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STRATEGY AND ACTIVITY BASED COSTING :
A CROSS NATIONAL STUDY

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ABSTRACT

This study assesses the association between the corporate strategy of organizations and experiences with activity based costing. It considers strategy-based contingencies in relation to the decision to implement activity based costing, as well as the extent, speed and perceived success of activity based costing implementations. A questionnaire was developed to collect information on corporate costing practices and strategic orientation in seven countries: Canada, France, Germany, Italy, Japan, USA and UK. More than 400 questionnaires were returned and analysed. The results of the study show that strategy and the perception of ABC implementation success are associated. However, strategy orientation was not found to affect the decision to implement activity based costing, nor the speed or stage of activity based costing implementation within the firms investigated. The investigation is indicative of the stability of ABC-corporate strategy relationships across different country contexts. The results of the study signify also the outcome-based rather than the process-based dependency between activity based costing and corporate strategy orientation across large organizations in the countries investigated.
STRATEGY AND ACTIVITY BASED COSTING: A CROSS NATIONAL STUDY

INTRODUCTION

A number of studies postulate relationships between the success of activity based costing (ABC) implementation and a variety of variables (Shields 1995; Swenson, 1995; Foster and Swenson, 1997; Al-Omiri and Drury, 2003). These studies consider that rather than technical factors, it is behavioral and organizational variables which influence ABC implementation success. Such variables could include organizational culture, top management support, links between accounting system and performance evaluation, availability of resources, training, consensus about and clarity of the objectives of the system, and linkages between the cost system and corporate strategy (McGowan and Klammer, 1997; Shields and Young, 1989). Researchers have also investigated the relationships between the stages of the diffusion, adoption and implementation of ABC and several contextual factors such as organizational structure, product diversity and strategy (Bjornenak, 1997; Gosselin, 1997; Malmi, 1999 (see also Bjornenak and Mitchell, 2000)). The literature is indicative of strategy orientation as significantly affecting the activity based costing and activity based management (ABCM) experiences of enterprises.

The present study seeks to more extensively assess associations between activity based costing (ABC) implementation issues and organizational strategy orientation. The motivation for considering strategy-based contingencies stems from the prior accounting literature which conceptually suggests the existence of strong links between strategic orientation and ABC practices though there remains a relative dearth of empirical research specifically focusing on strategy and ABC implementation experiences. Additionally, there is little research
documenting the stability of relationships between dimensions of management accounting system implementations and corporate strategic orientation across countries. The present study addresses both concerns.

The paper is organized as follows. In the next section, the results of scholarly studies relating to linkages between organizational variables and implementation experiences with activity based costing and activity based management (ABCM) are reviewed. The section also develops the hypotheses that are tested in the light of this prior research with particular reference to corporate strategy orientation and ABCM. Section three focuses on the research design including the questionnaire instrument used and the data collection process. Section four provides a description of the analyses performed to test the hypotheses and a discussion of the results. The last section discusses the contribution and the limitations of this study and addresses opportunities for further research in this area.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Scholarly research on activity based costing has been carried out on the influence of organizational size (Armitage and Nicholson, 1993, Gosselin, 1997, Innes et al., 2000), level of automation (Drury and Tayles, M. 1994), complexity of production processes and product diversity (Bjornenak, 1997), organizational culture elements (Friedman and Lyne 1999), behavioral factors (Anderson, 1995; Anderson and Young, 1999; Argyris and Kaplan, 1994; Bhimani and Pigott, 1992; Foster and Swenson, 1997; Krumwiede, 1998; McGowan and Klammer, 1997; Shields, 1995), institutional forces (Armstrong, 2002; Colwyn Jones and Dugdale, 2002; Malmi, 1999; Sisaye, 2003), and stock market and firm performance (Gordon and Silvester, 1999; Kennedy and Affleck-Graves, 2001). A small number of studies have
explored aspects of cross-national variations in the use of ABC systems (Aptel and Pourjalali, 2001; Groot, 1999). Gosselin (1997) has investigated a variety of organizational variables including the links between corporate strategy type and the adoption of activity management within a set of Canadian companies. Gosselin’s (1997) data related to a variety of organizational determinants and business strategies argued in the past literature to find linkages with costing practices. His study is the most conclusive to date regarding the relationship between strategic posture and the adoption and implementation of activity management approaches in that Gosselin (1997, p.114) concludes that “prospectors tend to adopt activity analysis, activity cost analysis and activity based costing more frequently than analysers and defenders”. The present study’s purpose is to extend Gosselin’s (1997) study in terms of the diversity of ABC implementation issues considered and to assess the stability of strategy and ABC linkages across different country contexts.

Whilst conjectures may be made concerning ABC–strategy linkages based on monocountry data sets, one test of the stability of posited relationships is to determine how pervasive these are across different country contexts. ABC as a costing approach provides an appropriate frame of reference for a multi-country study because of the relatively fast pace through which it has gained recognition internationally. The emergence of ABC, as a cost management innovation, started in the USA with articles by Cooper (1987; 1988a; 1988b; 1989a; 1989b) and Cooper and Kaplan (1988a; 1988b). The new approach was almost simultaneously publicised in the UK and in Canada. The diffusion of ABCM in France started, a little later, with the work of Evraert and Mévellec (1990) and Mévellec (1990). However, French management accountants have often argued that a method similar to ABC has been used in France since 1930 (Bescos and Mandoza, 1995; Lebas 1994; 1996). Even though, the diffusion process for ABC has not been similar across the seven countries investigated here
(Bhimani, 1996; Brierley et al., 1997; McGowan and Klammer, 1997; Sakurai, 1996; Shim and Stagliano, 1997), it is held that the strategic posture of an organization will be associated with costing system experiences in the same manner across different country contexts. This follows in that organizational priorities can be notionally limited to strategic orientation and broad managerial pursuits (Chenhall and Langfield-Smith, 2001; Palmer, 1992). Consequently, corporate stance towards ABC is likely to be strategy dependent across different country contexts. Shields’ (1998) observation that there is no evidence of country specificity or lack of convergence in management accounting practices and that decisions pertaining to management accounting systems tend to align across countries lends further support to this argument.

ABCM has been regarded as a management accounting innovation that has rapidly diffused and spread across many organizations, industries and nations in a manner worthy of scholarly inquiry (Bjornenak, 1997; Colwyn Jones and Dugdale, 2002, Malmi, 1999). Strategy has been argued to play a key role in influencing management control practices and the diffusion process for innovation (Simons, 1994; 1995; Langfield-Smith, 1997). The necessity to innovate is driven by the type of strategy employed by a firm (Guilding et al., 2000). Identifying conceptions of strategic types is essential in order to assess links to the diffusion of ABC and implementation characteristics. Miles and Snow (1978, 1994) identified four strategic types of organizations according to the rate at which they change their products and markets: prospectors, defenders, analyzers and reactors. The fundamental difference among these types is the rate of change in the organizational domain. Prospectors are characterized by their dynamism in seeking market opportunities, their capability to develop and produce new products to meet customers’ needs, their large expenditures related to research and development, and their dependence on teamwork. They are usually innovators that create
change in their respective industries. Defenders have a strategy that is the polar opposite of that of prospectors. They operate within a narrow product-market domain characterized by high production volume and low product diversity. Defenders compete aggressively on price, quality and customer service. They engage in little or no product or market development and stress efficiency of operations. Defenders are likely to face a lower level of environmental uncertainty than prospectors (Slocum et al., 1985; Govindarajan, 1986). Analyzers stand between these two categories, sharing characteristics of both prospectors and defenders. Reactors do not follow a conscious strategy. They are viewed as a dysfunctional organizational type. The premise of the Miles and Snow typology is that prospector, defender and analyzer strategies, if properly implemented, can lead to effective performance (see Chenhall, 2003).

The Miles and Snow typology is chosen in this study to explore the interactions between organizational strategy orientation and ABC implementation within organizations. The rationale for using the Miles and Snow typology as Gosselin (1997) has noted is that first, the capacity of an organization to innovate is the key dimension of this typology. It is therefore particularly appropriate for examining the issue of the decision by enterprises to adopt innovation in management accounting systems and to study their post-implementation experiences with the innovations. Second, this typology is consistent with Porter's (1980; 1985) well documented low-cost and differentiation generic types which have also been adopted by researchers in management accounting (Dent, 1990; Palmer 1992; Roslender and Hart, 2003). Hambrick (1983) suggested that prospectors pursue a particular type of differentiation and defenders another type of differentiation or cost leadership strategy. Miller (1987) associated prospectors with a differentiation strategy complex product innovation. Govindarajan (1986) also suggested an alignment between a differentiation strategy and prospectors and a low-cost strategy and defenders. Third, the Miles and Snow typology is
academically well accepted and internally consistent having been tested in several studies not focused on accounting innovations (Hambrick, 1981; 1983; Simons, 1987; Shortell and Zajac, 1990; Slocum et al., 1985; Snow and Hrebiniak, 1980). Gosselin’s (1997) study which was concerned with the effect of strategic posture and organizational structure on the adoption and implementation of activity management approaches lends strong validity for the Miles and Snow typology.

If strategic orientation is sought to be linked to an organization’s cost management priorities, one might point to the notion that defenders compete on price and stress efficiency of production and volume output. Their focus on value render defenders likely to be receptive to ABC. But this assumes generic acceptance that ABC is the approach of choice for contexts where efficiency of production and price/value relevance are priorities. Yet, ABC in effect remains an innovation. Several surveys have been conducted in different countries across Europe and North America to assess the degree to which ABCM has been adopted by firms (Innes and Mitchell, 1991; Bright et al., 1992; Nicholls, 1992; Institute of Management Accountants, 1993; Armitage and Nicholson, 1993; Cobb et al, 1992; Drury and Tayles, 1994; Innes and Mitchell, 1999; Lukka and Granlund, 1996; Bjornenak, 1997; Gosselin, 1997; Innes et al., 2000). Innes and Mitchell (1991) carried out the first survey that included questions on ABCM. They found that among their 187 UK company respondents, only 6% had begun to implement an ABCM system while 52% had not considered implementing ABCM. During the same period, Bright et al. (1992) surveyed manufacturing firms again in the UK. The percentage of ABCM adopters, 32%, was much larger than in Innes and Mitchell (1991). The authors questioned these results and suggested that the low response rate and the potential non-response bias may explain this high level of ABCM diffusion. Another survey conducted in the UK by Nicholls (1992) showed that 10% of the respondents had implemented ABC.
later UK investigation by Innes and Mitchell (1999) was again carried out. Innes et al (2000) who compare the two surveys, report that in 1994, UK companies revealed a 19.5% rate of ABC adoption with 27.1% of firms actively considering ABC. By 1999, the respective figures were 17.5% and 20.3%. In Canada, Armitage and Nicholson (1993) surveyed the 740 largest corporations. The results showed that 14% of the respondents had implemented ABC, 15% were reflecting on implementing ABC with 67% had not considered implementing an ABC system. In Germany, Italy, France and Japan, surveys indicate that ABC adoption is gaining popularity but just as in North America and the UK, it remains innovatry (Boons et al, 1992; Bestos and Canvin, 2000; Barbato et al. 1996; Cescon, 1998, Cinquini et al, 1999; Brunetti and Cescon, 2002; Sakurai, 1996).

Given that ABC is a cost management innovation rather than an established management accounting technique, its appeal can be argued to be influenced by its innovatory quality. Since prospectors search continually for market opportunities and have a broad product-market domain, they will tend to adapt their cost management system innovations swiftly to their needs and thus more readily implement activity-based costing than defenders (Chenhall, 2003; Langfield-Smith, 1997; Palmer, 1992).

The likelihood of ABC implementation is also influenced by corporate strategy orientation in another regard. ABC has been reported to be particularly relevant to firms with high product and customer variety (Cooper 1988b; 1989a; Cooper and Kaplan, 1988a; 1988b). It is a cost management approach which lends greater transparency to the cost of variety by indicating which products or customers contribute to profitability/losses. Since prospectors tend to stress high variety relative to defenders, they can be expected to be highly prone to implement ABC.
This and the fact that ABC is still an innovation undergoing different rates of diffusion in different countries lead us to hypothesise that:

Hypothesis 1 (H1): Prospectors are more likely to implement ABC than defenders.

As argued above, prospectors are organizations that tend to adopt changes and innovations more often than defenders (Chenhall, 2003; Guilding, 1999; Langfield-Smith, 1997). By definition, they are typically first in the market and move swiftly. Their effectiveness as prospectors is time sensitive. Thus, they can be expected to implement ABC within a shorter period of time than defenders. We consequently hypothesise that:

Hypothesis 2 (H2): Among organizations that implement ABC, the speed of ABC implementation is likely to be higher for prospectors than for defenders.

The success of the implementation of ABC depends on several characteristics according to the prior literature. Shields (1995) has shown that the success of an ABC implementation depends on factors such as training, performance evaluation, competitive strategy adopted, adequacy of resources, top management support, clarity of objectives and non-accounting ownership. Studies by Anderson, 1995; Cobb et al, 1992; Krumwiede, 1998; McGowan and Klammer, 1997; Malmi, 1997, Shim and Stagliano, 1997, confirm the relevance of these and other related technical and organizational variables in affecting the success of ABCM implementations. Forster and Swenson (1997) in their study of alternative measures of ABCM success in models testing ABCM success determinants conclude that broad-based measures (like how ABCM data is used in decisions) yield the highest explanatory power.
If an ABC system is implemented effectively, it is likely that it will give rise to information concerning costs which is more reflective of resource consumption and therefore of providing cost information that is perceptively regarded as more accurate than the conventional system being replaced. Defenders are typically viewed as organizations that emphasize the need for more accurate cost information and which seek to enhance the effectiveness of cost allocation (Palmer, 1992; Langfield-Smith, 1997). Therefore, the perception of the success of the ABC implementation can be expected to be higher among defenders than among prospectors. Whilst defenders may be less likely to adopt a management innovation as readily as prospectors and once adopted, less swift in the actual implementation process as argued above, their perception of ABC success once implemented is likely to be higher given their focus on value provision, volume of production and efficiency of operations. Thus, we propose the following hypothesis.

**Hypothesis 3 (H3):** Among organizations that implement ABC, the success of ABC implementation is higher for defenders than for prospectors.

Prospectors are organizations that are always searching for innovations. Once they embark on change, they seek out subsequent avenues for effecting ongoing change. Therefore, in the context of organizational experiences with ABC, there are two potential behaviors for prospectors: they may either stop implementing ABC and move to other management innovations or they may roll out ABC across the entire firm.

Therefore, we propose the following hypothesis:

**Hypothesis 4 (H4):** The proportion of organizations that abandon ABC or that use ABC across the majority of their business units is higher for prospectors than defenders.
QUESTIONNAIRE AND DATA COLLECTION PROCESS

To test the hypotheses discussed in the previous section, a mail survey was administered in seven countries: Canada, France, Germany, Italy, Japan, USA and UK. The instrument enabled the collection of information concerning strategy, speed, success and stages of ABC implementation as well as firm specific information. The questionnaire included questions pertaining to activity based costing practices, corporate strategic orientation and background information. The English version of questions on ABC and strategy is shown in the Appendix. This questionnaire was translated into French, German, Italian and Japanese by academics from these countries. The questionnaires were translated back into English by different academics. This resulted in some stylistic revisions for the non-English language questionnaires.

The population surveyed in Canada included the 500 largest companies taken from the Blue book of Canadian Business. In the United Kingdom, the survey was sent to the 500 largest companies of the Times 1000 UK companies. The questionnaire in France was sent to the 500 largest companies of the database “L’expansion: Les 1000 - performance et classement des plus grandes entreprises françaises”. In Germany, the survey was sent to the 500 largest companies from a ranking compiled by Frankfurter Allgemeine Zeitung GmbH Information Services. In Japan, the questionnaire was sent to the 500 largest companies listed by Nikkei Shinbun. The Italian population consisted of the top 450 Italian companies from a listing provided by the Italian Trade Center. Lastly, in the USA, the population was made up of the

1 Size was measured by the amount of revenues
top 500 firms ranked under Moody’s Industrial manual. In all cases, the questionnaires were addressed to the Chief Accountant, Controller or equivalent post in the sample population. The Canadian companies were sent both the English and French versions of the questionnaires.

RESULTS

The response rate for a survey across a multitude of countries can be expected to be non-standard unlike mono-country studies. The absence of follow-up procedures is a common limitation in cross-country studies. In this investigation, the response rates in Canada and Italy are the lowest at a rate of 7% and highest in Japan with 19%. UK, Germany, USA and France produced response rates of 17%, 15%, 11% and 8% respectively. These rates take into account the fact that only questionnaires received during the first five weeks of the survey period were included in the analysis. Before undertaking the statistical analysis, tests on the non-response bias was performed to confirm that early respondents during that period were not statistically different from the late respondents. Four hundred and sixteen questionnaires were sent back to the researchers. The study’s concern with the specificity of strategy orientation and ABC implementation experience rather than nation-based relationships provided a final sample size with sufficient basis for statistical discrimination.

Table 1 shows the number of respondents in each country. The largest groups of respondents relate to Japan (95) and the United Kingdom (85) while Italy (32) represents the smallest. This gap may be explained by the fact that the respondent group from the UK have had the opportunity to participate in several surveys over the last decade (Innes and Mitchell, 1991; Bright et al., 1992; Nicholls, 1992; Drury and Tayles, 1994; Innes et al., 2000). This not the
case for respondents from France and Italy where only a small number of surveys on accounting systems have been conducted.

(Insert Table 1)

As noted, the literature suggests that strategy plays a key role in the design of management accounting systems and more specifically in the decision to implement ABC. Respondents were asked to classify their organization according to the Miles and Snow typology (Miles and Snow 1978). This typology has been used widely in the management accounting literature (Simons 1987, 1988, 1990; Gosselin 1997; Langfield-Smith 1997). The instrument developed by Snow and Hrebiniak (1980) was employed. The self-typing process resulted in a fairly identical proportion of analyzers, prospectors and defenders as shown in Table 2. This is consistent with Miles and Snow (1978) who suggested that in an industry the number of each strategy type should be relatively similar.

(Insert Table 2)

**Strategy and ABC Implementation**

It was suggested in hypothesis 1 that prospectors would be more likely to implement ABC than defenders. To test this hypothesis, we used the following logistic model:

\[
\text{ABC} = a + b_1 \text{PRO} + e \quad (1)
\]

where ABC was set equal to 1 if the firm implemented ABC and equal to 0 if not. PRO is a dummy variable for strategy. PRO was given a value of 1 if the respondent had classified his organization as a prospector and a value of 0 if the organizations was an analyzer or a defender. The results of the logistic regression are reported in Table 3. They do not support H1
at the 5% level. Strategy does not influence the decision to implement ABC. Although acceptable at the 10% level, these results do not replicate the findings of Gosselin (1997) which more conclusively indicated that prospectors were more frequent adopters of activity management approaches than firms with other strategic orientation.

(Insert Table 3)

**Strategy and Speed of ABC Implementation**

Hypothesis 2 relates to the relationship between the speed of implementation and strategy. It was suggested that the speed of implementation would be higher for prospectors than for defenders. To test this hypothesis, we used the following model:

\[
\text{SPEED} = a + b \times \text{PRO} + e
\]  
(2)

where SPEED represents the ordinal measure of the perceived velocity of ABC implementation which is measured on a five-point scale. PRO, the dummy variable for strategy, was given a value of 1 if the respondent had classified the organization as a prospector and a value of 0 if the organizations was an analyzer or a defender. The results included in Table 4 show that strategy type does not affect the speed of implementation. Prospectors do not implement ABC more quickly than defenders.

(Insert Table 4)

**Strategy and Success of ABC Implementation**

The success of ABC implementation depends on a variety of factors that have been identified in several studies (Foster and Swenson 1997; Shields 1995; Swenson 1995; McGowan and
Klammer, 1997). In this paper, we hypothesise that the perceived success of ABC implementation would be higher among defenders than among prospectors. The rationale for this is that defenders are highly focused on cost containment and ABC is regarded as enhancing the accuracy with which product costs are reported. To test this hypothesis, a reduced regression model with strategy as the independent variable and perceived success of ABC as the dependent variable was employed. Success was measured on a five-point scale from unsuccessful to successful while strategy was represented by a dummy variable DEF. The value of DEF was set to 1 if the organization was a defender and to 0 if it was an analyzer or a prospector. The results of the test supports hypothesis 3 and are summarized in Table 5. The independent variable DEF has a positive and significant coefficient at the 5% level. ABC implementations are perceived as more successful among defenders than among prospectors and analysers in the group of organizations investigated.

(Insert Table 5)

**Strategy and Stages of ABC Implementation**

Organizations may decide to implement ABC as a pilot, to use it across the units or in the majority of units. They may also decide to abandon ABC. Hypothesis 4 suggests that prospectors would be more likely to abandon ABC or to use it in the majority of units in comparison to defenders who would prefer to conduct a pilot ABC or use ABC across units. To test this hypothesis, a Chi-square analysis was performed. The results of the analysis do not support hypothesis 4. The value of the chi-square is 8.17 and the p-value is 0.226 (see Table 6). Strategy does not affect the extent of deployment of ABC after system implementation.

(Insert Table 6)
DISCUSSION

The study is concerned with ABC implementation experiences across large firms in seven countries in terms of associations between the decision, extent, speed and perceived success of ABC implementations vis-à-vis corporate strategic orientation. The results show that the respondents’ view of their organizations’ strategy is associated with the perception of implementation success of ABC. However, strategy type does not seem to affect the decision to implement ABC nor the extent or speed of implementation.

Cross-national studies of organizational practices which reveal variations can be indicative of different explanatory reasons as to the underlying reported variations. There may be nation-specific factors underlying country differences and cultural forces at play which may coincide with national borders but transcend organizational specificities (Harrison and McKinnon, 1999). This study’s concern has been to identify associations between ABC implementation characteristics and corporate strategy posture as relationships which overarch nation-specific influences. The hypothesis test results are indicative of the stability of such linkages. This investigation has not sought to assess national influences as causal factors of differences. Such associations may potentially be identified and discernible from larger scale cross national data. This would present an interesting avenue for further research focusing specifically on strategy linked factors underpinning ABC implementations. Additionally, a larger scale study which engages in more extensive data collection and second mailing of initial non-respondents is likely to lead to higher response rates. This would further enhance the statistical discrimination that could be achieved.
The hypothesis test results do not suggest statistically significant relationships between strategic type and the ABC implementation decision, extent of deployment or speed of implementation. These are factors relating to the process of cost management system changes. Conversely, the perception of ABC success was higher among defenders than prospectors and analysers. The product of cost management change was, therefore, seen to be associated with corporate strategy type. The results presented here thus posit outcome-based rather than process-based relationships between ABC implementation and corporate strategy. A possible reason for this is that strategic posture is itself reflective of the outcome of managerial efforts, rather than as conferring managerial particularity. This proposition offers an avenue of research worthy of further inquiry.

A large number of contextual variables aside from strategic orientation have been considered to affect management accounting and control systems (see Chapman, 1997; Chenhall, 2003). Exploring the multitude of forces which shape accounting practices including experiences with the adoption and implementation of ABC remains a task for researchers wishing to contribute to our understanding of the wider contingencies affecting cost management practices.
# TABLE 1

NUMBER OF RESPONDENTS BY COUNTRY

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>35 (8.4%)</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>39 (9.4%)</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>73 (17.6%)</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>95 (22.8%)</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>32 (7.7%)</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>85 (20.4%)</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>57 (13.7%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>416 (100.0%)</td>
<td></td>
</tr>
</tbody>
</table>

# TABLE 2

THE STRATEGIC ORIENTATION OF ORGANIZATIONS SURVEYED

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of firms</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyzers</td>
<td>164</td>
<td>40.2%</td>
</tr>
<tr>
<td>Prospectors</td>
<td>120</td>
<td>29.4%</td>
</tr>
<tr>
<td>Defenders</td>
<td>124</td>
<td>30.4%</td>
</tr>
<tr>
<td>Total</td>
<td>408</td>
<td>100%</td>
</tr>
</tbody>
</table>
### TABLE 3

ADOPTION OF ABC AND STRATEGY: LOGISTIC REGRESSION RESULTS\(^a\)

<table>
<thead>
<tr>
<th></th>
<th>Expected Sign</th>
<th>Coefficient (Std. Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-</td>
<td>0.3235 (0.1392)</td>
</tr>
<tr>
<td>PRO</td>
<td>+</td>
<td>0.0916* (0.054)</td>
</tr>
<tr>
<td>Canada</td>
<td>-</td>
<td>-0.034 (0.2781)</td>
</tr>
<tr>
<td>France</td>
<td></td>
<td>0.335 (0.269)</td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td>-0.151 (0.264)</td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td>0.168 (0.266)</td>
</tr>
<tr>
<td>Japan</td>
<td></td>
<td>0.356 (0.149)b</td>
</tr>
<tr>
<td>Germany</td>
<td></td>
<td>0.2286 (0.264)</td>
</tr>
<tr>
<td>Italy</td>
<td></td>
<td>-0.109 (0.270)</td>
</tr>
</tbody>
</table>

Model \(X^2 = 64.514, \ p = 0.0001\)

\(^a\)The model is \(ABC = a + b_1 \text{PRO} + b_2 \text{Canada} + b_3 \text{France} + b_4 \text{UK} + b_5 \text{USA} + b_6 \text{Japan} + b_7 \text{Germany} + b_8 \text{Italy} + e\). Variables: ABC indicates whether the respondents implemented ABC (=1) or did not (=0); PRO was set to 1 for prospectors and 0 for analyzers or defenders. Significance levels are determined using two-tailed \(X^2\) tests.
TABLE 4

SPEED OF ABC IMPLEMENTATION AND STRATEGY: REGRESSION RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Expected Sign</th>
<th>Coefficient (Std. Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-</td>
<td>2.80468 (0.1119)</td>
</tr>
<tr>
<td>PRO</td>
<td>+</td>
<td>0.02344 (0.1940)</td>
</tr>
</tbody>
</table>

R-square = 0.0001

\(^a\)The model is SPEED = a + b_1 \text{ PRO} + e. Variables: SPEED represents the level of speed of the implementation; PRO was set to 1 if prospectors and 0 if analyzers or defenders.

TABLE 5

SUCCESS OF ABC IMPLEMENTATION AND STRATEGY: REGRESSION RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Expected Sign</th>
<th>Coefficient (Std. Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-</td>
<td>2.10769 (0.0907)</td>
</tr>
<tr>
<td>DEF</td>
<td>+</td>
<td>0.37507** (0.1633)</td>
</tr>
</tbody>
</table>

R-square = 0.0276

\(^{**p}\)-value = 0.0228

\(^a\)The model is SUCCESS = a + b_1 \text{ DEF} + e. Variables: SUCCESS represents the level of success of the implementation; DEF was set to 1 if defenders and 0 if prospectors or analyzers.
TABLE 6
STAGES OF ABC BY STRATEGY

<table>
<thead>
<tr>
<th></th>
<th>Abandoned</th>
<th>Pilot ABC</th>
<th>Use across units</th>
<th>Use in majority of units</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyzers</td>
<td>34 (51.5%)</td>
<td>20 (35.7%)</td>
<td>45 (46.4%)</td>
<td>24 (33.3%)</td>
<td>123 (42.3%)</td>
</tr>
<tr>
<td>Prospectors</td>
<td>12 (18.2%)</td>
<td>18 (32.2%)</td>
<td>28 (28.9%)</td>
<td>26 (36.1%)</td>
<td>84 (28.9%)</td>
</tr>
<tr>
<td>Defenders</td>
<td>20 (30.3%)</td>
<td>18 (32.1%)</td>
<td>24 (24.7%)</td>
<td>22 (30.6%)</td>
<td>84 (28.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>56</td>
<td>97</td>
<td>72</td>
<td>291</td>
</tr>
</tbody>
</table>

The percentages represent the proportion of strategy types in each ABC stage.

Chi-square = 8.17, p-value = 0.226 with 6 degrees of freedom
APPENDIX

QUESTIONS FOR CROSS NATIONAL STUDY OF ACTIVITY BASED COSTING

1. Please indicate (by placing a checkmark on desired rating) the potential usefulness to your company of assigning costs to products/services using volume and non-volume based cost drivers (ie. activity based costing):

<table>
<thead>
<tr>
<th>Very important</th>
<th>Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

2. If an activity based costing system has been implemented in your organization:

(a) This implementation has been relatively:

<table>
<thead>
<tr>
<th>Quick</th>
<th>Slow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

(b) In terms of expected benefits, implementation has been relatively:

<table>
<thead>
<tr>
<th>Successful</th>
<th>Unsuccessful</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

(c) Activity based costing is now (tick one only):

- Abandoned
- Being tried on a pilot basis
- In use across some business units
- In use across the majority of business units
3. Compared to other companies in your industry which of the following descriptions most closely matches your company (tick one only):

(a) We operate in two types of product-market domains, one relatively stable, the other changing. In the stable areas, we operate routinely and efficiently through use of formalised structures and processes. In more turbulent areas, top managers watch competitors closely for new ideas, and rapidly adopt those which appear to be the most promising.

OR

(b) We continually search for market opportunities, and regularly experiment with potential responses to emerging environmental trends. We are often the creators of change and uncertainty to which our competitors must respond. However, because of our strong concern with being "first-in" in new product and market areas, we may not maintain market strength across all areas.

OR

(c) We have a narrow product-market domain. Top managers are highly expert in the company's limited area of operation but do not tend to search outside of their domains for new opportunities. We seldom need to make major adjustments in technology, structure, or methods of operation. Instead we devote primary attention to improving the efficiency of existing operations and doing the best job possible in a limited area.
4. (a) What type of industry does your company operate in:

........................................................................................................
........................................................................................................

(b) The company's product range is relatively: diversified _ OR standard _

(c) Please indicate what percentage of the product range is: high volume ___% low volume ___%

(d) Your company's latest sales volume is: ............

(e) The current number of employees is: ............

(f) Your position is: .................................................................

5. If you would like to comment on any of the above issues, please do so below:

Your time and effort with this research project are very much appreciated. Please return this questionnaire in the envelope provided. If you would like to obtain the results of this study please put your name and address on the back of the envelope.

Thank you.
REFERENCES


