Behavioural Considerations of Cost Allocation in Indian Industry : An Empirical Examination

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Abstract

The behavioural aspects of cost allocation has been discussed and debated extensively in management accounting literature. Since cost allocation methods are components of the overall performance evaluation system, cost allocation tends to influence the behaviour of the participants within the system. Building upon this behavioural reason, this study investigates behavioural considerations influencing cost allocation. For this purpose data was collected from finance managers from manufacturing and service companies. The study then presents the interaction effects of behavioural considerations across the two sectors. The findings are in agreement with the literature and major studies conducted around the world. However, it is the first time that such a study has been attempted in reference to Indian companies.

Key Words : Cost Allocation, Behavioural Factors, ANOVA, Cost Consciousness

The problem of how to deal with cost allocation in manufacturing and service companies has been recognized for decades, and a controversy over the best approach continues till today. The traditional academic perspective was that considerable caution should be observed in this respect since cost allocations were considered to be arbitrary in nature.

Empirical observations have however revealed that companies do allocate costs for a variety of reasons and that there are arguably certain behavioural benefits associated with such practices. The proponents of cost allocation have generally emphasized the advantages of allocating costs for decision-making, motivational or behavioural purposes (Modell, 2002). One of the widely cited reason for cost allocation in the literature is that such allocation can make the managers aware that such costs exist and must be covered by profits (Drury and El-Shishini, 2005).

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So, what is cost allocation? Companies that manufacture more than one product or provide more than one service have indirect costs because resources are shared by the products and services. Because indirect costs associated with shared resources cannot be directly traced to products or services, some means of assigning them must be developed (Jiambalvo, 2001). The process of assigning indirect costs by manufacturing and service companies is referred to as cost allocation.

Why allocate costs? Across the entire value chain, managers need accurate cost information in order to effectively plan and control operations. The proportion of total costs that are indirect has increased in most companies and as a result, the need for accurate and timely cost allocation has also increased.

An issue of particular importance to management accountants as well as designers of cost allocation and performance evaluation system is whether cost allocation for the purposes of performance evaluation is useful in influencing the behaviour of the subordinate managers in such a way that they will be motivated to take interest in the best interests of the company as a whole (Ramadan , 1985). However, cost allocation system designers often fail to recognize the need to address the behavioural dimensions which influence cost allocation.

Many companies now recognize the importance of non-financial measurements. Even though financial information plays a very important role, a company maintains control best by taking into consideration behavioural dimensions like motivation and goal congruence.

While there is an extensive economic and accounting literature on cost allocation (Horngren et al., 2005) and on behavioural aspects of cost allocation (Bodnar and Lusk, 1977; Morse and Zimmerman, 1997; Drury and El-Shishini 2005) the literature offers no guidance on the comparison of the behavioural responses by the different sectors of the industry. This paper attempts to identify the important dimensions which influence cost allocation in manufacturing and service industries.

Previous Research

Modell (1996) notes the increasing interest in management accounting research in manufacturing and service organizations. However, he further notes that a review of the previous research reveals an over-emphasis on structural accounting implications at the expense of the behavioural side of accounting and control. Today this trend is very much visible in reference to Indian industries.

Research relating to management accounting within the service sector still lags behind the research that has been undertaken in the manufacturing sector (Drury and El-Shishini, 2005). However, there is some evidence to suggest that the characteristics of service companies differ from those of manufacturers on a number of criteria including average number of employees (Lowry, 1990). Probably this must be the reason for the gap in research between the two sectors.

Behavioural considerations were introduced to the cost allocation process by Bodnar and Lusk (1977) who proposed a conditioning model to generate allocations in a manner sensitive to organizational behavioural considerations. Cost allocations arise when decision-making responsibilities are assigned to and vested in various individuals within a firm (Zimmerman, 1979) and this induces managers to behave in an appropriate way (Rajan, 1992).

Building upon this behavioural reason for allocating costs several arguments have been put forth to support the potential role of the behavioural factors in implementing a cost allocation system. Researchers have addressed issues such as the incentive and motivational aspects of cost allocation (Pavia, 1995).

During recent years, investments in resources have grown dramatically resulting in managers becoming increasingly concerned with the efficient utilization of resources. A cost allocation system which ignores the resource consumption may lead to problems. According to Ramadan (1985), although the issue that allocations encourage optimal utilisation of resources may be appreciated, it has not been empirically examined.

Managerial accounting books (Horngren et al., 2005) and surveys of company practice (Fremgen and Liao 1981; Atkinson 1987; Ramadan 1989) document the widespread practice of common cost allocation to induce appropriate consumption of corporate resources. For example, if divisions were not in allocated any corporate costs, they may have adverse incentives to overconsume such common resources.

In cost allocation literature, the use of cost allocations is mostly investigated in a principal-agency framework (Wouters, 1993). Whenever a person delegates authority to another person to act on behalf of the former, an agency relationship is created. Agency theory is a widely accepted behavioural perspective (Cohen et al., 2000).

Agency models seek to reduce goal incongruence between the principal and agent by using cost allocation schemes (Sridhar and Sanders, 1993). Management accounting researchers are interested in agency theory because it provides a model from which uses of

managerial accounting information and managerial accounting systems can be derived and studied. Agency models of cost allocation take place in single-agent as well as in multi-agent settings.

The principal provides the work and the incentive and rewards, which the agent does not, but the agent has the ability to do the work which the principal does not. Zimmerman (1979) has shown that allocation of costs may affect the incentives of a manager. The effect of this incentive function on the manager's behaviour is an important behavioural consideration while allocating costs.

Cost allocation is not a purely technical exercise since as mentioned earlier allocations can have both intended and unintended consequences. Therefore choosing how to calculate costs should not be based solely on technical merits (Hansen and Mowen., 1999). The way to allocate costs depend more on the behaviour of managers and staff employed in that department.

Cost allocation systems contribute in raising the cost consciousness with the ultimate benefit of maximising system efficiency (Abbas and Abd-Allah, 1999). Cost consciousness is a very important concept and managers must be aware of it while allocating costs. The literature on cost allocation has not explored this dimension in depth.

A thorough review of the literature on cost allocation indicates that, across different studies offering a multitude of behavioural approaches, motivation is seen by many as being fundamental to the process of cost allocation.

Behavioural factors associated with successful applications of cost allocation system include optimal use of resources, linkages to incentives and rewards, cost consciousness, agency theory, motivation and goal congruence. While there is broad agreement that cost allocation is associated with behavioural factors, a
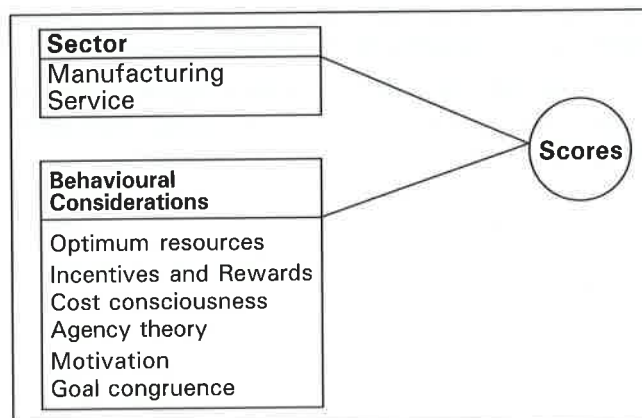
Figure I : Dependent and Independent Variables

difficulty exists in developing hypotheses as existing theories do not relate specifically to Indian companies. In this study, six key multidimensional constructs of behavioural factors based on existing dimensions in the cost accounting literature are considered for this study.

The above figure shows the independent and dependent variables for this study. The two independent variables (or factor variables as they are referred to in ANOVA) are the sector and the behavioural considerations. The scores are the dependent variable. The second part of this research attempts to study how behavioural considerations of cost allocation affect industries. The main aim here is to find out the level of interaction of the six considerations in the manufacturing and service sectors.

Methodology

Since behavioural dimensions should be a prominent consideration in designing cost allocation systems, any systems, checklists, questionnaires, or criteria should explicitly include an appraisal of the behavioural influences of the system under review (Horngren et al., 2005). This study used a questionnaire to conduct an appraisal of the behavioural influences of the cost allocation system.

Drury and El-Shishini (2005) have highlighted the difficulty of posing a single survey for manufacturers and different types of service organisations. This problem was solved to a large extent by designing the questionnaire in such a way that it is applicable to both manufacturing and service organisations. A draft questionnaire was developed based on the review of literature and circulated to a group of experts as part of a pilot study. A few members from professional institutes were also contacted. Based on their suggestion the questionnaire was revised. The final questionnaire on behavioral considerations of cost allocation consisted of six main questions with sub-parts.

Data for the survey were collected from finance managers. The survey asked the managers to respond on a five-point Likert scale (ranging from 1 = highly disagree to 5 = highly agreed). One hundred and twenty questionnaires were sent to finance managers in both manufacturing and service sectors. Sixty questionnaires were returned. Out of which 10 were incomplete and had to be rejected. Thus, fifty companies constituted the sample for deriving inferences for the present study. The respondent companies consisted of manufacturing companies like engineering and automobiles and service companies which included banks, IT companies and even few consulting firms. The industry composition of the sample is as below :

Table I : Industry composition

Industry	Sample Size	Sample Proportion (%)
IT Services	11	22
Engineering	7	14
Automobiles	7	14
Construction	5	10
Chemicals	4	08
Tyres	2	04
Telecom	3	06
Banks	5	10
Consultancy	2	04
Others (Airline, healthcare etc)	4	08
Total	**50**	**100**

The industry categories were collapsed into two categories, manufacturing and service, for analysis. Each category consisted of 25 companies ensuring that proportionate representation is there.

For the purpose of this study, equal amounts of sample was assigned to one of the two categories of sectors. Factorial ANOVA was conducted with two independent variables: sector and behavioural considerations. The dependent variable is consideration scores (measured on a scale of 1 to 5). Each observation is uniquely coded.

Table II : Coding of Independent Variables

SECTOR	CONSIDERATIONS
Manufacturing = 1	Optimum usage of resources = 1
Service = 2	Rewards = 2
	Cost consciousness = 3
	Agency theory = 4
	Motivation = 5
	Goal congruence = 6

For each pairing of SECTOR and CONSIDERATIONS, there are 25 observations. That is, 2*6 conditions by 12 observations per condition results in 300 observations, which were coded. Each participant was classified into two groups based on whether they belonged to the manufacturing or service industry. Factorial ANOVA was employed, using a .05 criterion of statistical significance

Factorial ANOVA yields three F-ratios which are computed to determine how much of the variance in the dependent variable can be attributed to each of these three effects:

- Variance due to the main effects of first factor (sector)
- Variance due to the main effects of second factor (considerations)
- Variance due to the A * B (sector * consider) interaction factor

A main effect is the direct effect of an independent variable on the dependent variable. If $p < .05$ for the main effect of a particular factor, then there is a significant effect for that factor. An interaction effect is the joint effect of two or more independent variables on the dependent variable. If the F-value for the interaction is significant ($p < .05$), then the null hypotheses is rejected (Rutherford, 2001).

In this study Factorial Analysis of Variance (ANOVA) is used to determine whether sector and behavioural considerations interact to affect scores on cost allocation. For this purpose, the following hypotheses are formulated:

Main Effect of Type of Sector

H_0: $\mu_{Manufacturing} = \mu_{Service}$

H_1: not H_0 (where μ is the mean of the scores received)

This hypothesis asks if the mean of scores received for the sector is different for the manufacturing companies and the service companies.

Main Effect of Considerations

H_0 : $\mu_{Consider\ for\ manufacturing} = \mu_{Consider\ for\ service}$

H_1: not H_0 (where μ is the mean of the scores received)

This hypothesis asks if the mean of the scores received for considerations is same for manufacturing companies and service companies.

Interaction Effect of Type of Sector and Considerations

H_0 : $\mu_{Manufacturing,\ Consider} = \mu_{Service,\ Consider}$

H_1: not H_0 (where μ is the mean of the scores received)

This hypothesis asks if the effect of considerations is the same in the manufacturing sector as it is in the service sector.

Analysis

After conducting a factorial ANOVA, one typically inspects the results of that ANOVA and then decides what additional analyses are needed. Researchers have often recommended that this take place in a top-down fashion, inspecting the highest-order interaction term first and then moving down to interactions of the next lower order.

The output of the analysis gives the descriptive statistics followed by the standard ANOVA table, which includes the Degrees of Freedom, Sum of squares and the mean square for the model and for random error. This is followed by the graph showing estimated marginal means of score and post-hoc 1-way ANOVAs of simple effects.

Table III : Descriptive Statistics

Considerations	Sector	Mean	Std. Deviation	N
Score	Optimum use of resources	Manufacturing	4.96	.20	25
		Service	4.48	.51	25
		Total	4.72	.45	50
	Incentives & rewards	Manufacturing	3.72	.84	25
		Service	4.16	.75	25
		Total	3.94	.82	50
	Cost Consciousness	Manufacturing	4.60	.50	25
		Service	4.96	.20	25
		Total	4.78	.42	50
	Agency Theory	Manufacturing	3.88	.73	25
		Service	3.60	.91	25
		Total	3.74	.83	50
	Motivation	Manufacturing	4.92	.27	26
		Service	4.50	.51	26
		Total	4.71	.46	52
	Goal congruence	Manufacturing	4.63	.49	24
		Service	4.96	.20	24
		Total	4.79	.41	48
	Total	Manufacturing	4.45	.73	150
		Service	4.44	.74	150
		Total	4.45	.73	300

In terms of descriptive comparison it can be observed from the above table that the manufacturing sector has a slightly higher mean than the service sector. The next section investigates whether this difference is statistically significant.

The next table "Tests of Between – Subjects Effects" is also referred to as summary or source table and it lists the values for the sources of variance (between and within groups, and total sum of squares) that were computed. As explained earlier, interpreting this table involves examining the three F-values associated with the two main effects and the interaction effect.

From the above table, it can be seen that the factorial ANOVA revealed no significant main effect for sector. However, the main effect for behavioural considerations (consider in the table) reveals a significant main effect. There is also a significant interaction between these variable. This is revealed by the p-value of (CONSIDER * SECTOR) as being less than .05. Results are presented in terms of how effect of one factor varies with the level of the factor. If interaction is significant, the next step is to follow-up ANOVA with post-hoc 1-way ANOVAs of simple effects. However, before that it is necessary to facilitate this interpretation and this done by generating the graph for estimated marginal means of score.

In the above figure, the thick dashed line represents the range between the manufacturing and service means. The lines representing the two sectors are not parallel and when the lines are not parallel, there is an intersection. When both lines have positive slope the

Table IV : Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent. Parameter	Observed Power[a]
Corrected Model	68.017[b]	11	6.183	19.329	.000	212.624	1.000
Intercept	5930.111	1	5930.111	18537.734	.000	18537.734	1.000
CONSIDER	56.457	5	11.291	35.297	.000	176.486	1.000
SECTOR	5.152E-03	1	5.152E-03	.016	.899	.016	.052
CONSIDER *SECTOR	11.547	5	2.309	7.219	.000	36.096	.999
Error	92.129	288	.320				
Total	6092.000	300					
Corrected Total	160.147	299					

a. Computed using alpha = .05

b. R Squared = .425 (Adjusted R Squared = .403)
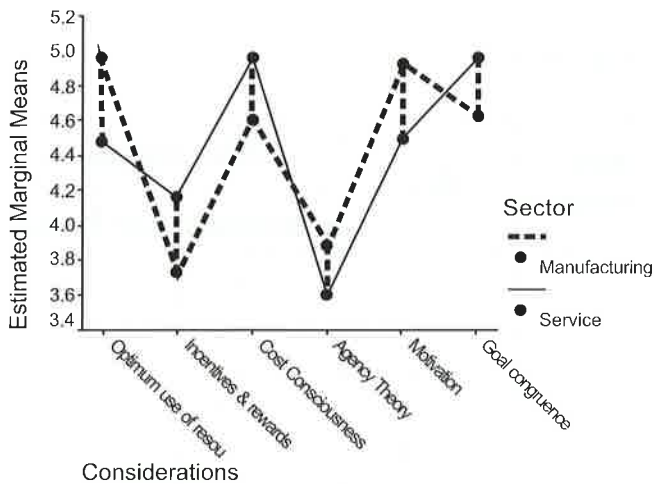
Figure II : Graph showing Estimated Marginal Means of Score

interaction is monotonic. However, in the interaction above one line has positive slope and the other has negative slope so the interaction is nonmonotonic. This means the lines represent opposing effects and this type of interaction is called disordinal (Hair et al., 2006). Since the interaction is disordinal the main effects are not considered. The graph above only exhbits the pattern of interaction but do not tell where the interaction is significant. For this simple effects analysis tests have to be performed. This involves conducting one-way ANOVA and Post-hoc Tukey tests.

Follow up One-way ANOVA

Once there is a significant interaction, the independent variables have to be recomputed to make it look as if only one IV is there. Once things have been configured that way, a one-way ANOVA is conducted to see if the different means obtained are significantly different from one another

Table V : ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Score	Between Groups	56.457	5	11.291	32.015	.000
	Within Groups	103.690	294	.353		
	Total	160.147	299			

A one-way Analysis of Variance of score according to sector found consider level to be highly significant $F(5,294) = 6.907$; $p<0.001$. Thus, there appear to be a significant difference overall in the behavioural considerations according to the two sectors. The purpose of a Multiple comparison test such as Tukey's HSD Test is – having established from the interpretation of the ANOVA table that there is a significant difference overall between the six behavioural considerations- to go on to identify which particular pairs of sub groups can be judged to be significantly different (Klockars and Gilbert, 1986).

Post Hoc Tests

The Tukey HSD test detected significant differences in mean of score between four groups – optimum resources with motivation, cost consciousness with motivation and goal congruence, motivation with optimum resources and finally goal congruence with cost consciousness. All remaining possible comparisons were found to be non-significant (see table VI).
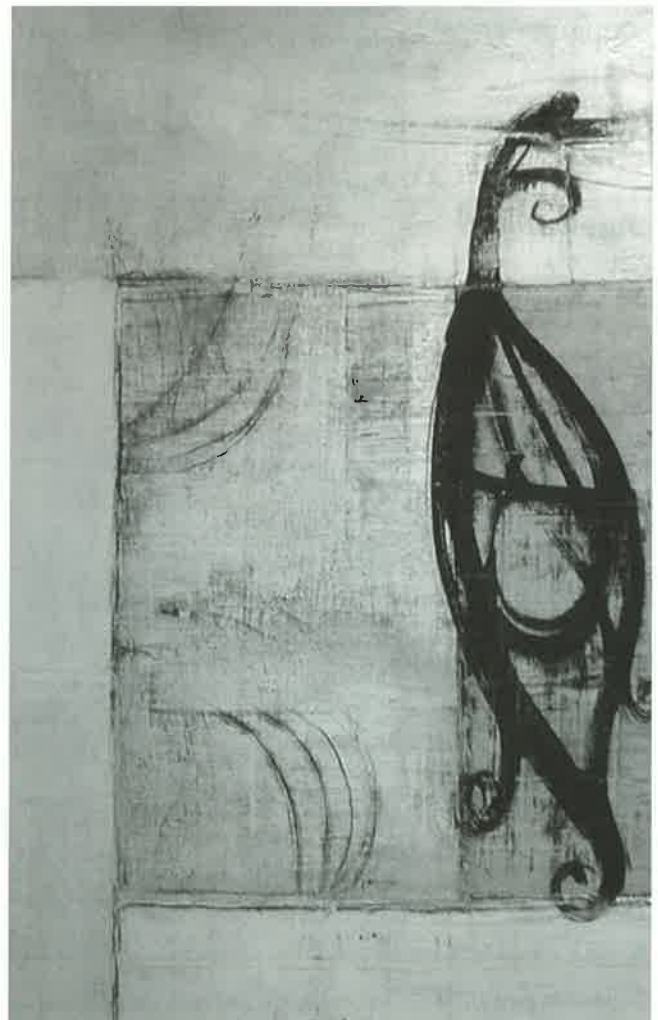
Table VI : Multiple Comparisons

Score HSD		Mean Difference	Std. Error	Sig.	95% Interval	
(I) GROUP	(J) GROUP				Lowe Bound	Uppe Bound
Optimum use of resource	Incentives reward	.78 *	.119	.000	.44	1.12
	Cos consciousne	-6.00E-	.119	.996	-.40	.28
	Agency \ Theory	.98 *	.119	.000	.64	1.32
	Motivation	8.46E-	.118	.995	-.33	.34
	Goal congruenc	-7.17E-02	.120	.991	-.41	.27
Incentives & reward	Optimum use resource	-.78*	.119	.000	-1.12	-.44
	Cos consciousne	-.84*	.119	.000	-1.18	-.50
	Agency	.20	.119	.543	-.14	.54
	Motivation	-.77*	.118	.000	-1.11	-.44
	Goal congruence	-.85*	.120	.000	-1.19	-.51
Cost consciousness	Optimum use resource of	6.00E-	.119	.996	-.28	.40
	Incentives reward	.84 *	.119	.000	.50	1.18
	Agency	1.04 *	.119	.000	.70	1.38
	Motivation	6.85E-	.118	.992	-.27	.40
	Goal congruence	-1.17E-	.120	.993	-.35	.33
Agency theory	Optimum use resource	-.98*	.119	.000	-1.32	-.64
	Incentives reward	-.20	.119	.543	-.54	.14
	Cos consciousne	-1.04*	.119	.000	-1.38	-.70
	Motivation	-.97*	.118	.000	-1.31	-.64
	Goal congruence	-1.05*	.120	.000	-1.39	-.71
Motivation	Optimum use resource	-8.46E-	.118	.990	-.34	.33
	Incentives reward	.77 *	.118	.000	.44	1.11
	Cos consciousne	-6.85E-	.118	.992	-.40	.27
	Agency	.97 *	.118	.000	.64	1.31
	Goal congruence	-8.01E-	.119	.985	-.42	.26
Goal congruence	Optimum use resource	7.17E-	.120	.991	-.27	.41
	Incentives reward	.85 *	.120	.000	.51	1.19
	Cos consciousne	1.17E-	.120	.900	-.33	.35
	Agency	1.05 *	.120	.000	.71	1.39
	Motivatio	8.01E-	.119	.985	-.26	.42

* The mean difference is significant at the .05

Summary of the Results

A 2*6 factorial ANOVA was employed, using a .05 criterion of statistical significance. There were no significant main effects for the first factor 'sector' but the second factor 'consider' reported significant effects. The interaction between the two variables (sector * consider) was also found to be significant. This significant interaction was further tested by one-way ANOVA. Since the probability, .000, is less than the .05 alpha criterion level, the null hypothesis is rejected and it can be concluded that there is a significant difference in the effect of considerations between the manufacturing and service sector.

Table VII : Summary of Results of Hypotheses Tested

Main effect of sectors	Main effects of consider	Interaction effects of sector and consider
H_0: $\mu_{Manufacturing}$ = $\mu_{Service}$ H_1: not H_0 This hypothesis asked if the mean received for the first factor (sector) is different for the manufacturing and service companies. In this case, the p value is equal to .016 which is greater than .05 (a) so there is insufficient evidence that the manufacturing and the service means are different	H_0: $\mu_{considerformanufacturing}$ = $\mu_{considerforservice}$ These hypotheses asked if the means received for consider is the same for both sectors. In this case, the p value is .000 , which is less than .05 so H_0 cannot be rejected. There is sufficient evidence to conclude that the consideration means for manufacturing and service sector is different.	H_0: $\mu_{Manufacturing,Consider}$ =$\mu_{Service,Consider}$ These hypotheses asked if the effect for considerations is same in the manufacturing sector as it is in the service sector. In this case, the p value is.000 which is less than .05 so H_0 cannot be rejected. When the interaction is significant the main effects are ignored and the next step is to follow-up ANOVA with post-hoc1-way ANOVA of simple effects.

Discussion and Implications

The strength and limitation to this study should be kept in mind before discussing the results. First, the study used participants from both manufacturing and service sectors which included companies from different background like banking, automobiles and consultancy. Second, today the dynamic and changing nature of the industry has redefined the traditional classification of sectors into manufacturing and sector. These limitations suggest that care should be exercised when generalizing the result.

An important strength of this study is that most managers considered the set of behavioural reasons provided in the questionnaire important in the cost allocation decision. This becomes clear from the pattern of responses received (overall mean for manufacturing is 4.45 and service is 4.44) and it agrees with the view advocated in the literature, that cost allocations are made to influence the behaviour of managers.

But as this study shows, there is a clear difference how the behavioural considerations of cost allocation are perceived across the manufacturing and service sectors. Probably this must be the reason for the difference in mean scores for each of the considerations between the two sectors. For instance, the mean for motivation in the manufacturing sector is 4.92 and in the service sector it is 4.50.

The motivation for this research came from one of the recent studies conducted by Drury and El-Shishini (2005), who stated in context of cost allocation, that a comparison of responses by different sectors would be

an interesting area for future research. The first reason provided in the questionnaire related to the optimum use of resources. The costs of most manufacturing companies are linked to resources physically and often allocations are perceived as being likely to encourage optimum utilisation of resources. However, the costs of a service firm are typically professional labour and indirect costs in support of the labor.

The service sector is often considered to be that part of industry or business which deals with intangible products rather than physical goods. This probably explains the reason why optimum use of resources has a higher mean in the manufacturing sector (4.96) than in the service sector (4.48). In fact, this particular dimension has the highest score when compared to all others in the manufacturing sector.

Incentives and rewards form the second set of reasons are provided in the questionnaire. It is interesting to note that unlike the previous case, this dimension is rated higher in the service sector (4.16) than the manufacturing sector (3.72). A likely reason for this is as human resource is a very important part of this sector service firms increasingly use features of incentive plans. This trend is visible in many IT firms in India. In this study, IT firms form around 22% of the total sample.

Cost consciousness is also rated high (4.96) in the service sector but surprisingly in the manufacturing sector it had a lower score (4.60). However, most companies generally place great importance on cost consciousness when designing and implementing their cost allocations. Today's modern manufacturing firms incorporate much greater automation. This has changed the traditional cost consciousness and cost reduction practices and this fact has substantially altered the cost allocation practices in many manufacturing companies.

The literature explained the importance of agency studies in cost allocation but such studies cannot always address cost allocations across different sectors. Though they have been identified as an important dimension influencing cost allocation there is common agreement among researchers that they have not been very successful in explaining the behavioural aspects of cost allocation. The same holds true in this case also. This becomes clear by the responses received by the managers in the manufacturing sector (3.88) and in the service sector (3.60). When compared to the others, this set of considerations had the lowest score.

Managers in the manufacturing sector considered motivation to be the second important factor (4.96) after optimum use of resources while the service sector did not give it much importance (4.50). The literature states that cost allocations are useful devices for controlling and motivating managers. However, this aspect has not been explored in the context of manufacturing and service companies. Often motivation is the desire to attain a selected goal which results in goal congruence. This forms the last set of reasons provided in the questionnaire.

Along with incentives and rewards, the managers from the service sector rated goal congruence (4.96) as the most important dimension in cost allocation. It does appear that congruence across industries was supported by managers from both sides. Managers from the manufacturing sector did acknowledge the importance of this dimension (4.63) even though they did not give it a very high rating.

The service sector firms assign more importance to incentives, cost consciousness and goal congruence while manufacturing firms consider optimum use of resources, agency theory and motivation to be important factors while allocating costs. One common theme which emerges from the above discussion is that behavioural considerations are important while allocating costs.
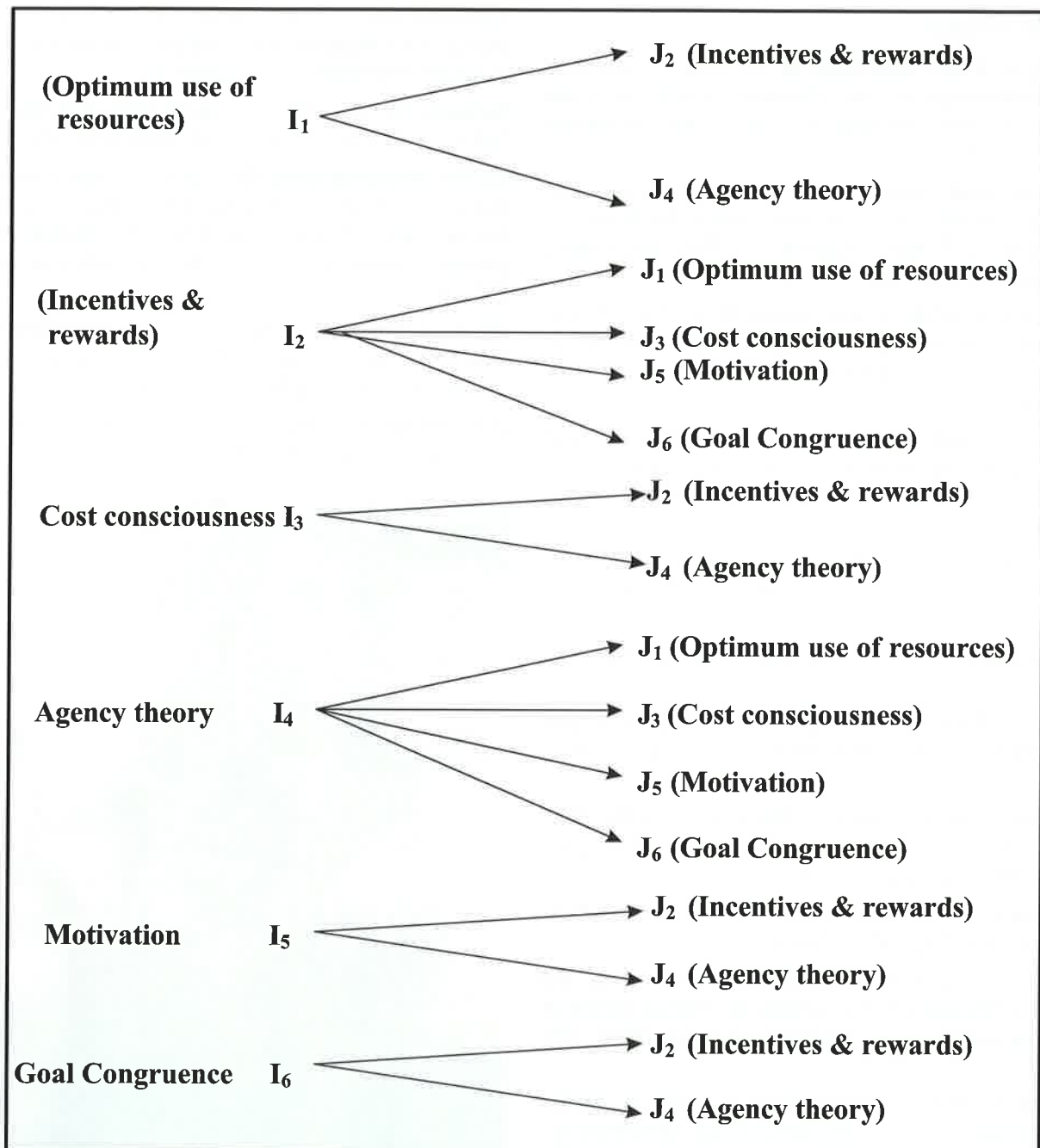
Based on the Tukey HSD test, it was found that there were significant variables between groups (see figure III). For the first group I1 (optimum use of resources), the significant variables in group J were J2 (incentives & resources) and J4 (agency theory). The most number of significant variables were in group I2 (incentives & rewards) with group J. Almost four significant variables were identified which included optimum use of resources, cost consciousness, motivation and goal congruence.

For the cost consciousness group (I3), the significant variables were incentives and rewards (J2) and agency theory (J4). This same trend was observed in case of motivation (I5) and goal congruence (I6), which were found to be significant with incentives and agency theory.

Agency theory, like incentives and rewards, had the same four significant variables. Even though they had the same set of significant variables, both were not significantly related to each other. Another important observation made regarding these two considerations was that they had the lowest mean scores when compared to the other considerations.

Conclusion

The findings of this study is in agreement with the literature and the findings of major studies. Even though most of these studies were conducted a few decades back it shows that the findings are still relevant today.

I_1 (Optimum use of resources)
→ J_2 (Incentives & rewards)
→ J_4 (Agency theory)

I_2 (Incentives & rewards)
→ J_1 (Optimum use of resources)
→ J_3 (Cost consciousness)
→ J_5 (Motivation)
→ J_6 (Goal Congruence)

Cost consciousness I_3
→ J_2 (Incentives & rewards)
→ J_4 (Agency theory)

Agency theory I_4
→ J_1 (Optimum use of resources)
→ J_3 (Cost consciousness)
→ J_5 (Motivation)
→ J_6 (Goal Congruence)

Motivation I_5
→ J_2 (Incentives & rewards)
→ J_4 (Agency theory)

Goal Congruence I_6
→ J_2 (Incentives & rewards)
→ J_4 (Agency theory)

Figure III : Significant Means Between Groups

Several authors have suggested that an important obstacle to successful outcome of cost allocation systems is a lack of attention to behavioural factors during implementation. In reference to Indian companies, there has been very little empirical research that explains why attention to behavioural factors during implementation improves the likelihood of successful cost allocation system.

The relevance of developing a more comprehensive understanding of the behavioural aspects of cost allocation is becoming important in the manufacturing and service industries especially in reference to Indian companies.

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