynamic business environment.

III. OBJECTIVES OF THE STUDY

Primary Objective

- To study role-based competency mapping and assess the skill gaps for key job positions at Pyung Hwa India Private Limited.

Secondary Objectives

- To identify the key competencies required for selected job roles.
- To analyse the existing skill levels of employees against required competencies.
- To find the skill gaps affecting job performance.
- To support effective HR decisions related to performance and career development.
- To suggest training and development measures to bridge the identified skill gaps.

IV. RESEARCH METHODOLOGY

Research is a systematic process of collecting, analyzing, and interpreting data to solve problems and generate new knowledge. This study adopts a structured methodology to examine competency mapping and skill gap assessment among employees at Pyung Hwa India Private Limited.

A descriptive research design is used, as it focuses on understanding the current level of employee competencies, role clarity, and existing skill gaps without manipulating any variables. The study aims to describe “what” competencies are required, “how” employees perform, and “to what extent” skill gaps exist.

The research is based on both primary and secondary data. Primary data was collected through a structured questionnaire distributed to employees, while secondary data was gathered from company records and

relevant literature. The questionnaire included closed-ended questions such as multiple-choice and Likert scale items to ensure consistency and ease of analysis.

A sample of 151 respondents was selected using non-probability convenience sampling, considering time and accessibility constraints. This sample size was considered sufficient to represent the target population and provide meaningful insights.

For data analysis, percentage analysis was used to interpret responses and identify trends related to employee competencies and skill gaps. This method helped in presenting data clearly and drawing valid conclusions regarding the alignment between employee skills and job requirements.

There were some closed-ended questions on the survey, such as:

- Yes/No dichotomous
- Multiple-choice
- Strongly Agree to Strongly Disagree on a Likert scale

Statistical Tools Used

The gathered information was examined using:

- Analysis of Percentages
- The Mann-Whitney U Test
- The Kruskal-Wallis H Test
- Correlation of Spearman Rank

Data Analysis

Percentage analysis was used to interpret employee responses:

Percentage = No. of. respondents / Total respondents x 100

V. RESULTS & DISCUSSION

Table 1: Mann–Whitney U Test Results

Gender		N	Mean Rank	Sum of Ranks
Gender	1	86	72.20	6209.50
	2	65	81.02	5266.50
	Total	151		
Age Group	1	86	78.35	6738.00
	2	65	72.89	4738.00
	Total	151		
Educational Qualification	1	86	77.84	6915.50
	2	65	73.56	4561.50
	Total	151		
Department	1	86	77.84	6694.50
	2	65	73.56	4781.50
	Total	151		
Work Expeeriece	1	86	78.01	6709.00
	2	65	73.34	4767.00
	Total	151		

To determine if gender groups differ significantly in their adherence to workplace safety rules, a Mann-Whitney U test was used. The findings show that Gender 2 (N = 65) has a mean rank of 81.02, whereas Gender 1 (N=86) has a slightly higher mean rank of . 72.20, there is not much of a difference in mean ranks. The Z value (-1.421) and test statistic value (U = 2.468E3) further show that there is little difference between the two groups. Since the asymptotic significance value (p = .155) is higher than the conventional significance level of 0.05, it can be concluded that the observed difference is not significant.

Table 2: Kruskal–Wallis Test Results

Age Group	N	Mean Rank	
	1	109	78.72
	2	32	72.66
	3	8	66.88
Organization Provide Adequate Training For Your Role	4	2	17.50
	Total	151	
	1	109	78.02
	2	32	75.95
Attend Training Programs	3	8	64.00
	4	2	14.50
	Total	151	
	1	109	75.73
	2	32	81.03
Training Programs For Improving Your Skills	3	8	69.06
	4	2	35.25
	Total	151	

The Kruskal – Wallis H test was used to examine if different age groups had different opinions on management

To ascertain if perceptions of management's active support and promotion of safety programs varied among different age groups, the Kruskal-Wallis H test was used. Age Group 1 has the highest mean rank (78.72), followed by Age Group 2 (72.66) , and Age Group 3 (66.88), according to the mean ranks, which vary somewhat throughout the groups. There are noticeable variations in mean ranks, but they are not very significant. With three degrees of freedom, the computed Chi-square value is 5.274. There is no statistical significance because the significance value (p 0.153) is significantly higher than the cutoff value of 0.05.

Table 3: Spearman Correlation Results

		Confident Are You In Solving Work-Related Problems	Communication Skills At Work
Confident Are You In Solving Work-Related Problems	Correlation coefficient	1.000	.499**
	Sig. (2- tailed)		.000
	N	151	151
Communication Skills At Work	Correlation coefficient	.499**	1.000
	Sig. (2- tailed)	.000	
	N	151	151

The association between the perception of the department's accident reduction and the notion that safety culture contributes to fewer workplace accidents was investigated using Spearman's rank correlation. The two variables have a positive association, as indicated by the correlation coefficient (p) of 0.499. This implies that employees' perceptions of accident reduction tend to rise together with their conviction in the efficacy of safety culture. The correlation is statistically significant at the 1% level, as indicated by the significance value (p=0.000), which is less than 0.01. Nevertheless, the correlation's low strength suggests merely a tenuous relationship. 151 respondents make up the analysis's sample size.

VI. SUGGESTIONS

- Conduct regular competency mapping reviews to keep job roles aligned with organizational goals.
- Implement structured training and development programs to bridge identified skill gaps.
- Introduce periodic performance appraisals based on role-specific competencies.
- Provide clear job descriptions and role clarity sessions for all employees.
- Encourage continuous learning and upskilling through workshops and e-learning.
- Develop a feedback system for employees to express skill development needs.
- Strengthen onboarding and induction programs to improve role understanding from the beginning. Use mentoring and coaching practices for employee development.

VII. CONCLUSION

The study on Role-Based Competency Mapping and Skill Gap Assessment at Pyung Hwa India Private Limited reveals that most employees have a clear understanding of their job roles and required competencies. The organization has established effective systems for defining roles and responsibilities. However, the analysis also indicates the presence of certain skill gaps among a small group of employees, highlighting the need for continuous training and development programs. Strengthening competency mapping practices and providing targeted skill enhancement initiatives can improve employee

performance and organizational efficiency. Overall, the study concludes that while the company has a strong foundation in competency management, further improvements in training, communication, and periodic assessment will help in achieving higher productivity and employee effectiveness.

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