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Developing Competency Model Using Repertory Grid Technique: The Case of Spinning Master

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Abstract

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Keywords

Competency, Competency Model, Competency Assessment, Repertory Grid, Textile Industry, Spinning Masters, India

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This paper aims to develop the Competency Model using Repertory Grid Technique. 15 Spinning Master of a large textile company in India were interviewed using repertory grid technique. The study identified 9 competencies in 3 competency clusters that are Interpersonal Relationship, Operational Efficiency and Individual Traits. The study is the first attempt to develop competency model in any textile company and can be useful in implementing competency based HR practices in the organizations. The Repertory Grid Technique used in the study helps in developing competency model in a quick and comprehensive manner that may reduce the time, labor and cost involved in the same. Keywords: Competency, Competency Model, Competency Assessment, Repertory Grid, Textile Industry, Spinning Masters, India

With 21% of total employment generated in the economy, and 27% of foreign exchange earning of total exports, textiles is one of the biggest industry of India (Anand, 2014). The industry produces a large range of fibers/yarn from natural and synthetic fibers like cotton, jute, silk, wool, polyester, viscose, nylon and acrylic.

The 1,227 textile mills in India are mostly into the production of Yarn (Anand, 2014), and production efficiency of these mills largely depends on the employees working in these mills, it is important for the textile industry to improve its productivity, quality and cost (Isaacs, McCurry, Woodruff, & Elliot, 2001) in order to ensure the financial efficiency (Zala, 2010), which can very well be ensured by the way of acquiring, training, and developing manpower that can give superior performances.

The textile companies need to have a competent pool of employees, who can deliver the required performances. Out of several positions/ roles; the role of Spinning Master is of significant importance in a textile company. The Spinning Master is primarily responsible for keeping the machinery, and equipment in good working conditions, and controlling the staff to achieve optimum machine efficiency, and desired output in terms of both quality, and quantity.

For developing effective Spinning Masters, it is important to identify the competencies that should be possessed by an effective Spinning Master. So far, the literature available for the Spinning Master is limited to the job description, and some key behavioral skills provided by the textile companies, and Ministry of Labor and Employment, India; do not give much details about the important competencies an effective Spinning Master shall possess, moreover the behavioral skills provided, lack details about the differentiating behavior between an effective, and not so effective (Spencer & Spencer, 1993) Spinning Master. Hence it becomes important to develop a competency model for the Spinning Masters

In Indian context, so far, to the best of researcher's knowledge, there is no literature available on competency based human resource practices in textile companies. Since textile is one of the biggest industries in India, and contributes significantly in employment, and revenue generation; the competency based approach can help organizations achieve better efficiency in its processes, and outcomes.

A competency model will help the companies to develop accurate, and job related selection methods, and assessment tools; and can help identify the future development needs of the workforce as it provides the basic framework to guide a series of human resource management activities (Patterson, Ferguson, Lane, Farrell, Martlew, & Wells, 2000).

Spinning Master - Role and Competencies

National career Services, Ministry of Labor and employment, India, details the Job description of a Spinning Master (National list of occupations, n.d.), as follows:

- Organizing, controlling, and supervising various processes in spinning yarn from various fibers
- Directing, mixing, and blending of different grades of fiber to produce yarn of required quality
- Supervising, cleaning, carding, and combing of fiber and drawing spinning of yarn.
- Ensuring required degree of temperature, and humidity in various spinning sections is maintained.
- Visiting spinning sections constantly to check continuity of operations.
- Ensuring machines are repaired or replaced for restoration of work.
- Controlling staff, and ensuring that quantity, and quality of production are maintained
- Keeping machinery, and equipment in good working order for optimum efficiency

The job description indicates that the role of the Spinning Master is quite important in the textile company. The Spinning Master has to obtain operational efficiency in terms of both production quality, and quantity by the way of managing people, processes, and raw material. As regard reporting relationship is concerned, the Spinning Master reports to the General Manager- Production and is reported by Deputy Spinning Master/Spinning Supervisor. Since the role of Spinning Master is directly linked to production which is one of the key activities of a textile company, the position becomes critical in nature. A critical position is an essential position for the organization to achieve necessary work results (Ibarra, 2005).

Therefore; the intent of this paper is to develop a competency model based on a systematic and scientific approach.

Literature Review

Competencies are underlying characteristics of an individual that causes effective performance (Boyatzis, 1982). Spencer and Spencer (1993) extending the definition described competencies as underlying characteristics that comprises of Knowledge, Skills, Self-Concept, Traits and Motives; are causally related, criterion referenced, and can differentiate between superior performers, and effective performers. Competencies are observable behaviors, and standards of individual performance (Hoffman, 1999), measurable human capabilities (Marrelli, 1998) and can be improved via training and development (Lucia & Lepsinger, 1999).

A Competency model is a detailed behavioral description (Fogg, 1999), comprising Knowledge, Skills, abilities, and other characteristics (Campion, Fink, Ruggeberg, Carr, Phillips, & Odman, 2011), needed to perform effectively in a specific job, role or position in a department, organization or industry (Ennis, 2008). The model comprises of a group of 5-9 competencies called competency dimensions/clusters (Spencer & Spencer, 1993), with each

cluster containing 3-5 competencies, each competency has some set behavioral statements called behavioral indicators.

The competency models can be useful in designing the HR systems and processes like selection, training, compensation etc. around the identified competencies (Hollenbeck, McCall, & Silzer, 2006) and are often customized according to organizations (Campion et al., 2011).

Mansfield (1996) gave three approaches to build competency models; the Single job approach that focuses on one job; one size fits all approach that focuses on broad range of jobs; and multiple job approach where the competencies are common to the multiple jobs/roles.

Aldredge and Nilan (2000) developed Leadership competency model at 3M, the model had 12 competencies grouped into three clusters; Fundamental, Essential and Visionary that illustrated the development of these competencies during executives' career. The competency model was an outcome of review of literature on leadership competency, and development followed by multiple rounds of deliberation, and discussions involving senior managers, and key executives of 3M across the globe who involved actively into the process. The competency model comprised of competency labels, competency definitions, and Behavioral anchors for each competency. The competency definitions captured the issues unique to the priorities held by the executives.

Patterson, Ferguson, Lane, Farrell, Martlew, and Wells (2000) developed the competency models for General Practitioner (GP) role using critical Incident focus group with GP, Behavioral observation with GP-Patient consultation and critical incident interviews (Flangan, 1954) with patients. The study resulted into identification of 11 competencies that includes 5 competencies elicited commonly by all the participants in all the conditions and 3-3 competencies elicited by GP and patients each. Each competency was defined based on the elicited constructs.

Vathanophas (2006) used behavioral event interview (BEI) technique (McClelland, 1998; Spencer & Spencer, 1993) to develop competency model for chief of general administrative sub division level in the Thai department of agriculture. The developed model has 9 competencies in 3 clusters.

Barber and Tietje (2004) studied MAMP (manufacturing assembly and other material processing) function's competency requirement for managerial development using modified Delphi technique, that comprised of the panel of experts from upper-level management of mid and large size organizations with five years or more experience in the same organization dealing with MAMP function. The developed competency model has Knowledge, skills and value scales with 5, 5 and 4 competencies respectively. One of the important implications of the study was that for MAMP managers only technical knowledge is not sufficient rather they must possess knowledge, skills and values corresponding to interpersonal leadership competencies.

Vashirawongpinyo and Pianthong (2015) developed competency model for engineers in Automotive sector using Delphi technique involving 17 experts; they later reviewed the model through focus group of management staff of the industry. The competency model has three clusters Management competency; comprising of management of operational performance such as Strategic Management, Technology management, Logistics Management, safety & Health and Quality management, Functional competency; comprising of Human Resource management such as Recruitment, delegation, training & support, Leadership, Negotiation, Employee development; Operational Performance, such as problem solving, productivity, maintenance, planning, controlling; and Production Engineer Characteristics, such as Leadership, Teamwork, Logical Thinking, communication skills etc.

The various studies suggest that the techniques used for competency mapping have primarily been the critical incident technique, Behavioral Event Interviews and

Delphi/Modified Delphi technique and literature review clubbed with and focus group interviews.

The critical incident technique has advantages in terms of connecting real world examples with the behaviors, minimizing the scope of subjectivity (Stano, 1983), also it is a systematic approach of collecting the perspectives from wide variety of participants (Kain, 2004), Yet it has several disadvantages as often it is based on the self-reporting that may be inaccurate and since the technique is based on the recollection of incidents, the order of questions may play a significant role (Schwartz, 1999); moreover the technique requires a large amount of time in generating the self-reports from individuals.

The BEI technique is an adaptation of Flagnan's critical incident technique (McClelland, 1998) with a flexibility of choosing the job incumbents from two categories that is Superior and Average performers (Spencer & Spencer, 1993) in order to identify the difference between the two. According to McClelland (1998) since the technique rates what makes people outstanding rather than who is outstanding, the biased is reduced. In the BEI process the respondents are asked to describe about 2-3 positive and negative events related to their work lives in their own words. The scripts are coded for various characteristics and then compared with two work groups to identify the competencies that differentiate the two, called differentiating competencies (Spencer & Spencer, 1993) that becomes the part of standardized competency dictionary (McClelland, 1998). Moreover, the bias is also reduced by the way of ensuring that the interviewers, interviewees and coders do not know who has been nominated as superior or average performers.

BEI is a very popular technique, and used extensively for mapping the competencies; the technique has a lot of advantages in terms of gaining in-depth perspectives about the job challenges, and competencies needed to perform the jobs effectively, but it is highly labor oriented, time consuming, and not practical to analyze a series of jobs due to the amount of cost, time, and expertise needed to administer the same (Marrelli, Tondora, & Hoge, 2005).

One of the personal observations made by the authors while conducting BEI was that, the respondents provide a fair amount of information while reporting the positive events related to their work lives, but while reporting the negative events they play with little caution. The respondents always have certain apprehensions in their minds regarding the purpose for which the information will be used. They need to be taken into confidence, and told the reasons for conducting such exercises well in advance. Trust becomes a crucial factor in it.

The ability of Delphi technique lies in structuring and organizing group communication (Powell, 2003) that helps in achieving consensus in a given area of uncertainty, and where precise information is not available (Yusuf, 2007). The success of Delphi depends on the combined expertise of participants who are part of the panel; moreover, the panel size and qualification of the members is of significant importance (Powell, 2003). According to Lindeman (as cited in Powell, 2003), Delphi has been considered as one of the efficient ways of collecting information through group process of achieving consensus. According to Jairath and Weinstein (as cited in Keeney, Hasson, & McKenna, 2006), since it anonymously captures the information from a large pool of experts situated at diverse locations, while arriving at consensus, the possibility of dominance of any expert member is removed; However, the consensus process requires rounds of deliberations, and discussions amongst the expert panel member through a moderator that may involve a lot of cost, and time commitment. Moreover, the consensus process may lead to the dilution of best opinion, and the anonymity, the lack of accountability (Sackman, 1975), and may result into hasty decisions (Powell, 2003).

Napier and Tan (2009) investigated the competency requirements of IT Project managers, using repertory grid technique. The study resulted in identification of nine competencies. The study complemented the existing research but provided richer understanding of several competencies that were narrowly defined.

The review of literature suggests that most of the techniques used for developing the competency models have their inherited strengths yet require a lot of cost, labor and time commitment in data collection. However, repertory grid can be one of the techniques that can take care of the above-mentioned concerns of cost, time and labor.

One of the authors of this paper is an academician, researcher, and consultant in the area of competency based Human Resource Practices, and works with a reputed business school in India as a Human Resource Management faculty. The author has been consulting with several organizations for development of competency models, and assessment tools. In the same context, one of the Yarn manufacturing company contacted the author, and expressed its willingness to adopt competency based approach to align its Human Resource Processes with organizational goals, and objectives. The organization felt the need of moving towards competency based approach as it believed that a well-designed competency framework will help the organization in designing its Human Resources functions like recruitment, training and development, and career planning in an effective manner and would help in developing a workforce that can bring better productivity. However, the organization was also concerned about cost, and time involved into the process, and wanted a solution that can easily be developed, and implemented with less cost and effort.

Research Methodology

To develop the competency model of Spinning Master Repertory Grid (RepGrid) technique was used, RepGrid is based on the personal construct theory proposed by Kelly (1955) that says that, people view their surrounding based on their cognition, and past experiences. According to Tan and Hunter (2002), RepGrid is a cognitive mapping technique that attempts to describe how people think about a phenomenon in their world. For the purpose of study, we choose to capture the cognitions of the Spinning Masters about their colleagues. According to Easterby-Smith (1980) there are three major components in the RepGrid; Elements, Constructs and Links. As per our study Elements are the Spinning Masters; Constructs are participants' interpretations of elements; and Links, the relationship between constructs and elements, that is, the competencies of Spinning Masters, and its relationship with effective and not so effective performance. We followed the given process as suggested by Tan and Hunter (2002) to develop the grid

Research Objective

To identify the competencies of Spinning Masters.

Element Selection. The elements are the objects of study; in our case the elements are the Spinning Masters with whom the participants have interacted and worked. The elements can either be identified by the participants, or supplied to them. While identifying the elements, it is important that the list of elements should be a mix of effective and average performers in an equal ratio. The nature of the grid can be of two types; "Idiographic" and "Nomothetic." The idiographic approach focuses on subjective experiences of participants and used when the elements are not commonly known to the participants; whereas in Nomothetic approach, there is commonality in the elements. Our approach was to identify those competencies, which the job incumbents (participants), regard as important as far as effective performance of the job is concerned rather than comparing the personal constructs of different participants, hence a list of common elements was supplied to all the participants.

6 Spinning Masters were selected as elements, the element selection was done based on the performance data provided by the Human Resource department wherein the elements

belong to the category of High Performers and Average Performers in an equal ratio (Tan & Hunter, 2002), utmost care was taken while selecting the elements as the RepGrid technique requires elements that are discreet (Stewart & Stewart, 1981), and homogeneous (Easterby-Smith, 1980), both the conditions were satisfied as the position chosen for study was Spinning Master (Discreet), and the Spinning Masters were identified from the same organization and were commonly known to all the 15 respondents (homogenous), moreover since the elements can either be supplied to, or can be selected by the participants with consensus (Easterby-Smith, 1980), we chose to supply the elements as we had opportunity to choose high performers, and average performers based on their performance at job. The respondents were not told the criteria of selection of elements to avoid any biases even the authors did not have any details about the elements with respect to their performances.

Construct Elicitation. To identify the competency constructs, 15 respondents were interviewed from the company. The Spinning Masters (Elements) were commonly known to all the respondents. A sample size of 15-25 within a population can generate sufficient competency constructs. The average experience of the respondents was 35 Years, with an average work experience in the company of 15 years. All the respondents were males since at the given position no females were working in the organization. The interview with the respondents was arranged by the Human Resource Department of the organization. The respondents were told about the purpose of the exercise. The authors took the permission from the management as well as the respondents to audio record the interview; however, it was clarified that only the text script of the interview shall be given to the management, and in no condition the name of the respondents shall be revealed in the script.

The respondents were given a formal training by the author about the RepGrid technique, and explained the various steps involved into the same; also, they were told that the process is to develop a competency model in order to find out the competencies that lead to effective performances. The idea was to communicate, that the exercise is for development purpose, rather than performance evaluation, and the data supplied by them shall be kept anonymous. In the entire process one of the authors who happened to be a neutral third party consultant interacted one to one with the respondents in a separate room.

7 cards were made carrying names of all the six elements, and a 7th virtual element was introduced as “My Favorite.” The virtual element has been used as a comparison anchor in the construct elicitation process (Keng, Xin, & Hong, 2010), moreover it also increases the variability in the elements (Stewart & Stewart, 1981).

The interview begins with asking the respondent to pick any three cards at random; the process is called “triading” (Kelly, 1955). The interviewer asked the respondents to look at the cards and describe; “In what way(s) any two of them are similar and yet different from the third one”? (Eden & Jones, 1984). The respondents were told that while describing the similarity, and differences; try various permutations and combinations, and elicit as many constructs as possible; also, that the construct should be related to the task performance only; as to keep the interview focused, it was important that the construct should come from work related perspective, rather than some other perspective.

As soon as a construct was elicited by the respondent the interviewer asked to provide the opposite pole of the elicited construct. For example; the respondent said that two of them are good listener and third is not; then the interviewer asked; what according to you is the opposite of good listener; and the respondent said, poor listener. Identifying similarities and differences produces contrasting poles for the constructs (Tan & Hunter, 2002) as the constructs are bi-polar (Kelly, 1955) in nature.

Laddering. To gain a complete understanding, and underlying interpretation of the constructs, the interviewer, Further probed into the same by asking; “what exactly you mean by the same?”; For example one of the respondents said that two of them have good

communication skills and third does not have, the author further probed and asked what exactly the respondent means with good communication skill, then the respondent said that, two of them listen with a lot of patient, but the third does not; the technique of probing to understand the real underlying meaning of construct is called laddering (Tan & Hunter, 2002). The author then further asked the respondent what is the exact opposite of the construct which has been provided, and what does the respondent prefer as far as effective performance is concerned in order to arrive at the opposite pole of the construct called the contrast pole.

Once the construct pole and contrast pole was elicited the author asked the respondents to rate all the elements on a scale of 1 (Very Low) to 7 (very High), the scores provided by the respondent was recorded in a grid called Repertory Grid.

The similar exercise was repeated till the entire construct exhausted with one set of cards; then a different set of cards was picked randomly from all the 7 cards and the same process was repeated, the exercise went on till the constructs exhausted or redundant construct were being elicited by the respondents, the standard “stopping rule” described by (Yin, 1994) or “theoretical saturation” defined by (Strauss & Corbin, 1990)

Once the construct elicitation exercise was completed the respondent was asked to rank all the constructs on a scale of 1 (Least Desirable) to 7 (Most Desirable) in the given job. The same process was performed with all the 15 respondents individually that resulted into 15 repertory grids (see Table 1).

Table 1: Example of Repertory Grid by a Spinning Master

	Construct / Favored pole	Construct rank	Elements - Spinning Masters							Contrast pole
			Rahul	Edwin	Mahesh	Murthy	Naresh	Simha	My favourite	
1	Well co-operate	7	4	2	3	5	6	5	7	Non co-operative
2	Good behavior	6	5	5	3	4	5	6	7	Bad behavior
3	Good listener	7	5	2	2	3	4	5	7	Bad listener
4	Frank	7	2	2	4	4	5	4	7	Reserved person
5	Good tone	6	4	3	5	5	4	5	7	Bad tone
6	Good work handling	7	5	6	4	4	3	4	7	Poor work handling
7	Good process follow-up	3	5	4	6	4	4	5	7	Very poor follow-up
8	Regular	1	6	3	4	5	4	5	7	Irregular
9	Good worker utilization	7	5	6	3	6	6	6	7	Poor worker utilization

It took around 5 Hours to complete the entire exercise with an average time of 20 minutes per respondent. In total 179 constructs was provided by the respondents. The average number of constructs per grid was 11.86 with the standard deviation of 3.39. In the prior studies the average number of constructs per grid has been found in between 9 to 24, hence data obtained is consistent with the prior studies (Feixas, Guillem, María, Stephanie, & Lorenzo, 2008; Rogers & Ryals, 2007; Timmermans, Van der Heuden, & Westerveld, 1982).

Content Analysis

The data obtained from the 15 repertory grids was compiled and clubbed in an excel sheet that contained all the 179 constructs along with their ratings. The compiled Sheet was sent to three independent coders for manual coding. The coders were briefed about the objective of the study, the organization, job description, and the role of Spinning Masters to gain clarity on the context. In order to understand the multiple perspective; one coder was identified from the textile industry background, and two from academic background.

The conventional content analysis of the obtained data was done following the process prescribed by (Hsieh & Shannon, 2005). The coders named, defined and categorized the

responses. The initial coding (Competency codes) was done highlighting the exact words from the text to capture key thoughts or themes. Once the initial coding was done; the codes were sorted into the categories based on their linkage and relatedness. The obtained codes were then grouped into meaningful clusters.

The inter-coder reliability between the coder 1&2, 2&3 and 3&1 was found as .90, .84 and .93 respectively. There were seven constructs that looked vague to the coders and hence were deleted.

The content analysis of data resulted into identification of 9 competencies in 3 competency clusters as given in Table 2.

Table 2: Content Analysis

S.NO.	Favoured Pole	Rank	Un-favoured Pole	Competency code	Cluster Code	Remarks
1.	Exhibits team work	7	No team work	Leadership	Interpersonal skills	
2.	Maintains good relation with workers	5	Does not maintain good relations	Leadership	Interpersonal skills	
3.	Good decision making	5	Depends on others	Leadership	Interpersonal skills	
4.	Understands the workers issues	5	Poor understanding of workers issues	Leadership	Interpersonal skills	
5.	Friendly relations with team	3	Not friendly	Leadership	Interpersonal skills	
6.	Worker handling	4	No worker handling	Leadership	Interpersonal skills	
7.	Good worker handling	2	Poor handling	Leadership	Interpersonal skills	
8.	Maintains good relationship with all	6	Poor relationship	Leadership	Interpersonal skills	
9.	Proper follow-up with workers	7	Improper follow up	Leadership	Interpersonal skills	
10.	Good worker relationship	7	Poor worker relationship	Leadership	Interpersonal skills	
11.	Helpful behaviour	7	Does not help	Interpersonal behaviour	Interpersonal skills	
12.	Excellent department control	6	Fair department control	Leadership	Interpersonal skills	
13.	Good people handling	4	Poor people handling	Leadership	Interpersonal skills	
14.	Motivates workers by praising their efforts	6	No praise for good work	Leadership	Interpersonal skills	
15.	Good worker handling	5	Not able to handle workers	Leadership	Interpersonal skills	
16.	Team work	7	Self-work	Leadership	Interpersonal skills	
17.	Maintains good relation with workers	6	Bad relationship	Leadership	Interpersonal skills	
18.	Cooperative	6	Non cooperative	Leadership	Interpersonal skills	
19.	Good decision making	7	Cannot take self-decision	Leadership	Interpersonal skills	
20.	Cooperative	5	Non cooperative	Leadership	Interpersonal skills	
21.	Understandable	7	Non understandable	Leadership	Interpersonal skills	
22.	Good worker relationship	6	Poor relationship	Leadership	Interpersonal skills	
23.	Helps to others	2	Harassing person	Leadership	Interpersonal skills	

24.	Non-political mind	4	Political mind	Leadership	Interpersonal skills	
25.	Understands workers perspectives	7	Does not care	Leadership	Interpersonal skills	
26.	Adjusts with worker	2	No department adjustment	Leadership	Interpersonal skills	
27.	Good department handling	5	Poor department handling	Leadership	Interpersonal skills	
28.	Best worker handling	4	Poor worker handling	Leadership	Interpersonal skills	
29.	Understands others' issues	4	Not understanding	Leadership	Interpersonal skills	
30.	Cooperative	7	Non cooperative	Leadership	Interpersonal skills	
31.	Good worker handling	7	Poor worker handling	Leadership	Interpersonal skills	
32.	Gives challenging tasks	7	Non challenger	Leadership	Interpersonal skills	
33.	Helping nature	6	Selfish	Leadership	Interpersonal skills	
34.	Good decision making	7	Cannot take decisions	Leadership	Interpersonal skills	
35.	Helps to others	2	Thinks about only his work	Leadership	Interpersonal skills	
36.	Good planner	7	Bad planner	Leadership	Interpersonal skills	
37.	Worker handling	6	Bad worker handling	Leadership	Interpersonal skills	
38.	Work handling	6	Bad work handling	Leadership	Interpersonal skills	
39.	Good relationship with staff	6	Bad relationship with staff	Leadership	Interpersonal skills	
40.	Helping nature	6	Selfish	Leadership	Interpersonal skills	
41.	Very good follow-up	6	Very bad follow-up	Leadership	Interpersonal skills	
42.	Good department knowledge	6	Fair	Leadership	Interpersonal skills	
43.	Takes Fast Action	6	Slow in taking action	Leadership	Interpersonal Skills	
44.	Can Work Independently	7	Always needs monitoring	Leadership	Interpersonal Skills	
45.	Talks politely	7	Bad communication	Interpersonal communication	Interpersonal skills	
46.	Listens to the workers problems	4	Does not listen	Interpersonal communication	Interpersonal skills	
47.	Not abusive	5	Abusive	Interpersonal communication	Interpersonal skills	
48.	Interacts with Humor	5	Harassing tone	Interpersonal communication	Interpersonal skills	
49.	Always interacts with workers	6	Does not interact at all	Interpersonal communication	Interpersonal skills	
50.	Talks in a nice tone	4	Harsh	Interpersonal communication	Interpersonal skills	
51.	Good writing skills	6	Bad writing skills	Interpersonal communication	Interpersonal skills	
52.	respectful language	1	Abusive	Interpersonal communication	Interpersonal skills	
53.	Patient listening	4	Good listening	Interpersonal communication	Interpersonal skills	
54.	Listens to the workers problems	5	Always threatening	Interpersonal communication	Interpersonal skills	
55.	Talks politely	4	Talks harsh	Interpersonal communication	Interpersonal skills	
56.	Not abusive	7	Abusive	Interpersonal communication	Interpersonal skills	

57.	Listener	3	Talks	Interpersonal communication	Interpersonal skills	
58.	Talks nicely	6	Abusive	Interpersonal communication	Interpersonal skills	
59.	Keeps interacting	6	Non communicator	Interpersonal communication	Interpersonal skills	
60.	Listener	6	Non listener	Interpersonal communication	Interpersonal skills	
61.	Non argumentative	5	Argumentative/ listener	Interpersonal communication	Interpersonal skills	
62.	Smoothly	5	Bad toner	Interpersonal communication	Interpersonal skills	
63.	Gives respect	7	Uses insulting tone	Interpersonal communication	Interpersonal skills	
64.	Continuously interacts	2	Interacts occasionally	Interpersonal communication	Interpersonal skills	
65.	Good tone	7	Very bad tone	Interpersonal communication	Interpersonal skills	
66.	Good listener	7	Bad listener	Interpersonal communication	Interpersonal skills	
67.	Non argumentative	6	Argumentative	Interpersonal communication	Interpersonal skills	
68.	Good tone	1	Bad toner	Interpersonal communication	Interpersonal skills	
69.	Good in responding	7	Bad in response	Interpersonal communication	Interpersonal skills	
70.	Keeps interacting	7	Fails to communicate sometimes	Interpersonal communication	Interpersonal skills	
71.	Talks only when necessary	3	Less talkative	Interpersonal communication	Interpersonal skills	
72.	Good tone	7	Harsh tone	Interpersonal communication	Interpersonal skills	
73.	Listener	7	Does not listen	Interpersonal communication	Interpersonal skills	
74.	Helpful nature	6	Bad nature	Interpersonal behaviour	Interpersonal skills	
75.	Cooperative	6	Not cooperative	Interpersonal behaviour	Interpersonal skills	
76.	Good behaviour	7	Bad behaviour	Interpersonal behaviour	Interpersonal skills	
77.	Good entertainer	5	Boring	Interpersonal behaviour	Interpersonal skills	
78.	Good behaviour	6	Bad behaviour	Interpersonal behaviour	Interpersonal skills	
79.	Good daring	6	Weak	Interpersonal behaviour	Interpersonal skills	
80.	Good behaviour	1	Misbehaves	Interpersonal behaviour	Interpersonal skills	
81.	Happiness / good work	2	Very aggressive / angry	Interpersonal behaviour	Interpersonal skills	
82.	Cool minded	4	Aggressive	Interpersonal behaviour	Interpersonal skills	
83.	Helpful behaviour	3	Selfish	Interpersonal behaviour	Interpersonal skills	
84.	Friendly behaviour	6	Very unfriendly	Interpersonal behaviour	Interpersonal skills	
85.	Can work independently	7	Always Needs Monitoring	Leadership	Interpersonal skills	
86.	Funny person		Serious	Interpersonal behaviour	Interpersonal skills	
87.	Calm	3	Aggressive	Interpersonal behaviour	Interpersonal skills	
88.	Peaceful	6	Reserved person	Interpersonal behaviour	Interpersonal skills	
89.	Good behaviour	5	Bad behaviour	Interpersonal behaviour	Interpersonal skills	
90.	Frank	7	Reserved	Interpersonal behaviour	Interpersonal skills	
91.	Calm	3	Aggressive	Interpersonal behaviour	Interpersonal skills	
92.	Good behaviour	3	Misbehaves	Interpersonal behaviour	Interpersonal skills	

93.	Friendly	2	Not friendly	Interpersonal behaviour	Interpersonal skills	
94.	Good behaviour	6	Bad behaviour	Interpersonal behaviour	Interpersonal skills	
95.	Frank	2	Reserved	Interpersonal behaviour	Interpersonal skills	
96.	Calm	2	Argumentative	Interpersonal behaviour	Interpersonal skills	
97.	Sometimes aggressive	3	Very aggressive	Interpersonal behaviour	Interpersonal skills	
98.	Cool	4	Sometimes gets angry	Interpersonal behaviour	Interpersonal skills	
99.	Good behaviour	6	Bad behaviour	Interpersonal behaviour	Interpersonal skills	
100.	Good behaviour	7	Fair behaviour	Interpersonal behaviour	Interpersonal skills	
101.	Fast process parameter setup	7	Process parameter calculation more time	Job knowledge and skills	Operational efficiency	
102.	Good job skills	7	Poor job skills	Job knowledge and skills	Operational efficiency	
103.	Good skill and knowledge	7	Poor skills and knowledge	Job knowledge and skills	Operational efficiency	
104.	Has technical knowledge	7	Non-technical	Job knowledge and skills	Operational efficiency	
105.	Good ERP knowledge	7	Poor ERP knowledge	Job knowledge and skills	Operational efficiency	ERP- Enterprise Resource Planning Software
106.	Good computer knowledge	7	Poor computer knowledge	Job knowledge and skills	Operational efficiency	
107.	General knowledge of various types of yarns	6	Poor general Knowledge	Job knowledge and skills	Operational efficiency	
108.	Good job knowledge	7	Less job knowledge	Job knowledge and skills	Operational efficiency	
109.	Good understanding of process parameter	5	Fair process parameter	Job knowledge and skills	Operational efficiency	
110.	Good work knowledge	5	Poor work knowledge	Job knowledge and skills	Operational efficiency	
111.	Accurate process calculation	5	Wrong calculation	Job knowledge and skills	Operational efficiency	
112.	Knowledge about machine	1	Poor knowledge	Job knowledge and skills	Operational efficiency	
113.	Good technical skills	7	Bad skills	Job knowledge and skills	Operational efficiency	
114.	Technical	7	No technical	Job knowledge and skills	Operational efficiency	
115.	Good computer knowledge	6	Do not know computers	Job knowledge and skills	Operational efficiency	
116.	Good ERP knowledge	5	Less ERP knowledge	Job knowledge and skills	Operational efficiency	
117.	Good general knowledge	5	Poor general knowledge	Job knowledge and skills	Operational efficiency	
118.	Excellent 5S implementation	7	Poor	Job knowledge and skills	Operational efficiency	5S stands for Sort, Straighten, Shine, Standardized and Sustain. It is a Kaizen technique to keep the people engaged through "Standards" and "Discipline."
119.	Good parameter knowledge	3	Lack of parameter knowledge	Job knowledge and skills	Operational efficiency	
120.	Good machine utilization in terms of production	7	Poor machine utilization	Machine utilization	Operational efficiency	

	quality and quantity					
121.	Efficient machine utilization, achieves production quality and quantity	5	machine utilization in not efficient	Machine utilization	Operational efficiency	
122.	Always achieves production target	2	Misses production targets sometimes	Machine utilization	Operational efficiency	
123.	No complains about quality	7	Complains about quality	Machine utilization	Operational efficiency	
124.	Efficient machine utilization	7	Deficient	Machine utilization	Operational efficiency	
125.	Better production and efficiency	4	Good production efficiency	Machine utilization	Operational efficiency	
126.	Keeps the machine well maintained	1	Machine maintenance is poor	Machine utilization	Operational efficiency	
127.	Best quality	7	Bad quality	Machine utilization	Operational efficiency	
128.	Keeps the workplace and machine clean	6	Keeps it dirty	Machine utilization	Operational efficiency	
129.	Achieves high productivity	5	Low productivity	Machine utilization	Operational efficiency	
130.	Achieves high machine efficiency	6	Low machine efficiency	Machine utilization	Operational efficiency	
131.	No complaints about quality	4	Complaints	Machine utilization	Operational efficiency	
132.	Keeps the machine busy	6	Machine idle	Machine utilization	Operational efficiency	
133.	Quality maintenance	4	No quality maintenance	Machine utilization	Operational efficiency	
134.	No complaints about quality	5	Complains about quality	Machine utilization	Operational efficiency	
135.	Result oriented	5	Not thinking about results	Machine utilization	Operational efficiency	
136.	Does proper machine maintenance	6	Bad maintenance	Machine utilization	Operational efficiency	
137.	Achieves good is auditing	5	No ISO auditing	Machine utilization	Operational efficiency	
138.	Good efficiency	7	Poor efficiency	Machine utilization	Operational efficiency	
139.	Work force optimum utilization	7	Poor work force utilization	Shift management	Operational efficiency	
140.	Plans well to minimally use overtime	5	High overtime	Shift management	Operational efficiency	
141.	Plans the work schedule in an efficient manner	7	Lots of loopholes in schedule planning	Shift management	Operational efficiency	
142.	Handles the shift in a planned manner	7	Improper shift handling	Shift management	Operational efficiency	
143.	Good shift planner	5	Shift planning is not good	Shift management	Operational efficiency	
144.	Prepares the shift schedule in advance to make timely adjustments if required	2	Poor shift adjustment	Shift management	Operational efficiency	

145.	Expert in manpower allocation in shift	6	Poor manpower allocation in shift	Shift management	Operational efficiency	
146.	Good manpower allocation	6	Poor manpower allocation	Shift management	Operational efficiency	
147.	Good department handling	6	Poor department handling	Shift management	Operational efficiency	
148.	Good manpower engagement	7	Poor manpower engagement	Shift management	Operational efficiency	
149.	High worker handling	2	Low worker handling	Shift management	Operational efficiency	
150.	Better planning	5	Average planning	Shift management	Operational efficiency	
151.	Plans department activities in a proper manner	5	Not a good planner	Shift management	Operational efficiency	
152.	House keeping	5	No house keeping	Documentation and follow-up	Operational efficiency	
153.	Good follow-up and process	2	Low follow-up	Documentation and follow-up	Operational efficiency	
154.	Good system follow-up	4	Poor follow-up	Documentation and follow-up	Operational efficiency	
155.	Prepares reports on time	7	Poor reporting	Documentation and follow-up	Operational efficiency	
156.	Good record maintenance	5	Poor record maintenance	Documentation and follow-up	Operational efficiency	
157.	Good record maintenance	5	Poor record maintenance	Documentation and follow-up	Operational efficiency	
158.	Good follow-up	6	Sometimes not	Documentation and follow-up	Operational efficiency	
159.	Excellent housekeeping	2	Weak housekeeping	Documentation and follow-up	Operational efficiency	
160.	Good process follow-up	6	Not so good	Documentation and follow-up	Operational efficiency	
161.	Busy in work all the time	5	Workless	Sincerity	Individual trait	
162.	Sincerity	5	Does not focus on work	Sincerity	Individual trait	
163.	Punctual	4	Not punctual	Sincerity	Individual trait	
164.	Regular	7	Irregular	Sincerity	Individual trait	
165.	Busy person	5	Keeps passing time	Sincerity	Individual trait	
166.	Work sincere	5	Disturbing	Sincerity	Individual trait	
167.	Sincerity	6	No sincerity	Sincerity	Individual trait	
168.	Works sincerely	7	Disturbing	Sincerity	Individual trait	
169.	Hard working	5	Lazy	Hard work	Individual trait	
170.	Hard working	7	Least working	Hard work	Individual trait	
171.	Hard working	6	Slow/poor work	Hard work	Individual trait	
172.	Hard working	7	Slow work	Hard work	Individual trait	
173.	Hardworking	7	Not so hardworking	Hard work	Individual trait	
174.	Dashing personality	5	Simple person	??	??	Item deleted
175.	Good person	4	Reserved person	??	??	Item deleted
176.	Department adjustment	3	Non adjustment	??	??	Item deleted
177.	Work practice	4		??	??	Item deleted
178.	Leadership qualities	6		??	??	Item deleted

179.	Leadership qualities	4	No leadership qualities	??	??	Item deleted
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Findings

The data analysis resulted into identification of three competency clusters; Interpersonal Skills, Operational efficiency, and Individual Traits. As given in table (3), Interpersonal Relationship received the highest weights of 55% followed by Operational Efficiency 37% and Individual traits 8%.

Each cluster represents a set of related competencies; the Interpersonal Relationship comprised of three competencies those are Leadership, Interpersonal Behavior, and Interpersonal Communication with their respective weights of 24%, 17%, and 13% respectively. The competency cluster Operational Efficiency comprises of four competencies: Machine Utilization, Job Knowledge & Skills, Shift Management and Documentation & follow-up with the weights of 12%, 11%, 8% and 6% respectively. The competency Cluster Individual traits comprises of 2 Competencies, Sincerity, and Hard work with their respective weights of 5% and 3%. Based on the data, and key constructs, each competency cluster, and competency has been defined. Refer to Table 3 for definitions and competency weights.

Table 3: The Competency Model

Cluster - Definition	Weights	Competency - Definition	Weights
Interpersonal Skills - Refers to exhibiting Leadership skills, good interpersonal communication and behavior	54	Leadership - refers to maintaining good relationship with workers, understanding their perspectives, providing them necessary help and, promoting team work, and independent decision making.	24
		Interpersonal Communication - Refers to exhibiting good listening skills against being argumentative, and responding to the workers queries.	17
		Interpersonal Behavior - Refers to exhibiting helping, friendly, cool natured, and cooperative behavior	13
Operational Efficiency - Refers to the efficient machine utilization, job knowledge and skills, people management and documentation and follow-up to achieve production output in terms of quality and quantity	37	Job Knowledge and skills - Refers to having complete understanding of process parameters including ERP and computer skills	12
		Machine Utilization - Refers to achieving machine efficiency in terms of production quality and quantity. It includes production planning, process parameter setup, 5S implementation and attaining good ISO audit.	22
		Shift management - Refers to efficient workforce utilization by the way of good shift planning and manpower engagement.	8
		Documentation and follow-up - Refers to record keeping and process follow-up.	6
Individual Trait - Refers to exhibiting hard work and sincerity	9	Sincerity - Refers to being regular and punctual in the job	5
		Hard work - Refers to making a lot of effort to perform the job	4

Developing Competency Dictionary

As given in Table 2, once the entire data was clubbed into different competency categories, and clusters, based on the constructs elicited in the competency categories, the competency dictionary was prepared. To define the competencies, authors, carefully examined various themes, which were emerging from a competency category; for example; The Leadership competency, majorly comprised of constructs like Relationship with workers (appeared 7 times, with a weightage of 39), understanding workers (appeared 4 times, with a weightage of 23), helping (Appeared 4 times, with a weightage of 16), cooperation (Appeared 3 times, with a weightage of 18), decision making (appeared 3 time, with a weightage of 19), and team work (appeared 3 times, with a weightage of 17). Based on the frequency, and weightage given to the constructs, the leadership definition emerged as “Leadership refers to maintaining good relationship with workers, understanding their perspectives, providing them necessary help, promoting team work, and independent decision making”

In the same manner, all the 9 competencies were defined. Once all the competencies were defined, the definition of competency cluster was written; for example, the competency cluster “Interpersonal Skills,” refers to exhibiting Leadership skills, Interpersonal communication and Interpersonal Behavior. (Refer to Table 3 for competency definitions).

Discussion

Interpersonal Skills as per our definition is exhibiting Leadership, Interpersonal behavior, and Interpersonal communication.

Leadership as per our study is defined maintaining good relationship with workers, understanding their perspectives, providing them necessary help, promoting team work, and independent decision making. (Refer Table 3 for definition).

Some of the prominent constructs that emerged in leadership competencies are maintaining good relationship with the workers, team work, providing them motivation and challenging tasks, extending cooperation and help to the workers, praising their efforts, understanding workers’ issues and concerns, and ability to take decisions independently. (Refer Table 2 for constructs).

According to (Mendelsohn, 1998), the single human factor that affects productivity the most in any enterprise, particularly in the labour intensive industry, is team work. The relationship with the workers plays an important role in exhibiting productive behaviour; according to Emilani (1998), poor relationship with workers and colleagues are non-productive behaviors.

Giving challenging task refers to the setting performance goals to a level that brings better performance the contrast is not providing any challenge, Wood (1986) defined tasks in terms of behavioral responses a person should exhibit to achieve some level of performance. Performing the challenging task requires full application of one's abilities, attention, or resources. As per the respondents, the effective Spinning Master provide challenging task to achieve the same. Also, as per the respondents, the praise for good work also helps in motivation and absence of the same leads to de- motivation. Henderlong and Lepper (2007) stated that Praise can potentially function as a positive reinforcement, and is considered to have beneficial effects on motivation; provided it is on effort rather than intelligence (Mueller & Dweck, 1998). Motivation has a significant influence on the proportion of working time spend productively (Olomolaiye, 1990).

One of the important constructs in the leadership competency has emerged as Decision Making which has been elicited by the participants as taking decision independently; effective Spinning Masters as per the respondents are able to take decision independently, the contrast is depending on others to take decisions, the dependent decision making has been defined as a search for advice and direction from others (Scott & Bruce, 1995). In the given context where the Spinning Masters are directly controlling the workers; adopting an independent decision making style becomes relevant, the same can be compared with the autocratic decision making (Kinne, 2005), wherein the Spinning Master has a direct control over the workers, and exerts highest levels of authority. The autocratic style has been found to be more productive (Anbazhagan & Kotur, 2014), and autocratic decisions time efficient (Selart, 2005).

Interpersonal Communication as per our study is listening, and responding in time; the contrast is Argumentative, speaking in a nice tone, and being interactive. Odusami (2002) defined communication skills as an ability to interact effectively with others at all levels within and outside organization. Listening skill refers to listening to the workers and being non-argumentative; and responding in time refers to responding to the queries and requests of workers against being none responsive. Communication effectiveness of supervisors and

employee productivity is positively related (Clampitt & Downs, 1993; Jain, 1973; Pincus, 1986).

Interpersonal Behavior as per our definition is exhibiting helping, friendly, cool natured and cooperative behavior.

Baehr and Renck (1958) defined Friendliness, and Co-operation as a factor that deals with the friendliness of fellow employees, and their ability to work together without friction. It reflects interpersonal relations among employees on the job. Our definition quotes an element of selfishness for Spinning Masters as not being friendly and cooperative. Emilani (1998) described selfishness as fat behavior also called as productivity waste behavior and stated that in-depth knowledge and teamwork helps in eliminating waste in manufacturing as well as in Interpersonal Relationship (Eisenhardt, Kahwajy, & Bourgeois, 1997; Katzenbach, 1997).

Interpersonal behavior includes, exhibiting good behaviors with colleagues the contrast is misbehavior, the good behaviors and contrasts described by the respondents are, calm v/s aggressive, frank v/s reserved, funny v/s serious. Emilani (1998) defined behaviors such as Humor, calmness, friendliness, helping, as productivity waste reducers. Frank v/s reserved (S.No 90, Table 2), denotes extraversion v/s Introversion, Extraversion has been found positively correlated to productivity (Omra & Pourhossein, 2014)

The competency cluster "Operational efficiency," is defined as efficient machine utilization, job knowledge and skills, people management, and documentation and follow-up, to achieve production output in terms of quality and quantity.

Machine Utilization refers to achieving the machine efficiency in terms of production quality and quantity by the way of good production planning, fast setup of process parameters, implementation of 5S, and attaining good ISO audit (refer Table 2). Effective Spinning Master demonstrate good job Knowledge which is the extent to which the Spinning Master has complete understanding of process parameters, ERP, and computer skills, and hence is able to have an efficient machine utilization; by contrast, not so effective Spinning Master takes more time to setup process parameters due to lack of understanding, and is poor at ERP, and computer skills. One more important dimension of the job knowledge emerged as general knowledge about the various types of yarns and its characteristics, found in effective Spinning Master. Job Knowledge is technical information, facts, and procedures required to do the job (Schmidt, Hunter, & Outerbridge, 1986) and are performance predictor (Palumbo, Miller, Shalin, & Steele-Johnson, 2005).

Shift Management as per our study refers to the efficient workforce utilization by the way of good shift planning, and manpower engagement. Effective Spinning Masters, demonstrate the same by proper shift allocation through department planning, the contrast is improper shift planning. International labor organization (1986), defined shift work as, A method of work organization under which groups or crews of workers succeed each other at the same. Shift work optimization results into minimization of occupational health hazards, maximization of performance and enhanced organizational productivity (Pati, Chandrawanshi, & Reinberg, 2001).

Documentation & follow-up refers to the proper record keeping, and process follow-up. Record keeping helps in collection of crucial information related to the production quality, and quantity; that may help in taking important decisions to make the entire process more effective.

The ability of the organization to keep the record well maintained helps it becoming lean. In a study done by Muhammad, Tegegne, and Ekanem (2004) on the factors contributing to success of small farm operations in Tennessee, it was found that the farmers who are very successful, use record keeping as a key practice. The same may apply to any organization, or individual in relation to record keeping, moreover proper follow-up helps in continuous improvement in the process (Bettes, 1993).

Individual traits such as Sincerity, and Hard work elicited as competencies present in effective Spinning Master. As per Emilani (1998) hard work alone may not bring the performance as it needs to be clubbed with some of the performance enhancing behaviors, and sincerity is one amongst the many lean behaviors he identified.

Implications, Limitations, and Conclusion

The study is one of its first attempts to develop competency model for Spinning Masters. We adopted repertory grid technique to identify the competencies exploring personal constructs of the Spinning Masters. Based on the analysis of qualitative data a competency model has been developed that depicts the competencies of a Spinning Master who can give superior performance. The Competency Model has 3 competency clusters; Interpersonal Relationship, Operational efficiency, and Individual Traits.

The competencies identified in the model are Interpersonal Behavior, Leadership, interpersonal Communication, Machine utilization, Job Knowledge and skills, Shift Management, Documentation & Follow-up, and Sincerity, & Hard Work. Each cluster and competency has been assigned weights based on its importance as perceived by the job holders. The RepGrid technique provides a blend of both qualitative and quantitative techniques that makes data analysis more effective.

The results of this study will help in developing a theoretical framework of effective staffing and management of Spinning Masters. The study provides a peers' perspective that would help the theory building in this area.

The study can help the researchers to develop assessment instruments, the competency clusters, and constructs can be used to design survey instruments which can be used to validate the competency model by the way of administering the survey on a large number of Spinning Masters across the industry.

The Study also demonstrates the use RepGrid technique to develop competency model, and assess the competencies. The technique is well validated, comprehensive and quick, requires less time, cost and labor. The technique can be used to develop competency models of other profiles /positions/roles in various industries.

The study can be used as a framework for competency based human resource practice in the organizations. Based on the findings of the study several HR activities like Recruitment, Selection, Performance Management, Succession Planning, Training & development can be planned.

The study is limited to one organization, further studies can be conducted to validate the model in more organization; moreover, the competency model developed can be validated through exploratory study. Also, the study used the perception of the Spinning Masters about their peers. However, other stakeholders like senior managers may have different views, which may be compared and contrasted in future studies.

In conclusion, the study provides an in-depth analysis of Spinning Masters competency; the study can be very useful for the organizations, consultants, and researchers to gain an insight about a job which has not been studied before using a validated technique of RepGrid. The study has implications for future research also; the researchers can use the competency constructs to validate the model by designing survey questionnaire and also can develop, and validate assessment instruments to assess the competencies of Spinning Masters in Yarn manufacturing companies.

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