

## Hierarchical and Sectoral Differences in Managerial Work

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The aim of the present study is to investigate hierarchical and sectoral differences in managerial work. Unlike other studies, this considers both frequency and importance in measuring managerial work to give capture critical work activities that characterize the positions. A random sample of 180 senior, middle and junior managers from service, IT and manufacturing sectors from Chennai City rated check list of activities both for frequency and importance on a 5-point rating scale. Criticality score was computed by multiplying frequency with importance for four managerial work dimensions namely, traditional management, communication, human resource management and networking. A 3 x 3 MANOVA was computed to test the differences across hierarchical levels and sectors. The results reveals insignificant differences across hierarchical levels, significant differences in traditional management and communication between managers of manufacturing sector and other two sectors, and a significant interaction in human resource management between senior managers in IT sector and managers of other sectors. The results imply the impact of contextual factors in differentiating managerial work.

Managerial work has been the focus of research for the past four decades. Numerous studies have documented the type and nature of managerial work in market economies. Studies have described and classified managerial work in terms of functions (Fayol, 1949; Dale, 1965), roles (Mintzberg, 1973), and activities (Luthans & Lockwood, 1984). Mintzberg's (1973) seminal work has grouped brief, diverse and fragmented managerial activities into 10 managerial roles which served as impetus for numerous studies by researchers across the world. In order to explain the variations in managerial activities, many studies have compared different aspects of managerial job with variables within and beyond managers' organizational context.

Many studies focused on hierarchical and functional differences in managerial work. Thomason (1966), using self-record and observation methods found that managers spend lot of time in communications, and the amount increased with the height in the hierarchy and the

direction depended on relative position in it. Using a behaviorally based questionnaire, Pinto (1975) identified through factor analysis 13 independent dimensions of managerial responsibilities and found that upper level managers have undertaken more of planning, public and customer relations, advanced consulting and broad personnel responsibilities when compared to middle and begin level managers. Alexander (1979) compared Mintzberg's managerial roles measured through a questionnaire, across hierarchical levels and functional specialties and found that various role-related behaviors became increasingly important as the managers go up in the hierarchy; and line managers performed more of decisional roles, staff managers performed more of informational roles, while interpersonal roles were performed by all. Wolf (1981) studied the differences in Mintzberg's managerial roles among partners, managers and senior field staff from 14 audit firms and found interesting differences. On the whole decisional roles were performed more frequently than

interpersonal roles followed by informational roles. Senior field staff performed more of interpersonal roles, managers performed more of decisional roles and partners performed more of informational roles than other groups. Great similarity in the work done by all levels of New York city managers were found by Allen (1981) using a questionnaire measure of managerial work. Pavett and Lau (1983) studied hierarchical and functional differences in Mintzberg's roles measured using a questionnaire and found that relative importance of managerial roles were similar across all three levels; and line managers performed more of informational and staff managers performed more of interpersonal roles.

These studies have clearly brought out that hierarchical levels moderate the magnitude of managerial activities, and functional specialties differentiate the nature of managerial activities. Do these findings hold good in the present circumstances of rapid change in the business environment? Do they hold good across nations, across different industries where the technology, structure and competencies required are different? After reviewing literature on managerial work Whitley (1989) concluded that managerial work is closely linked to industrial context and cannot be easily isolated from their context and standardized across enterprises and industries. Studies comparing managers from different nations and environmental conditions reinforce this view. The content of managerial work across nations were found to be similar but actual performance seem to be context dependent (Doktor and Loper, 1982; Boisot and Liang, 1992; Luthans and Welsh, 1993; Lubatkin, Ndiaye and Vengroff, 1997; Chatterjee and Pearson, 2000; Pearson, Chatterjee and Okachi, 2003; DeSanto and Moss, 2004). Environmental complexity and task interdependence show variations in informational, decisional and interpersonal roles (Gibbs, 1994; Pinsonneault and Rivard, 1998).

The present study aims to find answers to two questions. Whether managerial work varies across hierarchical level in the present context of layering and lateral work patterns like team work and matrix structure? Whether unique technology, structure and competencies required in different industrial sectors account for variations in managerial work?

While measuring the managerial work the present study takes into account not only the

temporal dimension of managerial work but also the cognitive dimension. After reviewing the methodologies adopted to study the managerial work, Martinko and Gardner (1985) concluded that the structured observation methodology used to measure the frequency of specific managerial activities fail to capture the cognitive process. In the present study an attempt has been made to capture the cognitive aspect by asking the respondents to rate the importance of each task to the organizations' objectives. Criticality score is arrived at by taking the product of frequency and importance. Hence the criticality ratings reflect not only the number of times an activity is performed but also how much stake the performer has in performing the activity.

The following three null hypotheses were formulated for empirical testing:

1. Hierarchical levels within the organization may not have any impact on the type of work the managers are engaged in.
2. Sectors of economy may not have any impact on the type of work managers are engaged in.
3. Sectors of economy may not influence the impact of hierarchical levels on the type of work managers are engaged in.

### **Method**

#### **Sample:**

The sample consists of 180 executives from various companies in Chennai city. The executives were selected from three major sectors viz., service (Hospitality and Health care), information technology (software development and IT enabled service), and manufacturing (automobile and power equipments), representing three levels of hierarchy viz., junior (executives and officers), middle (assistant managers to managers) and senior (general managers and above). The age of the sample range from 22 to 60 with a mean of 38.97 and sd of 10.89. The experience range from 4 to 23 with a mean of 12.76 and sd of 6.45.

#### **Tools:**

A special inventory was designed based on the gamut of activities identified by Luthans, Welsh and Rosenkrantz (1993) as representing the day to day work of managers. The inventory consists of 69 activities. Each activity was rated by the respondents on two aspects viz., frequency and

importance on a five point scale. Criticality score was computed by multiplying frequency with importance for each activity. These activities are grouped into 12 tasks by summing the criticality scores of those items representing those tasks. Further these 12 tasks were grouped into four major task categories, using confirmative factor analysis. Table 1 shows the factor loadings, reliabilities and variance extracted for the four task categories.

attached inventory. One hundred and eighty nine managers responded. A 3 x 3 factorial MANOVA design was used. The independent variables are levels and sector, each in three levels and the dependent variables are the 4 major task categories measured through the inventory. Significant univariate F-ratios were further tested using Tukey's test for comparing individual group means.

**Table: 1. The results of confirmatory factor analysis on specific task areas**

Task Categories	Specific task areas	Loading	Reliability	Variance
Traditional management	Planning and Control	.790	.849	.652
	Decision making and Problem solving	.798		
	Monitoring and Control	.834		
Communication	Paper Work	.833	.839	.753
	Exchanging routine information	.901		
Human resource management	Staffing	.701	.833	.503
	Training and Development	.681		
	Motivating and Reinforcing	.866		
	Disciplining and Punishing	.598		
Networking	Managing Conflict	.674	.361	.249
	Interacting with Outsiders	.652		
	Socializing and Politicking	.269		

(Numbers in the parenthesis are loadings determined by confirmatory factor analysis. All loadings are statistically significant. Goodness of fit index = .869; CFI = .911; PFI = .638)

Variables of the study: Independent variables of the study are hierarchical levels of the managers and the sector. Hierarchical levels are junior, middle and senior levels in managerial hierarchy as reported by the respondents. Sectors are service, information technology and manufacturing, which were identified by the investigator. Dependent variables are 4 task categories namely, traditional management, communication, human resource management and networking.

Data collection and analysis: Data collection was on line. A random sample of around five hundred executives representing different hierarchical levels and sectors were contacted through e-mails requesting for responses on the

## Results

The means and standard deviations of all the nine groups of managers are shown in table 2 and the results of the diagnostic tests on data are shown in table 3. Deviation from normality, tested using KS test of normality for all the four dependent variables is not significant. Error variance of all the four dependent variables across all groups are equal as tested using Levene's test. Equality of covariance matrices, tested using Box's M test also shows non significant values.

**Table 2: Means and standard deviation for 4 task categories across levels and sectors**

Levels	Sectors	Traditional management	Communication	Human Resource Management	Networking
Junior	Service	42.215	23.964	53.438	18.030
	<i>N = 12</i>	<i>12.467</i>	<i>8.371</i>	<i>17.181</i>	<i>5.262</i>
	IT	40.869	20.762	51.195	16.071
	<i>N = 17</i>	<i>12.364</i>	<i>9.198</i>	<i>16.404</i>	<i>6.140</i>
	Manufacturing	53.924	30.101	56.242	16.169
	<i>N = 12</i>	<i>11.682</i>	<i>10.370</i>	<i>17.371</i>	<i>3.623</i>
Middle	Service	44.952	25.323	50.666	14.660
	<i>N = 24</i>	<i>13.336</i>	<i>11.108</i>	<i>17.535</i>	<i>6.091</i>
	IT	41.355	21.799	51.044	16.598
	<i>N = 29</i>	<i>13.699</i>	<i>11.694</i>	<i>21.922</i>	<i>7.495</i>
	Manufacturing	52.379	30.498	52.469	15.935
	<i>N = 16</i>	<i>12.227</i>	<i>9.554</i>	<i>16.269</i>	<i>4.899</i>
Senior	Service	42.477	22.077	45.404	15.506
	<i>N = 26</i>	<i>13.736</i>	<i>10.440</i>	<i>17.989</i>	<i>5.746</i>
	IT	48.061	22.137	64.135	18.135
	<i>N = 19</i>	<i>9.446</i>	<i>7.662</i>	<i>18.858</i>	<i>6.096</i>
	Manufacturing	45.607	26.016	47.072	15.762
	<i>N = 25</i>	<i>12.191</i>	<i>7.251</i>	<i>10.948</i>	<i>4.210</i>

Values in the italic are standard deviations

**Table 3: Diagnostic tests**

Statistics	Traditional	Communication management	Human Resource Management	Networking
<i>KS test of Normality</i>				
Value	.045	.049	.052	.050
df	180	180	180	180
Sig.	.200	.200	.198	.200
<i>Levene's test of equality of error variance</i>				
F	.755	1.683	1.576	1.465
Sig.	.642	.106	.135	.173

*Box's M test of equality of covariance matrices*

Value = 100.935; F = 1.139; p < .187

Table 4 contains results of MANOVA, ANOVA and Tukey's test for main and interaction effects. All four MANOVA statistics reveal significant sectoral differences and Roy's greatest characteristic root shows significant interaction effect. Since the major statistical assumptions of normality and homogeneity are satisfied, Roy's gcr, the most powerful and conservative estimate of multivariate differences is considered as a valid indicator of interaction effects.

Univariate F test, shown in the middle portion of table 4, reveals significant interaction effects of levels by sectors in human resource management (F = 2.889; p < .024), communication (F = 2.324; p < .059) and significant main effect of sectors in traditional management (F = 5.837; p < .004) and communication (F = 7.738; p < .001).

The results of Tukey's post hoc test on individual means are shown in the bottom portion of table 4.

Executives from manufacturing sector have rated traditional management activities as more critical than executives from service (Mean difference = 6.150, p < .025) and IT (Mean difference = 6.345, p < .019) sectors. The same trend prevails in communication activities. Difference in means between manufacturing and service is 4.983 which is significant at .035 level; and between manufacturing and IT is 6.666 which is significant at .001 level. The differences between the executives of service and IT sectors are not significant. Senior level executives from IT sector rate human resource management activities more critical than their counterparts in service (Mean difference =18.73; p< .001) and manufacturing (Mean difference =17.061; p< .002) sectors. Within each sector hierarchical differences in criticality ratings of human resource management activities are not statistically significant.

**Table 4: Multivariate and univariate and post hoc tests on main and interaction effects**  
**Multivariate ANOVA**

	Levels x Sectors				Levels				Sectors			
	Value	F	df	Sig.	Value	F	df	Sig.	Value	F	df	Sig.
Pillai's Trace	.132	1.462	16,684	.108	.048	1.046	8,338	.401	.293	7.254	8,338	.000
Wilks' Lambda	.872	1.470	16,513	.106	.952	1.048	8,336	.399	.713	7.748	8,336	.000
Hotelling's Trace	.141	1.472	16,666	.104	.050	1.050	8,334	.398	.395	8.243	8,334	.000
Roy's gcr	.090	3.840	4,171	.005	.045	1.905	4,169	.112	.373	15.760	4,169	.000
Univariate ANOVA												
Variables	Levels x Sectors				Levels				Sectors			
	MS (Between)	MS (Error)	F	Sig	MS (Between)	MS (Error)	F	Sig	MS (Between)	MS (Error)	F	Sig
Traditional management	364.37	156.76	2.324	.059	12.21	156.76	0.078	.925	914.98	156.761	5.837	.004
Communication	46.18	95.83	0.482	.749	102.82	95.84	1.073	.344	741.59	95.84	7.738	.001
Human Resource Management	891.09	308.43	2.889	.024	61.61	308.43	0.200	.819	472.99	308.43	1.534	.219
Networking	27.54	32.49	0.847	.497	15.48	32.49	0.476	.622	27.54	32.49	0.509	.602
	df = 4,171		df = 2,171		df = 2,171							



(Tukey's test)

Comparison groups	Main Effects				Interaction Effects					
	Traditional Management		Communication		Junior Human Resource Management		Middle		Senior	
	Mean Diff.	Sig.	Mean Diff.	Sig.	Mean Diff.	Sig.	Mean Diff.	Sig.	Mean Diff.	Sig.
Service vs IT	0.196	0.966	2.072	0.459	2.621	0.999	-0.378	0.999	-18.729	0.012
Service vs Manufacturing	-6.15	0.025	-4.593	0.035	-2.803	0.999	-1.807	0.999	-1.668	0.999
IT vs Manufacturing	-6.345	0.019	-6.666	0.001	-5.046	0.997	-1.414	0.999	17.063	0.038

### Discussion

This study examines the variation in perceptions of managers of three hierarchical levels from three sectors of industry on the critical managerial activities. Unlike other studies where the managerial activities were measured as frequency of performing each activity or time spend on performing each activity, this study considered a different measure named as criticality. Criticality measure represents both quantitative and qualitative dimensions of managerial activity by multiplying frequency and importance. An activity which is more frequent but less important may be a routine chore and may not characterize the uniqueness of that position. On the other hand an activity which is less frequent but more important may be a special assignment once in a while assigned to that position due to merits of the person than the importance of the position. More frequent and more important activities are the critical activity that is unique to that position. Present study examines those activities that characterize the position.

Differences across the hierarchical levels in the critical activities are not significant. Many early studies found similarity of managerial activities across all levels of hierarchy. Advent of information technology, global competitive pressure result in delayering of organizational hierarchies, adopting lateral organizational structures and team work designs make hierarchies redundant (Kanter, 1989). In the present study the pattern of activities is similar for the three levels. Examination of the difference between these activities shows that human resource management activities are performed more than all other activities. Traditional management is next in the order followed by communication and the last networking. In the knowledge economy, division of labor among

hierarchical levels is taken care of by the technology and work design, the hierarchical levels probably exists more in the way of motivating employees and to provide sufficient checks and balance.

As the managerial work is more context dependent, the sectoral differences may exist in the managerial work of different sectors. The findings of the present study reveal that managers of the manufacturing sector perform more of traditional management and communication related activities than managers of service and IT sectors. The traditional management activities involve planning, setting goals, deciding, monitoring and controlling work activities of others and communication activities involve receiving, processing and disseminating information in order to coordinate between different units of the organization. The nature of work in manufacturing sector depends on working with machines and man-machine interaction determines the physical, cognitive and social process involved in work activities. Unique skills and competencies required in dealing with man-machine interface in manufacturing organizations, necessitates high degree of division of labor with high vertically and horizontally differentiated structure for monitoring and coordinating work activities of employees. Hence the work of executives in manufacturing sector is characterized more by traditional management and communication.

Interesting aspect of the findings is the interaction between levels and sectors. Work activities of senior level managers in IT sector, is characterized by human resource management than the work activities of junior and middle level managers of IT and all the three levels of managers of other sectors. IT sector being knowledge intensive recruiting, developing, motivating and retaining human resources is biggest challenge

faced by IT companies across the globe. Hence the task of managing human resource is a senior management responsibility in IT companies.

The findings of the study clearly indicate that hierarchical differences in managerial work are sector specific and context plays a major role in differentiating managerial work across hierarchical levels. Effect of context on the managerial work should be further explored by examining different types of contextual factors.

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