The Diffusion of Management Accounting Innovations in Dependent (Subsidiary) Organizations and MNCs

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Abstract

A range of management accounting innovations (MAIs) have emerged in responding to the increasing changes in technology through the proliferation of globalization. Researchers have offered alternative views concerning these MAIs. These views range from rational-economic perspectives to the social-organizational process perspectives that explore how MAIs are adopted and implemented in different organizational settings. This paper contributes to the implementation impact by discussing the network view and subsidiaries' capabilities, both absorptive and combinative, in the diffusion of MAIs in group organizations. The paper identifies four possible sources of diffusion of MAIs that have not been discussed in the literature.

Key words: Dependent organizations; inter-subsidiary relations; management accounting innovations; activity-based costing; activity-based management; balanced scorecard; benchmarking; target costing; absorptive and combinative capabilities; CIMA members

1. Introduction

The last three decades have witnessed a surge of innovation in management accounting (MA) techniques and practices. Academic research on MA innovations (MAIs) has also flourished and now constitutes a substantial but rather diverse literature (Euske & Malina, 2013; Ittner & Larcker, 2001). An important stream of research concerns the diffusion of MAIs across organizations (Askarany, Yazdifar, & Askary, 2010; Alcouffe, Berland, & Levant, 2008; Ax & Bjørnenak, 2007; Tillmann & Goddard, 2008), but little is known about the diffusion of MAIs in groups and MNCs that are conceived as "differentiated networks" (Dossi & Patelli, 2010). This paper contributes to the literature by examining how MAIs are diffused in dependent organizations (subsidiaries of groups and MNCs) in comparison to independent organizations to better understand the nature of MA change and channels of diffusion of MAIs in group and complex organizations. The study identifies four channels of diffusion in group organizations, namely: (a) group-wide decision through *vertical relationships*; the next two channels are via *lateral relationships* that are (b) adopted from another subsidiary within the group or (c) developed from a joint decision by subsidiaries; and lastly, (d) decisions by the subsidiary itself, without any involvement of the parent organization and/or other subsidiaries. The literature on MAIs lacks studies on identifying these channels and also is silent on the second and third channels. Therefore, the influence of lateral relationships on diffusions of MAIs in group organizations requires further examination, which is the subject of the present study.

While we acknowledge the disagreements amongst researchers regarding the definitions of innovation in general and what MAIs are (Ax & Bjørnenak, 2007), in this

paper, we will follow the definition of Rogers (1995, p. 11): “An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption.” We focus on five MAIs, namely, (a) activity-based costing (ABC), (b) activity-based management (ABM), (c) balanced scorecard (BSC), (d) benchmarking, and (e) target costing (TC). The extant literature substantiates that these MAIs are popular techniques: see Naranjo-Gil, Maas, and Hartmann (2009) for ABC, BSC, and benchmarking; for ABM, see Baird, Harrison, and Reeve (2004); for TC, see Yazdifar and Askarany (2012) and Ax, Greve, and Nilsson (2008). Similar views were expressed by the CIMA members who were interviewed; hence, our choice.

On the question of diffusion of new management ideas, researchers tend to hold two alternative theoretical perspectives: the rational and the interpretive. The followers of the former perspective hold the view that adopters are rational and make technically efficient independent choices, and that the social and organizational contexts in which such adoptions take place are taken for granted (e.g., Rogers, 1995, 2003). By contrast, the latter perspective explores consequences that are more dynamic. Here, researchers examine the differences between early and late adopters, the effects of supply and demand forces, the corporate and national culture, the social and economic consequences, and the bundling effects of innovations (Ax & Bjørnenak, 2007; Bol & Moers, 2010; Kennedy & Fiss, 2009; Modell, 2009). These latter attempts identify various influencing factors that might appear in the adoption and implementation processes of MAIs (Alcouffe et al., 2008). For example, Van der Stede (2003) identified the effects of national culture, while Bol and Moers (2010) discussed the role of learning in the diffusion process. Some researchers have also examined the role of other organizations

and also the roles of management accountants in relation to MAIs (e.g. Emsley, 2005). Hence, MAIs may be adopted not only for efficiency reasons. Rather, adoption may occur through the nature of relationships with other organizational partners, such as parent organizations or other subsidiaries (Bol & Moers, 2010; Yazdifar, Askarany, & Askary, 2008a; Yazdifar, Zaman, Tsamenyi, & Askarany, 2008b), and with the help of management accountants (Baldvinsdottir, Burns, Nørreklit, & Scapens, 2009; Naranjo-Gil et al., 2009).

In the literature on MAIs and diffusion, the notion of "relationship" has been overlooked (Chenhall, 2008). In defining relationships within organizations, the nature of the parent-subsidiary relationship and its impact on the extent of MAI diffusion in such organizations cannot be easily ignored, as many large organizations are configured in relational terms (see Gupta & Govindarajan, 1991; Hashai, 2009). Arguably, which management practices a subsidiary may adopt and what issues might arise in the adoption depend on the nature of such relationships. For example, parent organizations' power to impose the adoption of new management practices on subsidiaries depends on the extent to which the subsidiary is "dependent" upon such impositions (Abrahamson, 1991; Kogut & Zander, 1993). Hence, the question of "dependency" invites us to investigate an interesting theoretical phenomenon in relation to the diffusion of MAIs. Despite the fact that MA researchers have begun to see how MAIs are diffused among subsidiaries (e.g. Bol & Moers, 2010; Yazdifar & Tsamenyi, 2005; Yazdifar *et al*., 2008b), this dependency perspective remains, as yet, unexplored. Concerning this broader question, the following questions are posed:

1. Is the extent of the diffusion of MAIs in dependent (subsidiary) organizations different from such diffusions in independent organizations?
2. Does the extent of such diffusions in dependent organizations occur through vertical relationships (i.e. through parental involvement), through multiple lateral relationships, or through the help of in-house management accountants?
3. Are such diffusions implemented more successfully in dependent organizations (having both internal and external group networks) or in independent and non-group organizations?

In addressing question 1, the study will try to achieve a theoretical aim and examine whether the institutional environment in group organizations results in different diffusion of innovations compared to non-group organizations, and hence, different diffusion rates of MAIs. Beyond academia, an understanding of such institutional differences may also guide the practicing managers who, due to intensifying national and international competition and reduced organizational slack, are not only concerned with diffusion rates, but also wish to maximize the benefit from such diffusions by retaining the most technically efficient MAIs (Abrahamson, 1991).

Answering question 2 would provide theoretical knowledge about the methods of diffusion of MAIs in subsidiary organizations and the accountant's participation in strategic decision-making processes, such as the adoption of MAIs in group organizations in order "to better understand the nature of accounting change" (Alcouffe et al., 2008, p. 1). The analyses would also provide some practical knowledge for managers who are concerned with the role of inter-subsidiary relationships and communications between

subsidiaries in the adoption of innovations. Finally, question 3, which leads to comparison and contrast of the nature of the diffusion of MAIs between group and non-group organizations, opens up a debate into whether success is contingent on the organizational networks, both vertical and lateral, in group organizations compared with non-group organizations. The analysis sheds light on how the logic of adoption interacts with subsequent implementation activities (cf. Kennedy & Fiss, 2009). Thus, the study makes both theoretical and practical contributions to the literature on the diffusion of MAIs in general, focusing on the diffusion of MAIs in group organizations.

This study has benefited from a mixed-method approach, where the equal importance of quantitative data, which represents "objective" facts, and qualitative data, which represents "discursive and subjective" interpretations of such "facts" (Modell, 2005, 2010), can be seen. Quantitative data were collected from a wide range of respondents through the use of a questionnaire regarding the adoption rate and implementation levels of MAIs, i.e., research questions 1 and 3. The qualitative data were collected through interviews, which were aimed at gathering "ideas" about how subsidiary organizations adopt and implement MAIs and the role of management accountants in such processes, which is the subject of research question 2 and provides further insights about other research questions. In so doing, the issues of validation are addressed, not only through this combinative effort but also through follow-up enquiries. Lillis and Mundy (2005) observe that this method closes the gaps between surveys and case studies. Based on this methodological stance, the data were collected through 584 questionnaire responses from members of the CIMA and follow-up interviews with 56 respondents from organizations operating in the UK, Australia, and New Zealand. While

the questionnaires were directed to both dependent and independent organizations, the focus was on illustrating the diffusion of MAIs in dependent organizations. Hence, the interviews were conducted only with the respondents working in dependent organizations.

The paper is structured thus. Section 2 presents a literature review of the diffusion of MA innovations, with special attention to such diffusions in group organizations and the implication of the role of management accountants therein. Section 3 describes the research methodology and methods adopted. Section 4 analyzes the findings of the survey and interviews and discusses their implications for our understanding of MA change in different settings. Section 5 offers the conclusions.

2. Diffusions, MAIs, and Dependent Organizations

2.1 Research on the Diffusion of Management Ideas—A Point of Departure

As alluded above, diffusion research in management has manifested two competing views: rational-economic perspectives and social-organizational process perspectives. For rationalists, innovations emerge for economic and rational reasons, and organizations adopt them to enhance efficiency (see Rogers, 1983). For process theorists, ideas are diffused through complex relationships, such as "boundary spanning processes," whereby organizations develop networks with external constituencies (Ax & Bjørnenak, 2007; Modell, 2009; Yazdifar *et al.*, 2008b). Other researchers have tried to integrate both views (Bjørnenak, 1997). Research into the diffusion of MAIs flows from this development.

Embracing the competing views on the diffusion of innovations, several empirical studies in accounting aim to contribute to the debates. For example, Bjørnenak (1997)

examined the diffusion of ABC across Norwegian manufacturing organizations, where he found three types of diffusion processes. The first relies upon "skilled workers moving" about and causing change due to their knowledge of ABC. The second is "contagious diffusion," which occurs when *information* is spread in a smooth, continuous, and random way. The third is "hierarchical diffusion," which occurs when information is dispersed through a trickle-down process from large, to intermediate, to small units. However, the study did not examine hierarchical diffusion in depth. In particular, the above and other studies in the MA literature do not examine the diffusion process and channels of diffusion of MAIs in group organizations and MNCs, which are conceived as "differentiated networks" with "complex combination of various elements" (Dossi & Patelli, 2010, p. 500–501) and form an important part of the world economy. Consequently, our knowledge of the effect of ownership structure (dependent vs. independent) on the diffusion and implementation of MAIs is limited (Kraus & Lind, 2010; Lapsley & Wright, 2004), and the present study aims to contribute to that. Section 2.2 below is devoted to a brief review of literature on the diffusion of innovations in group organizations and discusses parent-subsidiary (*vertical*) and subsidiary-subsidiary (*lateral*) relationships that are relevant to the focus of the present study.

2.2 Diffusion of MAIs in Dependent Organizations

Group organizations and MNCs have long been conceptualized as superior to alternative organizational configurations, with their ability to acquire and utilize knowledge across borders (Gupta & Govindarajan, 2000; Mudambi, 2002). Focusing on the hierarchical structures of these organizations, numerous studies have examined the effects of knowledge transfers to subsidiaries and considered the parent organization as

the focal unit of analysis (Michailova & Mustaffa, 2012). However, over the past two decades, an increasing number of studies have shifted their attention to the subsidiary as the central point of examination, considering it as the "strategic leader" (Bartlett & Ghoshal, 1986), the "global innovator," the "integrated player" (Gupta & Govindarajan, 1991), and the "world mandate" (Birkinshaw & Morrison, 1995). Consequently, subsidiaries are increasingly acknowledged as sources of knowledge, both for parent organizations and for peer subsidiaries (Michailova & Zhan, 2015).

This development points to inter-subsidiary ties being important in sharing and transferring knowledge. However, MA studies have paid little attention to understanding the processes of such knowledge transfer between subsidiaries and evaluating their effects (cf. Bol & Moers, 2010). Instead, most MA studies in group organizations and MNCs have relied on the thesis of "traditional hierarchical structures," examining MA changes imposed or directed by parent organizations, known as *intracorporate isomorphism* (Van der Stede, 2003). This critical gap is problematic because group organizations and MNCs increasingly desire to leverage knowledge adopted from externals or created by their various subsidiaries and make them available to their peer subsidiaries—and for knowledge to flow among its units. However, few studies have empirically examined such diffusion processes (Bol & Moers, 2010). The examination of the diffusion of MAIs in groups and MNCs in this study, as the first study in the literature, requires further discussion of intra- and inter-subsidiary relationships. Accordingly, the following subsections will first deal with the parent-subsidiary relationships and then the subsidiary-subsidiary relationship, followed by a brief review of subsidiaries' capabilities in adopting new techniques.

2.2.1 Parent-subsidiary relationships (network of organizational units) and the diffusion of MAIs

Researchers who follow 'traditional hierarchical structure' in groups and MNCs and use forced-selection theories assume that the ownership structure of group organizations and the existence of the parent company would result in different types of administrative technology, control systems, and MIS in subsidiary companies (Yazdifar & Tsamenyi, 2005). With regard to the administrative technology, for example, it is argued that parent organizations may or may not have conflicting preferences as to whether or not they want their subsidiaries to use a particular administrative technology (Covaleski & Dirsmith, 1988). When parent and subsidiary organizations' interests and preferences towards a particular administrative technology coincide, both parties will act for the diffusion, implementation, and retention of that technology. However, when the parent organizations have diverse interests and preferences from those of the subsidiaries, some parent companies would exert political pressure, encouraging the continuous use of an existing administrative technology; others would try to force the rejection of the new administrative technology (Abrahamson, 1991), "calling for uniform formalized procedures" (Van Der Stede, 2003, p. 268). For example, the case study undertaken by Yazdifar, Alam, Moshfique Uddin, Askarany and Wickramsinghe (2018) discusses how a parent organization used budgetary control and capital investment rules to impose (by financially supporting) its preferred administrative innovations instead of supporting those proposed by the subsidiary, which were not in line with the parent organization's strategy. Thus, the MA technique adopted by the parent organization was trickling down from the parent organization to subsidiaries in the form of a "hierarchical diffusion

process" (Bjørnenak, 1997), and the parent organization exerted budgetary and political pressure to reject the costing system selected by its subsidiary.

In another study, Yazdifar and Tsamenyi (2005) present results of a questionnaire survey that examined whether significant differences exist between the perceptions of CIMA members working in dependent (subsidiary) and independent organizations in the UK on three main issues: (a) MA practices, (b) factors driving change in MA practices, and (c) the roles of management accountants. The study reports that some differences exist between the two groups in terms of the variables tested, and that subsidiary organizations are likely to adopt certain practices due to the influence of headquarters. The study concludes, "we recognized that other institutional forces are likely to be at play in shaping the perceptions of the management accountants. Head office control is thus only one of the multiple institutional factors. This is a limitation of the paper" (Yazdifar & Tsamenyi, 2005, p. 196). The authors invite further studies to identify other influential factors on the diffusion of MA practices in group organizations. The next section discusses interrelations between subsidiaries as another influencing factor in driving MA changes in subsidiary organizations.

2.2.2 Interrelationship: Subsidiary-subsidiary or lateral relationships (network of managers) and diffusion of MA innovations

Having explained the 'traditional hierarchical parent-subsidiary relationship' as a source of diffusion of innovations, we turn to the recent studies in international management, which report that relationships between parents and subsidiaries in the global economy are characterized simultaneously by elements of organizational interdependence and local autonomy (Dossi & Patelli, 2010). Consequently, many

researchers argue that subsidiaries are not just an "agent of corporate HQ" or the implementers of assignments from parents, but rather act as semi-autonomous entities and develop unique capabilities in different local environments (Dossi & Patelli, 2010; O'Donnell, 2000). The studies also highlight the role of the network of intra-subsidiary organization linkages, which can result in a high degree of interdependence amongst the subsidiary organizations (Phene & Almeida, 2008).[1] Explaining the interdependence in group organizations and MNCs, Gnyawaḷi, Singal, and Mu (2009) argue that inter-subsidiary ties involve the creation, transfer, and/or exchange of valuable knowledge. Inter-subsidiary ties can be formal or informal, strong or weak, and result in unidirectional or bidirectional knowledge flow. Motivation of a subsidiary for inter-relationship ties could stem from both proactive and reactive reasons (Gnyawaḷi et al., 2009, p. 390) and would result in an isomorphic pull towards similarity between subsidiaries in the group (Westney, 1993).

In the case of group organizations, isomorphism occurs as managers replicate key management practices and techniques (including MA practices) from other subsidiaries within the group that have found success with strategies (Kostova, 1999). Such transfers of organizational knowledge and practices and the consequent isomorphism are facilitated by more extensive interactions and communications across the subsidiaries, through the use of informal mechanisms of coordination and by building good relationships between managers (Ghoshal & Westney, 1993; Kostova, 1998). This trend

[1] Interdependence has been defined as the state in which the outcomes of a subsidiary of a group organization influence or are influenced by the actions of another subsidiary within the group operating in a different region or country (see also, Saavedra, Earley, & Dyne, 1993).

toward isomorphism takes place through the network ties among managers of subsidiaries (Manev, 2003).

The lateral integration or so-called managerial network is an important informal coordination mechanism between subsidiaries in group organizations. Through their lateral contacts with other subsidiaries at other locations, subsidiary managers not only learn about successful management practices, but also - when their subsidiaries share knowledge about the implementation of new (MA) practices and techniques — can coordinate their actions at the grass-roots level. Hence, the more subsidiary managers interact with each other or are better connected (as explained by Bol & Moers, 2010), the more they learn about (MA) techniques and practices adopted and implemented in other subsidiaries within the group.

2.2.3 Subsidiaries' capabilities in adopting new techniques and the role of management accountants

Both external (to the group) and internal (parent and other subsidiaries) sources of knowledge assimilation and adoption of MAIs may have certain characteristics that differently affect the subsidiary organizations' changes to their (MA) systems. The subsidiary's management, structure, and culture also play an important role in the adoption of (MA) innovations from different sources. Phene and Almeida (2008) comment that the recognition, absorption, and utilization of this knowledge is dependent upon *subsidiary capabilities and knowledge stock*. Birkinshaw and Hood (2000) suggest that the influence of the subsidiary management cannot be overlooked. In another study, they commented that changes to the subsidiary stock of capabilities and its charter are closely tied to the subsidiary's ability to add value (Birkinshaw & Hood, 1998). The

subsidiary's ability to recognize, assimilate, and exploit new external information, also called "absorptive capacity" (Cohen & Levinthal, 1990) or "sourcing capability" (Phene & Almeida, 2008), is critical to the adoption of new knowledge and innovation. However, there may be differences across subsidiaries in how this knowledge is utilized. This is an important potential, which is referred to in the international management literature as "combinative capability" (Phene & Almeida, 2008), which represents creativity in knowledge management and the ability to fit knowledge into an organizational context. Both *absorptive* and *combinative capabilities* are important in the adoption and implementation of MAIs in subsidiary organizations, and this line needs further research.

Concurrent with the development of the MAI literature, researchers have also examined the roles of management accountants in developing the sourcing and combinative capabilities of organizations in the adoption and implementation of such techniques and "the interplay between management accountants and other agents of change" (Berry, Coad, Harris, Otley, & Stringer, 2009, p. 10). Naranjo-Gil *et al*. (2009) argue that individuals acting as financial officers or senior management accountants may have a significant effect on the adoption of MAIs (see also Burns & Baldvinsdottir, 2005; Byrne & Pierce, 2007; Emsley, 2005; Emsley, Nevicky, & Harrison, 2006; Järvenpää, 2007; Pierce & O'Dea, 2003) and that demographic data is predictive of their innovativeness. Emsley (2005) reported that some management accountants display a higher level of innovativeness because of their involvement in managerial decision-making. Berry et al. (2009, p.10) review the literature and comment: "There is very limited evidence of active involvement by management accountants, in the processes of

design, operation, adaptation and abandonment of new organizational forms." They conclude, "Whatever the reason, this gap warrants further research." However, and despite the urgency of examining such roles of management accountants, the extant literature on groups and MNCs lacks studies examining the role of management accountants in the adoption and implementation of MAIs in subsidiary organizations.

From the review of the literature above, organizational networks, in summary, can be classified into two broad types: external and internal. External networks are formed between a number of organizations, whereas internal (including both vertical and lateral) networks are formed between parents-subsidiaries and subsidiaries-subsidiaries. In the present study, we are interested in examining whether the extent of the diffusion of MAIs in dependent organizations with both internal and external networks is different from those in independent organizations (research question 1), what the sources and channels of diffusion of MAIs are in group organizations and MNCs, and how management accountants are involved in such processes (research question 2). The third research question will be discussed below.

2.3 The Notion of Success in the Implementation of MAIs

Along with the examination of the extent of diffusion of MAIs, the literature shows a growing interest in the implementation of MAIs and indicates that not all adopted MAIs may successfully be implemented. However, due to the complexity of defining and evaluating "success" (Schoute, 2000), appraising success in MAI implementation has proved to be a real challenge for researchers. The literature indicates that the nature and meaning of success in MA has been debated and considered from different perspectives (Cinquini & Mitchell, 2005; Shields, 1995). While there might be

overlaps between these perspectives, Cinquini and Mitchell's (2005) review of literature on ABC/M success suggests seven approaches adopted by researchers to identify and measure success[2]. In a recent study, Ax and Bjørnenak (2007, p. 362–363) argue that success can be measured in different ways, including the degree to which innovations are adopted and implemented in practice; the number of books, journals, magazines, and professional articles devoted to innovations; and the number of people attending conferences, seminars, courses, workshops, and training courses on innovations. These studies indicate that success for MAIs is multi-dimensional with a dynamic characteristic; its evaluation requires consideration of several factors/aspects from different views (such as producers and users, the type of work of respondents). Overall, "there is no generally agreed, set definition of the meaning of success in a MA context" (Cinquini & Mitchell, 2005, p. 73).

Among the studies in the literature, Anderson (1995) adopts a different view as she examines success in the implementation of ABC/M as a staged process. This analysis is argued to provide "a more dynamic view of the ABC/M implementation process and of the importance of the timing of the factors implicated in its success" (Cinquini & Mitchell, 2005, p. 66). Further work by Anderson and Young (2001) indicates that the direction and level of importance of many factors vary by stage. They conclude that "studies which do not differentiate implementation stages could, in aggregating results from various stages, distort the real levels of significance of factors potentially associated with ABC/M success" (Cinquini & Mitchell, 2005, p. 67).

[2] The seven approaches are: 1. Success equals participants' views of it; 2. Conditions indicative of ABC/M success; 3. Success equals financial benefit; 4. Success equals the continuing existence of the ABC/M system; 5. Success equals the meeting of objectives; 6. Success equals improvement on existing information; 7. Success is evidenced by the organizational use of ABC/M.

The present study addresses this importance and considers the implementation stages of MAIs (four stages, developed from the literature for each of the five MAIs examined in this paper - see Table 4 for the details of the stages). Our approach complements prior research, which mainly relies on a subjective interpretation of responses in identifying implementation stages in very broad terms. Furthermore, by presenting the levels of implementation of MAIs in the survey questionnaire, we address the limitations of the studies that fail "to recognize, and/or convey to survey respondents, the different levels at which organizations might adopt [ABC and ABM], together with the use of different activity management terms across prior studies" (Baird et al., 2004, p. 385). Previous researchers neither examined the stages of implementation of MAIs in group organizations and MNCs nor compared such implementations with those in independent organizations (Jones, 1985, 1992; Yazdifar & Tsamenyi, 2005). As a result, they failed to examine the effects of ownership type on the implementation of MAIs. In addition, the literature is silent on the issue of the effect of vertical and lateral relationships in subsidiary organizations on the stages of implementation of MAIs. The present study addresses this importance by the third research question and analyzing the data from the survey questionnaire with further insights from the interviews.

3. Research Methods

This research is based on a mixed-methods approach involving the administration of a questionnaire and follow-up interviews. The questionnaire was employed to gather objective facts and unveil some realities about MAIs, while the interview was adopted to validate the objective facts (Modell, 2015, 2010) and gather further information. Reviews of empirical research show that questionnaires are commonly used to gather data about

the diffusion of MAIs but are rarely combined with complementary research methods, and this is seen as a limitation of the prior research. The data for the present study were collected during 2007–2011 from two sources: a survey and interviews (face-to-face and telephone) with CIMA-qualified management accountants. While questionnaires can provide evidence of patterns amongst large populations and have proved to be economical in collecting a large volume of primary data, they have limitations in gathering some significant and more in-depth insights on participants' attitudes, thoughts, and actions (Converse & Presser, 1986; Kendall, 2008). The interviews not only overcome this limitation but also provide a deeper understanding of the nature of the diffusion of MAIs at different implementation levels and their contexts. Interviews also act as a way to internally validate quantitative data (cf. Cadez & Guilding, 2008). Consequently, "the qualitative inquiries in the same empirical setting" (Modell, 2005, p. 236), provide further exploration of variables in the survey questionnaire and the responses to open-ended questions. The combination of quantitative and qualitative information enhances the assessment of this study's empirical measurements, validates its interpretation of empirical evidence, and strengthens the basis for its conclusions (Dossi & Patelli, 2010, p. 504).

3.1 Questionnaire Survey

A postal questionnaire survey was used to gather the data, with the aim of the questionnaire being to test the research questions mentioned earlier. The cooperation of three CIMA-qualified members was helpful in this regard. A pilot test was carried out, which asked some practitioners and academic colleagues about the questions used in the

questionnaire. Subsequent modifications were made to improve the questionnaire's usability.

The first part of the questionnaire was designed to collect demographic information regarding the respondents (such as age, job title, number of years as a CIMA-qualified management accountant, and work experience in the current business) and about the business (type of business industry, number of employees, annual turnover, parent company). Table 1 reports the descriptive statistics of some of the above data. The second part of the questionnaire was designed based on a review of the literature, aiming to be straightforward.[3] It includes sections on the levels of adoption and stages of implementation of MAIs, and also, an open question for each section about any other factors specific to their organization that participants felt would influence the take up and implementation of MAIs. The section on the adoption of MAIs provides five choices[4] for respondents, ranging from "discussions have ***not*** taken place regarding the introduction of the innovations" to their "implementation" (responses to the latter option are summarized in Table 2). The respondents who had marked the choice of adoption of MAIs in the above section were then asked to indicate the stage of their implementation, as set out in the questionnaire, which included four stages for each innovation. Table 4 shows the details of these stages for each of the five MAIs discussed in this study.

The questionnaire was mailed to 2,041 qualified members of CIMA who were working in the managerial accounting sections of organizations in Australia, New

[3] The questionnaire includes various sections to serve as analysis for different academic discussions.
[4] The five choices offered in the questionnaire are: "Discussions have ***not*** taken place regarding the introduction of this practice;" "A decision has been taken ***not*** to introduce this practice;" "Some consideration is being given to the introduction of this practice;" "This practice has been introduced on a trial basis;" and, "This practice has been implemented and accepted."

Zealand, and the UK in 2007 (1,175 in Australia, 366 in New Zealand, and 500 in the UK). The head office of CIMA in the UK provided the authors with a list of names and addresses of qualified members in the above three countries. Following this provision of names, a general announcement about this questionnaire survey was made on the CIMA website. Three weeks later, an online questionnaire was also made available, encouraging those who had received copies of the questionnaire but who had not had a chance to complete it to respond.

There were 584[5] useable responses (both hard copies and online replies) from the three countries. These include 310 completed questionnaires, with 88 incomplete or undelivered for Australia; 142 completed questionnaires, with 10 incomplete or undelivered for New Zealand; and 132 completed questionnaires, with 45 incomplete or undelivered for the UK. Eventually, the survey ended up with satisfactory response rates of 28.5%, 39.5%, and 29% from Australia, New Zealand, and the UK, respectively. Krumwiede (1998) agrees that the normal response rate for such surveys must be approximately 20%, although there are many published surveys with lower response rates.

To test for non-response bias, the responses were split into two groups. Those received first were labelled "early respondents," and the rest were labelled "late respondents." *Simple* t-tests did not reveal any significant differences (at $p = .05$) between early and late respondents for demographics or mean item scores (such as the total

[5] The average age of respondents was 47 years, with an average time of employment in their current position of slightly over five years and in their organization for over 10 years. Average SBU size was 336 employees. Ninety-eight percent of respondents were male, and the remaining 2% female.

number of CIMA members working in manufacturing and non-manufacturing organizations, their average ages, and number of years as qualified members).

3.2 Interviews

As mentioned earlier, the interviews were aimed at eliminating some of the uncertainties, validating responses, and examining answers to open-ended questions in detail, as well as gathering additional qualitative interpretations. The respondents were the CIMA-qualified management accountants who had expressed interest in participating in an interview by checking the box provided on the cover page of the questionnaire, and who had provided the researchers with their contact details. Consequently, 56 interviews were conducted with CIMA members working in subsidiary organizations: 34 in Australia, 13 in New Zealand, and nine in the UK (face-to-face and over the phone). These took place between 2008 and 2011.

The interviewees were working in different organizations and industry sectors (including business services, insurance, food and beverages, IT, finance, apparel, engineering, oil and mining, construction, consumer products, healthcare, education, aerospace, automotive, media, chemical, design) and, consequently, represented 56 subsidiary organizations. The demographic information of the interviewees, briefly noted below, reveals that they were experienced and knowledgeable about the MA techniques discussed in the literature, those studied in this research, and particularly, those adopted and implemented in their organizations.

The average interviewee is 44 years of age, has been working for their current employer for almost nine years, and has held their position for a little more than five years. In addition, 34 (61%) respondents are working as financial directors/managers, and

22 (39%) as senior management accountants. The comments received from respondents to the open-ended questions drew our attention to important but unexplored issues in the MA literature, i.e., the sources of innovation diffusion in groups and MNCs that resulted from an inter-subsidiary relationship. Consequently, our interview questions were adjusted to include such issues as well. In this way, it was ensured that the essential issues were systematically covered during the interviews. Moreover, although semi-structured questions were set, the interviews took a flexible form and included follow-up questions aimed at clarifying some of the practices. All but six of the interviews lasted between one and two hours. For validation purposes, interviews were also followed-up by some telephone calls and emails to clarify some issues that subsequently emerged. Apart from three, all the interviews were tape-recorded with the permission of the interviewees, then transcribed. Finally, confidentiality was assured both externally and internally.

4. Findings and Discussion

We open this discussion with a glimpse of the context of the survey sample. As Table 1 shows, 27.2% of the respondents to the survey were from subsidiary organizations, and 72.8% were from independent organizations. Compared with the UK and New Zealand, a higher number of subsidiary companies in the sample are from Australia. However, the number of dependent companies that participated in this study was lower than the number of independent companies in all three countries. The table also shows that 63.7% of these companies are in the service sector, and 36.3% are in the manufacturing sector. Finally, the summary shows that in terms of number of employees as an indicator of company size, 29.9% of the organizations in the survey are small businesses, and the rest are medium and large. Clearly, the impact of industry type and

size of organization on the diffusion of MAIs is important (e.g., see Askarany et al., 2010, for the impact of size). While these factors warrant future studies, the focus of the present research is to examine the impact of ownership type on the diffusion and implementation of MAIs. The contextual characteristics discussed above will provide a useful background for our analysis, to which we now turn.

Insert Table 1 here

4.1 The Extent of the Diffusion of MAIs in Dependent and Independent Companies

The first research question examines whether there is a difference in the extent of diffusion of MAIs between dependent and independent organizations. This was addressed by the findings of the questionnaire. Table 2 summarizes the responses to the adoption of MAIs in both types of organizations. The responses show that the adoption rates (in percentage terms) of all five MAIs (i.e., ABC, ABM, BSC, benchmarking, and TC) in dependent organizations are higher than in independent ones. However, the Chi-square tests indicate a significant association between the ownership types (dependent vs. independent) and the adoption of BSC and benchmarking (but not for ABC, ABM and TC). Although the impact of ownership on diffusion cannot be statistically generalized for all five MAIs tested in the current study, Yazdifar and Tsamenyi (2005) find that the reported importance of ABC and BSC in the 1990s was not significantly different between dependent and independent organizations but was marginally significantly higher for dependent organizations when respondents were asked about the importance of ABC, BSC, and TC in the future. They argue that management accountants in subsidiaries consider organizational restructuring, new management style, and globalization as the main drivers for adopting such techniques. The present survey

indicates that eight years later, the dependent organizations present a higher take-up rate for all five MAIs tested in the study. This indication raises the question of which factors have contributed to this higher take-up of the new MAIs in group organizations. The interviews were used to further our insights on this finding (for research question 1) and also to discuss research question 2, which is to identify sources of diffusion of MAIs in subsidiary organizations and the role of management accountants in such processes.

Insert Table 2 here

The majority of interviewees responded to the question of which factors have contributed to the higher take-up of the new MAIs in group organizations. They emphasized that changes in the market, technology, competition, and customer focus were the most influential factors for this development. They also highlighted that an increase in inter-subsidiary relationships and knowledge transfer between units has become a factor. While this conforms to what Hatch and Dyer (2004) and Bol and Moers (2010) argued, the interviewees did not undermine the role of parent organizations in affecting changes in the MA practices of subsidiaries. Nevertheless, as the respondents emphasized, these relational factors were emerging and became much more influential from the 2000s. An interviewee said: “We have gained valuable knowledge and expertise from other subsidiaries” and “This is kind of practical learning before doing.” Interviewees also commented:

> “We do not compete against each other [but rather] now see the success in collaborative actions between us and other peer subsidiaries and also learning from each other.”

> "If we manage our relationship with them, they [other subsidiaries] are willing to share their knowledge with us, in this fierce market."
>
> "They discuss how they have progressed with it, the difficulties experienced, and how these could be avoided."

These views emerged as a common theme. They also added:

> "We explain our situation with them and then a discussion on how to progress."
>
> "It is not difficult to call them [other subsidiaries] and ask about their experience of certain things and seek advice. Can I do this with other [non-group] organizations?"
>
> "They are kind of model for us [who] we can approach them easily to learn […] to know what they have done, [also] to discuss how to alter the program to fit our unit."

We gathered similar comments suggesting a trend of subsidiary organizations gaining deeper understanding of the new techniques prior to any adoption and implementation. This was the case in the adoption and implementation of MAIs, where subsidiaries themselves were stimulated to adopt these new techniques within the group, but without their parent organizations' involvement. An interviewee outlined, "You cannot believe how our managers felt confident about their knowledge of BSC before the new practice was launched in our subsidiary." Other interviewees commented:

> "It seems that we had read all the relevant textbooks and case studies; we knew all the existing knowledge and just needed to deal with any new issues that may relate to our company case."

> "This is how we learn before doing…it addresses our questions, concerns and importantly, removes uncertainty, which is inevitable in any change program."
>
> "This is all about sharing experiences between units, rather than repeating them. [However,] this requires careful management of our relationships."

A common theme that emerged in the interviews was that the intra-group and inter-unit connections are main sources of knowledge sharing in relation to the diffusion of MAIs.

How did these connections and subsequent knowledge sharing materialize? The interviews with 56 accountants in subsidiary organizations reveal something novel to the literature on MAIs. They point to four types (or sources and channels) of diffusion of MAIs in group organizations (see details in Table 3), which have not yet been discussed in the literature. One of these four types stems from the group-wide decision, where the MAIs are selected by parent organizations and subsidiaries are asked to follow that group-wide decision. A second type is the one first adopted by another subsidiary within the group, and then taken up by other subsidiaries. A third type develops from a joint decision: two or more subsidiaries jointly decide to take up an MAI. The fourth type is where an MAI is chosen by the subsidiary itself, without any involvement of parent and/or other subsidiaries,[6] but this MAI would consequently become a subsequent choice for other subsidiaries.

[6] Here, it should be noted that even though these four sources of diffusion and adoption of MAIs in subsidiary companies are presented as separate methods, in practice, they would be joint effects on the adoption and implementation of innovations in a subsidiary.

4.2 Sources of the Diffusion of MAIs in Subsidiaries: Parent Companies as a Facilitator of MAI Diffusion

For the purpose of the second research question, the investigation into the sources of diffusion of MAIs continued by asking the 56 interviewees in subsidiary organizations whether those MAIs adopted in their organizations were initiated by their parent organization, learned from other subsidiaries, jointly adopted by other subsidiaries, or finally, adopted by the subsidiary organization without the involvement of the parent organization and/or other subsidiaries. The results are summarized in Table 3.

Insert Table 3 here

As Table 3 reveals, most of the changes in subsidiary organizations (54%) are launched by parent organizations, 24% are diffused by other subsidiaries, 9% are jointly taken up by two or more subsidiaries, and 13% are initiated by a subsidiary without the involvement of the parent organization and/or other subsidiaries. The extant literature has mainly studied the diffusion of innovation in group organizations through the first and fourth methods listed above (e.g., Al Chen, Romocki, & Zuckerman, 1997; Dossi & Patelli, 2008), but the second and third—an innovation is jointly adopted by two or more subsidiaries, or is adopted by a subsidiary after the innovation's adoption by another subsidiary—have not been previously discussed (Bol & Moers, 2010; Van Der Stede, 2003). There might be several motivations for these types of diffusion of innovations within group organizations; we were able to examine three of them as discussed by the interviewees. The interviewees commented that in the case of joint adoption of MAIs or when a subsidiary follows another subsidiary in adopting an innovation, the subsidiaries could "share their knowledge about the innovations and the implementation process."

This not only would reduce costs, but also lead to increased knowledge about the innovation implementation, which would result in a "reduction in the uncertainty" (Bol & Moers, 2010) that exists in change programs. Finally, the interviewees also discussed how in the case of joint adoption of an innovation, the subsidiaries were in a stronger position to defend/legitimize the decision to adopt new techniques and to challenge a possible disagreement expressed by the parent organization. In other words, the joint adoption was also a tactic to challenge the institutional pressures of parent companies.[7]

Overall, the findings indicate that almost 87% (53.7% + 24.1% + 9.2%) of the adoption of MAIs in subsidiary organizations has been due to the inter- and intra-corporation network, i.e., the involvement of either the parent company or other subsidiary organizations. Indeed, it seems that the subsidiary organizations are operating in a different business and economic environment, called "differentiated networks" by Dossi and Patelli (2010), where the take-up of innovations by themselves is much lower than in independent organizations. The take-up of MAIs by subsidiary organizations through external group sources, i.e., without the involvement of other subsidiaries and parent organizations, forms only 13% of the changes found in subsidiary organizations in comparison to independent organizations which only access external sources for all changes. This finding suggests that the subsidiary organizations may leave to parent organizations the decision to make changes to their (MA) systems and/or to follow other subsidiaries, and consequently, internal group relationships form the major source of MAIs for subsidiary organizations, through which they can receive relevant information

[7] The subsidiaries challenge parent companies' institutional pressure by demonstrating the rationality of their decision, as it is decided by other subsidiaries as well. The tactic of joint adoption of innovation to respond to institutional pressures, such as those imposed by parent companies, is one of the strategic responses to institutional pressures discussed by Oliver (1991, p. 152).

about MAIs and how to implement them by following peer subsidiary organizations and discussing the process with them.

In another part of the study, all the interviewees were asked about their understanding of the adopted MAIs in their subsidiaries, how they work, their advantages, outcomes, difficulties, and limitations. In response, the interviewees were more supportive of those changes that they themselves initiated and equally supportive of those MAIs jointly adopted with other subsidiaries or learned from them. Two interviewees in dependent organizations made the following comments:

> "We feel it is easier to learn from a colleague in another subsidiary than from a boss in the parent organization. It gives more confidence when working with a colleague from another subsidiary. We sometimes get partial solutions from people at headquarters, but much more and practical comments from colleagues even in another subsidiary."
>
> "HQ mainly sets the plan and then asks for the results, but without 'sufficient guidance' on how to implement the plan and achieve the results."

So, the interviewees had a better understanding of the new MA techniques when the subsidiary adopted them by itself or through another subsidiary (where it could get some support), but without the parent's involvement: "There is a 'must' with the parent's decisions which obstructs smooth learning," an interviewee affirmed. In the case of adopting an MAI without the involvement of the parent, the subsidiaries' understanding of the new techniques mostly took place before and during the implementation process.

"Learning before doing" was a comment made by an interviewee. However, this was not the case of those adopted MAIs that had been initiated by parent organizations, where the learning about some aspects of the new systems was sometimes postponed until postimplementation. "This happens as the adopted approach is hierarchical," an interviewee in a dependent organization affirmed. Other comments included, "The HQ dictates its decision and sometimes does not understand the difficulties that we face." "The time schedule set by them [HQ] is somehow unrealistic." "They don't see our ground." So, with these comments, one should expect a more successful implementation of the MAIs initiated by subsidiary organizations than those enforced by parent organizations. This is further discussed in section 4.4, which follows the discussion of the role of management accountants in the change processes.

4.3 Sources of the Diffusion of MAIs in Subsidiaries: Management Accountants' Involvement

When subsidiaries initiate MAIs, one obvious question is whether management accountants play a role. These issues were discussed with management accountants in dependent organizations. Surprisingly, the interviews suggested that they play a minimal role in the process of adopting MAIs in their organizations. Hence, they did not contribute to the 'absorptive capacity' of their organization. They described that top management and managers of operating departments, rather than financial experts, were more supportive in adopting new techniques, including MAIs. The accountants claimed that other managers display a better understanding of the application and benefits of the new MA techniques than the accountants do. The accountants also discussed that other managers show more willingness to take the risk of supporting new systems than

accountants do. The common theme in the comments by interviewees was that the accountants' knowledge, gained during academic and professional education (e.g., CIMA), is mainly at a theoretical level, with less knowledge of how to implement and apply the new techniques. One interviewee said: "We need more practical knowledge that gives us confidence on how to act" and "how to work in a team." Similar comments from other interviewees include:

> "Everyone knows that these techniques are superior to traditional ones, but how should ABC be implemented? How can we simplify its use?"
>
> "How to deal with difficulties?"
>
> "These are not taught at universities or during other training programs, such as the CIMA qualifications that we possess now."
>
> "The production manager knows much less than us about accounting and MA. However, he is very confident on what he knows about say target costing and easily can apply that."

The interviewees commented that the interest of non-accountant management leads to better adoption and implementation of MAIs.

The interviews also suggest that the accountants expected other organizational members to take the first step in advocating the adoption of MAIs. Interviewees commented:

> "To be honest, it seems that others [non-accountant managers] know these techniques [MAIs] better than we do."

> "The marketing manager discussed ABC in a meeting, and I was surprised how he could see and nicely explain the application of the technique for our business."
>
> "We are still talking about budgets and variances while other managers are more advanced in knowing about the changes in the market, business, economy, and what techniques and systems we need to respond to the changes. […] They have a better assessment of the situation, what we need, and what the outcomes of the adoption of a MA technique will be."

The accountants kept quiet, as they were worried that they "would be blamed if things went wrong." An interviewee asked: "Have we ever seen any major changes initiated by a management accountant?"

Overall, the accountants interviewed in subsidiary organizations were not what Coad (1996) called "strategic management accountants." To undertake strategic management accounting (SMA) projects, Coad (1996) urges that management accountants need to work "smart and hard." He defines "smart work" as the manifestation of a tendency to select clever and ingenious approaches and techniques (such as those MAIs discussed earlier) to deal with a given task, and then to modify those approaches intelligently and resourcefully when needed. Hard work is regarded as the use of effort to perform and complete the task. Thus, and as discussed in detail by Coad, smart work and hard work are not mutually exclusive. Coad then discusses both learning and performance orientations and argues that the strategic management accountant requires a "learning orientation." This is because learning motivates both smart and hard work, whereas a "performance orientation" motivates only hard work and is not sufficient to

undertake SMA projects. He hypothesizes that in addition to undertaking smart work, the effective strategic management accountant requires high levels of communication skills and the ability to empathize with others, both within and outside the organization (cf. Langfield-Smith, 2008). However, most interviewees did not claim that they were working smartly and hard, as discussed above. They discussed the importance of the above roles but added that they did not perform that way. The accountants in the subsidiaries had established contacts with other subsidiary organizations to proceed with the implementation of MAIs. However, the original idea of adopting an MAI and how to proceed with it had come from other departments, and not from the accounting department, in all of the interviewed organizations. This observation may bring reluctant agreement with Cooper's (1996) assessment of the inability of accountants to rise to the challenge of SMA (see also Langfield-Smith, 2008). What can be seen here is that claims that management accountants occupy internal consulting roles (Baldvinsdottir et al., 2009), act as hybrid accountants (Miller, Kurunmäki, & O'Leary, 2008), or become strategic partners (Chenhall, 2008) cannot be tenable.

4.4 Progress in the (Stages of) Implementation of MAIs

As stated earlier, although the notion of 'success' has a far from incontestable definition, in this study, by "successful implementation" we mean higher stages of implementation of MAIs, as indicated in the questionnaire survey (stages one to four) and summarized in Table 4. With regard to the implementation of MAIs in the two types of organizations (the purpose of our third research question), the comparison has been simplified by comparing the aggregated responses to the first two levels of each innovation (as indicators of lower levels of implementation) to the aggregated responses

to the last two levels (as indicators of higher levels of implementation) in order to examine the overall level of implementation of MAIs in dependent and independent organizations. Notably, none of the respondents commented that they aimed to implement the innovations partially, and therefore, they considered implementation of all four stages[8]. The analysis in Table 4 reveals that subsidiary organizations are further advanced in the implementation of ABC and BSC, while the independent organizations present a higher level of implementation of ABM, benchmarking, and TC. The table compares the implementation levels of MAIs in independent organizations with all dependent organizations that replied to the questionnaire and those 56 subsidiaries that participated in the interviews. The Chi-square tests indicate a significant association between the ownership type (independent and dependent) and the level of implementation for all five MAIs tested in this study. This observation is important when we relate the levels of implementation with the channels of MAI diffusion in subsidiary organizations in Table 3. The comparison shows that independent organizations are more advanced in the implementation of those MAIs (i.e., ABC and BSC) that they, rather than the parent companies, initiated, indicating that the levels of implementation of MAIs relate to the logic of adoption in subsidiary organizations. This is further discussed below.

Insert Table 4 here

[8] It might be argued that some firms may not decide to implement all four levels of the stages for each of the five innovations indicated in the questionnaire. Consequently, some companies may consider their MAIs to be fully and successfully implemented without reaching level four, as this had not been their target. Though this might be true in practice, none of the interviewees raised this point in the interviews, and we also paid attention to such issue and did not get such comment on this in the open questions in sections 1.1, 2.1, and 6 of the questionnaire.

4.4.1 Parent companies' influence vs. other sources on implementation of MAIs

Table 3 summarizes the sources of diffusion of 108 MAIs in the 56 dependent organizations we interviewed. A further analysis of the four sources of these MAIs in group organizations and the stages of their implementation are summarized in Table 4. The Chi-square test in Table 5 indicates a significant association between sources of adoption of four MAIs, namely ABC, ABM, benchmarking, and TC (but not BSC), and their levels of implementation in subsidiaries. This indicates that the level of implementation of four of the MAIs in dependent organizations is positively associated with the source of their adoption. In other words, for four of the MAIs examined in this study (except BSC), the greater the involvement of subsidiaries in the adoption process (i.e., ABC is adopted more via other sources than via parent companies), the higher the level of its implementation in subsidiaries. In contrast, the less the involvement of subsidiaries in the adoption process (i.e., ABM, benchmarking, and TC, which are decided by parent companies), the lower the implementation levels. Thus, the findings show that the implementation practices for the four MAIs in dependent organizations are related to motivation and to the rationale of subsequent implementation activities (Kennedy & Fiss, 2009). That is, the findings suggest that a greater involvement by subsidiaries in the adoption process will result in higher stages of implementation of MAIs. This coincides with Dossi and Patelli's (2008) study on the use of performance measurement systems in subsidiary organizations. This also corresponds with well-established budgeting research, which theorizes that participation boosts motivation (e.g., Brownell & McInnes, 1986; Dossi & Patelli, 2008) and reduces cognitive dissonance

(e.g., Foran & DeCoster, 1974). What can be inferred here is that subsidiaries' real participation in the adoption of MAIs can facilitate better decisions, as such participation liberalizes decision initiation and, in turn, minimizes implementation dysfunction. In other words, hierarchically imposed MAIs are associated with a lower level of implementation, whereas participative adaptations are associated with a higher level of implementation (Dossi & Patelli, 2008).

Insert Table 5 here

4.4.2 Subsidiaries' stock of knowledge, geographical location, and adoption/ implementation of MAIs

It has now been established that there exists two sets of sources for the adoption of MAIs and assimilating knowledge: the external (non-group) environment and the internal group environment, the latter of which includes both the parent company and other subsidiaries. Of the subsidiaries we studied, 53.7% had taken up the adoption of their MAIs from the parent company, 34.3% (24.1% + 9.2%) from or with other subsidiaries, and 13% directly (i.e., without the involvement of the parent or other subsidiary organization) from the external environment.

A common theme that emerged from our interviews was that those subsidiaries that had already given some (practical[9]) thought to the MAIs, such as introducing them on a trial basis or had already adopted them, were more prepared to and capable of adopting and implementing other MAIs. The interviewees in the subsidiary organizations that had adopted one or more MAIs in the past discussed the possibility of adopting other

[9] By "practical thought," we refer here to the case where the subsidiaries had already adopted and implemented an MAI or adopted them on a trial basis in real organizational life and not at the theoretical level (which is limited to the discussion of the methods, their advantages, and limitations) that is commonly taught at universities or other teaching institutions (e.g., CIMA).

techniques. This comment was based on their understanding of the views of other managers in their organizations.

> "They [managers] believe that when we have experienced one major change, the next one would be easier."
>
> "The experience of change is the key."
>
> "It is important to be somehow confident that you can manage difficulties that you may face in a new project implementation since you have experienced such cases in the past."

A similar theme was also observed from the analysis of the survey results. For example, most of those subsidiary organizations that had either introduced ABC on a trial basis, or had adopted and implemented it, had also adopted one or more other MAIs in the following percentages: 56% ABM, 66% BSC, 80% benchmarking, and 44% TC. So, it can be argued that their technical expertise and insights resulting from the earlier thinking about and adoption of certain innovations (stock of knowledge) and their openness to change have provided the subsidiary organizations with the (absorptive) capability to recognize the knowledge and techniques available within or outside the group and identify potential sources of assistance, e.g., other subsidiaries within the group. Thus, the knowledge stock of the subsidiary can be expected to act as an important factor in the adoption and implementation of new techniques, including MAIs.[10]

This would lead to a subsequent transfer of knowledge about MAIs between subsidiaries and between the parent company and subsidiaries if the subsidiaries were

[10] Of course, the mere recognition of the availability of external knowledge (both outside and within the group) does not necessarily permit a subsidiary firm to absorb it. The subsidiary must also develop linkages to sources of knowledge (other subsidiaries) that act as conduits for knowledge transfer (Dyer & Nobeoka, 2000).

located near each other, thus forming a stronger "organizational unit's social network" (Bol & Moers, 2010, p .723). The geographic proximity between the subsidiary organizations was noticed in several of the MAIs' knowledge exchanges between subsidiaries in the interviewed organizations, and it was discussed by the interviewees. Company visits and meetings, frequent phone calls, mail to send forms, and sample reports facilitated knowledge transfer and the knowledge-building process between subsidiaries. Therefore, it can be argued that parents and subsidiary organizations may need to establish intra-organizational mechanisms, processes, and systems to develop better connected social networks (Bol & Moers, 2010) that link various subsidiaries across time (Almeida, Grant, & Song, 1998; Hansen, 1999). Interviews also revealed four cases of subsidiaries that faced significant difficulties in their implementations of MAIs, which the interviewees believed partly arose due to lack of proper communication arising from the geographical distance between the subsidiary and HQ or other subsidiaries, making effective assimilation difficult. Phene and Almeida (2008, p. 911), regarding the innovations in MNCs, suggest: "Geographic proximity appears to be more important than organizational context or identity, permitting more effective knowledge assimilation for innovation," and our evidence lends weight to this.

5. Conclusions

This paper has been an attempt to examine how MAIs are diffused in subsidiary organizations. Three interrelated questions have been posed:

1. Is the extent of the diffusion of MAIs in dependent (subsidiary) organizations different from such diffusions in independent organizations?

2. Does the extent of such diffusions in dependent organizations occur through vertical relationships (i.e. through parental involvement), through multiple lateral relationships, or through the help of in-house management accountants?
3. Are such diffusions implemented more successfully in dependent organizations (having both internal and external group networks) or in independent and non-group organizations?

We attempted to answer these questions through an analysis of both quantitative and qualitative data collected from a questionnaire survey of 584 responses by members of CIMA working in dependent and independent organizations, and from follow-up interviews with 56 respondents in dependent organizations. We believe that our study is a pioneering effort in that it is the first to examine the different sources and channels of diffusion of MAIs in group organizations and subsidiaries. As discussed below, the findings will have theoretical implications for research into diffusion of MAIs in particular, and diffusion theory in general.

Concerning the first research question, the study offers a detailed picture of the diffusion of MAIs in group organizations and suggests that the diffusion of MAIs in subsidiaries is different from that in independent organizations. The results of the survey indicate that the adoption rates (in terms of percentage) and take-up of all five MAIs (i.e., ABC, ABM, BSC, benchmarking, and TC) in dependent organizations are higher than in independent ones. However, the Chi-square tests only indicate a significant association between the ownership type (dependent vs. independent) and the adoption of BSC and benchmarking (but not ABC, ABM, and TC). Though the impact of ownership on the

diffusion of MAIs cannot be statistically generalized for all five MAIs examined in this study, the higher take-up of MAIs by dependent organizations observed in this study is in line with the study conducted earlier by Yazdifar and Tsamenyi (2005). Hence, for the diffusion and adoption of MAIs, ownership type matters. Given the few studies in this field, this topic requires further research.

For a subsidiary organization, there are two environments, one being external to the group and the other being the environment formed by the group and other subsidiaries within the group. The subsidiary can adopt MAIs from both sources, but with different orientations. The study provides interesting results regarding the question of which sources of external knowledge (external environment, group, and other subsidiaries) are playing a role in the diffusion of MAIs in group organizations. In particular, the study provides evidence that there can be four sources driving innovations in subsidiaries: parent, peer, joint, and individual. Interestingly, two of these sources (i.e., peer and joint) are related to the inter-subsidiary relationship or so-called *lateral relationship,* which is new to the literature on the diffusion of MAIs. Hence, the creation, diffusion, and adoption of new ideas cannot always be a 'top-down' process (of institutionalization). Rather, as Friedland and Alford (1991) and Sewell (1992) observed, institutional arrangements are often vague and "non-monolithic," allowing alternative logic to generate divergent models of behavior. This seems to be an emerging logic in the institutional field of MAIs, and this area needs further research.

Addressing the second research question, the study shows that although 53.7% of the MAIs are adopted and diffused into group organizations by parent organizations, the inter-subsidiary relationship also plays an important role, as it forms 33.3% (24.1% +

9.2%) of the diffusion of MAIs in group organizations. The subsidiaries show less interest (only 13%) in adopting MAIs without the involvement of their parent organization or other subsidiaries. Therefore, despite the claim that subsidiaries act as "appendages" of parent organizations (Bartlett & Ghoshal, 1991; Stopford & Wells, 1972) or "miniature replica" subsidiaries (White & Poynter, 1984), the present study claims that the interdependence of subsidiaries has a substantive impact on the adoption and implementation of MAIs in subsidiaries. The findings suggest that the subsidiary comprises part of a network—not just a dyadic relationship with a parent company. The literature on MA change lacks data on this particular scenario. With these findings, it is clear that the dynamic relationships between subsidiaries can produce considerable diffusion effects within subsidiaries. This dynamic relationship of transferring knowledge (and consequent reduction in uncertainty) between entities of group organizations and MNCs with the diffusion of MAIs requires further study.

Despite the influence of the parent organizations, this study also highlights the role of subsidiaries' capabilities in adopting and assimilating MAIs. *Absorptive capacity* or *sourcing capability* (subsidiaries' ability to recognize, assimilate, and exploit new techniques such as MAIs) and *combinative capability* (i.e., creativity in knowledge management and how to fit that into an organizational context) are critical to the adoption and implementation of MAIs. The paper supports the idea that the absorptive capacity of a subsidiary is related to its prior knowledge stock and permits the recognition and absorption of knowledge, including MAIs. The study indicates that those subsidiaries that had already adopted any MAIs were more prepared to and capable of adopting and implementing other MAIs. Thus, the knowledge stock of the subsidiary can be expected

to act as an important factor in the adoption and implementation of new techniques, including MAIs. However, this stock of knowledge and the subsidiary's capabilities in adopting MAIs are, to some extent, distinct from the capabilities of its parent companies and sister subsidiaries. The particular geographical setting and history of the subsidiary are important in defining "a development path that is absolutely unique to that subsidiary, which, in turn, results in a profile of capabilities that is unique" (Teece, Pisano, & Shuen, 1997, as cited in Birkinshaw & Hood, 1998, p. 781). Since Cohen and Levinthal (1989) first introduced the idea of absorptive capacity, the concept has been widely cited, but it has not been discussed in the MA literature. We consider this paper a starting point to discuss this and invite further case studies in this area. In future studies, we hope to identify the actual mechanism and processes underlying absorptive capacity and knowledge assimilation to determine and measure their role in the diffusion of MAIs in group organizations.

Moreover, the study found that the geographical proximity of parent and subsidiary organizations plays a role in the diffusion and implementation of MAIs; also, the distance may contribute to a subsidiary being unable to utilize knowledge from the parent and other subsidiaries. This is an area that has not been discussed in the extant literature on the diffusion of MAIs in group organizations. With an efficient communication structure in place in group organizations, different subsidiaries will be more able to seek out, collect, and disseminate information (Bol & Moers, 2010; Tushman, 1977). This, in turn, increases the chance of adopting MAIs through interaction within the group. A well-developed internal communication infrastructure in group organizations may outweigh the geographical issue and facilitate the dispersion of ideas

about the adoption and implementation of MAIs and improve the visibility of the new techniques. This finding adds to the existing literature by discussing the idea that the diffusion of MAIs in group organizations and MNCs should be considered in conjunction with other (contingency) variables, such as organizational environment and structure. This, in particular, contributes to the research on roles of MA practices in organizations with team-based structures.

We explored how management accountants enrich intra-organizational relations and enhance organizational capabilities in the process of adoption and implementation of MAIs. The study revealed that management accountants in subsidiary organizations are not involved in the major changes in MA practices, such as the adoption of MAIs. The interviews reveal that they do not sufficiently take the role of strategic management accountants to undertake SMA projects. Frequently, the accountants did not show any interest in initiating change programs and tended to concentrate on their independent "watchdog" role, focusing on "preventing things from happening" (Johnston, Brignal, & Fitzgerald, 2002, p. 1331) rather than being effective strategic management accountants, as discussed by Coad (1996). This might be due to the type of training provided to them during the study and their training for their academic and/or professional qualifications. Indeed, one may question the reason for the minimal attempt by the qualified accountants in subsidiary organizations to initiate changes in MA systems. This leaves us with serious questions: What knowledge and skills does an accountant need to be a 'strategic management accountant'? What are the current and future needs of accountants that universities and other training centers should seriously consider?

With regard to the third research question, our study revealed that the stages of implementation of MAIs adopted by subsidiary organizations may be higher if these are initiated by the subsidiary organizations themselves rather than forced by parent organizations. The study reports a higher stage of implementation for ABC and BSC in subsidiary organizations, with higher adoption rates of these techniques via other sources versus those forced by parent organizations. However, compared to independent organizations, the subsidiary organizations in this study show a lower stage of implementation of ABM, benchmarking, and TC, for which the adoption had mostly been decided by parent organizations. It can be argued that the subsidiary organizations will take ownership of the new techniques if they believe that these are their own systems rather than the group organization's systems imposed on the subsidiary (Dossi & Patelli, 2008). Thus, the practice of implementation of MAIs in group organizations is probably related to adoption methods and motivation (amongst other possible factors and attributes/characteristics of innovations and adopters). The improved interaction between the group and subsidiary organizations may positively affect motivation and remove potential barriers and, in particular, uncertainty (Bol & Moers, 2010). Since the successful implementation of an organizational change, such as the implementation of MAIs, is quite difficult, we believe it is necessary to examine both motivation and outcomes to fully understand the partial implementation processes in group organizations and MNCs.

The findings mark theoretical implications as well. On the one hand, they challenge the rational perspective, which holds the view that adopters are rational and make technically efficient independent choices, taking for granted the social and

organizational contexts in which such adoptions take place. In particular, the agency theory precept that the agent–principal relation between headquarters and subsidiaries can prompt forceful adoption has flaws. On the other hand, the findings support the view that MAIs take place in dynamic and complex inter-organizational relationships (i.e. between adopting organizations and enforcing organizations), in intra-organizational relations between subsidiaries, and in their enabling mechanisms, including managerial knowledge and capabilities. The effects of isomorphism, fads, and fashions would be valid for these relationships rather than in the global arena of diffusion. Future studies should also examine subsidiary knowledge outflows, both horizontal and vertical, as compared to inflows (see also Michailova & Mustaffa, 2012).

The results of this study suggest that organizational structure is relevant to consider in efforts to increase the knowledge about how and why MAIs are diffused, adopted, and implemented. The study suggests that knowledge flow is a key source of advantage for groups and MNCs in the adoption of MAIs; however, the nuances of knowledge flow practices and their micro-foundations (individual levels) require further theoretical development. In this regard, the role of managers at various organizational levels should be examined. Furthermore, it is interesting to examine to what extent MAIs are adopted through *deliberate knowledge flows* or as an *emergent strategy* in a subsidiary organization, and how these affect the levels of implementation of MAIs. Deliberate knowledge flows denote an intentional, top management–driven strategic effort to manage the pattern of competence impacting knowledge exchanges. It refers to the leverage of “superior” competencies which are usually generated by parent companies or advanced subsidiaries with creative roles (Meyer, Mudambi, & Narula,

2011). Meanwhile, knowledge can also be exchanged, reused, and leveraged in subsidiary organizations of MNCs in more emergent ways and to respond to non-routine problems (Tippmann, Scott, & Mangematin, 2014).

The study assessed the success of MAIs according to their stages of implementation as set in the questionnaire. Though this measure provides a more dynamic process of implementation and has its merit, it is a proxy and partial. This measure, similar to many other measures at best, "can indicate a likelihood of success but does not provide any guarantee of it" (Cinquini & Mitchell, 2005, p. 74). Also, the interviews in this study were conducted with CIMA-qualified accountants working in subsidiary organizations. It is believed that interviews with accountants in independent organizations would also shed light on the issues discussed above. In this study, we have focused our investigation on a limited number of MAIs (ABC, ABM, BSC, benchmarking, and TC). While these innovations were intended to serve as indicators of a broader construct, overlooked idiosyncrasies might render them less appropriate as proxies for the adoption of MAIs in general (Chenhall & Langfield-Smith, 1998a, 1998b; Naranjo-Gil et al., 2009). In addition, this study was conducted in three countries, namely, the UK, Australia, and New Zealand; in different industry sectors; and in organizations of various sizes. The analysis was based on the overall responses to the questionnaires and interviews; therefore, the specific features of each country on the adoption of MAIs in the studied organizations, the type of industry sectors, and company size have not been discussed or analyzed. These require further study.

Finally, this paper wishes to emphasize that in studying phenomena such as MAIs in the field of inter/intra-organizational configurations, the merits of mixed methods

prove meaningful (Modell, 2010). The experience has been that “hard facts” are useful to gauge what is happening across the relevant institutional environments. To this end, percentages, aggregations, and trends become “real” in realizing “what is going on” in an institutional field. Using the mixed approach, beyond the logic of sampling, the opportunity can be exploited to open the black box of statistical significance and to proceed to an examination of why such trends occur. Such cross-accreditations and validation can generate a fuller account of a theoretical analysis, as has been attempted here. Nevertheless, threats to validity issues must be addressed when combining the quantitative and the qualitative. The hope is that much future research will be carried out around the issues of MAIs in different institutional environments in order to determine how to deal with the validity threats of this combined approach.

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Table 1: The proportion of dependent and independent companies

		Independent %	Dependent %	Total %
The proportion of dependent and independent companies participating in the survey	Country: UK	89.1	10.9	100%
	NZ	83.5	16.5	100%
	AU	61	39	100%
	Total	**72.8**	**27.2**	100%
Industry sector and ownership type	Manufacturing	23.7	12.6	36.3
	Service	49.1	14.6	63.7
	Total	**72.8**	**27.2**	100%
Organization size (no. of employees)	Less than 100	31.8	24.4	29.9
	100–500	29.6	39.4	32.1
	More than 500	38.6	36.2	38
	Total	100%	100%	100%

(Source of data: questionnaire survey)

Table 2: The extent of diffusion of MAIs

MAIs	Independent %	Dependent (subsidiary) %	Total %
ABC	25.5	33.1	27.6
ABM	19.1	22.5	20
BSC	34.4	48.3	38.2
Benchmarking	49.4	62.9	53.1
TC	23.1	23.8	23.3

(Source of data: questionnaire survey)

Chi-Square Tests			
ABC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.097	4	0.192
ABM	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.003	4	0.061
BSC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.657	4	0.047
Benchmarking	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.371	4	0.023
TC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.396	4	0.355

Table 3: Sources of MAI diffusion in dependent organizations

Methods of diffusion of MAIs in group companies	ABC	%		ABM	%		BSC	%		Benchmarking	%		TC	%		Total MAIs adopted	Total %	
Decided by parent organization	12	43		11	61		7	37		13	62		15	68		58	**53.7**	
Decided by subsidiary organization after another subsidiary had implemented it	10	36		2	11		8	42		4	19		2	9		26	**24.1**	
Jointly decided by two or more subsidiaries	2	7	57 %	2	11	39 %	1	5	63 %	3	14	38 %	2	9	32 %	10	**9.2**	46.3 %
Decided by subsidiary organization with no previous adoption within the group	4	14		3	17		3	16		1	5		3	14		14	**13**	
Total	**28**	**100%**		**18**	**100%**		**19**	**100%**		**21**	**100%**		**22**	**100%**		**108**	**100%**	

(Source of data: interviews)

Table 4: Stages of implementation of MAIs in dependent and independent organizations

MAIs	All levels / stages of implementation	Independent organizations %		All dependents (subsidiary) %		56 interviewed dependents (subsidiary) %	
ABC	- Activity analysis	13.9	13.9	8.5	8.5	9.1	9.1
	- The identification of cost drivers	-		-		-	
	- Allocation of cost to cost pools	54.3	86.1	43.7	91.5	41.3	90.9
	- Revised product costing based on activity, not volume	31.8		47.8		49.6	
		100%		100%		100%	
ABM	- Activity analysis	19.1	41.7	24.5	56.6	19.7	58.1
	- The identification of value-adding and nonvalue-adding drivers	22.6		32.1		38.4	
	- The identification of separate drivers of cost, quality, response, and innovation	21.7	58.3	7.5	43.4	11.1	41.9
	- Adoption of strategies to impact the performance of key drivers	36.6		35.9		30.8	
		100%		100%		100%	
BSC	- Establishment of detailed corporate objectives and critical success areas	14.7	46.2	10.5	41	7.4	33.6
	- Measurement of overall performance based on a linked combination of financial and nonfinancial indicators	31.5		30.5		26.2	
	- Communication and commitment to separate measures used to evaluate finance, processes, innovation, and customers	26.1	53.8	33.7	59	36.3	66.4
	- Review of the implementation of strategies devised to impact specific measures in the scorecard	27.7		25.3		30.1	
		100%		100%		100%	
Bench-marking	- Identification of critical success areas and associated key performance measures	15.2	39.7	17.2	48.4	11.4	47
	- Comparison of own performance with that of publicly available measures for similar companies	24.5		31.2		35.6	
	- Collaboration with appropriate benchmarking partners identified to compare internal processes	24.5	60.3	19.4	51.6	22.2	53
	- Devising strategies that address identified performance deficiencies	35.8		32.2		30.8	
		100%		100%		100%	
TC	- Identification of target product cost as the difference between expected price and required profit	24.8	38	23.7	44	25.6	48.7
	- Adoption of cost-cutting strategies at the production stage to approach target	13.2		20.3		23.1	
	- Examination of all cost-reducing strategies at the planning and preproduction stages	28.1	62	32.3	56	29.4	51.3
	- Adoption of value engineering to incorporate customer requirements	33.9		23.7		21.9	
		100%		100%		100%	

(Source of data: Data for independent organizations and all subsidiaries from questionnaire
Data for 56 interviewed subsidiaries – i.e., the two rightmost columns, from interviews)

Table 4 (cont'd.)

Chi-Square Tests			
ABC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.523	2	.014

ABM	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.736	3	.033

BSC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.727	3	.003

Benchmarking	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.150	3	.043

TC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.615	3	.014

(Source: Questionnaire survey data for independent organizations and all dependent organizations)

Table 5: Diffusion sources and implementation stages in group organizations: Data derived from the interviews

Chi-Square Tests			
ABC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.381	6	0.031

ABM	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.974	9	0.003

BSC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.814	9	0.224

Benchmarking	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.906	9	0.026

TC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.532	9	0.041

(Source: The sources (channels) of MAIs in Table 3 and their levels of implementation in 56 subsidiaries indicated in Table 4, in which both data categories are derived from interviews)