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An Empirical Study on Competency Mapping of Employees in the Automotive Sector with Specific Reference to Chennai

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ABSTRACT

In today's competitive business world understanding and developing Employee Competencies remains the key to Organisational success. Understanding employee competencies requires a focused approach to study the key competencies possessed by the employees and hence the study was carried out. The purpose of the study is to investigate the level of employee competencies and to analyse the most and least possessed competencies among employees of manufacturing units across the automobile corridor in Chennai, TamilNadu, India. A structured questionnaire was framed and circulated among the respondents to collect the primary data used for research. The respondents were selected through convenient random sampling method. Data collected from 227 respondents were tabled in SPSS and was anlaysed using statistical tools like factor analysis, reliability analysis and Correlation. The study intends to provide a pragmatic view on the level of competency among the employees and provides insights to the administrators, policy makers and practitioners in the field of human resource management for implementing the findings in developing the competency of employees for the development of the individual and the organisation.

Introduction

In today's competitive world, Organisation performance is no longer measured by its ability to effective and efficient utilisation of material resources, rather it is measured in its ability to manage its most important resource, the human resources and their competencies. Managing the employee competencies has become a key priority for organisations and organisations has started taking strenuous effort in identifying the employee key competencies, their levels and measures to improve their competencies. An organisation rich in multi-talented workforce has greater advantages in todays business scenario.

At the individual level competence is an underlying characteristic of a person, motives, traits, abilities, aspects of image or social role, knowledge that a person is able to use. It is an ability to perform well in terms of qualification, skills and knowledge, to have authority to do something, highly qualified awareness. A combination of knowledge, skills, attitude and personality of an individual as applied to a role or job in the context of the present and future environment that accounts for sustained success within the framework of Organisational Values. Competencies include the collection of success factors necessary for achieving important results in a specific job or work role in a particular organisation.

It is therefore necessary to understand and to asses the level of employee competency. The study was undertaken with the same purpose of understanding and assessing the level of competencies possessed by the employees in the manufacturing units in the Automotive sector in Chennai. The City of Chennai also nick named to be the 'Detroit of India' is considered to be one of the busiest hubs of automotive manufacturing industry. Chennai accounts for 30% of the Indian Automobile Industry and more than 35% of the Automobile Component Manufacturing industry. The prime placement of Chennai in the Indian Automotive Sector makes it a right choice to study the level of employee competencies in the sector.

Objectives

The broad objectives of the research have been defined as below:

1. To study and assess the competency of employees in the manufacturing units in the automotive corridor in Chennai.
2. To study the most and least possessed competencies among these employees.

Review of Literature

The researcher has undertaken a careful review of previous research carried out in the area of competency mapping, prior to framing the research objectives. A summary of the review has been presented below:

(Sarkar, 2014) In the study titled, 'Competency based Training Need Assessment – Approach in Indian companies' Shulagna Sarkar researched on the areas of Innovativeness, Communication, Decision Making, Effective Planning, Creativity, Self-Management, Learning Ability, Resource Orientation and Team Building as the core competencies. The study revealed that organisation should focus on conducting training need assessment, as the training objectives fail because of not conducting TNA.

(Rajan, 2015) The study reveals that Skill development by Competency mapping is one of the most accurate means in identifying the job and behavioral competencies of an individual in an organization. Organisations have to concentrate more on developing the competency model.

(Raju, Bagrecha, & Ravi Kumar, 2016) The study was carried out considering job performance skills, Communication Skills, Team Work, Leadership Skills and Personal Qualities as the dimensions of Competency Mapping. The author concludes the paper titled

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'Competency Mapping in IT Industry: A roadmap for future' Competency mapping as a process of identifying key competencies for an organization and/or a job and incorporating those competencies throughout the various processes (job evaluation, training, recruitment) of the organization.

(Sinha, Sinha, & Singh, 2016) According to Sinha on the study titled 'Applying Competency Mapping in the Information Technology Sector' described Competency mapping as a process of identifying key competencies for a company or an organisation and the jobs and functions within it. Competency is a set of knowledge, skills and attitudes required to perform a job effectively and efficiently. Sinha concluded the research stating that there exist a set of competencies possessed by the employees and organisations need to set more specific goals in order to improve the achievement orientation of the employees.

(Thamaraiselvi, Visagamoorthi, & Shobana, 2019) The study considers Communication, Creativity / Innovation, Decision Making, Leadership and Team work as the required core competencies. In their study titled 'A Study on Competency Mapping in Manufacturing MSME Sector using Mathematical Model' the researcher has concluded that employees have medium level of core competencies in creativity/innovation and leadership skills. Therefore, the MSME sector can bring and implement a culture of open and ongoing communication that will suit all the levels. The leadership skills of employees in industry can be developed through motivation and encouragement with intrinsic and motivational factors.

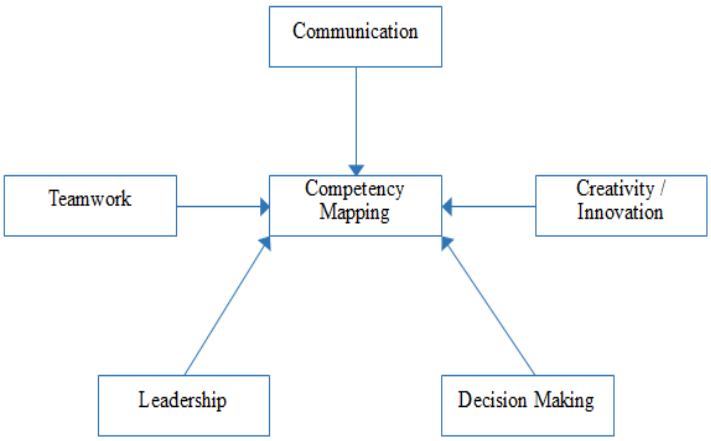
Conceptual Framework

The researcher in line with the review of literature and considering the research objectives has set the conceptual framework of the study. The researcher intends to investigate employee competencies under the dimension's Communication, Creativity / Innovation, Decision Making, Leadership and Teamwork.

Dimensions of Competency Mapping

For the purpose of the current research and after brainstorming with academic experts the research for the purpose of the study has finalized the below five dimensions for the study:

1. Communication:
2. Creativity / Innovation
3. Decision Making
4. Leadership
5. Teamwork



Research Design

Descriptive research design was adopted for the research. Primary data was collected from the respondents working in manufacturing units across the automobile corridor in Chennai, TamilNadu, India. Survey method was considered to be appropriate for the study as it facilitates the collection of data from a large population. Simple random sampling method was adopted for the purpose of the research. A structured questionnaire was developed in line with the research objectives to measure the level of competencies. Each competency was measured using 5 statements each and were measure using a 5-point Likert scale (5- Strongly Agree to 1-Strongly Disagree). Samples were collected on the basis of simple random sampling method. A total of 300 questionnaires were distributed for the survey out of which 227 usable and complete questionnaires were received. The data collected from the respondents were tabulated and anlaysed using SPSS 20.0. Statistical Tests like Anova, Correlation, T Test, Factor Analysis and Reliability Analysis were carried out to test and draw inferences from the study.

Results and Discussion

The demographic profile of the respondents is mentioned in the above table (Table 1). From the above table it is inferred that majority of the respondents 153 (67.4%) are male and 74 (32.6%) of the respondents are female. Majority of the respondents 87 (38.3%) of the respondents are in the age group of 20-29; 62 (27.3%) of the respondents are in the

Table 1. Demographic Profile of the respondents.

Demographic Factor		Percent	Frequency	Valid Percent	Cumulative Percent
Gender	male	153	67.4	67.4	67.4
	female	74	32.6	32.6	100.0
Age	20-29	87	38.3	38.3	38.3
	30-39	62	27.3	27.3	65.6
	40-49	63	27.8	27.8	93.4
	50-59	15	6.6	6.6	100.0
Marital Status	married	134	59.0	59.0	59.0
	Unmarried	93	41.0	41.0	100.0
Education Qualification	SSLC/HSC	93	41.0	41.0	41.0
	GRADUATE	95	41.9	41.9	82.8
	POSTGRADUDATE	36	15.9	15.9	98.7
	PROFESSIONAL	3	1.3	1.3	100.0
Salary	Up to25000	71	31.3	31.3	31.3
	25001-50000	114	50.2	50.2	81.5
	50001-75000	42	18.5	18.5	100.0
Grade	Senior Manager	46	20.3	20.3	20.3
	Manager	52	22.9	22.9	43.2
	Assistant Manager	41	18.1	18.1	61.2
	Senior Officer	25	11.0	11.0	72.2
	Junior Officer	63	27.8	27.8	100.0

age category 30-39; 63 (27.8%) of the respondents are in the age category 40-49; 15 (6.6%) of the respondents are in the age category 50-59. As far as the educational qualification, majority of the respondents 95 (41.9%) of the respondents are graduates; in terms of salary 114(50.2%) of the respondents are earning between 25001 – 50000 as their monthly salary; majority of the respondents 63(27.8%) are in working in Junior Officer grade.

From the table 2 it is known that the minimum mean value is for the item 'The organisation has well defined guidelines in decision making'. It falls around neutral. The highest mean rating is for the item 'Iam able to communicate well with my team members' which fall in the category Agree. It's inferred from the table that the majority of the respondents are of the opinion that they are able to communicate well with their team members and they all agree that they agree that they possess the communication competency; and the respondents are of the opinion that the organisation has well defined guidelines for decision making to which the respondents are neural in their opinion.

Table 2. Descriptive Statistics

	N	Mean	Std. Deviation
Iam able to communicate well with my team members	227	3.93	1.342
I get a clear communication of my task from my supervisor	227	3.90	1.328
During a conversation, I pay attention to how others are reacting to what I am saying.	227	3.71	1.297
Company has appropriate forum to communicate	227	3.81	1.295
Generally, I think about the consequences of what I say	227	3.66	1.416
I consider myself to be competent enough to be a leader	227	3.46	1.374
I enjoy setting goals and work towards accomplishing the goals	227	3.77	1.383
I see myself being supportive with all my peers	227	3.71	1.471
I consider myself to take complete responsibility of the task that Iam involved	227	3.59	1.434
Providing guidance without pressure is the key for being a good leader	227	3.78	1.369
I enjoy working as a part of team	227	3.73	1.315
I tend to seek approval and support from others	227	3.58	1.359
I go out of my way to encourage people in the group	227	3.68	1.516
I listen carefully to what others have to say.	227	3.72	1.343
I press for action to make sure people don't waste time or go around in circles.	227	3.65	1.404
I try to be clear about my objectives	227	3.52	1.331
I try to analyse the pros and cons of all possible alternatives before making decision	227	3.81	1.422
The organisation has well defined guidelines in making decisions	227	3.44	1.433
When making a decision I like to consider all relevant information	227	3.71	1.324
I like to consider all possible alternative before making a decision	227	3.67	1.383
I consider myself to be a creative person	227	3.50	1.384
Iam engaged in creative type of work on a regular basis	227	3.52	1.494
My creativity comes from careful planning and forethought	227	3.35	1.516
I tend to be more creative when working together with my team	227	3.81	1.587
When I get stuck, I consult with people about how to proceed	227	3.77	1.277
Valid N (listwise)	227		

Factor Analysis was conducted to recover out the relevant factors that specify the degree of level of competency among the employees. Table 3 shows the output of the Kaiser-Meyer-Oklin (KMO) and Bartlett's test of sphericity values. KMO measure of sampling adequacy value was estimated to be .863 for the overall sample. The Bartlett's test of Sphericity shows the correlation among the variables is statistically significant (p=0.000). The KMO and Bartlett's test results revealed the data to be fit for factor analysis.

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.863**
Bartlett's Test of Sphericity	Approx. Chi-Square	2326.474
	df	300
	Sig.	.000

Principal Component Analysis and Varimax rotation method was used for the study and the table 4 shows the communalities of the loaded items and the amount of variance accounted by each of the items in the study which is between 41.5 and 75.2. The Principal Component Analysis (Table 5) shows that the 6 components extracted and account for 60.82 % of the variance in the overall sample. The scree plot for the PCA has been shown below.

Table 4. Communalities

	Initial	Extraction
Iam able to communicate well with my team members	1.000	.658
I get a clear communication of my task from my supervisor	1.000	.629
During a conversation, I pay attention to how others are reacting to what I am saying.	1.000	.625
Company has appropriate forum to communicate	1.000	.576
Generally, I think about the consequences of what I say	1.000	.621
I consider myself to be competent enough to be a leader	1.000	.581
I enjoy setting goals and work towards accomplishing the goals	1.000	.752
I see myself being supportive with all my peers	1.000	.728
I consider myself to take complete reasonability of the task that Iam involved	1.000	.715
Providing guidance without pressure is the key for being a good leader	1.000	.678
I enjoy working as a part of team	1.000	.664
I tend to seek approval and support from others	1.000	.631
I go out of my way to encourage people in the group	1.000	.644
I listen carefully to what others have to say.	1.000	.538
I press for action to make sure people don't waste time or go around in circles.	1.000	.654
I try to be clear about my objectives	1.000	.445
I try to analyse the pros and cons of all possible alternatives before making decision	1.000	.592
The organisation has well defined guidelines in making decisions	1.000	.582
When making a decision I like to consider all relevant information	1.000	.523
I like to consider all possible alternative before making a decision	1.000	.550
I consider myself to be a creative person	1.000	.562
Iam engaged in creative type of work on a regular basis	1.000	.648
My creativity comes from careful planning and forethought	1.000	.694
I tend to be more creative when working together with my team	1.000	.501
When I get stuck I consult with people about how to proceed	1.000	.415

Extraction Method: Principal Component Analysis.

Table 5. Component Matrix[a]

	Component					
	1	2	3	4	5	6
During a conversation, I pay attention to how others are reacting to what I am saying.	.636	-.388				
I like to consider all possible alternative before making a decision	.622					
Providing guidance without pressure is the key for being a good leader	.619		-.466			
I get a clear communication of my task from my supervisor	.618	-.480				
The organisation has well defined guidelines in making decisions	.618				-.353	
Generally, I think about the consequences of what I say	.616	-.382				
I try to be clear about my objectives	.606					
Iam engaged in creative type of work on a regular basis	.605			.343		.348
Company has appropriate forum to communicate	.599	-.409				
Iam able to communicate well with my team members	.595	-.376				
I try to analyse the pros and cons of all possible alternatives before making decision	.593					
I see myself being supportive with all my peers	.591	.327	-.383			
I listen carefully to what others have to say.	.591					
When making a decision I like to consider all relevant information	.588			.321		
I tend to seek approval and support from others	.585		-.519			
I enjoy setting goals and work towards accomplishing the goals	.561	.357	-.344			-.300
I enjoy working as a part of team	.554	.358			.300	-.336
I consider myself to be a creative person	.526			.412		
I tend to be more creative when working together with my team	.523		.373			
When I get stuck, I consult with people about how to proceed	.490					
I press for action to make sure people don't waste time or go around in circles.	.466			-.435		
I go out of my way to encourage people in the group	.439	.305	.422	-.400		
My creativity comes from careful planning and forethought	.436			.429	.372	.359
I consider myself to be competent enough to be a leader	.518	-.521				
I consider myself to take complete reasonability of the task that Iam involved	.518				.565	

Extraction Method: Principal Component Analysis.

a. 6 components extracted.

Table 6. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.050	32.199	32.199	8.050	32.199	32.199	3.569	14.275	14.275
2	1.844	7.378	39.576	1.844	7.378	39.576	2.947	11.789	26.065
3	1.513	6.052	45.629	1.513	6.052	45.629	2.773	11.093	37.158
4	1.457	5.829	51.458	1.457	5.829	51.458	2.587	10.347	47.506
5	1.276	5.105	56.563	1.276	5.105	56.563	1.911	7.642	55.148
6	1.066	4.263	60.826	1.066	4.263	60.826	1.420	5.678	60.826
7	.990	3.961	64.787						
8	.905	3.620	68.407						
9	.873	3.493	71.900						
10	.748	2.992	74.892						
11	.724	2.895	77.787						
12	.606	2.426	80.213						
13	.582	2.327	82.540						
14	.525	2.102	84.642						
15	.501	2.002	86.644						
16	.475	1.900	88.544						
17	.446	1.782	90.327						
18	.394	1.577	91.904						
19	.376	1.503	93.407						
20	.334	1.338	94.744						
21	.318	1.270	96.015						
22	.295	1.179	97.194						
23	.249	.995	98.189						
24	.233	.932	99.121						
25	.220	.879	100.000						

- Extraction Method: Principal Component Analysis.

The test of reliability was conducted to test the reliability of the factors extracted. The Cronbach's Alpha coefficient (Table 7) for internal consistency was calculated to test the reliability. The Alpha coefficient achieved was .910 thus concluding that the factors were highly reliable in predicting the Competencies. The reliability coefficient values of the factors are represented in the table 8. Nunnally (1978) suggested that a minimum alpha of 0.600 sufficed for early stage of research. The Cronbach alpha estimated for Leadership is .723, for communication it is .828, for Teamwork it is .700, for Decision Making it is .763 and for Creativity

it is .723. As the Cronbach's alpha in this study were all much higher than 0.600, the constructs were therefore deemed to have adequate reliability.

Table 7. Reliability Statistics

Cronbach's Alpha	N of Items
.910	25

Table 8. Reliability Statistics

Factor	Cronbach's Alpha	N of Items
Leadership	.723	5
Communication	.828	5
Teamwork	.700	5
Decision Making	.763	5
Creativity / Innovation	.723	5

Correlation analysis is a method of statistical evaluation used to study the strength of a relationship between two numerically measured continuous variables. was performed to study the relationship. The results of the correlation study are presented in the table below. It is inferred from the below table that there exists a perfect correlation among the variables and shows a significant relation exists among the variables.

Table 9. Correlations

		Communication	Leadership	Teamwork	Decision-making	Creativity
Communication	Pearson Correlation	1	.554**	.470**	.540**	.485**
	Sig. (2-tailed)		.000	.000	.000	.000
Leadership	Pearson Correlation	.554**	1	.612**	.602**	.492**
	Sig. (2-tailed)	.000		.000	.000	.000
Teamwork	Pearson Correlation	.470**	.612**	1	.602**	.459**
	Sig. (2-tailed)	.000	.000		.000	.000
Decision-making	Pearson Correlation	.540**	.602**	.602**	1	.590**
	Sig. (2-tailed)	.000	.000	.000		.000
Creativity	Pearson Correlation	.485**	.492**	.459**	.590**	1
	Sig. (2-tailed)	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

Suggestions and Recommendations

Based on the findings of the study the researcher intends to suggest that companies should focus towards developing a competency-based model as it is found that majority of the respondent's lack in the required competencies. The study also reveals that majority of the respondents (84) feel that the companies do not have an appropriate forum to communicate, and majority of the respondents feel that they not engaged in a creative type of work on a regular basis. The research findings also reveal that majority of the respondents do possess good communication skills to deliver in their present job, however they do prefer to develop their language skill. In terms of the leadership skill it was identified that the employees need to improve their leadership skills, and hence it is recommended that if the organisations are looking up to their existing workforce to take up future leadership challenges they have to impart leadership development programs for their employees to enhance their leadership capabilities. In terms of teamwork, the study reveals that the respondents showed a higher-level ability to work and deliver as a team and the Organisational policies were conducive to work as a team. In terms of decision making and creativity level it is found that the respondents were showing average level on these competencies. It is recommended that the organisations institute measures to develop the decision-making skills and creativity competency of their employees.

Conclusion

Competency Mapping as a process involves the identification of key competencies for an organisation and trying to incorporate these competencies throughout the various process in the organisation. Humane Resource Department plays a vital role in mapping the Organisational Competencies required and to implement measures to identify and develop these competencies among the employees. The study has provided a roadmap in understanding the competencies possessed by the employees of automotive sector in Chennai. The findings of the study can be providing a greater managerial implication and set a road map to HR managers, Department and Unit Heads and Policy Makers in framing appropriate competency development programs in promoting the required skills among the employees in Automotive Sector. A well-established competency-based HR framework forms the base of unifying and aligning all the HR functions like talent mapping, recruiting, hiring, onboarding, developing and appraising their performance.

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