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**Project report on the impact of planning and control sophistication on financial performance of small and medium manufacturing enterprises in Australia**

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## Abstract

Although there has been a limited amount of prior research on the relationship between planning sophistication and small enterprise performance, no attention has been given to the control aspect of planning and its possible impact on financial performance. This points to a major limitation of prior research on planning and performance. It is common knowledge that effective control is often necessary for achieving the maximum results from a predetermined plan of action in any organisation. Even an excellent plan may not produce the results as expected due to numerous unforeseen circumstances which are internal or external to the firm. Therefore, measuring actual performance against planned performance from time to time and taking remedial action on factors causing unfavourable deviations from the plan are important for maximising the results anticipated through planning (Koontz and Weirich 1988, Wildavsky 1975). Accordingly, this process, commonly referred to as 'control,' is likely to have adverse impact on enterprise performance if it is not effectively utilised. Furthermore, the impact of this process on performance may vary from firm to firm depending on the extent of its use. Another limitation of prior research in this area is that most of the researchers who examined the relationship between planning and performance have concentrated on very small firms. Nevertheless, studies have reported that while the majority of very small firms do not use any kind of written plans, the use of planning and its extensiveness tend to increase with firm size (Robinson and Pearce 1984, Bennis et al. 1977). Therefore, it is important to empirically examine what extent of planning and control processes are used in both small and medium enterprises (SMEs) and how they impact upon their financial performance. Findings of such studies, while contributing to the literature, can be useful to owners and managers of SMEs.

## Keywords

planning, report, control, impact, sophistication, financial, performance, small, medium, manufacturing, enterprises, australia, project

## Disciplines

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## **Project report on the impact of planning and control sophistication on financial performance of small and medium manufacturing enterprises in Australia**

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Although there has been a limited amount of prior research on the relationship between planning sophistication and small enterprise performance, no attention has been given to the control aspect of planning and its possible impact on financial performance. This points to a major limitation of prior research on planning and performance. It is common knowledge that effective control is often necessary for achieving the maximum results from a predetermined plan of action in any organisation. Even an excellent plan may not produce the results as expected due to numerous unforeseen circumstances which are internal or external to the firm. Therefore, measuring actual performance against planned performance from time to time and taking remedial action on factors causing unfavourable deviations from the plan are important for maximising the results anticipated through planning (Koontz and Weihrich 1988, Wildavsky 1975).

Accordingly, this process, commonly referred to as 'control,' is likely to have adverse impact on enterprise performance if it is not effectively utilised. Furthermore, the impact of this process on performance may vary from firm to firm depending on the extent of its use. Another limitation of prior research in this area is that most of the researchers who examined the relationship between planning and performance have concentrated on very small firms. Nevertheless, studies have reported that while the majority of very small firms do not use any kind of written plans, the use of planning and its extensiveness tend to increase with firm size (Robinson and Pearce 1984, Berman et al. 1977). Therefore, it is important to empirically examine what extent of planning and control processes are used in both small and medium enterprises (SMEs) and how they impact upon their financial performance. Findings of such studies, while contributing to the literature, can be useful to owners and managers of SMEs.

Therefore, under a research grant awarded by the University of Wollongong Faculty of Commerce, we conducted a questionnaire survey in the later part of 1999 to examine the possible impact of planning and control sophistication on financial performance of 473 small and medium manufacturing enterprises in Australia.

## Questionnaire Survey

A sample of 2,000 manufacturing SMEs was obtained from the Dun & Bradstreet data base for conducting the questionnaire survey of this study. The criterion used for selecting the sample firms was that they belonged to the category of small and medium manufacturing enterprises representing all eight states in the country. These SMEs are defined by the Australian Bureau of Statistics as manufacturing firms employing fewer than 500 people.

The questionnaire designed for the survey was first pilot tested on owner/managers of fifty firms before it was finalised on the basis of their responses. The final questionnaire was mailed to the owner/managers of 2,000 sample firms. A reply-paid envelope was also sent for easy returning of the completed questionnaire. Since 89 questionnaires were returned as undeliverable and 28 responses were unusable due to incomplete data, the total useable responses amounted to 473, giving a response rate of 25.1 per cent. Given the nature of SMEs and the low response usually associated with most mail surveys, this response rate was considered adequate. A profile of these firms is displayed in Table 1.

**Table 1: Profile of the Sample Firms**

| Type of Industry   | Firms | %     |
|--|-------|-------|
| Chemical, petroleum, rubber and plastics products              | 48    | 10.1  |
| Electronic and electric equipment                              | 61    | 12.9  |
| Fabricated metal products                                      | 72    | 15.2  |
| Food, beverages and tobacco                                    | 31    | 6.6   |
| Furniture, fixtures and lumber and wood                        | 60    | 12.7  |
| Machinery, computer and transportation equipment               | 40    | 8.5   |
| Measuring Instruments, photographic, medical and optical goods | 20    | 4.2   |
| Paper, printing and allied products                            | 26    | 5.5   |
| Stone, clay, glass, concrete products                          | 37    | 7.8   |
| Textile and wearing apparel                                    | 40    | 8.5   |
| Miscellaneous  | 38    | 8.0   |
| All firms  | 473   | 100.0 |

| Forms of Organisation   | Firms | %     | Employees | Firms | %     |
|-------------------------|-------|-------|-----------|-------|-------|
| Sole proprietorship     | 22    | 4.7   | 1 - 25    | 214   | 45.2  |
| Partnership             | 12    | 2.5   | 26 - 50   | 96    | 20.4  |
| Trust                   | 26    | 5.5   | 51 - 100  | 69    | 14.6  |
| Proprietary company     | 375   | 79.3  | 101 - 150 | 56    | 11.8  |
| Unlisted public company | 38    | 8.0   | 151 - 500 | 38    | 8.0   |
| All firms               | 473   | 100.0 | Total     | 473   | 100.0 |

All industry groups were well represented by the sample firms. The majority of firms (79.3 per cent) operated as proprietary limited liability companies while others were unlisted public companies, trusts, sole proprietorships and partnerships. This indicates that proprietary limited liability company is the most popular form of business organisation among SMEs in Australia. About 45 per cent of firms in the sample employed fewer than 25 persons while another 35 per cent having 26 to 100 employees. This shows that about 80 per cent of sample firms belonged to the small

industry category, which is defined by the Australian Bureau of Statistics as manufacturing organisations employing fewer than 100 people (ABS 1996). Accordingly, only about 20 per cent of firms in the sample belonged to the medium-scale.

## **Results and Discussion**

In analysing the survey data, first, for the purpose of identifying the extent of planning, the sample firms were classified into three categories according to the extent of their budgeting process. That is, firms in the first category did not use any type of written plan or budget. Those in the second group prepared simple budgets representing a less sophisticated planning process. In the third group were firms using detailed budgets in respect of many different areas of operation. These firms were considered as those engaged in a more sophisticated planning process. Then, for the purpose of identifying the extent of control sophistication, the firms falling into the second and third categories were reclassified into three more categories according to the extent of their control process. Firms in the first category did not calculate differences (variances) between actual performance and budgeted performance. Firms in the second category occasionally used budget variances in respect of a few specific items for taking suitable corrective action. The third category represented firms that used budget variances regularly in respect of many different items of operating activities, revenues and costs for taking appropriate corrective action.

Because of the difficulty in obtaining reliable information on sales revenues and profits particularly from smaller firms, the owner/managers were asked in the survey to indicate the percentage increase or decrease in sales over the last three years and the profit as a percentage of total assets (investment) at the end of their last financial year. Furthermore, in the case of sales, considering the inherent reluctance of small business people to disclose sales information even on percentage basis, an additional question was included in the questionnaire, asking the respondents to indicate the direction of their sales growth by stating whether the sales increased, decreased or remained constant over the last three financial years. Accordingly, both these two types of information on sales growth were used in the statistical analysis as a means of verifying the accuracy of data.

### *Relationship between Planning Sophistication and Performance*

Some of the results derived from the survey data are presented in Table 2. Accordingly, 50.6 per cent of firms in Category I (no written budgets) reported a slight or significant increase in sales as against 39 per cent reporting a slight or significant decrease in sales. With regard to the firms in Category II (simple budgets), the respective percentages were 57.7 and 25. In Category III (comprehensive budgets), these figures were 67.1 and 19.2 respectively. In essence, the percentages of firms reporting an increase in sales amounted to 50.6 in Category I, 57.7 in Category II, and 67.1 in Category III, whereas those reporting a decrease in sales were 39, 25 and 19.2 respectively.

**Table 2: Relationship between Planning Sophistication and Changes in sales**

| Change in Sales         | Degree of Planning Sophistication   |       |                                  |       |  |       |
|-------------------------|-------------------------------------|-------|----------------------------------|-------|--|-------|
|                         | Category I<br>No written<br>Budgets |       | Category II<br>Simple<br>Budgets |       | Category III<br>Comprehensive<br>Budgets |       |
|                         | Firms                               | %     | Firms                            | %     | Firms                                    | %     |
| Decreased significantly | 10                                  | 13.0  | 6                                | 5.8   | 18                                       | 6.2   |
| Decreased Slightly      | 20                                  | 26.0  | 20                               | 19.2  | 38                                       | 13.0  |
| Remained constant       | 8                                   | 10.4  | 18                               | 17.3  | 40                                       | 13.7  |
| Increased slightly      | 23                                  | 29.9  | 36                               | 34.6  | 76                                       | 26.0  |
| Increased significantly | 16                                  | 20.7  | 24                               | 23.1  | 120                                      | 41.1  |
|                         | 77                                  | 100.0 | 104                              | 100.0 | 292                                      | 100.0 |

Significance and validity of the survey results were tested on the basis of ANOVA, Tukey's Multiple Comparison and Chi-square test. Accordingly, firms using 'comprehensive budgets' had recorded significantly higher sales growth than those having 'no written budgets'. However, no significant difference was observed between the two categories representing 'no written budgets' and 'simple budgets' in terms of their sales growth. What is primarily apparent from these results is that greater planning sophistication significantly correlated with higher performance in sales growth. This finding confirms the generally held view that effective planning contributes to the efficient management of an organisation.

Next, since the study sought to examine the possible impact of planning sophistication of sample firms on their return on investment (ROI) as well, we carried out another statistical test for this purpose. The results of this test did not indicate a significant relationship between each category of firms and its corresponding ROI. This raises an important issue: although a higher sales growth rate was reported by firms with more sophisticated planning processes, it was not similarly reflected on one of the objective measures of performance, ROI. However, this situation observed in Australian small and medium firms is consistent with the experience of American small firms reported by Rue and Ibrahim (1998).

One possible explanation for the above situation is that although firms with a more sophisticated planning process report higher rates of growth in sales, it may be that these revenues are not bringing about higher profits because of internal inefficiencies. Obviously, the profit of a firm depends, to a great extent, on the level of its operating expenses. If operating expenses increase at a higher rate, increased sales may not produce a profit leading to a higher ROI.

#### *Relationship between Control Sophistication and Performance*

The procedure followed in the previous section with regard to the determination of enterprise performance in terms of sales growth and return on investment was used in the same manner in this section for identifying possible relationship between control sophistication and performance. Since the sophistication of a firm's budgetary control process was assumed in this study to represent its control sophistication, the extent of the use of budget variances was utilised for determining whether there was a control-

performance relationship. The statistical tests employed for assessing the significance or otherwise of this relationship were also similar to those used in the previous section.

The results of the survey on the relationship between control sophistication and changes in sales are given in Table 3. These results indicate that the differences of changes in sales among the three categories of control groups were statistically significant. More specifically, firms reporting a significant or slight increase in sales were 60.4 per cent in Category I, 60.2 per cent in Category II and 68.8 per cent in Category III. On the other hand, the percentages of firms reporting a significant or slight decrease in sales were 27.1, 22.6, and 16.5 in these three categories respectively.

**Table 3: Relationship between Control Sophistication and Change in Sales**

| Change in sales         | Degree of Control Sophistication      |       |  |       |   |       |
|-------------------------|---------------------------------------|-------|--|-------|---|-------|
|                         | Category I<br>Do not use<br>variances |       | Category II<br>Use few variances<br>occasionally |       | Category III<br>Use many variances<br>regularly |       |
|                         | Firms                                 | %     | Firms  | %     | Firms   | %     |
| Decreased significantly | 2                                     | 4.2   | 6  | 6.5   | 14  | 6.4   |
| Decreased Slightly      | 11                                    | 22.9  | 15   | 16.1  | 22  | 10.1  |
| Remained constant       | 6                                     | 12.5  | 16   | 17.2  | 32  | 14.7  |
| Increased slightly      | 20                                    | 41.7  | 19   | 20.4  | 56  | 25.7  |
| Increased significantly | 9                                     | 18.7  | 37   | 39.8  | 94  | 43.1  |
|                         | 48                                    | 100.0 | 93   | 100.0 | 218   | 100.0 |

Next, statistical test was conducted to check the relationship between control sophistication and sales growth of firms. According to these tests, the differences in sales growth between Categories I and III were found to be statistically significant. However, a significant relationship was not found between other categories of firms.

The above results reveal that SMEs using more sophisticated budgetary control processes have achieved better performance in sales growth. Although this finding confirms the generally held view that effective control contributes to the accomplishment of enterprise objectives, no prior research evidence is available to make a comparison. Nevertheless, it is realistic to believe that firms that compare actual performance against expected performance regularly and take appropriate remedial action on activities showing unfavourable deviations perform better than those with less participation in such a control process.

Finally, another statistical test was conducted to examine whether the ROI of firms was also affected by the control sophistication. However, no significant relationship was found between control sophistication and ROI of firms. This finding is similar to the one discussed in the preceding section in respect of planning sophistication versus ROI. Although the possible explanation given for the lack of a significant relationship between those two variables is equally applicable to this finding, in-depth case studies on individual firm basis are needed to identify the real reason for this situation.

## Conclusions

This study has demonstrated that planning and control sophistication is an important contributor to the sales performance in manufacturing SMEs. In essence, the findings of the study suggest that greater the sophistication in both planning and control processes the higher is the sales growth. However, since no significant relationship was found with regard to return on investment in-depth case studies are needed to identify the cause of this situation.

It is important to offer some caveats regarding the conclusions generated by this research. Primarily, although the results indicate that those firms engaged in more sophisticated planning and control processes have achieved higher growth rates in sales, it cannot be said that the results empirically resolve the causal relationship between the variables. Clearly, this study has produced only a correlational analysis. In addition, the results of this study were subject to the limitations commonly associated with all mail surveys in respect of the reliability and accuracy of information. Despite these imperfections, the study has achieved its purpose of filling a void in the literature by examining the impact of planning and control practices in manufacturing SMEs, which has been largely ignored in past research. More importantly, the results of the study provide some useful insights to owners and managers of small and medium-scale enterprises.

Finally, it must be emphasised that while separate in-depth case studies on individual firm basis are needed to explore the causal relationships between variables, it is important to replicate our study using more measures of performance and wider coverage of planning and control processes under different country settings. Because of the prominent and growing role of SMEs in the modern business environment, understanding the impact of their planning and control efforts on financial performance is a worthwhile research theme.

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