

Development of Managerial Competency Scale: A Telecom Sector Study

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Managerial competencies engender employees' effective job performance and are a great tool for exploring the unknown potential of employees through appropriate human resource practices. Measuring managerial competencies is a method of knowing the underlying characteristics of an employee and its conduciveness for a particular job. This study develops a scale to gauge the presence of managerial competencies in managers contributing in organizational growth. Telecom industry was selected for research and sample identified was its middle level managers of whom 108 were studied. Since these managers liaison between top and lower level employees, their competencies define organizations' success. The Managerial Competency Scale measured Analytical Thinking, Interpersonal Relationship, Decision Making, Emotion Handling and Innovativeness.

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Introduction

As stated by Brophy and Kiely (2002), competency-based employee job performance defines what skills, experience, and behavior the candidates must possess for the job in alignment with the company's goals (Spencer & Spencer, 1993). Competency constitutes a complex and multifaceted concept in a particular professional context (Brandão & Borges-Andrade, 2008) derived from personality attributes (Durand, 2000; Gonczi, 1999), which becomes evident through the individual's behavior at work (Brandão et al., 2012; Whiddett & Hollyforde, 1999). It gives a practical insight to the employer about when they need to search for a talent outside of the organization (Martone, 2003). Competencies include varied factors that influence job success but are not included in the job description (Steyn & Staden, 2018; Hsieh et al., 2012).

Measurement of managerial competencies is a method of knowing what the underlying characteristics of an employee are and how much it is

conducive for a particular job (Boyatzis, 1982; Klemp, 1980). This would help in showing managers what skills they have compared to what they need in order to perform superiority (Veliu & Manxhari, 2017; Soderquist et al., 2010; Antonacopoulou & Fitzgerald, 1996; Spencer & Spencer 2008, 1993; Boyatzis, 1982). As suggested by researchers, competency is a great tool for exploring the unknown potential of the employee and employing the known one correctly by implementing right human resource practices (Spencer & Spencer, 2008; 1993; Boyatzis, 1982). It would give insights to the employer about when they need to search for a talent outside of the organization, forecasting the types of managers suitable for organization's long-term needs and success (Steyn & Staden, 2018; Martone, 2003; Boyatzis, 1982; Spencer & Spencer, 1993).

Competency is a great tool for exploring the unknown potential of the employee and employing the known one correctly by implementing right human resource practices

The purpose of this study is to develop a scale to gauge the presence of managerial competencies in managers which contribute in the success of organization through their individual job performance.

Review of Literature

According to Adult Learning Theory understanding people is the key

to remain competitive both inside and outside organizational settings. Though 'competence is said to be a function of learners' (Rothwell et al., 1999), still there is lack of researches noted on assessment and identification of managerial competencies (Steyn & Staden, 2018; Liang, Howard & Leggat, 2017; Bakanaus-kienė & Bartnikaitė, 2006). Which particular managerial competencies are necessary for management specialists, in order to work successfully, is yet to be framed (Veliu and Manxhari, 2017; Bakanauskienė & Martinkienė, 2015; Bakanauskienė & Martinkienė, 2011). Over the past decade, the conception of competency has been considered a foundation for human resource management (Hsieh et al., 2012). Still, the problem of doubtfulness about the Competency Models being "fit" for the organization is prevailing (Liang, Howard & Leggat, 2017; Pierce, 1994; Burgoyne, 1990). Understanding of how competency management fits into employees' career development is yet unabsorbed. There is lack of empirical support on concept definition and behavioral manifestation of elements of each competency with language appropriateness (Naseem, 2018; Adsule & Berad, 2014; Shirazi & Mortazavi, 2009; Woodruffe, 1992).

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Studies in different fields linking the cause and effects of competencies and performance management lack empirical support (Hsieh, et al., 2012; Shirazi & Mortazavi, 2009; Wickramasinghe & Kumara, 2009; Drucker, 1991). As seen in the review of related literature of competency management, it can be registered that the field has been ploughed by several researchers with different seeds of conceptions and conceptual additions. It is also noticed that no comprehensive and standard accepted list of competencies or managerial competencies have come up till date, especially not in the Indian context. We may underline the list of managerial competencies provided by Boyatzis (1982) and Spencer and Spencer (1993) which mirrors a combined composite framework of all levels of managerial competencies. Boyatzis (1982), in his study, presented managerial competencies sometimes at motive level, sometimes at trait level, sometimes as self-conception and knowledge and sometimes as skills. The intent, action and outcome theory proposed by Spencer and Spencer (1993), too presented these levels but in the form of a 'causal relationship model' which indicates the building over of a competency, one level over the other (Sanghi, 2004). He elaborated on the causal relationships of personal characteristics (motives, traits, self-conception, and knowledge) becoming cause for the effect exhibited as behavior in action, which finally produces an outcome in the form of performance. It has been hypothesized and proven, that each competency at different levels of

a person's personality gets manifested differently (Boyatzis, 1982:4). As shown in the 'causal flow model' by Spencer and Spencer (1993), a competency can be broken into three parts as intent, action, and outcome. This theory was advocated by Mumford et al. (2000) also through their, 'three component skill' model which shows the mediating effect of competencies producing leadership outcomes as performance while individual attributes are the cause effective 'leadership performance'

The understanding of managerial competency aspects which would be affecting management educators' and practitioners' needs is required (Naseem, 2018; Ko & Chan, 2017; Devkar & Kalidindi, 2013; Mistarihi et al., 2012; Zhang et al., 2012). Managers too perceive and complain that training programs imparted to them and other HR practices are not in line with future competency requirements (Hsieh, et al., 2012; Levy-Leboyer, 1997). Therefore, whether the assessment techniques for managerial competencies, currently in use are sufficiently sophisticated to measure employees complex behavior while delivering appropriate solutions to their job performance is doubted (Liang, Howard & Leggat, 2017; Leggat & Cathy, 2013; Testa & Sipe, 2012; Brandão, 2007). The present study has attempted to come out with a basic structure of constituents in managerial competencies with an objective of knowing what to measure and how to measure the credibility of an incumbent in terms of being a competent manager.

Study Context

This study has chosen services sector because of its contribution in the economic growth of India, and the increased influence of globalization on it. The gross value added (GVA) for services sector estimated at 73.79 lakh crore INR in 2016-17, accounted for 53.66% of total India's GVA of Rs.137.51 lakh crore (Middlemiss, 2017). According to the National Council of Applied Economic Research (NCAER), in Indian service sector the Telecom industry had been attracting a larger amount of foreign and domestic investments to the country (Barman & Sengupta, 2017; Sarma, 2007). India had 898 million subscribers in March 2013 and over 1151.78 million subscribers as on Dec 2016 which increased to 1,190.67 million in December, 2017. Inching towards a digital revolution, mobile telecom industry has contributed 6.5 per cent of India's GDP while providing enormous direct and indirect employment to countrymen (Middlemiss, 2017). Telecom sector has been selected for study because of its contribution to Indian economy.

Sample

The sampling units were middle level managers working in Indian telecommunication industry. The reason for selecting them as target respondents is that it is the middle level managers who have the biggest interface of interaction and execution of tasks as compared to the top and lower level management employees. Sample characteristics drawn were:

gender, age, city, total work experience and domain of work.

Measurement

In order to collect the data, the survey method was preferred because it allows collecting maximum responses in a shorter period of time. The maximum portion of the instrument was constructed on the guidelines of Schein and Schein, (1978); Schein (1976) and some by Spencer and Spencer (1993). Consistent with the scaling literature multiple items were drawn for each dimension based on their relevance in the Indian context. A total of 43 items were extracted and framed majorly on 5-point Likert scale. Written in English language, the items and directions to answer them were straightforward and concise. These items were subjected to exploratory and confirmatory factor analysis.

Exploratory Factor Analysis:

Exploratory Factor Analysis (EFA) is the most commonly used method for data/variable reduction where the study is being conducted with no pre-conceived theories or expectations. In exploratory factor analysis, Principal Components Analysis is recommended (Pedhazur & Schmelkin, 1991; Churchill, 1979) for editing the scales and to test dimensionality of the constructs. In order to measure sampling adequacy, the researcher used the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity and following results were received. (Table 1)

Table 1 KMO and Bartlett’s Test of Managerial Competency Scale

Sr. No.	Name of the Measure	Value Achieved/Received
1	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.783
2	Approx. Chi-Square	707.400
3	Bartlett’s Test of Sphericity df	105
4	Value of Significance	0.000

Any measurement scale’s composite reliability (CR) more than 0.7 and average variance extracted (AVE) more than 0.5 is good, where current managerial competency scale scored 0.94 (CR) and 0.91 (AVE) respectively, (computed as per formulas given by Fornell & Larcker (1981) using Microsoft Excel (2010). As shown in Table 2, five components were extracted using Principal Component Analysis with Varimax Rotation and total variance explained by the items of the managerial competency scale is 72.04 percent. Initially, the scale had 43 items with 4 constructs i.e. analytical skills, interpersonal skills, emotional skills and conceptual skills, as derived from exhaustive literature and preliminary investigations. After applying EFA, 28 items were dropped because of their fewer factor loadings, item saturation, and weaker theoretical supports. Lately, the scale got reduced to 15 items distributed in following five factors.

Factor 1 constitutes 4 (C40, C41, C42 and C43) items representing conceptual skills of the respondents. The items here are related to the concept building approach of the respondents and the variance explained by this factor is 21.406 %.

Factor 2 constitutes 3 (C30, C31, and C32) items representing risk taking ca-

pability and emotional skills of the respondents trying to measure their emotional turmoil tolerance, The variance explained by this factor is 14.533 %.

Factor 3 constitutes 4 (C15, C26, C27, and C28) items representing the dependency of respondents on others for retrieving information and making decisions and readiness to share their power. The variance explained by this factor is 12.689 %.

Factor 4 constitutes 2 (C11 and C12) items representing relationship building behavior of respondents, portraying their frank and honest likeliness with others. The variance explained by this factor is 11.960 %.

Factor 5 constitutes 2 (C2 and C3) items representing self-analysis, pointed on how much the respondent is able to analyze himself/herself. The variance explained by this factor is 11.458%.

The total number of items accepted by the exploratory factor analysis conducted through SPSS software on managerial competency scale was 15. The probable reasons for the unacceptability of remaining items were tried to be identified by sieving the competency and related literature and following understanding was developed to reason it out:

Table 2 Factor Structure of Managerial Competency Scale

Sr. No.	Statements/Items		1	2	3	4	5
1 (C11)	My ability to develop open and trusting relationships with my colleagues.	Interpersonal relationship	0.86				
2 (C15)	My ability to communicate my own thoughts and ideas clearly and persuasively.		0.42				
3 (C17)	My ability to influence people over whom I have no direct control.**						
4 (C18)	My ability to influence my colleagues.**						
5(C6)	My ability to assess the validity of information that I have not gathered myself.**	Analytical Thinking					
6 (C28b)	The degree to which I am able to acknowledge errors.			0.72			
7 (38a)	I recognize the patterns of data.**						
8 (38b)	I recognize the patterns of things happening around me.**						
9 (C26)	The degree to which I am able to make up my own mind without relying on the opinions of others.	Decision Making				0.73	
10 (C27)	The degree to which I am able to share power with others.					0.66	
11 (C30)	My ability to take risks, to pursue a course of action even if it may produce negative consequences.					0.84	
12 (C28a)	The degree to which I am able to tolerate errors.	Emotion Handling				0.72	
13 (C31)	My ability to pursue a course of action even if it makes me anxious and uncomfortable.					0.87	
14 (C32)	My ability to confront and work through conflict situations (versus suppressing or avoiding them).					0.72	
15 (C35)	My ability to continue to function in the face of continued environmental turbulence.**						
16 (C36)	I never use abstract concepts for anything.**	Innovativeness					
17 (C40)	I simplify complexities at work.						0.73
18 (C41)	I create new concepts.						0.85
19 (C42)	I create new concepts for complex issues.						0.86
20 (C43)	I create new models.						0.84

**Dropped in EFA but retained for CFA based on conceptual understanding and literature support

C1, C2, and C3: These statements represent the analytical skills of the respondents, where the analyzing capability of the respondent was to be assessed to know whether a manager is able to think analytically about the situations, resources, outcomes and/or draw inferences to take decision on its basis. The probable reason for rejection of these items could be that the respondents might have not answered them properly finding it ambiguous and difficult because of its rich English vocabulary. Another reason could be that the respondents might not wanted to share their perceptions about self-analysis. Due to this ambiguity, the received responses were thought not to be included in further analysis.

C4: Respondents were reluctant to answer this statement because they were not confident in regard to the right reflection of their actual status about knowing their own weaknesses. Hence, this item was removed.

C5, C6, C7, C8, C9 and C10: Here, the respondents were unable to relate themselves as these items were falling on analytical skills measure but talking more about their perception towards themselves rather than quoting any situations where they could have applied analytical skills for reaching an optimal conclusion. Table 2 indicates item C6 was retained for confirmatory factor analysis as the item dealt with information processing ability of an individual (Spencer & Spencer, 1993).

C13, C14, C16, C17, C18, C19, C20, C21, C22, C23, C24, and C25: These

statements represented interpersonal skills and relationship building competency of managers in the managerial competency scale. The probable reason of weaker loadings on this sub construct could be the possibility of respondents believing that open and trusting relationship, the climate of collaboration and conducive team environment with the development of processes and facilitation of intergroup and inter functional coordination practice flows from top management to middle and lower levels. Therefore, the respondents did not respond appropriately. Items C13, C17, C18, C19, and C20 were retained for further analysis. Items C18, C19 and C20 were clubbed into C18, as they were referring to similar conceptual understanding. Also in the items where influencing abilities of managers with respect to their subordinates are approached, there are no proper/exact parameters mentioned like rational persuasion, exchange, ingratiation, pressure, coalition, and upward appeals for measuring the influence of respondents.

C29, C33, C34, and C35: These statements represent emotional skills in managerial competency scale. Here, respondents might have got confused with the mention of stakeholders' perspectives giving a sort of commerce based outlook of the respondent. As the items also intended to measure the effect of an environmental turbulence in the behavior of the respondent resulted from a disturbed workplace environment, possibly respondents might have connoted it negatively. Though the emotional intelligence concept offers a theoretical structure for the organization of personality and linking it

to a theory of action and job performance, there is a chance of respondents not understanding its perspective and therefore, did not respond carefully. Item C35 has been retained for further analysis (Table 2).

C36, C37, C38 and C39: These statements belong to fourth sub-section of the managerial competency scale i.e. conceptual skills. These items explained the negative nature of the competency holder and not their abilities to conceptualize. Also the items were found confusing and ambiguous by the respondents because of its English vocabulary due to which they did not respond properly and hence the items were removed. This can be referred to the difficulties faced firstly, in identifying and measuring a competency, and then its operation and implementation in suitable competency management models which are mostly a complex and lengthy process. Items C36, C38 were retained for further analysis of CFA. These items reflected conceptual understanding of an individual, an important competency for managerial level employees (Klemp, 1980) (Table 2).

Confirmatory Factor Analysis

Confirmatory factor analysis was run using Analysis of Moment Structure (AMOS) software version 21. The measurement model that fits with the data was checked with model chi-square, goodness-of-fit, and approximate fit indexes. Non-significant model chi-square goodness-of-fit (set at 0.05) signifies model fit. For approximate fit indexes, Goodness of Fit Index (GFI), Adjusted

Goodness of Fit Index (AGFI), Normed Fit Index (NFI) and Tucker-Lewis Fit Index (TLI) of above 0.9 indicate a model fit (Schumacker & Lomax, 1996). For another approximate fit index, Root Means Square Error of Approximation (RMSEA) having a value less than 0.08 (Hu & Bentler, 1999) and Chi-square/Degree of Freedom (CMIN/DF) having a value less than 3 signifies a reasonable model fit. The results of the Confirmatory Factor Analysis applied to the factor structure obtained from Exploratory Factor Analysis and some items based on conceptual understanding are discussed. All items were tested with standardized coefficients obtained using maximum likelihood estimation. The managerial competency variable presented a right fit as most of the values retrieved were in the acceptable limits. Table 3, presents values of model fit. Following are the results obtained by application of CFA on managerial competency variable: Chi-square = 67.214, Degrees of freedom = 48, Probability level = 0.035. Fig. 1 represents the managerial competency scale with number of items and loadings.

After application of CFA (Confirmatory Factor Analysis), the scale got reduced to 12 items and 4 components/factors. The items discarded after EFA are C2, C3, and C32. The reasons for exclusion of these items seem to be as under:

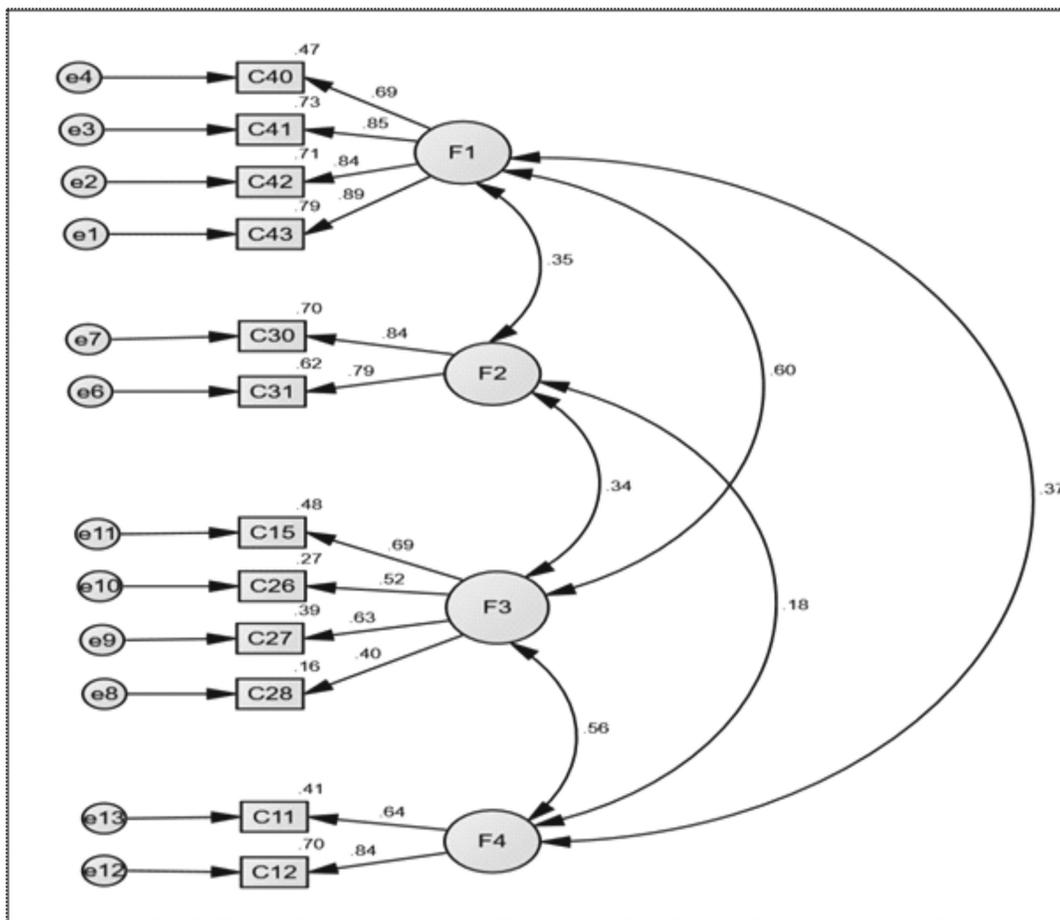
C2 and C3: These items got removed because they were reflecting self-analysis of the respondents, while it should measure their analytical skills for analyz-

Table 3 Fit Indices of Managerial Competency Scale

Model	CMIN/DF	GFI	AGFI	NFI	TLI	RMSEA
Default Model	1.400	0.910	0.854	0.873	0.943	0.061
Independence Model	8.049	0.456	0.358	0.000	0.000	0.257

Note: Default model refers to the hypothesized model under testing while independence model also known as null model is a model in which all correlations among variables are zero (Bryne, 2009).

Fig. 1, Construct of Managerial Competency Scale



ing situations and people at workplace, and come up to certain conclusion.

C32: This item got removed because it was a repetition of items C30 and C31 and removing would lead to better results through software.

However, this could have been the final structure of managerial competency scale, on the basis of exploratory and confirmatory factor analysis conducted, but in case of managerial competency measure, being an un-established scale, re-examination of items of the scale was

done. Since many of the items which were rejected by factor analysis and dropped, support the literary conceptual understanding provided by eminent philosophers of the field (Schein & Schein, 1978; Mumford et al., 2000; Spencer & Spencer, 1993). Therefore, it was thought to retain them. It was considered that the items having rich loadings and well acclaim by literary and conceptual support, should be retained in the scale and used for future data collections.

In Table 2, the allocation of items and nomenclature of factors are done while showing that after applying confirmatory factor analysis and reexamining the research instrument, finally a 20 items managerial competency scale was developed and its reliability and validity were established.

Conclusion

The current study presents employees' most important managerial competencies which play significant role in their job performance. This study identified and analyzed the most important parameters of measuring managerial competencies, and came up with a statistically established managerial competency scale. The results show expected outcomes meeting theoretical aspects in most of the cases and accomplishment of the purpose of this research. The researchers had tried to fill the academic and practical lacuna demanding particular managerial competencies that are necessary for management specialists and generalists, in order to work successfully in contemporary business scenario (Mihail, et al, 2013; Bakanauskienė & Martinkienė,

2011). All the items in the scale have sufficient literary back up which makes it more reliable.

Managerial Implications

The current research work shows how, with the help of acknowledging his/her managerial competency, a human resource manager can predict an employee's job performance. This assessment will help in understanding employees' potential and retrieving maximum input from them. As had been found by the previous scholars that the difference between the performances of a manager rated average, and another rated outstanding, are his/her managerial competencies which help him/her perform extraordinarily, the current piece of work has succeeded in tapping the major managerial competencies which make these differences in the performances and may mediate in achieving enhanced job performance.

Previous researches suggest that identifying the "gap" or "differentiating competencies" of identified exemplary and typical performers had been a major hurdle that influence job performance in organizations. This study can help guide the HRD or WLP (Workplace Learning and Performance) practitioners in understanding the foundation of managerial competencies present in the working managers and provide a methodological guide for making them an exceptional performer.

Limitations of the study

Although the researchers tried to collect information on managerial com-

petencies from different industries, considering the parsimony concept of research the sampling unit was restricted to only telecommunication industry, middle level managers working in selected geographic locations. This could be accepted as a limitation of this study and further efforts could be made to avoid such a limitation. The exploration of causes and effects of obtained managerial competencies and relationships between them could be performed in the future courses of action.

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