EXPLORING THE SUCCESS FACTORS OF COMPETENCY MAPPING IN CAPTIVE POWER PLANTS IN INDIA

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Abstract

Competency has been the bedrock of each and every successful sector. This paper attempts to explore the package of success factors of effective competency mapping in a few representatives Captive Power Plants (CPP) of Odisha. The paper outlines data reduction using exploratory factor analysis (EFA) from an archetypal sample of 420 respondents drawn from four public and private power units of Odisha. Investigation reveals competency mapping process is an effective apparatus including six success factors that lend it credence: result orientation, transparency, updated practice, management support, employee participation and strategic orientation. These factors assign different weightage in terms of perception and significance towards mapping of competencies and embellishing knowledge. A convenient non probability sampling method has been espoused in this study. Future research on this study may attempt to replicate this research with intercession and temperance function to explore the interrelationship of effective competency mapping factors and employee performance. A wider organization network may be used to see whether the success factors have some degree of impact. The study assumes significance as Odisha state in India has been a constantly growing economy in case of power manufacturing and distributing area. The identified success factors do serve power sector organization positively and are observed to be beneficial in terms of employee involvement, establishing transparent communication channels to deliver consistent growth, developing leaders for future, aligning individual performance in sync with organization vision and mission. Power manufacturing and supply industries play a significant role in economic growth supporting the vision of Government of India's initiative "Power for all". "Power" is the most essential constituent of infrastructure impacting economic growth and welfare. Power manufacturing units are facing challenges in human knowledge development and its forward linkage with business sustainability. The paper explores the success factors contributing towards having an effective competency mapping of CPP in Odisha. The present study is among the few work studied in the past regarding exploring the success factors behind effective competency mapping. The findings add significantly to the scanty information in this area in Odisha context.

Keywords: Competency mapping, employee performance, effective mapping, power sector-Captive power plant (CPP), success factors, knowledge management

Introduction

In today's changing business scenario, people are identified as competent due to their knowledge, skills and abilities to perform the task proficiently. Managing knowledge, mapping skills and developing abilities effectively transcends the business excellence. In the process of achieving excellence, business firms put focus on developing such framework which shows a way to define individual excellence aligned with the company culture (Kochanski, 1996; Sanghi, 2016)

The role of the researcher is to identify the success factors through inputs received from and tacit knowledge of employees. It is observed that capturing this implicit knowledge from employees experiencing competency mapping process and being aware of the system play an important role in managing knowledge and improving. Documenting the response by conducting interviews, survey on perceptions show a direction to develop a structured way of mapping competencies aligned with business strategy and goals. In this complex context, organization learning needs to be introduced. Many organization learning techniques available can be engaged to obtain success from organization perspective such as scenario planning, appreciative enquiry (Cooperrider and Srivastva, 1987) and the practitioner needs to be well experienced and trained for its successful execution.

Literature Review

A competency is a measurable parameter which highlights one's superior performance. Competency is a cluster of qualities that enable an individual to perform his/her assigned task successfully without fail and make himself/herself an exceptional performer. Spenser and Spenser (1993) described competency as "an underlying characteristics of an individual that is causally related to criterion-referenced effective performance in job situation". The authors identified competency characteristic as "motives", "traits", "self-concept", "knowledge" and "skills". Out of these, "knowledge" and "skills" are observable characteristics and can be enhanced through imparting need-based training and exposure to experience.

"The asset of the organization resides in the experience and knowledge of staff, rather than in plant and equipment" note Patrick S.W. et.al (2009) based on their study on the knowledge management process being practised in professional quantity surveying firms in HongKong. In order to understand the knowledge management process, firms focus on four essential characteristics such as "knowledge intensive nature", "advisory nature", "competence governed by institution" and "code of conduct followed by individuals". Beside s that organization development is possible in three phases: "inputs that affect the organization", "elements of organization development (OD) transformation" and output of the organization" (Yip and Lee (2017). Many attempts have been taken to improve the knowledge capability through mapping individual level. Communication from senior management has its own way of influencing capability building activity within the organization. Research indicates that stories and narratives have more meaningful context to convey information to the recipients (Boje, 1991; Cox, 2001;Ruggles, 2004; Sinclair, 2005). It is important for an organization to provide that platform to extract information from its employees and map those to the strategic goals set out by senior management. It is thus important to establish the point that two way communications in terms of understanding, sharing and caring for others builds strong relation and positive influence on the performance. Open communication system helps translating judgmental knowledge in formulating business strategy.

Employee participation among other organizational members generates trust between organizational agents and increases the leader's understanding of how competency/knowledge management is conducted throughout the organization. Finally, strategic steering of professional communities keeps the focus on business relevant issues and inspires useful knowledge and new ideas, while a motivational push to learn and try new things empowers employees to be involved (Inkinen ,2016).

In practice

Mapping of knowledge and skills are frequently used as an important element of individual and organizational development. Blend of knowledge and skill can be considered as a process of listing success factors of a task, job role, unit or organization to signify what is essentially required for successful accomplishment of job. Implementation of competency mapping process allows supervisors to scan the present status of competence and what needs to be developed (gap analysis in short) to be successful in work situation. Lyons,(2003) notes that "Competency mapping is basically used to identify skills in existing role or new jobs situations or for classifying skills in an extant situation". The graphical creation (map) is the start point to organize the ideas for future reference. In the workplace, no definite point works in every situation. Individuals keep on experimenting with new ideas, behaviours and deliverables to meet the expectation of business style adopted by organization from time to time. But there are some generic competencies which are outlined for every individual irrespective of their position or grade. These generic competencies are determined by identifying the successful performance factors which contribute positively to individual and organization. For this, organization prepares and follows a framework to assess the performance by clustering a list of competencies which are most essentially demanded by the job role. In practice, the list of competencies are clustered against the job profile, position and assigned task. For each competency, identified behavioural indicators (BI) are attached as statements. Behavioural indicators are the observable behaviours indicating the presence of certain qualities of outstanding performer. Behavioural indicators serve to assess of knowledge, skills and traits helping supervisors to spot the strongest players contributing maximum output Lyons,P.(2003). The set behavioural indicators are designated with proficiency level to different position. The framework is presented with a cluster of competencies required at individual and organizational level. All the competencies are generally well defined and understood with the help of certain behavioural indicators. The various indicators defined have different proficiency level expected from the positions/roles and responsibilities undertaken by the job holder. This is known as connecting positions with proficiency level. The designed mapping process is then assessed through different methods such as assessment centre, 360 degree feedback. The result of assessment opens the door for development of such gaps identified during the assessment process.

The mapping process is helpful for managers and higher authority to obtain complete understanding of transferability of skills from one job activity to another (Gunner,2001).This can be used as a reference tool in order to assess the workplace activities with more precision and detail attention. Skill charting or mapping are observed to be a formative assessment tool if used in advance can generate interest regarding need based training exercise to be executed (Wenger,1998)

Research methodology

The present study involves two phases of information collection. First phase involves data gathered from secondary sources and personal discussions with practitioners and employees

to spot the issues. It resulted in preparation of structured questionnaire. Second phase includes collection of input through designed questionnaire and developed scale to support the study.

Research Instrument

Reviewing past literature, an experimental list of variables impacting effective competency mapping was derived. The variables undertaken for the present study were aligned with the existing practices and opinions shared by individuals during personal discussion. Final instrument was developed comprising of 22 variables and the responses were to be reported on a five point scale. The scale measurement indicates "1" as strong disagreement and "5" as strong agreement. The structured questionnaire was pre tested for validity and reliability of the scale. The questionnaire represented the demographic profile of the respondents too.

Sampling

For the purpose of this research, population was defined as employees working in executive roles from heterogeneous functional jobs in power sector units. Sampling frame was developed considering executives working in captive power plants taken from four research unit such as National Aluminium Company (NALCO), National Thermal Power corporation (NTPC), Jindal Steel and Power Limited (JSPL) and GMR Kamalanga Energy limited (GKEL) Captive power plants in Odisha. The study considered non probability convenience sampling method to reach out to the respondents. Sampling was based on executives only and their awareness of competency mapping. Consideration of sample was focussed on executives only. For the study purpose, respondents were sampled because they were convenient sources of data.

Data analysis and Interpretation

Structured questionnaire was developed and used to collect demographic information and other responses related to the variables being studied. Data relating to important success factors was subjected to data reduction using factor analysis through SPSS.

Factor analysis

Data collected were fit for factor analysis in terms of variable wise measure of sampling adequacy, KMO test of sampling adequacy and Bartlett's test of sphericity. The data was run for Principal component analysis (PCA) with Varimax rotation. After variable deletions, factor output was received in form of 6 extracted factors with 22 variables as presented in Table 1.

## Validity and reliability of factor output

Validity and reliability of factor output was checked statistically. Value of Cronbach's Alpha was greater than 0.7 for all factors indicating reliability of output. Convergent validity was checked with help of "Variance Extracted (VE)"

Table 1 : Factor analysis output

Factor (Variance explained)	Eigen Value	Factor	Variables	Factor Loading
43.622	9.597	Employee	Access	.593

		participation	Clear	.805
			Involved	.738
			Feedback	.853
			Goal set	.794
8.896	1.957	Updated practice	Market requirement	.879
			Update the competencies	.789
			Stay ahead	.905
			Evaluate CM Practice	.865
7.663	1.686	Result orientation	Meaningful	.732
			Linked with reward	.813
			Development tool	.810
			Desired performance	.637
6.593	1.451	Transparent	Trust	.797
			Transparency	.875
			Unbiased	.839
5.615	1.235	Strategic orientation	Positively communicates	.797
			Derived from org goals	.830
			Strategic direction	.795
4.594	1.011	Management support	Committed	.632
			Critical responsibility	.850
			Serious	.729

Scree Plot describing Eigen values of 6 variable for effective Competency Mapping of NTPC,NALCO,JSPL and GKEL with N=420
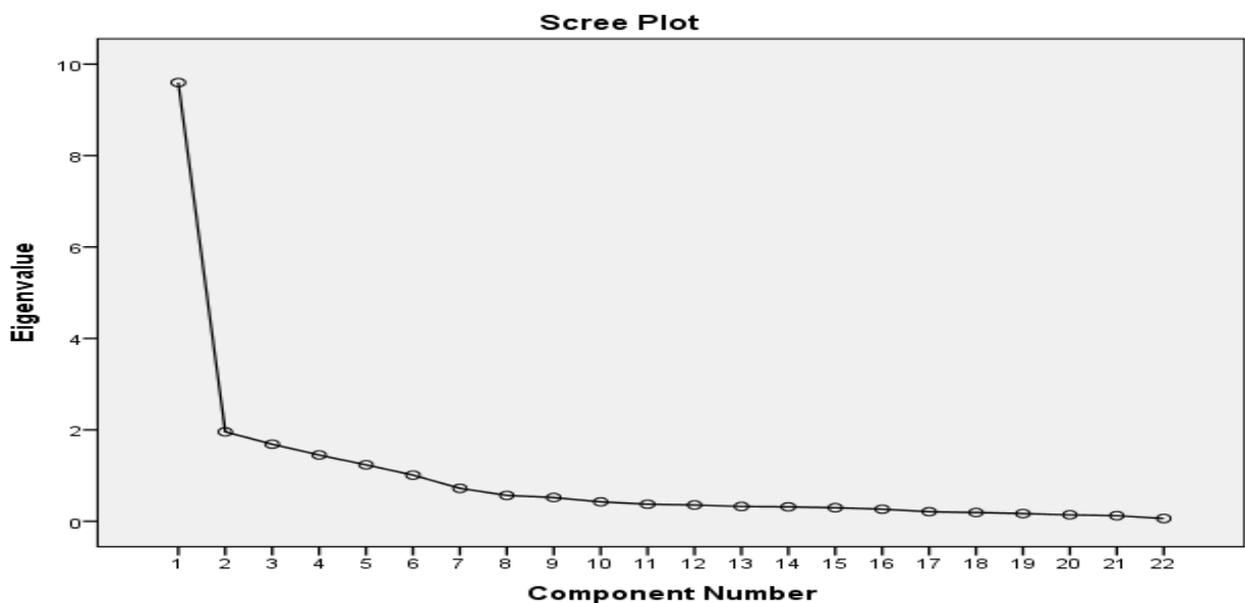
Factor Output

Six factors explained the 67.4 per cent total variance associated with the problem. Rotated component matrix is affixed as appendix 1. Extracted factors resulted out of rotated component matrix are presented in the table (Table I)

Factor 1: Result Orientation: Out of six factors identified through factor analysis, "Result Orientation" was observed to be the most important and relevant factor for effective competency mapping in power sector. This finding is consistent with prior research conducted indicating determinants of factor "Result Orientation" which are: "Meaningful" (4.35), "Linked with rewards" (4.33), "Development tool" (4.36),"Desired performance" (4.34) (number in the bracket indicate the men score)

Factor 2: Transparency: Transparency of practices is considered as significant factors in effective competency mapping. The employees of power sector reported transparency as the second most significant factors of effective competency mapping. Transparency factor is composed of variables such as Trust (4.32), Transparency (4.34), Unbiased (4.40).

Factor 3: Updated practice: According to the study, employees of power sector reported, updated practice as the third most significant factor of effective competency mapping. The variables in this factor are "Market requirement" (4.30), "Update the competencies" (4.31), "Stay ahead" (4.29) and "Evaluate CM practice" (4.30).

Factor 4: Management support: Management support is vital in organization growth. It is the management that frames the process to be followed by individuals and takes decision on the performance standard to be monitored. The variables taken for the factor "management support" were "Committed" (4.35), "Critical responsibility" (4.35) and "Seriousness" (4.35). For example: commitment level indicates the responsibilities held by management lead towards considering the process seriously.

Factor 5: Employee Participation: The study suggested that "employee performance" can be ranked as the next important factor according to the perceptions of employees of power sector. The factor "employee participation" consists of variables such as "Access" (4.31), "Clear" (4.31), "Involved" (4.28), "Feedback" (4.30) and "Goal set" (4.34)..

Factor 6: Strategic Orientation: The study revealed the factor "strategic orientation" ranked 6th among all the factors explored. Based on variables mentioned as "positive communication" (4.34), "derived from organizational goal" (4.35) and "strategic direction" (4.37), the factor was named as "strategic orientation"

Garrett's ranking method:

The factors explored by factor analysis are Strategic orientation, result orientation, employee participation, management support, transparency and updated practice. These factors are ranked by using Garrett's ranking method. The following formula was applied:

Percent position = $\dfrac{100(R_{ij} - 0.5)}{N_j}$

Table 2: Scale values of factor levels

Rij	I	II	III	IV	V	VI
Percent position	8.33	25	41	58	75	91
Scale values	77	63	55	46	37	24

Table 3: Ranking the factors on the basis of importance given in organization

S no	Factor	Rank	I	II	III	IV	V	VI	Total Score	Mean score	Rank
		x	77	63	55	46	37	24			
1	Employee participation	F	3	24	20	16	27	10	100	48.18	V
		Fx	231	1512	1100	736	999	240	4818		
2	Updated Practice	F	27	13	25	08	18	9	100	55.23	III
		Fx	2079	819	1375	368	666	216	5523		
3	Result orientation	F	34	23	14	12	9	8	100	59.74	I
		Fx	2618	1449	770	552	333	192	5974		
4	Transparency	F	17	28	23	14	12	6	100	55.70	II
		Fx	1309	1764	1265	644	444	144	5570		
5	Strategic orientation	F	8	16	24	11	6	35	100	45.12	VI
		Fx	616	1008	1320	506	222	840	4512		
6	Management support	F	22	7	17	28	16	10	100	51.90	IV
		Fx	1694	441	935	1288	592	240	5190		

Source: Primary Data

Note: x: Scale value, F: Number of respondents, Fx: Score value

Ranking of factors: Relative significance of factors was ranked by using Garrett's ranking method. Per cent position is extracted by following the formula.

Percent position = $100(Rij - 0.5)/Nj$ where Rij: Rank given for the ith factor by the jth sample respondents.
Nj: Number of factors ranked by the jth sample respondents.

By referring the Garrett's table, per cent position is transfigured to scores. The scores shared by each respondent against factor are added and the average score is calculated. The factors having highest average score is considered to be the most significant The scores of each factor is tabulated, hence resulted the rank of each factor by considering the highest average score. It is evident from the result that the respondents of public and private power units assigned the maximum score (59.74) to factor Result Orientation (RO) followed by Transparency (T) with score (55.70), Updated practice (UP) with score (55.23), Management support (MS) with score (51.90), Employee participation (EP) with score (48.18) and Strategic orientation with score (45.12).

Observation: Result of the study reveals that the effective practice of competency mapping is orchestrated by various factors. The practitioners must look at a consolidated view of practices and competencies framed by the organization to set forth an advanced knowledge management with a continuous effort towards achieving business goal.

These factors may be discussed in the light of following observation made in this research.

Composition of effective competency mapping: Mapping of individual competencies differentiating them from others necessitates improved understanding of the practice and challenges faced during execution. The framed competencies are set and defined on the basis of job requirement, position held, roles and responsibilities taken up and risk involved in the work profile. A flawless model can be framed only when the issues are addressed timely and results are manifested. The first step towards recognizing the flaw in the system begins by strategizing the process from the root. Results indicate that recognizing the effort put by individuals are expected to be highly significant which is termed as result orientation.

Conclusion:

Changing business environment calls for some innovation in managing human workforce and competency mapping is the need of the hour to bring out the innovations in human resource management field. Revisiting the literatures, it can be observed that the concept of competency mapping has been a useful tool for practicing organization to develop the performance of individual and organizational performance effectively and efficiently. Organizations have perceived competency management system as an inevitable process in the organization in the present business environment. In the era of Artificial Intelligence where technology outperforms human capital capability, managing competencies have become real challenge for organizations having vision and mission to grow. Identifying competencies and developing them is one of the major tasks of growing organizations. Many of the organization use competency mapping for training and development processes, majorly to help identify training need and the performance gap. Common competencies along with the values are incorporated in the induction training itself so the new employee is aware of the competencies essential across the organization. However, it has been observed that most of the companies have their own model with identified set of competencies. The findings of the study highlight the success factors of competency mapping have a significant contribution towards execution and development of individual competency mapping process more effectively.

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