Single Business Vs Multi Business Firms in India: An Empirical Analysis

Dr. V S Pai[a,*] & Prof. Chetan V Hiremath[b]

[a]Senior Professor of Strategic Management, KIAMS, Harihar, Karnataka, India.
[b]Assistant Professor, School of Management Studies & Research, KLE Technological University, Hubli, Karnataka, India.

ABSTRACT	**ARTICLE INFO**
We studied the performance of 60 firms, 30 each from two types of firms namely, focused and diversified. Further, of the 30 firms in each group, 10 each were selected on the basis of three different sizes; small (with assets <INR10 billion), medium (with assets ranging between INR10 and <INR50 billion) and large (with assets >INR50 billion). Our intent was to determine which of these displayed superior economic performance. We analysed data for two points of time 2006-07 and 2013-14 using three measures of economic performance. These include profit after tax (PAT), return on capital employed (ROCE) and asset turnover ratio (ATR). We employed parametric (MANOVA, ANOVA) as well as nonparametric (Mann-Whitney, Kruskal-Wallis and Chi square) tests. Our analysis started with MANOVA to compare the overall performance of the selected firms for all the three measures. Later, ANOVA was used to further understand specifically, which performance measure was influenced by type and size of the firm. Since, there was a possibility for outliers to influence the findings, nonparametric tests were employed with the assumption that both the finding would give similar results. Our study concluded that there is no significant difference in the performance between focused and diversified firms. However, we found significant difference in the performance of firms based on size, though there were no interaction effects between size and type. Particularly, when diversified and focused firms were separately studied, it was found that for focused firms alone there were significant differences in performance between firms of different sizes.	

1. INTRODUCTION

Whether a firm should remain focused on a single business or move into multiple businesses has been the centre of research and debate with no clear answers. There are limits to which a firm can grow in a given line of business and therefore the urge to diversify into other businesses. Researchers have argued (Prahalad and Hamel, 1990) that even the core competence of a firm should enable it to enter and flourish in several product markets. It has also been suggested that focused strategies are not desirable in emerging markets (Khanna and Palepu, 1997). In strategy literature different theories (resource based view, transaction cost, agency theory, etc.) have been put forth to explain firm diversification (Chandler, 1962, Berry 1974, Rumelt 1974, Andrew 1980). Diversity is defined as the extent to which firms are

simultaneously active in many different businesses (Ramanujam and Varadarajan, 1989). Firms diversify into unrelated product markets or related ones. The latter alludes to adding related or similar product/service lines to existing core business, either through acquisition of competing firms or through internal development of new products or services leading to increase in existing managerial competence within the firm.

Firms use diversification as a method to expand from their core business into other products or services (Aaker 1980, Andrew 1980, Gluck 1985). Researchers have found (Pandya and Rao, 1998) that diversification can yield several positive outcomes for a firm. It can improve debt capacity, reduce the chances of bankruptcy by going into new product/markets and improve asset deployment along with productivity. Skills developed in one business transferred to other businesses, can increase labour and capital productivity. Diversified firms pool unsystematic risk and reduce the variability of operating cash flow.

2. REVIEW OF LITERATURE

The linkage between diversification and performance has been the subject of numerous studies over the years. These studies can be categorized into three groups. One set of studies have indicated negative relationship (Bettis 1981; Rumelt 1974, 1982; Palepu 1985; Varadrajan 1986; Varadarajan and Ramanujan 1987). While another set of studies done by Lubatkin (1987), Micheal and Shaked (1984), and Weston and Mansinghka (1971) have shown positive relationship between diversification and performance. A third set of research have revealed lack of relationship between these variables (Grant, Jammine and Thomas 1988).

2.1. Profitable firms diversify

An important strand of research has focused on firm profitability leading to diversification. Such studies have put forth arguments that profitable firms tend to diversify and consequently such firms are likely to maintain their profit making capability post diversification as well. Grant et al. (1988) suggest that high profits from existing business can be used to finance diversification. [1] They conclude that profitability induces diversification rather than diversification resulting in higher profitability. Second, firms with higher profitability would find it easier to expand compared to its competitors. However a saturation point comes after which any increase in market share may not lead to a corresponding increase in profitability. On the contrary, rather, it reduces it. Hence, it becomes imperative for the firm to diversify. Besides, the erstwhile Monopolies and Restrictive Trade Practices Act (popularly known as

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[1] Grant et al. (1988) p. 778-795.

MRTP) in India never allowed a firm to grow sufficiently big to have monopolistic power. Hence even in that case, the firms were left with no choice but to diversify.

Third, highly profitable firms are usually the first movers into less developed countries. Evidences from the highly successful companies in the west suggests that when they find that the market in the home country is saturated or has reached a level of near saturation, they quickly identify a foreign market and suitably modify the product to suit the local conditions. Fourth, due to the core competency, which a firm would have developed in its pursuit of excellence, it would like to diversify into related areas or related industry. Chandler (1962) suggests that firms considering diversification will likely choose to diversify on related basis rather than on an unrelated basis. Rumelt (1974) likewise found that related diversifiers outperformed firms diversifying into unrelated areas.

2.2. Diversification improves performance

A related strand of research point out that diversification results in improved performance. The argument is that firms when they decide to diversify, select those area or industry where returns would be definitely higher than those earned currently. Hence when diversified, the overall profitability would go up. In accordance with this view Grant et al. (1988) offer supporting evidence by arguing that low prospects of future profitability in existing activities might be expected to create incentives for diversification.[2] Likewise, Burgelman (1983) argues that diversification may lead to increased performance. When prospects looked not so good, top management seemed to be ready, as one manger put it 'to jump into just anything'.[3] This attitude indicates the general assumption that diversification will lead to better performance.

Second, diversification provides synergy benefits to the firm. The major areas of synergy are marketing, operational and financial. This would lead to exploring economies to scale and thereby reduction of overall cost. However, the level of synergy derived would depend upon the nature of industry, nature of integration (horizontal, vertical) etc. Studies by Rumelt (1974, 1982) suggest that the firms going for related diversification derives more synergy benefit than the ones opting for unrelated diversification. However Hall (1995) found that it's difficult to determine which diversification strategy will result in maximum improvement in performance.

Third, diversified firms are in a better position to handle internal resources. This results in optimum utilization of factors of production, which in turn enhances operational efficiencies. This is directly reflected in higher profitability (Alchian and Demsetz, 1972). The level of management information

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[2] Grant et al. (1988), p. 778.
[3] Burgelman (1983), p. 1355.

system (MIS) generated would also be superior to the firms less diversified. Hence, this further contributes to working efficiency (Williamson 1981). When it comes to management of finance, a diversified firm is in a much better position to efficiently deploy the available funds within its business units. Put together these factors result in pulling the overall profitability of the firm northwards. Fourth, benefit drawn from diversification is separation of strategic and operation controls with the organization. This results in better management of specific business units. This also results in insulation of top executives from agency problems [Williamson (1979, 1981)]

2.3. Profitable firms do not diversify

However, some studies have come up with contradictory findings. The logic behind these findings is that firms experiencing superior profitability may not desire to engage in diversification, since such a strategy would require a large amount of capital. This would put additional pressures on the business and eventually may lower the performance. This view has been advocated by studies of Burgelman (1983). He argues that firms with higher levels of profitability may choose to focus on maintaining their current performance rather than seeking to increase profits through diversification. In summarizing his research, he stated, when things were going well in the main stream areas of business, only lip service was paid to diversification.[4] Hall (1995, p 40) found that profitability does not play an important role in deciding whether a firm will go for diversification or not.

Regardless of how diversification is measured, as relatedness (Rumelt 1974) or in terms of level of diversification (Jacquemin and Berry 1979; Palepu 1985, Raghunathan 1995), the corporate diversification literature has failed to reach consensus between diversification and firm performance. In spite of great volume of research on diversification not all issues of diversification have been fully investigated. This is so because all these studies have tried to look the issue only from a single dimension. In our study we compare the performance of single business firms with multi-business firms operating in India. We brought in another dimension of size to examine whether firm size has any impact on the performance of focused or diversified firms.

3. RESEARCH METHODS

We decided to, through this paper, make an attempt to study the comparative performance of two sets of firms each divided into three sizes. The sets of firms are 'focused firms' and 'diversified firms' and each set has data of firms categorized as small, medium and large. This research is designed to collect essentially objective data on performance of afore mentioned two sets of firms operating in India and to carry out statistical analyses with a view to establish performance of one set of firms vis-à-vis the other.

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[4] Burgelman (1983), p. 1355.

Three financial measures have been considered. These include Profit after Tax (PAT), Return on Capital Employed (ROCE) and Asset Turnover Ratio (ATR). The study was done for two different time periods: base year 2006-07 and terminal year 2013-14. This was done to observe changes in performance (if any) of the sets of firms over a seven-year period. Choice of this period is because India experienced high GDP growth rate during the base year and low GDP growth rate during the terminal year. Our hypothesis is that:

H_0: *There is no difference in performance between focused and diversified firms across sizes*

3.1. Sample

The data for this study have been extracted from secondary sources. The main source is the Ace Analyzer data base. We identified 60 firms in all divided equally between focused firms and diversified firms. Further, the data were collected based on size of firms, namely small firms, medium firms and large firms. Of the 60 firms studied, 30 belonged to focused group (firms engaged in one line of business; say steel or cement or passenger cars) and 30 were from diversified group (firms engaged in two or more lines of business; say steel and cement, pharmaceutical and financial services). Further, of the 30 firms in each group, 10 each were selected on the basis of three different sizes. The sizes were small (with assets <INR 10 billion), medium (with assets ranging between INR 10 and <INR 50 billion) and large (with assets >INR 50 billion). We studied the performance of firms using both parametric as well as nonparametric tests.

4. ANALYSIS AND DISCUSSION

4.1. Effect of size and type on firm performance

A multivariate analysis of variance model was employed to determine the impact of type, size and size cum type of firms on three measures of firm performance, namely, profit after tax (PAT), return on capital employed (ROCE) and asset turnover ratio (ATR). The impact on these three measures was studied simultaneously i.e. they were grouped together. The multivariate analysis of variance (MANOVA) was chosen as it is a composite model that studies effect of independent variables on group of dependent variables by comparing the vectors of means. Mathematically, the model is represented as follows,

$$Y_{ijk} = V_k + \alpha_{ik} + \beta_{jk} + \gamma_{ijk} (\alpha_{ik} * \beta_{jk}) + e_{ijk}$$

Where,

i= Type of the firm (Focused or Diversified)

j= Size of the firm (Small, Medium or Large)

k= Performance of the firms (PAT, ROCE, ATR)

V_k = Overall average performance of firms.

α_{ik} = effect of type of firm on PAT, ROCE and ATR captured as a vector.

β_{jk} = effect of size of the firm on PAT, ROCE and ATR captured as a vector

γ_{ijk} = represents the overall performance of the firm k for given i and j i.e. Overall performance of a firm for given type and size.

e_{ijk} = error term. We have used bold letters to indicate that in MANOVA we have vectors instead of variables. The dimension of the vector is 1 x 60 as we have 60 observations in total.

4.1.1. Performance of firms in the base year (2006-07)

The results of the study revealed that there is no statistically significant relationship between types of firms on the three measures of firm performance. Same was the case with size cum type of firms. However, it was found that there was significant difference at $\alpha = 0.05$ in the performance of firms when size alone was considered. When studied simultaneously, the difference in performance was due to ATR only. The firms' PAT and ROCE did not change with size. On conducting the Post Hoc test (multiple paired comparisons) we found that the above mentioned difference in ATR is attributable to difference between small and large firms at $\alpha = 0.05$ and between medium and large firms at $\alpha = 0.10$ levels respectively. Small and medium firms performed better than large firms with mean ATR values of 0.85 and 0.50 respectively.

4.1.2. Performance of firms in the terminal year (2013-14)

A similar analysis was done for the terminal year 2013-14. Again, results revealed were similar to base year results with regard to type of firms as well as size cum type of firms. But when size per se was analyzed, significant difference at $\alpha = 0.05$ level was detected with two measures of performance i.e. ROCE and ATR. The results can be seen in table 1. The difference in performance in ROCE was due to the superior performance of medium-sized firms vis-a-vis small firms as well as large firms with mean values of 22.65 and 21.95 at α 0.10 level. This was revealed by Tukeys HSD paired comparison test. Similarly, difference in performance in ATR was due to inferior performance of large firms vis-a-vis small and medium firms with mean values of -0.55 and -0.75 at α 0.05 level.

4.2. Effect of size on type of firms

In the preceding analysis it was found that only 'size' plays an important role, indicating no interaction effect between 'size and type' of firms. Therefore, we wanted to determine how 'size' affected focused and diversified firms. To perform this analysis we decided to use one-way ANOVA test. Mathematically, we can write the equation as,

$$Y_{jk} = V_k + \beta_{jk} + e_{jk}$$

Where:

γ_{jk} = represents the overall performance of the firm for given size.

V_k = Overall average performance of firms.

β_{jk} = effect of size of the firm on PAT, ROCE and ATR

e_{ijk} = error term.

4.2.1. Performance of firms in the base year (2006-07)

In the base year results for focused firms revealed that, except for ATR, there was no significant difference in performance of different sizes of firms on the other two measures. The Post Hoc test showed that the significant difference on ATR measure (p value 0.054 at α= 0.10) was due to the superior performance of small firms vis-a-vis large ones with mean difference of 0.900. When the same test was administered on diversified firms, it was found that there was no significant difference in performance on the three measures across sizes of firms.

4.2.2. Performance of firms in the terminal year (2013-14)

The one-way ANOVA was next used to analyse focused and diversified firms separately for the terminal year. The results for focused firms indicated significant difference in performance on two measures namely ROCE (with p value 0.062 at α= 0.10) and ATR (with p value .72 at α= 0.10). The Post Hoc test conducted showed the following: medium sized firms performed better than small ones (mean difference 23.5 for ROCE). Similarly, for ATR medium-sized firms performed better than large firms (mean difference 0.800). When the same test was conducted on diversified firms, again it was found that there was no significant difference on the 3 measures of performance across sizes of firms.

5. NONPARAMETRIC TESTS

The parametric tests allow one to study the behaviour of samples based on their measures, in our case PAT, ROCE and ATR, as metric variables. The conclusions are based on means of the observations. Alternatively, there is a scope to study the performance of these companies based on their relative positions (ranks). Where, their performance is compared based on ranks instead of their means. Both the approaches ought to give similar results, but the latter method would overcome stringent assumptions and minimize the influence of extreme values in the data. We have used Mann-Whitney test to compare the performances of focused and diversified firms and Kruskal-Wallis test to verify the results of ANOVA. Mann-Whitney test uses "U" Statistics to compare the two samples. The basic formula for "U" statistics is as follows,

$$U = n_1 n_2 + [n_x (n_x+1)/2] - T_2$$

Where,

U = Mann-Whitney U value

n_1 = Sample size one (smaller)

n_2 = Sample size two (larger)

n_x = Sample size of the group that gave the larger rank total

T_2 = Sum of larger rank total.

The Mann-Whitney test was first employed to compare the performance of focused and diversified firms for all sizes for the base year (2006-07). Results revealed that there were no significant differences in performance between focused and diversified firms across sizes. The same test was next conducted for the terminal year (2013-14). Results of the test for terminal year matched those of the base year. As we had used parametric (one-way ANOVA) test to compare the performance of firms based on size we decided to do the same using a nonparametric test. Since Kruskal-Wallis test is the nonparametric version of the one-factor independent measures ANOVA, where "H " statistics is used to compare the groups.

$$H = \frac{12}{N(N+1)} \left(\sum \frac{Tg^2}{ng} \right) - 3\ (N+1)$$

Where,

N = Total Number of observation

T_g = Sum of ranks of group *g*

N_g = Number of observations in group *g*

For the base year (2006-07) results showed that except for one measure ATR (with p value 0.092 at α 0.10), the other two measures did not show any significant difference in performance by focused firms of varying sizes. When the Kruskal-Wallis test was deployed for focused firms in the terminal year (2014-14), the results were interesting. For all three measures, PAT, ROCE and ATR, there were significant differences in performance among firms of different sizes (PAT with p value .003 at α 0.01; ROCE with p value 0.095at α 0.10; ATR with p value 0.087 at α 0.10). For diversified firms for both base and terminal years it was found that there were no significant differences in performance between small, medium and large firms.

6. CONCLUSION

In this study, we analysed the performance of 60 firms, at two points of time, drawn equally from focused and diversified firms in India. We tested the hypothesis that there is no difference in performance between focused and diversified firms across sizes. The hypothesis was arrived at based on the survey of several research studies done. Based on the selected sample of firms, our study concluded that there is no significant difference in the performance between focused and diversified firms. When diversified firms alone were studied, the findings were similar. However, when focused firms were exclusively studies, it was observed that there were significant differences in performance between firms of different

sizes. This thus indicates that the difference found (when MANOVA was used) in the performance across sizes was primarily due to focused firms. However, the findings of parametric tests and nonparametric tests differed when comparing the performance of focused firms across the sizes. Similar variation was observed for performance measures. The measure ATR differed across the sizes in nonparametric test. The sample size being the limitation, we believe such diversion is common and gives more importance to the findings of nonparametric test. Further, instead of limiting data to two points in time, if continuous data for say a 10-year period is used, both the tests may give similar findings. This gives scope for further research using larger sample size and test for definitive results.

Table1: Compiled test results

Year	Test	Variable	Measure/p values	Mean difference		
Parametric tests						
Base	MANOVA	Size	ATR (.012)	Tukey HDS: S-L* (.85)		
Terminal	MANOVA	Size	ROCE (.035)	TukeyHDS: S-M (-22.65) M-L (21.95)		
			ATR (.014)	TukeyHDS: S-L (.55) M-L (.75)		
Base	One-way ANOVA	Size	ATR (.054)	TukeyHDS: S-L (.900)		
Terminal	One-way ANOVA	Size	ROCE (.062)	TukeyHDS: S-M (-23.500)		
			ATR (.072)	TukeyHDS: M-L (.800)		
Nonparametric tests						
Base	Kruskal-Wallis test	Focused/size	ATR (.092)	Chi-square	Ranks	
					S (19.3)	
					M (15.95)	
					L (11.25)	
Terminal	Kruskal-Wallis test	Focused/size	PAT (.003)	Chi-square	L (21.6)	
					M (16.6)	
					S (8.3)	
			ROCE (.095)	Chi-square	M (20.2)	
					L (14.45)	
					S (11.85)	
			ATR (.087)	Chi-square	M (18.45)	
					S (17.2)	
					L (10.85)	

*S: small firms M: medium firms L: large firms

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