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The use of management controls in different cultural regions:

An empirical study of Anglo-Saxon, Germanic and Nordic practices

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ABSTRACT

Most cross-cultural studies on management control (MC) have compared Anglo-Saxon firms to Asian firms, leaving us with limited understanding of potential differences between other cultural regions, in particular those of developed Western societies. This study addresses differences and similarities in MC practices in Anglo-Saxon (Australia, English Canada), Germanic (Austria, non-Walloon Belgium, Germany), and Nordic firms (Denmark, Finland, Norway, Sweden). Unique data is collected through structured interviews with 593 strategic business units (SBUs). We find many differences in the use of MC practices in these regions, although there are also a number of similarities despite cultural differences. We discuss whether and why cultural traits explain these findings. We further explore variations in MC practices that are not aligned to cultural traits by examining whether the MC practices are interdependent. Our findings reveal a number of interdependencies that hold across cultural regions, but also demonstrate that certain associations appear to be dependent on the cultural context of the SBU. We outline the implications of these and other findings for theory development.

Keywords: management control practices; national culture; survey; complementarity

1.0 Introduction

Is it a small world of management control (MC) practices[1]? Some scholars have suggested tendencies for a convergence of MC practices due to, for instance, globalization of markets and transnational regulation (Granlund & Lukka, 1998). Others argue that variances in institutional forces and social factors will lead to a divergence in MC practices employed by firms in different cultural contexts (Bhimani, 1999; Harrison & McKinnon, 1999, 2007). From a managerial perspective, globalization has created a need to understand how, or whether, to adapt MC practices to a local culture. Do some practices fit across all cultures, while others need to be tailored to local circumstances to achieve desired outcomes? As Merchant, Van der Stede, Lin and Yu (2011) argue, we are at an early stage in our understanding of which MC practices should be adapted and how, to suit a particular cultural context (see, for instance, also Allen, White, Takeda & Helms, 2004; Björkman & Lu, 1999; Chow, Shields & Wu, 1999; Milkovich & Bloom, 1998; Otley, 2016).

In this study we seek to better understand the influence of culture on the design and use of MC practices. Specifically, we investigate variation in MC practices between Western cultures, for three main reasons. First, most prior studies have focused on comparisons between Anglo-Saxon (mostly US and Australia) and Asian firms (see Endenich, Brandau & Hoffjan, 2011). To develop a more general theory of the influence of culture on the design and use of MC practices, we need to explore how they vary between other cultural regions. In particular, there are significant cultural differences between Western nations (Hofstede 1980; 2001; House, Hanges, Javidan, Dorfman & Gupta, 2004), and these differences are likely to have implications for the design and

[1] We refer to MC practices in a similar fashion to Grabner and Moers (2013). "Examples of MC practices that are related to budgets, performance measures, and incentives are the interactive use of financial budgets, the use of subjective performance evaluation, and the extent of variable pay, respectively" (ibid, p. 407).

use of MC practices (see e.g., Jansen, Merchant & Van der Stede, 2009). Although there is quite some empirical evidence as to whether or not MC practices vary between Western cultures and to what extent, these studies are mostly based on data collected in no more than three nations (Ahrens, 1997; Bae, Chen & Lawler, 1998; Carr & Tomkins, 1996; Chung, Gibbons & Schoch, 2006; Coates, Davis & Emmanuel, 1992; Coates, Davis & Stacey, 1995; Dossi & Patelli 2008, 2010; Faulkner, Pitkethly & Child, 2002; Fischer, 2004; Jansen et al., 2009; Lubatkin, Calori, Very & Veiga, 1998; Merchant et al., 2011; Meyer & Hammerschmid, 2010; Myloni, Harzing & Mirza, 2004; Pennings, 1993; Van der Stede, 2003). Moreover, studies that investigate a larger number of nations (Chiang & Birtch, 2010; Gooderham, Nordhang & Ringdal, 2006; Hoffman, 2007; Newman & Nollen, 1996; Peretz & Fried, 2012; Roth & O'Donnell, 1996; Schuler & Rogovsky, 1998; Tosi & Greckhamer, 2004; Williams & van Triest 2009) fail to investigate the supra-national level. This is surprising as research indicates that cultural differences may be influenced more by the supra-national level than by the national level (Beugelsdijk, Kostova & Roth, 2017).

Second, the range of MC practices examined in cross-cultural analysis is relatively limited, with most studies focusing on incentive systems, budgeting and performance measurement (e.g., Chow, Lindquist & Wu, 2001; Harrison, 1993; Jansen et al., 2009; Merchant et al., 2011; Van der Stede, 2003), and selected administrative controls (e.g., Birnberg & Snodgrass, 1988; Chow et al., 1999; Harrison, McKinnon, Panchapakesan & Leung, 1994; Williams & Seaman, 2001). The MC literature, however, points to a much wider range of practices available to managers to influence subordinate behaviours (Bedford & Malmi, 2015; Malmi & Brown, 2008; Merchant & Van der Stede, 2012; Simons, 1995). Currently there is little understanding about whether or not the design and use of this wider set of MC practices that commonly form part of a MC package are, or should be, adapted to different cultural contexts.

Third, as recent literature on MC systems and packages illustrates (e.g., Bedford, Malmi & Sandelin, 2016; Grabner & Moers, 2013), the effectiveness of many individual MC practices may be wholly or partly dependent on other MC practices. Observing differences in individual practices between regions, which cannot be explained by cultural traits nor by a large number of traditional contingency or other firm-related factors, may suggest that the design and use of other controls explain this variation. This would hint towards the possibility that these MC practices are jointly designed and form a system.

Two general research questions guide our inquiry. First, do MC practices vary in different Western cultural regions? Second, given that we find MC practices to vary, what explains observed differences? To answer these questions we take an exploratory approach (Locke, 2007). This approach is appropriate given that we have relatively little understanding of how a wider set of MC practices vary between Western regions. Based on our exploratory analysis we seek to explain MC practice differences (and similarities) by drawing on validated cultural trait variations between Western cultural regions (House et al., 2004). Further, we examine the possibility that some variation may be due to interdependencies between MC practices and that these interdependencies may vary between cultural contexts. Our explanations are tentative at this stage of knowledge accumulation in our field of inquiry. Hence, the purpose of this study is to provide an empirical basis to support the development of a more comprehensive theory of cross-cultural variation in MC practices.

In this study, we draw on Malmi and Brown's (2008) framework of MC as a package. This framework suggests that MCs should be understood in a broad sense and encompass traditional systems, for instance performance measurement and budgeting, as well as organizational structure, management processes and cultural controls. In this vein, we understand management controls as

those "systems, rules, practices, values and other activities management put in place in order to direct employee behaviour" (Malmi & Brown, 2008, p. 290). MC research generally focuses on single practices or processes, and their variance is mostly explained with contingency factors in one culture (Chenhall, 2007). In this study, we address a large variety of MC practices to provide empirical evidence for subsequent theory development regarding how and why MC practices are influenced by cultural circumstances.

We study MC practices in three cultural regions: Anglo-Saxon (Australia, English Canada), Germanic (Austria, non-Walloon Belgium and Germany) and Nordic (Denmark, Finland, Norway and Sweden). These three regional clusters are based on cross-cultural management research (House et al., 2004). They are motivated by a lack of understanding as to how MCs in Germanic and Nordic countries vary in relation to Anglo-Saxon regions (Newman & Nollen, 1996). Scholars in this field maintain that nation states should not be equated with cultures (Baskerville, 2003). Therefore, we follow researchers of the *Global Leadership and Organizational Behaviour Effectiveness Research* (GLOBE) project who cluster societies based on religion, language, geography and ethnicity, and work-related values and attitudes (Gupta & Hanges, 2004). One reason for choosing their framework is that it builds on and extends the work of Hofstede (1980), who has been the main source for studies on cross-cultural practices in the MC literature (Harrison & McKinnon, 1999). Hence, we draw on the most comprehensive research available to categorize societies into cultural regions that have similar cultural implications for the design and use of a firm's MC practices.

The study uses survey data from structured interviews with 593 SBUs in these countries. The number of observations, as well as the method of data collection by interviews instead of postal or web-based surveys, increases the reliability of our findings. We study MC practices at

the level of SBUs of firms. Studying SBUs should reveal a more homogeneous picture than studying MC practices at the firm-level (Kruis, Speklé & Widener, 2016), as each business unit is likely to face unique competitive forces (and further contextual factors) compared to other business units of the firm. Although the data comes from SBUs from different industries, the sampling was stratified to ensure similar enough distribution of SBU's from different industries and of different sizes from each country and region. We also control for a wide range of contextual factors, including dimensions of the environment and firm strategy, as well as a number of other potential explanatory factors, to reveal variations in MC practices due to differences in the cultural characteristics of each region.

There are two main contributions of this study. The first contribution is to provide empirical evidence for how a wide range of MC practices vary between Western cultural regions. Specifically, we reveal the differences and similarities between Anglo-Saxon, Nordic and Germanic cultural regions – comparisons between the latter two have been subject to little examination in prior MC research (Newman & Nollen, 1996; Peretz & Fried, 2012). We find that Anglo-Saxon SBUs delegate decision rights, use matrix organization structures and boundary systems, involve subordinates into strategic planning activities, rely on financial and relative performance measures, emphasize performance-based pay, use subjectivity in determining subordinate compensation, use non-financial rewards, connect leadership performance to rewards, and emphasize socialization processes to reinforce SBU values and beliefs more than their counterparts in Germanic and Nordic regions do. Germanic SBUs' management team compositions are more stable, and they use financial performance measures, relative performance evaluation and financial rewards to a lower extent than SBUs in the Anglo-Saxon and Nordic regions. Nordic SBUs review strategic ends, revise short-term performance targets and formally

evaluate business performance of subordinates more frequently than SBUs in other regions do. The role of subordinates in action planning, diagnostic use of budgets and performance measurement systems, reliance on non-financial measures in performance evaluation, among other practices, appear similar across regions, despite differences in cultural traits. We further contribute by developing preliminary explanations for MC practice variation based on the cultural characteristics of each cultural region. Some of our findings are in line with prior MC research that has examined particular cultural dimensions, predominantly between Anglo-Saxon and Asian firms. Other differences are inconsistent with prior research, and we suggest that alternate cultural dimensions, based on GLOBE, may have greater explanatory power for understanding variations between Western cultural regions. Additionally, a number of MC differences seem unrelated to cultural characteristics. In fact, these differences do not seem to be related to a large number of factors that were found to influence MC practices in prior studies, and that we controlled for. Our second contribution relates to this last point - we provide evidence on how a number of MC practices are interdependent with other MC practices (Bedford et al., 2016; Grabner & Moers, 2013) and how these interdependencies vary between cultural regions. Our findings suggest that to understand variation in MC practices between cultural regions, and to build a theory on MC practices, interdependencies need to be taken into account and form part of the focus of further research.

The remainder of this study is structured as follows. The next section reviews prior literature on cultural regions and provides an overview of prior cross-cultural MC research. Section 3 describes the research methods, and the results are presented in Section 4. The final two sections discuss the results, present the contributions and limitations of the study, and provide suggestions for further research.

2.0 Literature review

2.1 Cultural regions

Contingency-based research assumes that because different countries possess particular cultural characteristics, individuals from within these cultures will react differently to the same MC (Chenhall, 2003). Prior cross-cultural MC research has relied predominantly on Hofstede's typology. In this study, we draw on two categorizations central to the GLOBE study (House et al., 2004)[2]: their extended nine cultural dimensions and their concept of cultural regions.

Scholars of the GLOBE study define culture as "shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations" (House & Javidan, 2004, p. 15). Building on and extending Hofstede's (1980) and Kluckhohn and Strodtbeck's (1961) work on culture, GLOBE researchers identified nine cultural dimensions, including organizational and societal practices ('As Is') and values ('Should Be'), from which eight are of relevance to intercultural studies of MC: assertiveness, future orientation, humane orientation, institutional collectivism, in-group collectivism, performance orientation, power distance and uncertainty avoidance (see explanations in Table 1 for differences between Hofstede and GLOBE).[3]

<Insert Table 1 about here>

[2] Both GLOBE categorizations resulted from a multi-method research project exploring relations between national culture, organizational culture and leadership (Dorfman, Javidan, Hanges, Dastmalchian & House, 2012). We rely on the initial GLOBE Culture and Leadership Study (2004), in which 160 scholars in 59 countries surveyed 17,300 middle managers in 951 organizations across three industries (financial services, food services and telecommunications).

[3] We left out Gender Egalitarianism because we could not identify MC-related literature that refers to this cultural dimension.

Individuals from societies scoring high on assertiveness tend to be confident, tough, confrontational and even aggressive in social relationships (House & Javidan, 2004). Thus, people in these societies tend to have a 'just-do-it' attitude and favour competitive behaviour (Den Hartog, 2004). Societies scoring high on future orientation encourage and reward behaviour such as planning or delaying gratification (Ashkanasy, Gupta, Mayfield & Trevor-Roberts, 2004; Kluckhohn & Strodtbeck, 1961). These societies tend to have longer-time horizons for decision making (Hofstede, 2001). In societies with high humane orientation, "others are important (i.e., family, friends, community, strangers)" and "values of altruism, benevolence, kindness, love and generosity have high priority" (Kabasakal & Bodur, 2004, p. 570). In these societies it is expected to find a participative leadership style (Dorfman, Hanges & Brodbeck, 2004). Institutional collectivism reflects the degree to which societal practices encourage and reward collective over individual action (House & Javidan, 2004). Organizations in collectively-oriented societies tend to stress co-operation of teams and reward group performance; low-collective countries, on the contrary, emphasize individual autonomy and reward individual performance (Gelfand, Bhawuk, Nishii & Bechtold, 2004). In-group collectivism is the degree to which individuals take pride in being a member of a collective; for instance, organizations, teams, families or clans (House & Javidan, 2004). Compared to the former (societal) collectivism, in-group collectivism is a small-scale phenomenon. In high in-group collectivistic societies, organizations command high loyalty among all their members (Gelfand et al., 2004). Societies with a high performance orientation encourage and reward their members if they succeed in an activity (House & Javidan, 2004). Power distance is the extent to which members of a society agree that power should be stratified and concentrated at higher levels of an institution (House & Javidan, 2004). Members of societies high in power distance are more accepting of an uneven distribution of power, status and wealth (Carl,

Gupta & Javidan, 2004). Uncertainty avoidance is the degree to which members of a society cope with ambiguous situations with indeterminate outcomes (House & Javidan, 2004). Societies with a higher tendency for uncertainty avoidance rely on rules and orders and their members actively avoid high-risk situations (Hofstede, 2001).

While Hofstede (2001) and GLOBE (House et al., 2004) study culture at the country or national level, scholars of GLOBE also study the supra-national level by constructing ten regional clusters (Gupta & Hanges, 2004).[4] Research indicates that cultural differences may be more driven by the supra-national level than by the national level (Beugelsdijk et al., 2017). The GLOBE cultural region scores and averages, and explanations for each construct, are displayed in Table 2. Out of the nine GLOBE societal culture dimensions (e.g., House et al., 2004), we only list those that have been related to MC practices in prior research or, in the case of humane orientation, where it was possible to reasonably build prior expectations. It is important to note that Table 2 shows cultural dimension scores in relation to actual practices. The GLOBE study of national culture asked respondents about both societal practices, referring to "things as they are", as well as societal values, which relates to "as things should be". We base our comparative analysis on responses to societal practices where "shared values are enacted in behaviours, policies, and practices" (House & Javidan, 2004, p. 16). Furthermore, House and Javidan (2004) argue that societal practices affect leadership behaviours and organizational practices, because managers must respond to the way things actually are in practice.

<Insert Table 2 about here>

[4] The ten clusters are Anglo (e.g., Australia, Canada), Confucian Asia (e.g., China, Taiwan), Eastern Europe (e.g., Poland, Russia), Germanic Europe (e.g., Germany, Austria), Latin America (e.g., Brazil, Bolivia), Latin Europe (e.g., Italy, Spain), Middle East (e.g., Egypt, Marocco), Northern Europe (e.g., Denmark, Finland), Sub-Sahara Africa (e.g., Nigeria, Namibia), and Southern Asia (e.g., Indonesia, Thailand).

Regarding GLOBE's cultural dimensions, the following differences are noteworthy for the regions in our sample: (1) *Assertiveness* is lowest in the Nordic region; (2) *Power Distance* is lowest in the Anglo-Saxon region and highest in the Germanic region; (3) *Institutional Collectivism* is highest in the Nordic region; (4) *In-Group Collectivism* is lowest in the Nordic region and highest in the Germanic region; (5) *Uncertainty Avoidance* is lowest in the Anglo-Saxon region; (6) *Future Orientation* is lowest in the Anglo-Saxon region, but differences are less pronounced than the other cultural dimensions; (7) the Anglo-Saxon region and the Nordic region show higher *Humane Orientation* than the Germanic region; and (8*) Performance Orientation* is lower in the Nordic region compared to the Anglo-Saxon region and the Germanic region.

2.2 Management controls

We follow the Malmi and Brown (2008) framework to identify MC practices, as it focuses on controls managers use to influence the behaviour of their subordinates, and it is sufficiently comprehensive to allow comparison of practices across a large number of dimensions. Based on this framework we consider variation in MC practices across six categories: administrative controls (further divided into organizational structure, management processes, and rules and procedures), strategic planning, action planning, performance measurement and evaluation, reward and compensation, and cultural controls.[5] Below we briefly discuss the cross-cultural research that has been conducted in each category and the MC practices to be examined in this

[5] Our questionnaire also contained a number of questions not directly related to controlling the behaviour of subordinates. Those differences are not reported in this study unless there is a reason to believe that such practices might have an impact on how controls are used.

study. Table 3 provides a summary of prior work. Definitions of the examined MC practices are provided in Tables 6 to 11 and Appendix A.

<Insert Table 3 about here>

2.2.1 Administrative controls

Administrative controls refer to practices that designate formal authority and patterns of interaction within the firm (Malmi & Brown, 2008). We examine three sub-categories of administrative controls: organizational structure, management processes, and rules and procedures. Although not always recognized as a component of MC (Merchant & Van der Stede, 2012), the structure of an organization has important implications for influencing the behaviour of subordinates (Flamholtz, 1983). The most frequently examined aspect of structure in MC research is the extent of decentralization (e.g., Abernethy, Bouwens & van Lent, 2004; Bedford & Malmi, 2015; Burns & Stalker, 1961; Bruns & Waterhouse, 1975; Gordon & Narayanan, 1984; Keating, 1997; Merchant, 1981), also referred to in economics-based literature as the delegation of decision rights (Brickley, Smith & Zimmerman, 1997). Prior research suggests that the extent of decentralization, or centralization, is associated with variations in the cultural dimensions of power distance and individualism (Harrison et al., 1994; Williams & Seaman, 2001; Williams & van Triest, 2009). In particular, according to Hofstede (1980), authority centralized at the top levels of firms is expected in high power distance cultures. Additionally, GLOBE research (House & Javidan, 2004) posits that in low power distance societies, forces toward centralization tend to be weaker than in high distance power societies. Empirical accounting research has addressed centralization and decentralization in Anglo-Saxon and East Asian firms and found support for these predictions

(Harrison et al., 1994; Williams & Seaman, 2001). Similarly, Meyer and Hammerschmid (2010) found the extent to which human resource management decision authority is decentralized in Europe (i.e., the 27 EU member states) to be in line with these predictions. In this study, we examine the delegation of authority across three types of decisions (strategic, business, and operational) and the use of matrix structures, which impose greater oversight on subordinate activities through multiple lines of reporting.

Variation in the use of rules and standardized procedures has been associated with institutional collectivism (individualism) and uncertainty avoidance. Low individualism implies that one accepts having less control over work-related actions. In line with this, Chow et al. (1999) show that Taiwanese managers employed by a local Taiwanese-owned firm (lower in individualism) used more written policies, rules, standardized procedures, and manuals than those employed by a Japanese-owned firm (higher in individualism). According to the GLOBE study (Sully de Luque & Javidan, 2004), in societies that score high on uncertainty avoidance (e.g., our Nordic and Germanic regions), organizations prefer to rely on formalization and standardized procedures and rules. Empirical accounting research has found some support for this (Chow, Kato & Shields, 1994; Chow, Kato & Merchant, 1996; Jaussaud & Schaaper, 2006), with Newman and Nollen (1996) showing well-defined rules and directions in high uncertainty avoidance settings to have positive performance consequences. However, contradictory results are also reported. In particular, Birnberg and Snodgrass (1988) found that, despite their high uncertainty avoidance, Japanese firms used fewer bureaucratic procedures than US firms. They ascribe this contradictory finding to Japan's homogenous and cooperative culture, which makes rules and enforcement less necessary. Prior research indicates that two MC practices are particularly important for implementing control at the top level of management: boundary controls, which specify limits on

acceptable behaviours (Simons, 1995); and pre-action reviews, which require subordinates to seek formal approval prior to conducting certain activities (Merchant & Van der Stede, 2012).

In an individualistic society, or in a society which scores low on institutional collectivism, (e.g., our Germanic and Anglo-Saxon regions), extensive communication and coordination mechanisms are required to align managers' plans and goals with those of the organization. Although studies by Ueno and Sekaran (1992) and Ueno and Wu (1993) of US and Japanese companies provide some support for the general idea that more individualism is associated with more extensive communication and coordination, it should be noted that these studies took place in the context of budget control practices. An important managerial process to encourage coordination and communication is the use of interfunctional or interdepartmental meetings and teams. Meetings serve as a monitoring device for the accomplishment of various plans and projects, and as an important arena for exchanging information (Simons, 2005). Hence, we examine the frequency of interaction and composition of teams within the SBU.

2.2.2 Strategic and action planning

Strategic planning can be conceived as a form of control if subordinates are allowed to participate in setting the course of action for an organization. Participation creates buy-in and it may require less extensive use of other forms of control to implement the strategy when subordinates are committed to the chosen strategy (De Baerdemaeker & Bruggeman, 2015; Dyson & Foster, 1982; Lee & Yang, 2011; Sponem & Lambert, 2016). One way to translate strategy into action (Groen, Wouters & Wilderom, 2016; Kaplan & Norton, 1996) is to ensure that short-term targets and action plans of subordinates are aligned with both strategic ends and means, and that plans are executed and targets are achieved. Hence, both strategic and action planning can also function as a control device if subordinates are held accountable for executing the plans.

Only one study has addressed cultural differences in how strategic planning is conducted. In particular, Hoffman (2007) investigated whether strategic planning enhances firm performance in Anglo-Saxon, Nordic and Germanic cultures and found that the strength of the planning-performance relationship was greatest within the Nordic culture. This was attributed to power distance and uncertainty avoidance. With reference to action planning and budgeting, both power distance and individualism have been used to explain attitudes towards budget participation (Harrison, 1992; Li & Tang, 2009). In a low power distance society, subordinate reactions to participation are likely to be favourable, whereas in a high power distance society, subordinates are likely to prefer lower participation (Connor, 1995; Elenkov, 1998). Empirical accounting research has addressed this in various cultures and found support for the idea that power distance plays a role in the extent of participation, how participation is perceived, and also how participation influences organizational outcomes (Brewer, 1998; Lau & Eggleton, 2004; Lau & Caby 2010; Lubatkin et al., 1998; Newman & Nollen, 1996; O'Connor, 1995; Tsui, 2001).

The arguments, and findings, regarding individualism are less clear.[6] Some authors claim that participation is culturally appropriate in an individualist society as it provides a mechanism to internalize goals and standards (Milani, 1975). However, most authors have argued that participation works best in collectivist societies as group decisions are believed to be superior to those made by an individual (Harrison, 1992). The effects of budgetary participation have been shown to be independent of culture, a result attributed to the offsetting effects of low power distance and high individualism of many Anglo-Saxon nations and the offsetting effects of high power distance and low individualism of many Asian nations (Erez & Earley, 1987; Lau, Low & Eggleton, 1995, 1997; Lau & Tan, 1998).

[6] Empirical accounting research has not used GLOBE classifications. GLOBE dimensions do not include individualism but refer to institutional collectivism and in-group collectivism.

In addition to examining the influence of subordinates in determining actions plans and setting targets, we also assess how comprehensive or detailed the plans are and how often targets, plans and resource allocations are revised. We could not find much research evidence on potential cultural differences on these practices. These dimensions could be related, for example, to uncertainty avoidance. In particular, high uncertainty avoidance may lead to increased search for information on uncertainties and more comprehensive planning to mitigate uncertainties, which may influence who participates in planning activities.

2.2.3 Performance measurement and evaluation

Prior research has addressed the association between cultural traits and the reliance on, and preference for, financial performance measures. It has been argued that individuals in a high power distance society prefer clearly specified performance criteria (Chiang & Birtch, 2007). Similarly, due to their comparability, financial performance measures are also preferred in collectivist societies where people are concerned with comparison to others (cf. Hui, 1988). In contrast, low reliance on financial performance measures generates more positive outcomes in low power distance/high individualism societies because it implies greater incorporation of person- and situation-specific factors in performance evaluation (Chiang & Birtch, 2006). Power distance and individualism are also argued to be associated with target difficulty – individuals in cultures with high power distance and low individualism are likely to be satisfied with high-stretch performance standards. Empirical accounting research provides support for these associations (Chow et al., 2001; Harrison, 1993).

Individualism has also been related to other aspects of performance evaluation. In individualistic societies, where organizational loyalty tends to be relatively lower, people favour short-term evaluations and immediate rewards for personal effort and achievements (Ueno &

Sekaran, 1992). Frequent formal appraisal has also been related to low (in-group) collectivist, high uncertainty avoidance and high assertive (i.e., masculine) cultures (Chiang & Birtch, 2010). In addition, it has been suggested that the degree of collectiveness has an impact on how managers appraise their employee's performance, in that it influences managers' perception of their employees' motivation as well as how they weigh these perceptions when appraising employee performance (DeVoe & Iyengar, 2004). Myloni et al. (2004) use four of the GLOBE cultural dimensions to compare performance evaluation practices between Greek firms and multinational corporation (MNC) subsidiaries from Europe, the US, Japan and Australia. Performance evaluations are more subjective (e.g., higher degree of favouritism and less use of written reports) in Greek firms compared to MNC subsidiaries due to the low level of performance orientation and future orientation, and high level of in-group collectivism and power distance. Besides performance evaluation, cultural traits also appear to influence the use of performance measurement systems (PMSs) for decision making, such as marketing, R&D and HR decisions. PMSs implemented by headquarters have a high influence on subsidiaries' decision making when the headquarter is located in a society characterized by high individualism, low masculinity, low power distance and low uncertainty avoidance (Dossi & Patelli, 2008). These subsidiaries consider the PMS implemented by the headquarter adequate for their performance and local business decisions. In contrast, subsidiaries with headquarters from societies with high masculinity, power distance and uncertainty avoidance use autonomously developed PMSs to influence local business decisions.

Prior research has investigated the relative emphasis on different types of performance measures in the relationship between headquarter and subsidiary in MNCs. Chung et al. (2006) compared the importance of performance measures between US, UK, German and Japanese

MNCs. The relative importance of the different types of performance measures was the same regardless of the MNC nationality. Financial measures were the most important category in all MNCs, followed by customer measures, internal business measures and innovation and learning measures. However, there are differences in the perceived importance of both financial and non-financial performance measures between MNCs from different societies (Borkowski, 1999; Chung et al., 2006). US and UK MNCs place more importance on financial measures compared to Germany and Japan (Chung et al., 2006), particularly on those that are short-term in nature (Borkowski, 1999; Carr & Tomkins, 1996; Chung et al., 2006; Coates et al. 1992, 1995). In her study of US headquartered MNCs with subsidiaries in Japan, Canada, Germany or the UK, Borkowski (1999) found that sales growth was the most important measure for performance evaluation regardless of orientation. However, in the study by Chung et al. (2006), return on assets and cost reduction were more important to US and UK MNCs than to MNCs in Germany and Japan, while net income was more important to German and Japanese MNCs compared to MNCs from the US and the UK. Conversely, German and Japanese MNCs placed greater importance on internal business and customer measures than US and UK MNCs. Dossi and Patelli (2010) investigated the overall inclusion of non-financial performance measures and the inclusion of customer, internal process and people measures in the design of PMSs employed by MNCs. PMSs containing a high portion of non-financial measures were used interactively by MNCs with headquarters located in societies with high individualism, low masculinity, low power distance and low uncertainty avoidance (as our Germanic and Anglo-Saxon regions). These firms also use a high portion of customer-related measures in the relationship between headquarter and subsidiary.

It is interesting to note that prior cross-cultural research on performance measurement and evaluation has not addressed many important dimensions widely discussed elsewhere in the literature. For example, there are no studies on whether culture influences the choice to use MCs in a diagnostic or interactive manner. Prior literature is also silent with respect to the extent to which non-financial measures are used, how detailed or aggregated measures are, how many measures are used for evaluation, and to what extent relative performance measures are used in different cultures. While it is common to use absolute preset targets, relative performance evaluation may be beneficial in the sense that it is free from game-playing. Relative performance evaluation is also objective in the sense that the benchmarks face the same uncontrollable factors as the evaluated subordinate.

2.2.4 Reward and compensation

In individualistic societies, performance-based reward systems are utilized more (Bae, Chen & Lawler, 1998; Newman & Nollen, 1996; Schuler & Rogovsky, 1998) and stronger links can be expected between individual compensation and personal success (Awasthi, Chow & Wu, 2001; Daley, Jiambalvo, Sundem & Kondo, 1985; Pennings, 1993). Moreover, firms in individualistic societies are likely to make more use of long-term incentives – otherwise managers will emphasize their own short-term gains at the expense of what is best for their firm's long-term success (Merchant, Chow & Wu, 1995).

Individualism and power distance have been found to be positively related, and uncertainty avoidance negatively related, to the proportion of variable compensation incorporated into incentive contracts (Chiang & Birtch, 2007; Tosi & Greckhamer, 2004). High individualistic cultures seem to link financial rewards to high performance (Fischer, 2004; Giacobbe-Miller, Miller & Victorov, 1998; Gooderham et al., 2006), whereas the link between performance on non-

financial measures and rewards appeared to be stronger in low assertiveness and low power distance cultures (Chiang & Birtch, 2006, 2012; Newman & Nollen, 1996). Indeed, in masculine countries, the trend has been to make jobs more interesting by providing workers with greater autonomy and greater accountability (Jansen et al., 2009).

Van der Stede's (2003) study focuses on local and foreign subsidiaries of Belgian parent firms. Incentive system design was mainly driven by corporate parent effects, as opposed to the culture of the local business unit. This non-adaptation of incentive system design for local cultures is in contrast to Chow et al.'s (1999) findings about local adaptations of administrative controls in Taiwan. Jansen et al.'s (2009) study of incentive compensation practices in the automobile retail sector in the US and the Netherlands (a low assertiveness country in which people are future oriented) demonstrates that the national setting does seem to matter in incentive system design. Compared to the US firms, the Dutch firms were much less likely to provide their managers with incentive compensation in any form. Moreover, Dutch firms based their bonus awards more on non-financial performance measures and used more performance boundaries in their performance/reward functions. Merchant et al. (2011) extended the results to Chinese automobile retailers and found that differences in masculinity (high assertiveness) could explain differences in the use of incentive compensation in firms in the three countries. The high use of discretion used to allocate bonuses in China was ascribed to the country's greater power distance, which indicates greater respect for authority.

Prior cross-cultural research has not examined many relevant dimensions of compensation and rewards systems that influence subordinate behaviours. One such aspect is the purpose of using incentive systems. Reward and compensation systems can be used to motivate employees (De Baerdemaeker & Bruggeman, 2015), to direct their attention within organizations, and to attract and retain talent. We do not have empirical evidence on whether managers in different cultures put varying emphases on these different uses, and how that might be reflected in the design of such systems.

2.2.5 Cultural controls

Top managers can use recruitment, training and socialization to manage and change their culture to achieve better alignment between individual behaviours and firm objectives (Merchant & Van der Stede, 2012). Organizations also produce mission, vision and value statements that set out the values, purpose and direction for the organization; top management communicate these values and beliefs to motivate and commit subordinates (Simons, 1995). However, little cross-cultural work has been completed in the area of cultural controls (Chenhall, 2003). One rare example is where uncertainty avoidance has been suggested to relate to employee selection. Firms from high uncertainty avoidance cultures fill top positions in foreign subsidiaries with people from their own culture (Chang & Taylor, 1999). Other comparative studies on cultural controls (e.g., Bae et al., 1998; Faulkner et al., 2002; Myloni et al., 2004; Snodgrass & Szewczak, 1990) have neither found differences, nor provided insights on how cultural traits may drive observed differences.

2.3 Summary

Taken together, cross-cultural research on MC practices has provided informative, if somewhat mixed, results on how MC practices are tailored to suit local cultural circumstances. However,

these studies have predominantly focused on comparisons between a variety of Asian nations and the US or Australia (Harrison & McKinnon, 1999). Power distance and individualism have been aspects of culture authors have most often drawn on, but observed differences are also attributed to uncertainty avoidance and masculinity/assertiveness. However, it is not always clear which cultural dimensions might best explain the observed differences.

There are cultural regions different from the Anglo-Saxon and Asian regions, including the Germanic and Nordic regions. According to the GLOBE study, these regions have distinctive cultural characteristics that may affect how companies in each region use their MCs, as for example the study by Jansen et al. (2009) suggest. Moreover, there are MC practices, such as planning and cultural controls, that have yet to be studied extensively, or at all, in cross-cultural research. Even within MCs that have been studied more extensively, there are several attributes of those practices that are still to be explored.

For reasons outlined, we have not enough ground to develop specific hypotheses on differences between MC practices in these cultural regions. Our study is exploratory in nature and we will compare our findings to those presented in the prior literature in the discussion section.

3.0 Method

3.1. Data collection

This study uses data from a survey conducted in eleven countries, of which nine are included in the analysis.[7] The same survey instrument was used in all countries (Schaffer & Riordan, 2003).

[7] The original survey also covered SBUs from Italy and Poland. Within the GLOBE study, Italy is part of the Latin Europe cluster and Poland of the Eastern Europe cluster. With only one country per cultural region, and a lower number of observations than in the three cultural regions used in the analysis, we decided to exclude observations from these two countries. Following the GLOBE study, 6 firms from the French-speaking part of Belgium and 12 firms from the French-speaking part of Canada were excluded.

The survey instrument was originally developed in English and then translated into the local language. The survey was subsequently back-translated by an independent researcher (Harkness, 2003) to ensure consistency in meaning (Van De Vijver & Leung, 1997). The survey instrument was extensively pre-tested by researchers in each country with both academics in the MC discipline as well as practitioners representative of the target population. Sample information for each country is detailed in Table 4.

<Insert Table 4 about here>

The survey population consists of private for-profit companies that have more than 250 employees. This minimum criterion was established to increase the likelihood that the MC variables of interest would be observed. Firms were included in the sample through a stratified sampling approach (Cochran, 1977). Samples were stratified by industry (manufacturing, service and wholesale) and size (medium, defined as firms with 250 to 1,000 employees, and large, defined as firms with 1,000 or more employees). For European countries, the sample was drawn from the ORBIS database, while Dun and Bradstreet was used for the Australian sample and the Scott's National database for the Canadian sample.

The unit of analysis is the strategic business unit (SBU), which is defined as a relatively independent entity that faces a unique competitive situation (in relation to other SBUs of the firm) and can be regarded as having its own competitive strategy. In some cases, firms operated as single independent businesses. Following prior literature, SBUs and independent firms were considered to be empirically comparable (e.g., Chenhall & Langfield-Smith, 1998; Henri, 2006). In these cases, questions referring to the SBU-group headquarters relationship were ignored. The target

respondents are CEOs and managing directors of SBUs or other members of the top management team. In some cases, persons with detailed knowledge of the SBU's management control systems were nominated by the CEO or CFO as interviewees. Almost all interviews took place with a single interviewee. Respondent titles and average interview durations by country are displayed in Table 5.

<Insert Table 5 about here>

Data collection took place from November 2009 to March 2013. Within individual countries, the data collection period lasted between 8 and 17 months (mean = 14). Due to the detailed and comprehensive nature of the survey instrument, data was collected through interviews. This minimizes the likelihood of missing data and increases the validity of survey responses as any ambiguities are able to be clarified with the respondent. Endenich et al. (2011) warn that such ambiguities may be particularly important in cross-country studies due to culture-specific perceptions of identical phenomena. In total 2,199 firms were invited (via telephone or email) to participate in the study, with 694 firms agreeing to participate. We eliminated SBUs with a shared headquarter and SBUs with a headquarter in a different region, leaving a usable sample of 593 responses. Interviews were conducted face-to-face (71%) or by telephone (29%). Where possible, interviews were audio recorded. Most of the interviews were conducted by one of the authors, although in some cases two of the authors were present and in some cases research students were trained to collect the data. To ensure consistency of collected data, and to achieve reliability of measurement instruments, all interviewers were provided a detailed lexicon with comments and explanations, outlining concrete definitions of the MC practices being assessed by

each question in the survey instrument. Similarly, detailed guidelines regarding the sampling procedure to be used in the databases when selecting companies was provided to all researchers. Regular meetings were organized for research group members to discuss and improve the research design and method.

Participants were assured anonymity and were explicitly informed that there were no right or wrong answers. At the start of the interview the interviewees were informed in very general terms about the purpose of the interview and about the interview structure. Interviewers asked the participants to answer questions from their perspective (SBU top management) and not from a headquarters perspective. Questions were always asked in the same sequence to create an identical flow of questions and answers across all interviews. Coding procedures were applied uniformly. Finally, a check of the data for consistency and missing values was conducted at both the research group level and at the country level.

3.2 Variable measurement

We used several constructs for each MC category outlined in Malmi and Brown (2008). Twelve constructs were used for administrative controls, 8 for strategic planning, 7 for action planning, 13 for performance measurement and evaluation, 7 for rewards and compensation, and 7 for cultural controls, resulting in 54 constructs used as dependent variables. In addition to the region variable, 14 control variables were used to control for other contextual determinants. This included aspects of the SBU's external environment and strategy, and other characteristics such as SBU size, ownership structure, and age. A complete list of MC variables and definitions is provided in Appendix A.

To control for potential biases from the data collection method we also included interviewer (researcher/student) and interview type dummies (face-to-face/telephone). Appendix B lists items,

anchors, and Cronbach Alpha for reflective constructs (between 0.64 and 0.88 except for the matrix structure construct with alpha = 0.59). Confirmatory factor analyses for the reflective constructs show factor loadings > 0.54 for all items (see Appendix B).

For formative constructs, we checked item weights on the first principal component (Petter, Straub & Rai, 2007). Item weights on all formative constructs are positive and have weights above the recommended minimum of 0.30 (Hair, Hult, Ringle & Sarstedt, 2017; see Appendix B). Variance inflation factors (VIFs) are calculated to assess multicollinearity. The maximum VIF of 2.63 is below the general threshold of 5 (Hair et al., 2017).

4.0 Results

4.1 The use of management controls across cultural regions

In line with the exploratory nature of this paper, we are more interested in the differences in means between regions rather than regression coefficients. Differences in the use of MC practices across cultural regions are assessed using ANCOVA and Tukey contrast analyses. The results, reported in Tables 6 to 11, show significant regional differences at the 0.05 or lower level. All *p*-values were adjusted using the false discovery rate method (Benjamini & Hochberg, 1995) to limit the risk of identifying false positives. Descriptive statistics of the management control and contextual variables are provided in Appendix C.

4.1.1 Administrative controls

We find a clear cultural difference in the delegation of decision rights, shown in Table 6 – top management in Anglo-Saxon SBUs delegate strategic, business and operational decisions more compared to other cultural regions ($p < 0.001$). We also asked respondents to assess the extent to which subordinates have multiple reporting lines (some form of matrix organization). The results

mirror those of decision rights – managers in Anglo-Saxon SBUs have a higher level of multiple reporting lines compared to Nordic SBUs, and Nordic compared to Germanic SBUs ($p < 0.001$). Hence, it appears that although subordinates in Anglo-Saxon SBUs have more power to decide on various issues than their counterparts in other cultural regions, they are also monitored by a larger number of managers.

We asked the respondents to assess the extent to which they rely on various types of rules and procedures in guiding and directing subordinate behaviour. Anglo-Saxon SBUs use boundary systems to a higher extent than SBUs in the other cultural regions ($p < 0.01$). Anglo-Saxon and Germanic SBUs rely on pre-action reviews more than their Nordic counterparts ($p < 0.001$).

We also asked respondents about various managerial processes. Anglo-Saxon and Germanic SBU managers meet more frequently within their SBU than Nordic managers ($p < 0.01$).[8] Our results also suggest that management groups within Anglo-Saxon SBUs ($p < 0.001$) are more broadly based than those in the other cultural regions. Management groups within and across SBUs in the Anglo-Saxon and Nordic regions are less stable compared to the Germanic region ($p < 0.001$).

<Insert Table 6 about here>

Our findings on the variation in the allocation of decision rights are in line with GLOBE research (House & Javidan, 2004) and prior accounting literature (Harrison et al., 1994; Williams & Seaman, 2001). Power distance is lowest in the Anglo-Saxon region, while Anglo-Saxon SBUs allocate decision rights to a greater extent than their Germanic and Nordic counterparts. Our

[8] The average period between meetings in Anglo-Saxon (Germanic, Nordic) SBUs is 13 (22, 25) days.

finding that Anglo-Saxon SBUs rely on more complex communication and accountability structures (i.e., matrix organizations) than Germanic and Nordic SBUs, and Nordic SBUs more than Germanic SBUs, could also be driven by differences in power distance. The lower the power distance, the more likely managers are to accept situations where they do not have sole control over their subordinates. The more extensive use of matrix organizations could also result from the higher extent to which decision rights are delegated, allowing multiple managers to monitor subordinate decisions. This would also imply that matrix structures are explained by differences in power distance.

The GLOBE classification (Sully de Luque & Javidan, 2004), and some prior accounting research (Chow et al., 1994; 1996), indicates that in societies that score high in uncertainty avoidance (e.g., our Germanic and Nordic regions) organizations prefer to rely on the formalization and standardization of procedures and rules. In contrast, our results suggest these are relied on equally or even more intensively in Anglo-Saxon SBUs. However, this result may well be explained by the different focus of this study compared to prior research. Prior literature has focused on the degree of formalization more generally, and the use of standardized rules and procedures that specify how activities must be conducted. This study examines the use of pre-action reviews and boundary systems, which specify behaviours. The more extensive delegation of decision rights by Anglo-Saxon SBUs may explain why boundary systems are emphasized more in Anglo-Saxon SBUs than in Germanic and Nordic SBUs. Higher performance orientation, and an associated quest for excellence and performance improvement, may lead SBUs in Anglo-Saxon and Germanic regions to use pre-action reviews more than SBUs in Nordic regions.

The composition of various managerial teams has not been addressed by prior accounting research. The higher stability in Germanic SBUs may relate to a greater in-group collectivism – in

regions scoring high on in-group collectivism, managers emphasize group stability. However, the SBUs in the Anglo-Saxon region score higher on in-group collectivism than Nordic SBUs, but we find no differences in stability between these regions. This casts some doubt on the ability of in-group collectivism to explain these differences. We also find that Anglo-Saxon SBUs have higher functional diversity of individuals in the SBU management teams than SBUs in other studied regions. As it is difficult to build compelling arguments based on GLOBE cultural dimensions to explain this difference, one possibility is that these differences may relate to Anglo-Saxon SBUs using matrix organizations and delegating decision rights more extensively than SBUs in other regions.

4.1.2 Strategic planning

Table 7 reveals that participation of subordinates in strategic planning is less common in Nordic and Germanic SBUs compared to Anglo-Saxon SBUs ($p < 0.001$). We assessed interaction around strategic planning by looking at how often strategic ends and means are reviewed and revised. On average, about 40% of the SBUs in our sample review both their ends and means – either monthly or quarterly. For the rest of the SBUs, the review cycle is longer. Nordic SBUs review their ends more often than SBUs in other cultural regions ($p < 0.01$). Germanic and Nordic SBUs review their means more often than Anglo-Saxon SBUs ($p < 0.001$). Regarding revising ends and means, an annual cycle is by far the most common. With respect to revising ends and means, we do not find any regional differences.

There are some regional differences in how comprehensive strategic planning is. In Anglo-Saxon SBUs, strategic planning is less comprehensive than in Germanic and Nordic SBUs ($p < 0.001$). In terms of specificity, i.e., how detailed and exact strategic plans are, we did not find any differences between cultural regions.

<Insert Table 7 about here>

In prior accounting literature, participation is related to power distance and individualism, but it is discussed mainly in relation to budgeting rather than strategic planning. The finding that subordinates in Anglo-Saxon SBUs participate in strategic planning activities more than their counterparts in Germanic and Nordic regions is only partly in line with differences in power distance (see Table 2). On the other hand, institutional collectivism, on which Nordic countries score highly, would suggest that participation should be extensive within Nordic SBUs (Harrison, 1992; Lau & Buckland, 2000). As this is not the case, this finding may suggest that power distance as a cultural trait is stronger than individualism or institutional collectiveness in explaining participation in strategic planning activities.

The difference in comprehensiveness of strategic plans between Nordic and Germanic SBUs compared to Anglo-Saxon SBUs could be attributed to higher uncertainty avoidance. On the other hand, our findings on review frequency of ends and means are difficult to explain relying solely on cultural differences. It may be that more comprehensive plans create a need to review the means more often, as the pace and unpredictability of change has generally increased across Western societies.

4.1.3 Action planning

In roughly half of the studied SBUs, important areas of action are defined at the top and subordinates are required to develop specific action plans. Another common practice to derive action plans is by intensive negotiations between managers and subordinates within planning guidelines provided by the top. Both practices rely on subordinate input and participation,

facilitating commitment to action plans. No differences seem to exist in the autonomy subordinates have in developing action plans between the cultures we studied.[9] We also asked respondents how short-term targets are set for both ends and means. In the majority of the SBUs, top management set targets for ends, i.e., what needs to be achieved, either as a top-down process or based on negotiations. There do not seem to be any cultural differences in terms of autonomy granted for subordinates in setting targets for ends. Subordinates have, on average, more impact on targets set for means, i.e., how ends are to be achieved, but we found no cultural differences in this regard either. In sum, very few SBUs allow subordinates to autonomously define action plans or set short-term targets for ends and/or means. This indicates that, at least in the majority of the SBUs in our study, management attempts to link long-term and short-term plans together – not only by passing financial objectives down the ranks, but by ensuring that short-term action plans and targets for means are in line with long-term strategic objectives.

Nordic SBUs tend to update short-term targets more often than Anglo-Saxon SBUs, and these again more often than Germanic SBUs ($p < 0.001$). Resource commitments are updated more frequently in Nordic compared to Germanic SBUs ($p < 0.001$).[10] There are no differences between cultural regions with respect to how often action plans are updated. Similarly, we find no differences in how comprehensive and detailed action plans are.

<Insert Table 8 about here>

[9] We used five items (see Appendix B) to describe SBU managers' participation in setting short-term targets for ends and means. For ends, more than 75% state that targets are set by top management with no or little participation of SBU managers. For means, 58% state high top management involvement, but almost 20% describe the process of having extensive negotiations with top management.

[10] For Anglo-Saxon (Germanic, Nordic) SBUs, the average revision period for short-term targets is 4.0 (7.9, 5.8) months; the average revision period for resource commitments is 3.8 (4.0, 3.0) months.

Although the studied cultural regions differ somewhat in terms of institutional collectivism, our results suggest that action planning is done mostly as a collective process in all the regions. The more frequent updates of short-term targets in Nordic compared to Anglo-Saxon, and Anglo-Saxon compared to Germanic SBUs may, however, relate to higher institutional collectivism and lower assertiveness, perhaps because targets are commonly used in performance evaluation. High institutional collectivism and low assertiveness may suggest that individuals in such SBUs seek to amend targets to avoid major discrepancies between targets and actuals – this could lead to confrontational situations during performance evaluation. It is difficult to draw on any cultural dimensions to explain why Nordic SBUs update resource commitments more often than Germanic SBUs, while there are no statistical differences with Anglo-Saxon SBUs.

4.1.4 Performance measurement and evaluation

In assessing whether budgets and performance measures are used diagnostically, our results indicate no differences between cultural regions (see Table 9). However, Anglo-Saxon SBUs rely more on interactive use of budgets ($p < 0.01$) and PMSs ($p < 0.01$) compared to Nordic SBUs.

Simons (2005) has argued that the more measures there are to evaluate subordinates' performance and the more detailed those measures are, the less a subordinate can use his or her discretion in an attempt to achieve good results and vice versa. Our results indicate that Nordic SBUs use a higher number of measures that subordinates are accountable for than Germanic SBUs ($p < 0.05$).[11] However, Germanic SBUs include more individual behaviours, such as leadership achievements and individual effort, in performance evaluation than Nordic SBUs ($p < 0.05$). In evaluating subordinate performance, SBUs in all cultural regions put similar emphasis on non-

[11] The mean number of performance measures for Anglo-Saxon (Germanic, Nordic) SBUs is 6 (5, 6).

financial measures, while financial measures are used more in Anglo-Saxon SBUs compared to Nordic SBUs, and Nordic compared to Germanic SBUs. We find no differences regarding how detailed and aggregated measures are over the three cultural regions.

Compared to the Anglo-Saxon SBUs, the use of relative performance evaluation is less common in Germanic and Nordic SBUs, and less common in Germanic compared to Nordic SBUs ($p < 0.001$). Besides differences in the information used for performance evaluations, our results indicate that Nordic SBUs evaluate leadership performance of subordinates more frequently than Anglo-Saxon SBUs ($p < 0.01$), and business performance of subordinates ($p < 0.001$) more frequently than Germanic SBUs, and the latter more frequently than Anglo-Saxon SBUs.

<Insert Table 9 about here>

It is not obvious which cultural dimensions could drive interactive use of budgets and PMSs. High institutional collectivism could be one – as it refers to the degree to which organizational and societal institutional practices encourage and reward collective action – but it does not get support from our findings. On the other hand, as Simons (1995) argues, managers use interactive controls to cope with strategic uncertainties. It may be that cultures high in uncertainty avoidance put high emphasis on mechanisms assisting in identifying and coping with uncertainties. Therefore, cultures high in uncertainty avoidance could be likely candidates for using budgets and/or PMSs interactively. Anglo-Saxon SBUs using budgets and PMSs more interactively than Nordic SBUs is inconsistent with what GLOBE dimensions would suggest.

It is interesting to note that Nordic SBUs evaluate both leadership and business performance of subordinates more frequently than Anglo-Saxon SBUs. Nordic SBUs use PMSs

and budgets less interactively, but rely on more frequent formalized evaluations of subordinates. In prior management literature, three cultural dimensions (i.e. (in-group) collectivism, uncertainty avoidance and assertiveness) are suggested to influence performance evaluation frequency (Chiang & Birtch, 2010). None of these, nor any other GLOBE dimensions, seem to be capable of explaining our findings. Perhaps this could be partly attributed to differences in how rewards systems are used (see below). Anglo-Saxon SBUs place stronger emphasis on performance-based pay. It may be that the timing of these formal evaluations of subordinates is somehow linked to how often bonuses are paid. Perhaps in Nordic countries the link with these evaluations and bonus pay is not as strong. This is clearly an observation that needs further research.

Prior accounting literature (Harrison, 1993) indicates that power distance and individualism are related to the extent that financial performance measures are relied upon in performance evaluation. It is argued that low reliance on financial performance measures generates more positive outcomes in low power distance/high individualism societies because it implies greater incorporation of person- and situation-specific factors into performance evaluation. In our study, Anglo-Saxon SBUs rely the most on financial performance measures. Hence, as Anglo-Saxon SBUs score the lowest on power distance, our findings appear to be in conflict with those of Harrison (1993). The more extensive use of relative performance measures by Anglo-Saxon SBUs, and Nordic compared to Germanic SBUs, may also relate to more extensive delegation of decision rights.

In addition, we find that Germanic SBUs incorporate more individual behaviours, such as leadership achievements and individual effort, in performance evaluation than Nordic SBUs. This could be related to individualism, but would be difficult to explain by relying on institutional or in-group collectivism (see Table 2). Nordic SBUs, on the other hand, hold their subordinates

accountable for a larger number of performance measures than Germanic SBUs. As there are no differences compared to Anglo-Saxon SBUs, this finding is not easily explained by any GLOBE cultural dimension. It could be that assessing the individual behaviours of subordinates serves as a substitute for holding subordinates accountable for some performance measures. Again, this would not allow us to explain why a certain method is used in a certain region. However, it might suggest there is more than one option available to resolve certain control problems. As GLOBE cultural dimensions appear unable to explain these choices, further research is required to provide explanation.

Finally, despite many differences in cultural traits between studied regions, we find that all regions rely on similar practices regarding the use of detailed and aggregate measures in evaluating subordinate performance.

4.1.5 Reward and compensation

Results reported in Table 10 show that there are also differences in how reward and compensation systems are used in different cultural regions. First, emphasis on performance-based pay is higher in Anglo-Saxon SBUs compared to Nordic and Germanic SBUs ($p < 0.001$). For the proportion of incentive pay out of total annual compensation to subordinates, we find no significant differences between regions.[12] Second, Nordic and Anglo-Saxon SBUs rely more heavily on financial rewards than Germanic SBUs ($p < 0.01$). Third, Anglo-Saxon SBUs also use non-financial rewards more than SBUs in the two other cultural regions, and Germanic SBUs use non-financial rewards more compared to Nordic SBUs ($p < 0.001$). Fourth, Anglo-Saxon SBUs emphasize non-financial measures more in determining subordinate compensation than Germanic and Nordic SBUs

[12] The mean proportion in the Anglo-Saxon (Germanic, Nordic) SBUs is 25% (23%, 19%).

($p < 0.01$). Fifth, Anglo-Saxon SBUs use both subjectivity ($p < 0.001$) as well as predetermined quantitative targets ($p < 0.05$) in determining subordinate compensation more than Germanic and Nordic SBUs.

<Insert Table 10 about here>

SBUs in all regions use incentive systems, but place different emphases on different aspects of them. Prior literature has attributed the more extensive use of incentive systems to individualism. Perhaps stronger emphasis on performance-based pay by Anglo-Saxon SBUs can be explained by higher individualism. Scales related to individualism in the GLOBE research, i.e., institutional collectivism and in-group collectivism, cannot explain this finding as the Anglo-Saxon region sits in-between Nordic and Germanic regions on these dimensions. The other plausible explanations are lower uncertainty avoidance in Anglo-Saxon SBUs as well as more extensive delegation of decision rights, driven by differences in power distance.

In prior literature, individualism and power distance have been found to be positively associated, and uncertainty avoidance negatively related, to the proportion of variable compensation (Chiang & Birtch, 2007; Tosi & Greckhamer, 2004). Despite differences in power distance and uncertainty avoidance between the three regions we study, no significant variation in the amount of variable compensation is observed.

Due to their higher assertiveness, Germanic and Anglo-Saxon SBUs could be expected to rely more on financial rewards than Nordic SBUs (Merchant et al., 2011). We find that Anglo-Saxon and Nordic SBUs rely more on financial rewards than Germanic SBUs. Although differences in humane orientation are in line with differences in the use of financial rewards, it is

difficult to come up with convincing arguments about why humane orientation would drive these choices. Perhaps individualism could better explain differences in financial rewards than assertiveness or humane orientation (Fischer, 2004; Giacobbe-Miller et al., 1998; Gooderham et al., 2006). Similarly, we could expect Nordic SBUs to have a higher preference for non-financial rewards because of their lower assertiveness. However, we find Anglo-Saxon SBUs to rely most on non-financial rewards, followed by Germanic SBUs, and Nordic SBUs using them the least. Some prior literature suggests that the use of non-financial rewards may be related to lower power distance (Chiang & Birtch, 2012). Our findings do not provide support. Hence, our findings cast some doubts on the usefulness of masculinity/assertiveness to explain the type of rewards, and power distance to explain the use of non-financial rewards. The GLOBE scales used in this study are unable to suggest alternative cultural traits to explain these differences.

The findings of Jansen et al. (2009) imply that SBUs in Nordic regions, as relatively non-assertive, base their rewards to a greater extent on non-financial criteria. However, we find that Anglo-Saxon SBUs, scoring in the middle in terms of assertiveness, use non-financial criteria more than Germanic and Nordic SBUs. Anglo-Saxon SBUs' more extensive use of predetermined, quantitative targets, subjective determination of subordinate compensation, and reliance on non-financial criteria compared to SBUs in other regions, are difficult to explain through uncertainty avoidance, on which the Anglo-Saxon region scores lower than the Germanic and Nordic regions. These differences in incentive determination may instead be related to Anglo-Saxon SBUs' stronger emphasis on performance-based pay. An alternative explanation may relate to low power distance (and delegation of decision rights), although we do not find differences between Germanic and Nordic SBUs, despite differences in power distance in these regions.

4.1.6 Cultural controls

Results reported in Table 11 show that job rotation is a requirement for promotions to a higher extent in Anglo-Saxon and Nordic SBUs compared to Germanic SBUs ($p < 0.001$). With regard to a preference for internal promotions, we found no significant differences. We find that alignment with organizational values in recruitment decisions for managerial positions is more important in Nordic SBUs than in Anglo-Saxon and Germanic SBUs ($p < 0.01$). Anglo-Saxon SBUs, however, connect leadership-based performance to promotions and rewards more than Germanic SBUs, and the latter to a larger extent than Nordic SBUs do ($p < 0.001$). The cultural region also has an effect on the extent to which SBUs use socialization activities, such as social events and mentoring programmes. Socialization is used to a higher extent in Anglo-Saxon SBUs to influence subordinates' behaviour compared to Nordic SBUs, and in the latter to a larger extent than in Germanic SBUs ($p < 0.001$). No significant differences were found with regard to the extent that SBU top management relies on vision and value statements to guide organizational activities.

<Insert Table 11 about here>

Prior literature provides some evidence that uncertainty avoidance is associated with an emphasis on internal promotions (Fukuda, 1992). However, we find no differences between lower uncertainty avoidance cultures (Anglo-Saxon) and higher uncertainty avoidance cultures (Germanic and Nordic) with regard to the importance of internal promotions. The higher degree to which rotation between multiple positions is required for promotion in Anglo-Saxon and Nordic regions may relate to SBUs in these regions scoring higher on humane orientation than Germanic SBUs. Rotation allows subordinates to understand various functions and associated challenges,

building ability to appreciate others' viewpoints. It is also likely to create feelings of belonging to an organization as a whole, fostering caring for others. Hence, cultures high on humane orientation are more likely to use rotation than cultures low in humane orientation.

The extent to which leadership performance is connected to rewards and promotions is difficult to explain by any cultural trait. However, Anglo-Saxon SBUs scoring highest can easily be associated with their higher emphasis on performance-based pay, use of subjectivity in performance evaluation, as well as higher weight placed on non-financial performance measures in determining compensation. Germanic SBUs scoring higher than Nordic SBUs, in turn, is consistent with their higher use of individual behaviours (such as leadership performance) in performance evaluation, as well as their higher use of non-financial rewards such as promotions. The different emphasis placed on socialization processes (e.g., training, social events, mentoring) to reinforce SBU values and beliefs among SBUs might relate to the extent to which SBUs delegate decision rights. In this case, power distance might be an indirect explanation for this result.

4.2. Further analysis of interdependencies between MC practices in cultural regions

To explore whether and how MC practices are interdependent in different cultural regions, we follow the demand approach to complementarity (Grabner & Moers, 2013). As culture at a supra-national level tends to be relatively stable over long periods of time, we assume that most firms in our sample will have been able to adapt MC practices to local conditions. Consistent with prior research, we examine the correlation of residuals derived from regressions in which the dependent variables are each of the MC practices and the independent variables the covariates used in the ANCOVA models describe in Section 4.1 (Grabner, 2014). These covariates represent the

main contingency factors, apart from culture, likely to influence the MC practices of a firm (Chenhall, 2003). The residual analyses are conducted on each cultural region separately.

Given the potentially large number of associations, we limit our analysis to those MC practices where cultural traits provided insufficient explanation as to why MC practices varied between cultural regions. Furthermore, given the exploratory nature of our study, we report only correlations that are significant at $p < 0.05$ and have moderate effect sizes ($r > |0.3|$) (Cohen, 1988). Correlations for the Anglo-Saxon, Germanic and Nordic cultural region samples are reported in Tables 12, 13 and 14 respectively. Significant positive correlations suggest a complementary association between MC practices, while significant negative association provides evidence that the MC practices are substitutes (Grabner & Moers, 2013). Statistical differences between correlation coefficients of different cultural regions are calculated using the Fisher transformation.

<Insert Table 12 about here>

<Insert Table 13 about here>

<Insert Table 14 about here>

All cultural regions exhibit complementary associations between the delegation of strategic, business and operational decisions. However, the association is stronger in Anglo-Saxon SBUs than in Germanic or Nordic SBUs. Our prior results indicated that Anglo-Saxon SBUs make greater use of matrix structures, although there was no clear reason, based on cultural traits, as to why this should be the case. The results of Table 12 indicate that delegation of strategic decisions and matrix structures are complements, suggesting that matrix structures are indirectly related to power distance as they are likely to be used simultaneously with higher levels of strategic

delegation in Anglo-Saxon SBUs. Using multiple lines of authority may allow for greater monitoring of subordinates, which is particularly important when they have authority over key strategic decisions. Variation in the stability and diversity of management teams was also difficult to explain by referring to cultural traits. However, there were no significant interdependencies that would provide further insight into these variations.

Our prior analysis revealed that Anglo-Saxon SBUs placed greater emphasis on the interactive use of budgets and performance measures than Nordic SBUs, but this was opposite to what might be expected based on the higher uncertainty avoidance of the Nordic culture. A partial explanation is found in the results of Table 12. Matrix structures are positively associated with the interactive use of both these practices. An interactive use may provide greater structure and focus to the more intensive communication associated with matrix structures. Interestingly, there is a significant positive association between the diagnostic and interactive use of budgets, as well as between the diagnostic and interactive use of performance measures, in all three cultural regions. This finding contributes to prior literature that has revealed the positive effects of dynamic tension created through using MC practices in both diagnostic and interactive ways (e.g., Bedford, 2015; Henri, 2006), by demonstrating that the effect holds across multiple cultural regions. The association for performance measures is strongest in Germanic and Nordic SBUs, while the association for budgets is strongest for Anglo-Saxon SBUs. Additionally, the association between the interactive use of budgets and the interactive use of performance measures is positive and significant in all three cultural regions. This suggests that there are benefits to firms of using more than one MC practice interactively, contradicting the claims of Simons (1995) that firms will tend to designate only a single MC practice as an interactive control mechanism.

Interdependencies associated with delegation and matrix structures may provide insight into findings related to rewards and compensation. The prior analysis showed that Anglo-Saxon SBUs place greater emphasis on the use of performance-based pay, but this did not align as expected with variation in relevant cultural dimensions. Results indicate that delegation of all three decision types is positively associated with performance-based pay as well as the use of financial rewards in Anglo-Saxon SBUs, but not in Germanic or Nordic SBUs. Prior research indicates that delegation and incentive design are interrelated (e.g., Abernethy et al., 2004; Nagar, 2002; Moers, 2006). Our results suggest that this association may not hold for non-Anglo-Saxon Western cultures. We also find that delegation of strategic decisions is positively associated with both the use of subjectivity and quantitative targets in incentive pay determination for Anglo-Saxon SBUs, while matrix structures are positively associated with subjectivity and the use of non-financial rewards.

A few of the variations between cultural MC practices were not in line with expectations based on cultural traits. We find that the emphasis on leadership in promotion decisions is also positively related to matrix structures and the interactive use of budgets and performance measures in Anglo-Saxon SBUs. This provides a potential explanation for the greater emphasis on promotions based on leadership in Anglo-Saxon SBUs, although positive associations are also found with the use of financial rewards in all cultural regions, and with performance-based pay in Anglo-Saxon and Nordic SBUs.

5.0 Discussion

We analysed how a broad set of MC practices varies across three cultural regions and provided tentative explanations for observed differences based on the GLOBE research cultural dimensions.

Out of these three cultural regions, the Germanic and Nordic have not been studied extensively before. Similarly, many of the MC practices included in this study have not been addressed in prior cross-cultural research.

Our finding that Anglo-Saxon SBUs delegate decision rights more extensively than other regions studied is in line with prior research focusing mainly on Asian and Anglo-Saxon cultures. Prior research has attributed these differences to power distance (Harrison et al., 1994; Williams & Seaman, 2001). Our results also suggest that variation in emphasis on performance-based pay, use of financial performance measures, and use of financial rewards, could be linked to delegation of decision rights and hence to power distance. A large number of previously unstudied MC characteristics in cross-cultural research – use of matrix organizations, boundary systems, diversity of management team composition, strategic planning participation, relative performance measurement and socialization practices – may also be linked to delegation. Hence, our results provide support for power distance to be a major cultural trait explaining MC choices, as a number of choices may well relate to the delegation of decision rights.

In addition to power distance, prior literature has relied on individualism as a cultural trait to explain variation in MC practices. We found many differences in performance evaluation, and reward and compensation practices, including Anglo-Saxon SBUs relying more on financial performance measures in evaluating subordinate performance, their stronger emphasis on performance-based pay, and their higher extent of subjectivism in rewarding subordinates, all of which have been attributed to higher individualism in prior literature (Bae et al., 1998; Newman & Nollen, 1996; Schuler & Rogovsky, 1998). Scales related to individualism in the GLOBE research, i.e., institutional collectivism and in-group collectivism, do not provide explanations for these findings. As the way in which we assess individualism is different to prior studies, it is

difficult to make any claims regarding the influence of individualism on MC variation between cultural regions. In general, institutional and in-group collectiveness do not appear to be able to explain the differences in MC practices between Western cultural regions. However, we discussed whether in-group collectivism could explain stability of management team compositions, and whether institutional collectivism could be related to more frequent updating of short-term targets.

Prior literature has also relied on masculinity and uncertainty avoidance in explaining MC variation. For example, prior literature has explained the variation in type of rewards by masculinity (Chiang & Birtch, 2006, 2012). Assertiveness, a cultural dimension based on GLOBE most closely related to masculinity, does not seem able to explain our findings regarding the type of rewards. In a similar vein, neither Chow et al. (1999) nor Van der Stede (2003) found support for masculinity to explain financial rewards. In our study, we suggested that the frequent updates of short-term targets may relate to lower assertiveness. While uncertainty avoidance has been linked to internal promotions in prior studies (Fukuda, 1992), we do not find differences in internal promotions between regions. We relied on uncertainty avoidance to build tentative explanations for the comprehensiveness of strategic planning as well as emphasis on performance-based pay.

Two GLOBE dimensions used in this study, performance orientation and humane orientation, have not been used before in the accounting and management control literature. We developed arguments in favour of performance orientation explaining differences in the use of pre-action reviews. Likewise, we argued that humane orientation could have an impact on how rotation is used for promotions.

We observed a number of differences in MC practices – most of which have not been studied in cross-cultural research before – that could not easily be associated with any cultural trait. These include frequency-related observations – strategy review frequency, frequency to

update resource commitments, interactive use of budgets and PMSs, and business and leadership performance evaluation frequency. Differences also related to many performance evaluation and reward practices – use of individual behaviours for evaluating subordinate performance, accountability for a large number of performance measures, incentive determination (subjectivity, objective targets, weight placed on non-financial criteria), and how leadership performance is connected to rewards. We controlled for a large number of traditional contingencies and other factors – these do not provide explanations for the differences either.

If an observed variation in any one MC practice cannot be explained by culture, or any other common firm or environment level factor, it may be that this MC is determined by, or jointly determined with some other management control. This would indicate that, to understand variation in some MC features, we need to understand how they form and interact as systems. We analysed interdependencies of those MC practices we found to vary between cultural regions, but that we could not explain by cultural traits. We found many complementary relations, but also substitutes. Some interdependencies seem to hold across cultural regions, but certain associations appear to be dependent on the cultural context of the SBU. There appear to be more interdependencies between frequency-related controls as well as performance evaluation and reward practices among Anglo-Saxon SBUs compared to Germanic and Nordic SBUs.

One way to try to make sense of variation between cultural regions, not explained by culture or other factors we controlled for, relies on the idea of equifinality (Bedford et al., 2016). Equifinality means that there exist alternative, equally effective ways of dealing with some control problems. In empirical data, variation in one MC between the regions is matched by a counter variation in another MC practice, both dealing with the same control problem. We discussed Germanic SBUs using individual behaviours for evaluating subordinates performance and Nordic

SBUs holding subordinates accountable for a large number of measures, as two potential alternative ways of dealing with the same control problem. If a firm uses one of them, there is no need to put heavy emphasis on the other. This does not, of course, provide any explanation of why certain MC practices prevail as the primary choice in a certain region.

Our focus in the analysis has mainly been on differences between the cultural regions. It is equally important to understand which practices are similar across regions. These might be practices that are independent of cultural traits, a result of institutional or global homogenisation, or those that might represent some form of universal best practices, at least among Western societies. The frequency of cross-SBU management team meetings, as well as the functional diversity of individuals participating in those meetings, seems to be similar in all studied regions. The degree of specificity and detail in strategic planning does not seem to vary, and long-term goals and means to achieve those goals are revised with the same frequency. Subordinates have a similar degree of autonomy both in developing action plans and setting targets for short-term ends and means. Action plans seem to be equally comprehensive and specific, and those plans are revised at similar intervals in all regions. These results are in line with Collins, Holzmann and Mendoza (1996), who suggest that budgetary practices may be similar across cultures. Diagnostic use of both budgets and PMSs, non-financial measures, and detailed and aggregate measures for evaluating subordinate performance, are the same across regions. In all regions, bonuses are of similar size relative to total annual compensation. Similarly, there is no difference regarding the preference to promote external or internal candidates. Furthermore, emphasis on value statements to reinforce SBU values and norms, as well as vision statements to reinforce objectives and purpose, appears even among the studied regions. Again, it is important to note that these practices are similar despite many differences in cultural traits in these regions.

Taken together, our findings suggest that differences in a number of MC practices are likely to be related to how they combine as bundles of practices, or as systems, and that these joint choices may be explained by cultural factors.

Finally, like in any exploratory research, our explanations are tentative and need to be tested and validated in future studies. Similarly, observed differences do not yet suggest any normative recommendations regarding local adaptations of controls for firms having operations in foreign countries. As Van der Stede (2015) points out, adaptations are costly. Hence, this study provides only some building blocks for further research to address this local adaptation question.

6.0 Conclusions

Our study contributes to the literature in the following ways. First, we reveal empirical differences in control practices in SBUs in three different cultural regions, of which the Germanic and Nordic have not been studied extensively before. Moreover, we reveal differences in many control practices that have not been studied in cross-cultural research, including planning and cultural controls. Second, we provide tentative explanations for observed differences based on cultural dimensions from the GLOBE research. Third, as part of the observed differences are difficult to explain by cultural traits, we suggest that some of these differences are related to other MC practices in use. Our findings reveal a number of interdependencies that hold across cultural regions, but also demonstrate that certain associations appear to be dependent on the cultural context of the SBU. Finally, we find a lot of similar control practices among studied regions, despite major differences in many cultural traits between them. These findings may hint towards some form of best practice – at least in Western societies.

This study is not without limitations. We relied on a single respondent from each firm and their views on MC practices are subjective. However, for many of the MC practices, subjective instruments are the only way to gain insights into how controls are designed and used within firms. We explained observed differences by cultural dimensions relying on GLOBE research. Although we cannot claim that observed differences are by necessity caused by cultural differences, we controlled for a large number of factors normally found to be associated with variation in control practices. Additional MC variables may have provided further insights to our study. For instance, company-specific variables not controlled for include business life-cycle position of the SBU and age of the firm. Further research is needed to confirm or refute these findings, and provide compelling explanations for observed differences. Our analysis of interdependencies was limited to those MC practices we could not explain by cultural traits. These MC practices may also have interdependencies with MC practices we did not include in our analysis.

Despite these limitations, this study provides a number of avenues to develop cultural theory of MC in empirical studies. In addition to examining which cultural dimensions drive MC variation, further research can extend our work by assessing the effectiveness of MC packages and systems in different cultures. If some MCs are used in a similar fashion in many cultures, how should other MCs be used in different cultures to achieve the desired outcomes? Are there a number of viable configurations, suggesting equifinality? Or can we identify optimal MC combinations for certain cultures, or certain sub-groups of organizations within these cultures? Qualitative comparative analysis (QCA) as a method could be applied in these attempts, in addition to more conventional methods. It would also be interesting to study a few large multinationals and how they either amend, or not, their control practices to local environments, and whether these adjustments have an impact on the effectiveness of those MC practices used.

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Table 1
Cultural dimensions

Cultural dimension	**Definition and comparison to Hofstede's typology**[a]
Assertiveness	Assertiveness is the degree to which individuals in organizations or societies are assertive, confrontational, and aggressive in social relationships.
	Hofstede's Masculinity is positively related to GLOBE Assertiveness as practice scale ($r = .37$, $p > .05$).
Power distance	Power Distance is the degree to which members of an organization or society expect and agree that power should be stratified and concentrated at higher levels of an organization or government.
	Hofstede's Power Distance is positively related to GLOBE Power Distance as practice scale ($r = .57$, $p > .01$).
Institutional collectivism	Institutional Collectivism is the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.
	-
In-group collectivism	In-Group Collectivism is the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families.
	Hofstede's Individualism is negatively related to GLOBE In-Group Collectivism as practice scale ($r = –.82$, $p > .01$).
Uncertainty avoidance	Uncertainty Avoidance is the extent to which members of an organization or society strive to avoid uncertainty by relying on established social norms, rituals, and bureaucratic practices.
	-
Future orientation	Future Orientation is the degree to which individuals in organizations or societies engage in future-oriented behaviours such as planning, investing in the future, and delaying individual or collective gratification.
	Hofstede's Long-term Orientation does not correlate with GLOBE Future Orientation Scale ($r = .03$).
Humane orientation	Humane Orientation is the degree to which a collective encourages and rewards individuals for being fair, altruistic, generous, caring, and kind to others.
	-
Performance orientation	Performance Orientation is the degree to which a collective encourages and rewards group members for performance improvement and excellence.
	-

[a]Definitions quoted from House and Javidan (2004); note that some of the GLOBE constructs do not correspond to any of construct of the Hofstede study.

Table 2
GLOBE country scores and means for cultural regions[a]

Region / Scores	AS	PD	IC	IGC	UA	FO	HO	PO
Anglo-Saxon								
Australia	4.28	2.78	4.29	4.17	4.39	4.09	4.28	4.36
Canada	4.05	4.82	4.38	4.26	4.58	4.44	4.49	4.49
Mean (sample)	4.17	3.80	4.34	4.22	4.49	4.27	4.39	4.43
Mean (all countries)	4.14	4.97	4.46	4.30	4.42	4.08	4.20	4.37
Germanic Europe								
Austria	4.62	4.95	4.30	4.85	5.16	4.46	3.72	4.44
Belgium[b]	–	–	–	–	–	–	–	–
Germany	4.57	5.28	3.76	4.08	5.21	4.23	3.21	4.23
Mean (sample)	4.60	5.12	4.03	4.47	5.19	4.35	3.47	4.34
Mean (all countries)	4.55	4.95	4.03	4.21	5.12	4.40	3.55	4.41
Nordic Europe								
Denmark	3.80	3.89	4.80	3.53	5.22	4.44	4.44	4.22
Finland	3.81	4.89	4.63	4.07	5.02	4.24	3.96	3.81
Norway[b]	–	–	–	–	–	–	–	–
Sweden	3.38	4.85	5.22	3.66	5.32	4.39	4.10	3.72
Mean (sample)	3.66	4.54	4.88	3.75	5.19	4.36		3.92
Mean (all countries)	3.66	4.54	4.88	3.75	5.19	4.36	4.17	3.92
Difference (sample countries)	G>A>N	G>N>A	N>A>G	G>A>N	N, G>A	G, N>A	A, N>G	A, G>N

[a]All scores are the societal level from GLOBE (2004): AS = Assertiveness, PD = Power distance, IC = Institutional Collectivism, IGC = In-Group Collectivism, UA = Uncertainty avoidance, FO = Future orientation, HO = Humane orientation, PO = Performance orientation; Mean = mean for the region based on sample countries; Mean (all countries) = mean for the region based on all GLOBE countries; scores range from 1 = very low to 7 = very high.

[b]Not included in the GLOBE study.

Table 3
Description of prior studies which have studied the relationship between national culture and MCS

Management control systems	Prior research	Relevant culture dimension(s) and expected influence[a]	National cultures and predictions if specified	Findings[b]
Administrative controls				
Decentralisation	Chow et al. (1999)	Individualism (+) Power distance (–)	*US > Japan > Taiwan*	Not sig.
Decentralisation	Harrison et al. (1994)	Individualism (+) Power distance (–)	*Australia and US > Singapore and Hong Kong*	Sig.
Decentralisation of human resource decision-making authority	Meyer & Hammerschmid (2010)	*Individualism (+)* *Power distance (–)* *Uncertainty avoidance (–)*	European countries	Sig. Sig. Sig.
Centralization drives MCS changes	Williams & Seaman (2001)	*Power distance (+)*	Singapore	Sig.
Decentralisation in MNCs, home country	Williams & van Triest (2009)	*Individualism (+)* *Power distance (-)* *Masculinity (-)* *Uncertainty avoidance (-)*	Headquarters in European countries, Israel. Japan, Korea, India, Singapore and US	Sig. Not sig. Not sig. Not sig.
Decentralisation in MNCs, host country	Williams & van Triest (2009)	*Individualism (+)* *Power distance (-)* *Masculinity (-)* *Uncertainty avoidance (-)*	Subsidiaries in European countries, Chile, India, Singapore and US	Not sig. Not sig. Not sig. Sig.
Budget control practices	Ueno & Sekaran (1992)	Collectivism (–)	*US > Japan*	Sig.
Budget control practices	Ueno & Wu (1993)	Collectivism (–)	*US > Japan*	Sig.
Rules and procedures	Chow et al. (1994)	Uncertainty avoidance (+)	*Japan > US*	Sig.
Rules and procedures	Chow et al. (1996)	Uncertainty avoidance (+)	*Japan > US*	Sig.
Rules and procedures	Chow et al. (1999)	Collectivism (+) Power distance (+) Uncertainty avoidance (+)	*Taiwan > Japan* *Japan > US*	Sig. Opposite
Effect of rules on financial performance	Newman & Nollen (1996)	*Uncertainty avoidance (+)*	European and Asian countries	Not sig.

Management control systems	Prior research	Relevant culture dimension(s) and expected influence[a]	National cultures and predictions if specified	Findings[b]
Formalized control mechanisms in MNCs	Jaussaud & Schaaper (2006)	/	*Japan subsidiaries in China* > *European subsidiaries in China*	Sig.
Strategic planning				
Formal strategic planning process	Hoffman (2007)	*Power distance (+)* *Uncertainty avoidance (–)* *Collectivism (–)* *Masculinity (–)*	US and European countries	Sig. Sig. Not sig. Not sig
Action planning				
Success of a top-down implemented ABC system	Brewer (1998)	Power distance (+)	*Malaysia* > *US*	Sig.
Budgetary participation	Lau & Eggleton (2004)	Power distance (–)	*Australia* > *Singapore*	Sig.
Budgetary participation	Lau & Caby (2010)	Collectivism (+) Power distance (–)	*Australia, Norway and Singapore* > *France*	Sig.
Budgetary participation	O'Connor (1995)	Power distance (–)	*Foreign subsidiaries in Singapore* > *Local subsidiaries in Singapore*	Sig.
Integrative mechanisms for mergers	Lubatkin et al. (1998)	Power distance (–) Uncertainty avoidance (–)	*UK* > *France*	Sig.
Participative work units and performance	Newman & Nollen (1996)	*Power distance (–)*	European and Asian countries	Sig.
Effect of budgetary participation and MAS on managerial performance	Tsui (2001)	Collectivism (–) Power distance (–) Long-term orientation (–)	*Western managers in China* > *Chinese managers in China*	Sig.
Participation in goal setting and individual performance	Erez & Earley (1987)	Collectivism (+) Power distance (–)	*Israel* > *US*	Sig.
Participation in goal setting and goal acceptance	Erez & Earley (1987)		*Israel* > *US*	Not sig.
Effect of budget emphasis, budgetary participation and task difficulty on managerial performance	Lau et al. (1995)	Collectivism (+) Power distance (–)	*Singapore* = *Australia*	Sig.
Effect of budget emphasis, budgetary participation and task difficulty on managerial performance	Lau et al. (1997)	Collectivism (+) Power distance (–)	*Singapore* = *Australia* (manufacturing industry)	Not rejected

Management control systems	Prior research	Relevant culture dimension(s) and expected influence[a]	National cultures and predictions if specified	Findings[b]
Effect of budget emphasis, budgetary participation and task difficulty on managerial performance	Lau & Tan (1998)	Collectivism (+) Power distance (–)	*Singapore = Australia* (financial services industry)	Not rejected
Performance measurement and evaluation				
Adherence to high-stretch performance standards	Chow et al. (2001)	Power distance (+) Collectivism (+)	*China > US*	Sig.
Reliance on accounting performance measures for evaluation is associated with low job tension and high job satisfaction	Harrison (1993)	Power distance (+) Individualism (–)	*Singapore > Australia*	Sig.
Financial performance measures in evaluation	Hui (1988)	*Collectivism (+)*	China > US	Sig.
Headquarters influence on the use of PMS on subsidiaries' decisions	Dossi & Patelli (2008)	*Collectivism (-)* *Masculinity (-)* *Power distance (-)* *Uncertainty avoidance (-)*	Italian subsidiaries of foreign international companies from European countries, US and Japan	Sig.
Inclusion of non-financial performance measures in PMS used in the relationship between headquarters and subsidiaries	Dossi & Patelli (2010)	*Individualism (+)* *Masculinity (+)* *Power distance (-)* *Uncertainty avoidance (+)*	Italian subsidiaries of foreign international companies from European countries, US, South Africa, Hong Kong, Taiwan and Japan	Sig.
Financial performance measures in MNCs	Chung et al. (2006)	/	*US, UK > Japan, Germany*	Sig.
Financial performance evaluation criteria	Borkowski (1999)	Short-term orientation (+) Long-term orientation (-)	*US, UK, Canada = Germany, Japan*	Not sig.
Short-term financial performance measures	Carr & Tomkins (1996)	/	*UK > Germany*	Sig.
Short-term financial performance measures	Coates et al. (1992)	/	*US, UK > Germany*	Sig.
Short-term financial performance measures	Coates et al. (1995)	/	*US, UK > Germany*	Sig.
Financial performance measures in MNCs	Chung et al. (2006)	/	*US, UK > Japan, Germany*	Sig.

Management control systems	Prior research	Relevant culture dimension(s) and expected influence[a]	National cultures and predictions if specified	Findings[b]
Non-financial performance measures in MNCs	Chung et al. (2006)	/	*Japan, German > US, UK*	Sig.
Performance evaluation subjectivity	Myloni et al. (2004)	Performance orientation (–) Future orientation (–) In-group collectivism (+) Power distance (+)	*Greek indigenous firms > MNC subsidiaries in Greece (Australia, European countries, US and Japan)*	Sig.
Performance evaluation frequency	Chiang & Birtch (2010)	*Masculinity (+)* *Uncertainty avoidance (+)* *Collectivism (–)*	US, Canada, UK, Finland, Sweden, Hong Kong, and Singapore	Sig. Sig. Sig.
Performance evaluation time horizon	Ueno & Sekaran (1992)	Collectivism (+)	*Japan > US*	Sig.
Extrinsic motivation Intrinsic motivation	DeVoe & Iyengar (2004)	Individualism (+) Collectivism (+)	*US: Extrinsic motivation > Intrinsic motivation* *Asian: Extrinsic motivation = Intrinsic motivation* *Latin America: Intrinsic motivation > Extrinsic motivation*	Sig. Sig. Sig.
Reward and compensation				
Incentive use	Jansen et al. (2009)	Masculinity (+)	*US > the Netherlands*	Sig.
Incentive use	Merchant et al. (2011)	Masculinity (+)	*US and China > the Netherlands*	Sig.
Incentive use	Awasthi et al. (2001)	Collectivism (–)	*US > China*	Sig.
Incentive use	Pennings (1993)	Collectivism (–) Masculinity (+)	*US > France and the Netherlands*	Sig.
Incentive use	Daley et al. (1985)	/	*US > Japan*	Sig.
Performance-based rewards	Bae et al. (1998)	Collectivism (–)	American and European subsidiaries in Korea > Asian subsidiaries in Korea	Sig.
Pay for performance practices	Schuler & Rogovsky (1998)	Collectivism (–) Uncertainty avoidance (–)	European countries, US and Israel	Sig. Not sig.
Merit-based reward practices	Newman & Nollen (1996)	*Masculinity (+)*	European countries, Asian countries and Australia	Sig.
Individual performance in determining pay levels	Schuler & Rogovsky (1998)	*Individualism (+)* *Uncertainty avoidance (–)*	European countries, US and Israel	Sig. Sig.

Management control systems	Prior research	Relevant culture dimension(s) and expected influence[a]	National cultures and predictions if specified	Findings[b]
Long-term incentives	Merchant et al. (1995)	Collectivism (–)	US > Taiwan	Sig.
Incentive proportion	Chiang & Birtch (2006)	Uncertainty avoidance (–)	Hong Kong > Finland	Not sig.
Variable compensation	Tosi & Greckhammer (2004)	*Uncertainty avoidance (–)*	African, American, Asian and European countries and Australia	Sig.
Discretionary bonuses	Merchant et al. (2011)	Power distance (+)	*China > US and the Netherlands*	Sig.
Formula-based bonuses		Masculinity (+)	*US > China and the Netherlands*	Sig.
Financial rewarding	Giacobbe-Miller et al. (1998)	Collectivism (+)	*US = Russia*	Sig.
Financial rewarding	Fischer (2004)	Collectivism (–)	*UK > Germany*	Sig.
Financial rewarding	Van der Stede (2003)	*Individualism (+)* *Power distance (–)* *Uncertainty avoidance (–)* *Masculinity (+)*	Local and foreign (European countries) subsidiaries of Belgian parent firms	Not sig. Sig. Not sig. Not sig.
Financial rewarding	Chow et al. (1999)	Collectivism (–) Uncertainty avoidance (–) Masculinity (+)	*US > Japan > Taiwan*	Not sig.
Financial rewarding	Gooderham et al. (2006)	/	*US, UK and Australia > Germany, Norway and Denmark*	Sig.
Non-financial rewarding	Chiang & Birtch (2006)	Masculinity (–)	*Finland > Hong Kong*	Sig.
Non-financial rewarding	Chiang & Birtch (2012)	*Masculinity (–)* *Power distance (–)*	Hong Kong and Finland	Sig. Sig.
Cultural controls				
Staffing control	Chang & Taylor (1999)	Uncertainty avoidance (+)	*Japanese MNCs in Korea > US MNCs in Korea*	Sig.
Internal promotion	Myloni et al. (2004)	Collectivism (+)	*Greek indigenous firms > MNC subsidiaries in Greece (European countries, Japan and US)*	Not sig.
Internal promotion	Bae et al. (1998)	/	*Japanese subsidiaries in Korea > Western subsidiaries in Korea*	Opposite
Recruitment time	Faulkner et al. (2002)	/	*Japan (lifetime) > US (short term)* *UK (long term) > US (short term)*	Sig. Sig.
Formal training	Faulkner et al. (2002)	/	*US > Japan*	Sig.

Management control systems	Prior research	Relevant culture dimension(s) and expected influence[a]	National cultures and predictions if specified	Findings[b]
Bureaucratic control and organizational cultural control	Snodgrass & Szewczak (1990)	/	*Negative relationship between bureaucratic control and organizational cultural control in both Japanese and US firms*	Sig.

[a]Expected influence indicates the directional predictions for the management control system components: (+) denotes a positive influence, and (–) denotes a negative influence.
[b]We use significant (Sig), not significant (Not sig), opposite and not rejected to indicate the results of the expected influence of national cultures and/or predictions in previous research. Note that the indications refer to italic text in either column 3 or 4 or both columns depending on the stated predictions in prior research.

Table 4
Sample response rates and industry and size distributions by country

Region/Country	Sample size	Responses	Response rate	Responses used[a]	# Employees		Industry		
					<1000	>1000	Manu.	Serv.	Wholes.
Anglo-Saxon									
Australia	422	50	12%	50	35	15	14	26	10
Canada	200	52	26%	39	19	20	33	6	0
	622	102	16%	89	54	35	47	32	10
Germanic									
Austria	223	51	23%	44	25	19	27	15	2
Belgium	113	50	44%	40	29	11	25	12	3
Germany	392	87	22%	76	51	25	38	30	8
	728	188	26%	160	105	55	90	57	13
Nordic									
Denmark	163	120	74%	109	67	42	50	43	16
Finland	183	96	52%	82	45	37	31	33	18
Norway	87	68	78%	59	44	15	26	28	5
Sweden	416	120	29%	94	61	33	32	46	16
	849	404	48%	344	217	127	139	150	55
Total	2199	694	32%	593	376	217	276	239	78

[a]Where multiple SBUs belonging to the same group were interviewed, only one observation was retained. All SBUs where the headquarter is not located in the same region were removed.

Table 5
Respondent positions by country

Region/Country	CEO	CFO	COO	Other[a]	Total	Average interview duration (minutes)[b]
Anglo-Saxon						
Australia	5	30	0	15	50	75
Canada	8	12	17	2	39	63
	13	42	17	17	89	70
Germanic						
Austria	23	7	1	13	44	115
Belgium (Flem.)	35	3	2	0	40	82
Germany	35	13	0	28	76	115
	93	23	3	41	160	107
Nordic						
Denmark	22	83	1	3	109	180
Finland	31	6	2	43	82	145
Norway	9	27	2	21	59	73
Sweden	23	57	0	14	94	120
	85	173	5	81	344	137
Total	191	238	25	139	593	119

[a] "Other" interviewees' job titles included Group or Business Unit controllers, SBU general managers, Business Area manager, Country manager, Head of Strategy, Head of Corporate Development, Head of HR, Head of Sales/Marketing, Operations Manager.
[b] Average interview duration shows country means. Region and total means are weighted averages.

Table 6
ANCOVA results for administrative controls

Dependent variable	Definition	Mean square	*F*-stat	adj. p-value.	Tukey contrasts
Organizational structure					
Delegation of authority					
Strategic decisions	Delegation of strategic decision authority to subordinates	93.82	40.10	0.000	A>G,N
Business decisions	Delegation of business decision authority to subordinates	54.11	18.46	0.000	A>G,N
Operational decision	Delegation of operational decision authority to subordinates	36.63	14.38	0.000	A>N>G
Matrix structures	Use of matrix structures with multiple lines of accountability	72.61	18.62	0.000	A>N>G
Management processes					
Team interaction					
Within SBU	Frequency that within SBU management team meetings take place	4.99	6.04	0.005	A,G>N
Across SBU	Frequency that cross-SBU management team meetings take plac	6.21	2.14	0.156	
Team composition					
Stability within SBU	Stability of individual composition in the SBU management teams	37.46	13.63	0.000	G>A,N
Stability across SBU	Stability of individual composition in cross-SBU management teams	47.93	15.25	0.000	G>A,N
Breadth within SBU	Functional diversity of individuals in the SBU management teams	61.10	10.23	0.000	A>G,N
Breadth across SBU	Functional diversity of individuals in cross-SBU management teams	12.51	2.07	0.161	
Rules and procedures					
Pre-action reviews	Emphasis on pre-action reviews	26.83	8.62	0.001	A,G>N
Boundary systems	Emphasis on boundary control systems	19.25	5.64	0.007	A>G,N

Table 7
ANCOVA results for strategic planning

Dependent variable	Definition	Mean square	*F*-stat	adj. p-value	Tukey contrasts
Content					
Comprehensiveness	Comprehensiveness of the content covered by the strategic plan	22.32	9.50	0.000	N,G>A
Specificity	Degree of specificity and detail of strategic plan content	6.53	2.46	0.115	
Review frequency					
Ends	Frequency that the strategic plan ends are reviewed	468.55	7.50	0.001	N>A,G
Means	Frequency that the strategic plan means are reviewed	808.35	11.81	0.000	G,N>A
Revision frequency					
Ends	Frequency that the strategic plan ends are revised	76.76	0.72	0.533	
Means	Frequency that the strategic plan means are revised	300.35	3.08	0.072	
Subordinate participation					
Ends	The number of levels of management below the top management participating in setting strategic plan ends	59.13	27.70	0.000	A>G,N
Means	The number of levels of management below the top management participating in setting strategic plan means	21.99	9.29	0.000	A>G,N

Table 8
ANCOVA results for action planning

Dependent variable	Definition	Mean square	*F*-stat	adj. p-value	Tukey contrasts
Content	Degree of comprehensiveness and specificity of detail of action plan content	0.17	0.12	0.884	
Revision frequency					
Targets	Frequency of revising short-term performance targets	406.16	10.97	0.000	N>A>G
Action plans	Frequency of revising action plans	25.67	0.89	0.476	
Resource allocations	Frequency of revising short-term resource commitments	180.89	8.06	0.001	N>G
Subordinate participation					
Plan development	Degree of autonomy that subordinates have to develop action plans	1.03	0.49	0.636	
Targets (ends)	Degree of autonomy that subordinates have to set short-term targets for ends	2.42	1.57	0.251	
Targets (means)	Degree of autonomy that subordinates have to set short-term targets for means	1.75	0.84	0.487	

Table 9
ANCOVA results for performance measurement and evaluation

Dependent variable	Definition	Mean square	*F*-stat	adj. p-value	Tukey contrasts
Budgets					
Diagnostic use	Extent to which top managers use budgets diagnostically	2.37	0.83	0.487	
Interactive use	Extent to which top managers use budgets interactively	19.96	7.00	0.002	A>N
Performance measurement systems					
Diagnostic use	Extent to which top managers use performance measures diagnostically	4.92	1.42	0.287	
Interactive use	Extent to which top managers use performance measures interactively	21.88	6.50	0.003	A>N
Performance evaluation measures					
Financial	Use of financial measures for evaluating subordinate performance	32.44	8.42	0.001	A>N>G
Non-financial	Use of non-financial measures for evaluating subordinate performance	7.05	1.82	0.200	
Detailed	Use of detailed measures for evaluation subordinate performance	2.15	0.44	0.657	
Aggregate	Use of aggregate measures for evaluation subordinate performance	2.82	0.55	0.610	
Personal	Use of individual behaviours (e.g., leadership, effort) for evaluating subordinate performance	12.98	4.67	0.016	G>N
Relative	Use of relative measures (e.g., comparison to internal or external benchmarks) for evaluating subordinate performance	67.83	20.80	0.000	A>N>G
Number of measures	The number of performance measures subordinates are held accountable for	86.17	3.66	0.043	N>G
Performance evaluation frequency					
Leadership	Frequency of formalized evaluations to assess	343.92	7.22	0.002	N>A

	leadership performance of subordinates				
Business	Frequency of formalized evaluations to assess business performance of subordinates	1718.61	32.47	0.000	N>G>A

Table 10
ANCOVA results for reward and compensation

Dependent variable	Definition	Mean square	*F*-stat	adj. p-value	Tukey contrasts
Incentive intensity					
Incentive use	Emphasis on performance-based pay	61.93	11.68	0.000	A> G,N
Incentive proportion	Proportion of incentive bonus out of total annual compensation to subordinates	2524.77	2.78	0.090	
Incentive determination					
Subjectivity	Use of subjectivity in determining subordinate compensation	142.06	27.09	0.000	A>G,N
Objectivity	Use of predetermined, quantitative targets in determining subordinate compensation	30.95	5.00	0.012	A>G,N
Non-financial weight	Weight placed on non-financial (versus financial) performance measures in determining subordinate compensation	8928.22	5.76	0.007	A>G,N
Incentive type					
Financial	Use of financial rewards (e.g., bonuses) to compensate subordinates	45.40	6.84	0.002	A,N>G
Non-financial	Use of non-financial rewards (e.g., recognition, promotion) to compensate subordinates	160.38	30.79	0.000	A>G>N

Table 11
ANCOVA results for cultural controls

Dependent variable	Definition	Mean square	*F*-stat	adj. p-value	Tukey contrasts
Selection and promotion					
Based on values	Emphasis on alignment with SBU values and beliefs in selection decisions	34.11	5.36	0.009	N>G,A
Internal promotions	Preference to promote internally versus external recruitment	8.68	2.97	0.079	
Job rotation	Degree to which rotation between multiple positions is required for promotion	87.21	18.86	0.000	A,N>G
Leadership	Degree to which leadership performance is connected to rewards and promotions	120.47	22.26	0.000	A>G>N
Socialization	Emphasis placed on socialization processes (e.g., training, social events, mentoring) to reinforce SBU values and beliefs	28.29	12.33	0.000	A>N>G
Belief systems					
Value statements	Emphasis on value statements to reinforce SBU values and norms	8.90	2.55	0.110	
Vision statements	Emphasis on vision statements to reinforce SBU objectives and purpose	7.92	2.48	0.115	

Table 12
Residual correlations for Anglo-Saxon cultural region (n=80)[a]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Administrative																													
1. Delegation (strat.)																													
2. Delegation (bus.)	.61																												
3. Delegation (op.)	.60	.74																											
4. Matrix structures	.38	·	·																										
5. Boundary systems	·	·	·	·																									
Strategic planning																													
6. Content	·	·	·	·	·																								
7. Specificity	·	·	·	·	·	.39																							
8. Review (ends)	·	·	·	·	·	·	-.41																						
9. Review (means)	·	·	·	·	·	·	·	·																					
Action planning																													
10. Specificity	·	·	·	·	·	·	.35	·	·																				
Perf. measurement																													
11. Budget (diagnostic)	·	·	·	·	·	·	·	·	·	·																			
12. Budget (interactive)	·	·	·	.47	·	·	.38	·	·	·	.65																		
13. PM (diagnostic)	·	·	·	·	·	.34	·	·	·	·	·	·																	
14. PM (interactive)	·	·	·	.38	·	·	.35	·	-.35	·	.48	.65	.34																
15. Perf. eval. (financial)	·	-.34	·	·	·	.33	·	·	·	·	.37	·	·	·															
16. Perf. eval. (non-fin.)	·	·	·	·	·	·	·	·	·	.43	·	·	·	·	·														
17. Perf. eval. (personal)	·	·	·	·	·	·	.31	·	-.34	.42	.30	.41	·	.44	·	·													
18. Perf. eval. (relative)	·	·	·	.32	·	·	·	·	·	·	·	·	·	·	·	·	·												
19. Perf. eval. (# meas.)	·	·	·	·	·	·	.33	-.37	·	·	·	·	·	·	·	·	·	·											
20. Perf. eval. (leadership)	·	·	·	.32	.34	·	·	.35	.38	·	·	·	·	·	·	·	·	·	-.43										
Incentives																													
21. Perf.-based pay	.47	.46	.38	·	.38	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·									
22. Subjectivity	.31	·	·	.32	·	·	·	.35	·	·	·	·	·	·	·	·	·	·	·	.42	·								
23. Objectivity	.32	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.33	·	·	·	.35							
24. Financial rewards	.33	.35	.32	·	.39	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.53	·	.34						
25. Non-financial rewards	·	·	.31	.36	·	·	·	·	·	.38	·	.33	·	·	·	·	·	·	·	·	·	.37	·	·					
Cultural																													
26. Promotion (values)	.35	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·				
27. Promotion (internal)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.34	·	·	·	-.41	·	·	·	·	·	·			
28. Promotion (leadership)	·	·	·	.38	·	·	·	·	·	·	.40	.51	·	.43	·	.36	·	·	·	·	.34	·	·	.38	·	·	·		
29. Socialization	·	·	·	·	·	·	·	·	·	·	.32	.40	·	.39	.35	·	·	·	·	·	·	·	·	·	·	·	·	·	
30. Vision statements	·	·	·	·	·	·	·	·	·	·	·	.32	·	·	·	·	.43	·	·	·	·	·	·	·	·	·	·	·	.31

[a] Only correlations significant at $p < 0.05$ and medium effect sizes ($r > 0.3$) are reported.

Table 13
Residual correlations for Germanic cultural region (n=117)[a]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Administrative																													
1. Delegation (strat.)																													
2. Delegation (bus.)	.43																												
3. Delegation (op.)	.33	.50																											
4. Matrix structures	·	·	·																										
5. Boundary systems	·	·	·	·																									
Strategic planning																													
6. Content	·	·	·	·	·																								
7. Specificity	·	·	·	·	·	.35																							
8. Review (ends)	·	·	·	·	·	·	·																						
9. Review (means)	·	·	·	·	·	·	·	.78																					
Action planning																													
10. Specificity	·	·	·	·	·	·	·	·	·																				
Perf. measurement																													
11. Budget (diagnostic)	·	·	·	·	·	.32	·	·	·	·																			
12. Budget (interactive)	·	·	·	·	·	·	·	·	·	·	.50																		
13. PM (diagnostic)	·	·	·	·	·	·	·	·	·	·	·	·																	
14. PM (interactive)	·	·	·	·	.37	·	.36	·	·	·	·	.36	.68																
15. Perf. eval. (financial)	·	·	·	·	·	·	·	·	·	·	.34	.33	·	·															
16. Perf. eval. (non-fin.)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·														
17. Perf. eval. (personal)	·	·	·	·	·	·	·	·	·	·	·	.34	·	·	·	·													
18. Perf. eval. (relative)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·												
19. Perf. eval. (# meas.)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·											
20. Perf. eval. (leadership)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·										
Incentives																													
21. Perf.-based pay	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·									
22. Subjectivity	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·								
23. Objectivity	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.46	·	·	·	·	·	·	-.33							
24. Financial rewards	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·						
25. Non-financial rewards	·	·	·	·	·	·	·	-.32	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·					
Cultural																													
26. Promotion (values)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·				
27. Promotion (internal)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	-.30	·	·	·	·	·	·	·	·	·	·	·			
28. Promotion (leadership)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.31	·	.40	·		
29. Socialization	·	·	·	·	·	·	·	·	·	·	·	·	·	.31	·	·	.32	·	·	·	·	·	·	·	.39	.30	·	·	
30. Vision statements	·	·	·	·	·	·	·	·	·	·	·	·	·	.35	·	·	·	·	·	·	·	·	·	·	·	.34	·	.30	·

[a] Only correlations significant at $p < 0.05$ and medium effect sizes ($r > 0.3$) are reported.

Table 14
Residual correlations for Nordic cultural region (n=268)[a]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Administrative																													
1. Delegation (strat.)																													
2. Delegation (bus.)	.38																												
3. Delegation (op.)	.33	.40																											
4. Matrix structures	·	·	·																										
5. Boundary systems	·	·	·	·																									
Strategic planning																													
6. Content	·	·	·	·	·																								
7. Specificity	·	·	·	·	·	.40																							
8. Review (ends)	·	·	·	·	·	·	·																						
9. Review (means)	·	·	·	·	·	·	·	.71																					
Action planning																													
10. Specificity	·	·	·	·	·	.33	·	·	·																				
Perf. measurement																													
11. Budget (diagnostic)	·	·	·	·	·	·	·	·	·	·																			
12. Budget (interactive)	·	·	·	·	·	·	·	·	·	·	.51																		
13. PM (diagnostic)	·	·	·	·	·	·	·	·	·	·	·	·																	
14. PM (interactive)	·	·	·	·	·	·	·	·	·	·	·	.33	.69																
15. Perf. eval. (financial)	·	·	·	·	·	·	·	·	·	·	·	·	·	·															
16. Perf. eval. (non-fin.)	·	·	·	·	·	·	.31	·	·	·	·	·	.36	·	·														
17. Perf. eval. (personal)	·	·	·	·	.30	·	·	·	·	·	·	·	·	·	·	·													
18. Perf. eval. (relative)	·	·	·	·	·	·	·	·	·	·	·	·	·	.32	·	·	·												
19. Perf. eval. (# meas.)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·											
20. Perf. eval. (leadership)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·										
Incentives																													
21. Perf.-based pay	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·									
22. Subjectivity	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·								
23. Objectivity	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.53	·							
24. Financial rewards	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.30	·	·	·	·	·	.61	·	.72						
25. Non-financial rewards	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·					
Cultural																													
26. Promotion (values)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·				
27. Promotion (internal)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·			
28. Promotion (leadership)	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.34	·	·	·	.40	·	·	.36	·	·	·		
29. Socialization	·	·	·	·	.32	·	·	·	·	·	·	·	·	·	·	·	.31	·	·	·	·	·	·	·	·	·	·	·	
30. Vision statements	·	·	·	·	·	.36	·	·	·	·	·	·	·	.34	·	·	·	·	·	·	·	·	·	·	·	·	·	·	.42

[a] Only correlations significant at $p < 0.05$ and medium effect sizes ($r > 0.3$) are reported.

Appendix A
Variable definitions

A.1 Administrative controls

Construct	Variable definition
Organizational structure	
Delegation of authority	
Strategic decisions	Delegation of strategic decision authority to subordinates. Reflective construct measuring the average of four items based on Abernethy et al. (2004) and Bedford and Malmi (2015).
Business decisions	Delegation of business decision authority to subordinates. Reflective construct measuring the average of five items based on Abernethy et al. (2004) and Bedford and Malmi (2015).
Operational decisions	Delegation of operational decision authority to subordinates. Reflective construct measuring the average of four items based on Abernethy et al. (2004) and Bedford and Malmi (2015).
Matrix structure	Use of matrix structures with multiple lines of accountability. Reflective construct measuring the average of two items based on Burns and Stalker (1961), Chenhall and Morris (1995), Simons (2005), Bogsnes (2009), and Rowe, Birnberg and Shields (2008)
Management processes	
Team interaction	
Within the SBU	Frequency that within SBU management team meetings take place. Single item construct based on Malmi and Brown (2015).
Across the SBU	Frequency that cross-SBU management team meetings take place. Single item construct based on Malmi and Brown (2015).
Team composition	
Stability within SBU	Stability of individual composition in the SBU management teams. Single item construct based on Malmi and Brown (2015).
Stability across SBU	Stability of individual composition in cross-SBU management teams. Single item construct based on Malmi and Brown (2015).
Breadth within the SBU	Functional diversity of individuals in the SBU management teams. Single item construct based on Malmi and Brown (2015).
Breadth across the SBU	Functional diversity of individuals in cross-SBU management teams. Single item construct based on Malmi and Brown (2015).
Rules and procedures	
Pre-action reviews	Emphasis on pre-action reviews. Formative construct measuring the average of two items based on Simons (1995, 2005), Merchant and Van der Stede (2012), and Widener (2008).
Boundary system	Emphasis on boundary control systems. Formative construct measuring the average of four items based on Simons (1995), Bedford and Malmi (2015), and Widener (2007).

A.2 Strategic planning

Construct	Variable definition
Content	
Comprehensiveness	Comprehensiveness of the content covered by the strategic plan. Formative construct measuring the average of two items.
Specificity	Degree of specificity and detail of strategic plan content. Reflective construct measuring the average of three items based on Brews and Hunt (1999).
Review frequency	

Ends	Frequency that the strategic plan ends are reviewed. Single item construct based on Brews and Hunt (1999).
Means	Frequency that the strategic plan means are reviewed. Single item construct based on Brews and Hunt (1999).
Revision frequency	
Ends	Frequency that the strategic plan ends are revised. Single item construct based on Brews and Hunt (1999).
Means	Frequency that the strategic plan means are revised. Single item construct based on Brews and Hunt (1999).
Subordinate participation	
Ends	The number of levels of management below the top management participating in setting strategic plan ends. Single item construct.
Means	The number of levels of management below the top management participating in setting strategic plan means. Single item construct.

A.3 Action planning

Construct	Variable definition
Content	Degree of comprehensiveness of action plan content. Formative construct measuring the average of seven items.
Revision frequency	
Target	Frequency of revising short-term performance targets. Single item construct.
Action plans	Frequency of revising action plans. Single item construct.
Resource allocations	Frequency of revising short-term resource commitments. Single item construct.
Subordinate participation	
Plan development	Degree of autonomy that subordinates have to develop action plans. Single item construct based on Bogsnes (2009).
Targets ends	Degree of autonomy that subordinates have to set short-term targets for ends. Single item construct based on Bogsnes (2009).
Targets means	Degree of autonomy that subordinates have to set short-term targets for means. Single item construct based on Bogsnes (2009).

A.4 Performance measurement and evaluation

Constructs	Variable definition
Budgets	
Diagnostic use	Measures cybernetic monitoring of activity through deviations from performance standards (Simons 1995). The construct is based Simons (1995), Henri (2006), and Bedford and Malmi (2015). Reflective construct measured as the average of three items.
Interactive use	The construct is based on a reflective measurement model (five items) developed by Bisbe, Batista-Foguet and Chenhall (2007). The wording of the items is based on Simons (1995), Henri (2006), Bisbe and Otley (2004), and Bedford and Malmi (2015).
Performance measurement system	
Diagnostic use	Measures cybernetic monitoring of activity through deviations from performance standards (Simons 1995). The construct is based Simons (1995), Henri (2006), and Bedford and Malmi (2015). Reflective construct measured as the average of three items.

Interactive use	The construct is based on a reflective measurement model (five items) developed by Bisbe et al. (2007). The wording of the items is based on Simons (1995), Henri (2006), Bisbe and Otley (2004), and Bedford and Malmi (2015).
Performance evaluation measurement	
Financial	Measures the use of financial measures for evaluating subordinates (Simons, 2005). Reflective construct measured as the average of two items.
Non-financial	Measures the use of non-financial measures for evaluating subordinates (Simons, 2005). A single item is used to capture the attribute.
Detailed	Measures the use of detailed measures for evaluating subordinates (Simons, 2005). A single item is used to capture the attribute (Simons, 2005; Bogsnes, 2009).
Aggregate	Measures the use of aggregate measures for evaluating subordinates (Simons, 2005). A single item is used to capture the attribute (Simons, 2005; Bogsnes, 2009)
Personal	Measures the use of individual behaviours for evaluating (e.g., leadership, effort) subordinate performance. The construct is based on Simons (2005) and Kolehmainen (2010). Reflective construct measured as the average of three items.
Relative	Measuring the use of relative measures (e.g., comparison to internal or external benchmarks) for evaluating subordinate performance. Reflective construct measured as the average of three items based on Bogsnes (2009).
Number of measures	The number of performance measures subordinates are held accountable for.
Performance evaluation frequency	
Leadership performance	Frequency of formalized evaluation to assess leadership performance of subordinates. Single item construct based on Merchant (1989), Kolehmainen (2010) and Merchant and Van der Stede (2012).
Business performance	Frequency of formalized evaluation to assess business performance of subordinates. Single item construct based on Merchant (1989), Kolehmainen (2010) and Merchant and Van der Stede (2012).

A.5 Reward and compensation

Construct	Variable definition
Incentive intensity	
Incentive use	Emphasis on performance-based pay. Formative construct measured as the average of two items based on Simons (2005) and Shields and Young (1993).
Incentive proportion	Proportion of incentive bonus out of total annual compensation to subordinates. Single item construct.
Incentive determination	
Subjective	Use of subjectivity in determining subordinate compensation. Formative construct measured as the average of two items based on Ittner, Larcker and Meyer (2003a) and Gibbs, Merchant, Van der Stede Vargus (2004).
Objective	Use of predetermined, quantitative targets in determining subordinate compensation. Reflective construct measured as the average of two items based on Ittner et al. (2003a) and Gibbs et al. (2004).
Non-financial weight	Weight placed on non-financial (versus financial) performance measures in determining subordinate compensation.
Incentive type	
Financial	Use of financial rewards (e.g., bonuses) to compensate subordinates. Single item.
Non-financial	Use of non-financial rewards (e.g., recognition, promotion) to compensate subordinates. Single item.

A.6 Cultural controls

Construct	Variable definition

Selection and promotion	
Based on values	Emphasis on alignment with SBU values and beliefs in selection decisions. Single item construct based on Chatman (1991), Harrison and Carroll (1991), Snell (1992), and Widener (2004).
Internal promotions	Preference to promote internally versus external recruitment. Single item construct based on Chatman (1991), Harrison and Carroll (1991), Snell (1992), and Widener (2004).
Job rotation	Degree to which rotation between multiple positions is required for promotion. Single item construct based on Chatman (1991), Harrison and Carroll (1991), Snell (1992), and Widener (2004).
Leadership	Degree to which leadership performance is connected to rewards and promotions. Single item construct based on Chatman (1991), Harrison and Carroll (1991), Snell (1992), and Widener (2004).
Socialization	Emphasis placed on socialization processes (e.g., training, social events, mentoring) to reinforce SBU values and beliefs. Formative construct measured as the average of three constructs based on Malmi and Brown (2008).
Belief systems	Indicate to what extent…
Value statements	Emphasis on value statements to reinforce SBU values and norms. Reflective construct measured as the average of four items based on Simons (2005) and Bedford and Malmi (2015).
Vision statements	Emphasis on vision statements to reinforce SBU objectives and purpose. Reflective construct measured as the average of four items based on Simons (1995).

A.7 Control variables

Construct	Variable definition and measurement
Environment	
Unpredictability	Degree of uncertainty in the operating environment of the firm (Dess & Beard, 1984). Formative construct measured as the average of six items relating to customer, supplier, competitor, technology, regulatory and economic dimensions (Bedford & Malmi, 2015).
Complexity	Degree of diversity in the main factors relevant to firm operations (Dess & Beard, 1984). Formative construct measured as the average of two items relating customer requirements and competitor strategies (Bedford & Malmi, 2015).
Hostility	Degree of threat from the operating environment (Miller & Friesen, 1983). Formative construct measured as the average of two items relating to competition intensity and difficulty of obtaining necessary inputs (Bedford & Malmi, 2015).
Strategy	
Low cost	Emphasis on competing through low price (Porter, 1980). Measured through a single item.
Innovation	Emphasis on competing through product innovation (Ittner, Larcker & Randall, 2003b). Reflective construct measured as the average of two items.
Ownership	
Family	Dummy variable. Coded 1 if the firm is primarily family owned, 0 otherwise.
Government	Dummy variable. Coded 1 if the firm is publicly owned, 0 otherwise.
Institutional	Dummy variable. Coded 1 if the firm is primarily owned by institutional investors, 0 otherwise.
Venture capitalists	Dummy variable. Coded 1 if primarily owned by a venture capital firm, 0 otherwise.
Firm characteristics	
Firm size	Natural log of the number of employees.
Firm complexity	Number of primary and support functions located within the firm.

SOX compliance	Dummy variable. Coded 1 if the firm has full or partial compliance with SOX. Coded 0 if no compliance.
Stock exchange listing	Dummy variable. Coded 1 if the firm is listed on a stock exchange, 0 otherwise.
Industry	Dummy variables indicating single digit NACE codes.
Internationalisation	Number of countries that the firm has activities in.

Appendix B

Questionnaire items, factor loadings, and Cronbach alphas

B.1 Administrative controls

Construct	Items	Anchors	Factor/PCA loadings	Cronbach alpha
Organizational structure				
Delegation of authority	Compare the degree of influence that SBU top management has to that of subordinates on the following decisions:			
Strategic decisions	Establishment of new businesses	N/A, SBU top management has all influence/Subordinates have all influence	0.73	0.77
	Development of new products/ services		0.63	
	Extension/ enlargement investments		0.82	
	Replacement investments		0.61	
Business decisions	Product/ service pricing	N/A, SBU top management has all influence/Subordinates have all influence	0.73	0.74
	Distribution channel choice		0.69	
	Choosing and contracting customers		0.63	
	Choosing and contracting suppliers		0.54	
Operational decisions	Prioritizing activities	N/A, SBU top management has all influence/Subordinates have all influence	0.58	0.70
	Compensation policy and rewards within the BU		0.72	
	Hiring and firing employees within the BU		0.61	
	Work process arrangements within the BU		0.55	
Matrix structures	Please indicate to what extent subordinates:	Not at all/Very high extent		0.61
	Have multiple reporting lines		0.70	
	Assume roles besides managing a unit		0.59	
Management processes				
Team interaction				
Within the SBU	Indicate how often different types of management groups convene	Weekly, fortnightly, monthly, bimonthly, quarterly		n/a
Across the SBU	Indicate how often different types of management groups convene	Weekly, fortnightly, monthly, bimonthly, quarterly		n/a
Team composition				
Stability within SBU	To what extent are management group structures stable?	Dynamic/stable		n/a
Stability across SBU	To what extent are management group structures stable?	Dynamic/stable		n/a
Breadth within the SBU	How broadly based are management groups?	Narrow/broad		n/a
Breadth across the SBU	How broadly based are management groups?	Narrow/broad		n/a
Rules and procedures	In guiding and directing subordinates' behaviour, to what extent does SBU top management:			
Pre-action reviews	Review plans before action?	Not at all/Very high extent	0.82	n/a

	Employ written authorization levels and decision rules?		0.82	
Boundary system	Make the sanctions of unethical business conduct known for subordinates (e.g. by written statements)?	Not at all/Very high extent	0.67	n/a
	Employ written guidelines that stipulate specific areas for, or limits on, opportunity search and experimentation?		0.72	
	Actively communicate in writing the risks and activities to be avoided by subordinates?		0.77	
	Apply sanctions to subordinates who engage in risks outside organizational policy, irrespective of the outcome?		0.77	

B.2 Strategic planning

Construct	Item	Anchors	Factor/PCA loadings	Cronbach Alpha
Content				
Comprehensiveness	Indicate to what extent your SBU's strategic planning produces ends and means that are:	Not at all/Very high extent		n/a
	Qualitative (e.g., vision, strategic intent, new markets, new technologies)		0.75	
	Quantitative (e.g. EVA, ROCE, Turnover, market share, brand value)		0.75	
Specificity	Indicate to what extent your SBU's strategic planning produces ends and means that are…	Not at all/Very high extent		0.85
	Detailed (ends)		0.63	
	Accurate (ends)		0.67	
	Documented (ends)		0.62	
	Detailed (means)		0.78	
	Accurate (means)		0.76	
	Documented (means)		0.74	
Review frequency				
Ends	Indicate how often your SBU's strategic ends are reviewed	Monthly, quarterly, three times a year, twice a year, once a year, every second year and every third year or less frequently		n/a
Means	Indicate how often your SBU's strategic means are reviewed	Monthly, quarterly, three times a year, twice a year, once a year, every second year and every third year or less frequently		n/a
Revision frequency				
Ends	Indicate how often your SBU's strategic ends are revised	Monthly, quarterly, three times a year, twice a year, once a year, every second year and every third year or less frequently		n/a
Means	Indicate how often your SBU's strategic meqans are revised	Monthly, quarterly, three times a year, twice a year, once a year, every second year and every third year or less frequently		n/a
Subordinate participation				
Ends	Indicate who participates in the formation of your SBU's strategic ends	Top management of SBU with corporate management Only top management of the SBU		n/a

		Only SBU management, including one level of managers below SBU top management Only SBU management, including two levels of managers below SBU top management More than two levels of managers below SBU top management		
Means	Indicate who participates in the formation of your SBU's strategic means	Top management of SBU with corporate management Only top management of the SBU Only SBU management, including one level of managers below SBU top management Only SBU management, including two levels of managers below SBU top management More than two levels of managers below SBU top management		n/a

B.3 Action planning

Construct	Item	Anchors	Factor/PCA loadings	Cronbach alpha
Content	Indicate how important it is that subordinates' short-term plans contain information about:	Not at all/Very important		n/a
	Progress schedule of activities, projects, programs		0.44	
	Coordinating activities within and/or across the units		0.59	
	Forming cross-functional projects and project teams		0.62	
	Financial resource requirements		0.53	
	Human resource requirements		0.69	
	Skills and competency requirements		0.68	
	IT-resource requirements		0.69	
Revision frequency				
Target	Indicate how often targets are updated	Almost continuously, monthly, bimonthly, quarterly, three times a year, biannually and annually		n/a
Action plans	Indicate how often action plans are updated	Almost continuously, monthly, bimonthly, quarterly, three times a year, biannually and annually		n/a
Resource allocations	Indicate how often resource commitments are updated	Almost continuously, monthly, bimonthly, quarterly, three times a year, biannually and annually		n/a
Subordinate participation				

Plan development	Indicate how strategic ends and means are translated into short-term action plans in your SBU	Action plans are decided at the top and given to lower level to be implemented Important areas of action are defined at the top and subordinates are required to develop specific action plans Action plans arise in intensive negotiations within planning guidelines given from the top Action plans are based on subordinates' interpretations of how to affect upper level strategic objectives Subordinates autonomously determine actions within strategic themes along the business	n/a
Targets ends	Indicate how short-term targets are set in your SBU	Top management sets targets and passes them to subordinates Top management sets targets, but revises them in negotiations with subordinates Targets setting is quite long, iterative negotiation process between organizational levels Subordinates set autonomously targets, but they are subject to top management acceptance Subordinates set targets autonomously with little, if any, management involvement	n/a
Targets means	Indicate how short-term targets are set in your SBU	Top management sets targets and passes them to subordinates Top management sets targets, but revises them in negotiations with subordinates Targets setting is quite long, iterative negotiation process between organizational levels Subordinates set autonomously targets, but they are subject to top management acceptance	n/a

		Subordinates set targets autonomously with little, if any, management involvement		

B.4 Performance measurement and evaluation

Constructs	Items	Anchors	Factor/PCA loadings	Cronbach alpha
Budgets	To what extent does SBU management use budgets for the following:			
Diagnostic use	Identify critical performance variables (i.e. factors indicating progress towards strategic objectives)	Not at all/Very high extent	0.71	0.78
	Set targets for critical performance variables		0.82	
	Monitor progress towards and to correct deviations from preset performance targets		0.72	
Interactive use	Provide a recurring and frequent agenda for top management activities	Not at all/Very high extent	0.76	0.82
	Provide a recurring and frequent agenda for subordinate activities		0.76	
	Enable continual challenge of underlying data, assumptions and action plans with subordinates		0.73	
	Focus attention on strategic uncertainties (i.e. threats and opportunities)		0.55	
	Encourage and facilitate dialogue and information sharing with subordinates		0.66	
Performance measurement systems	To what extent does SBU management use performance measurement for the following:			
Diagnostic use	Identify critical performance variables (i.e. factors indicating progress towards strategic objectives)	Not at all/Very high extent	0.83	0.88
	Set targets for critical performance variables		0.85	
	Monitor progress towards and to correct deviations from preset performance targets		0.84	
Interactive use	Provide a recurring and frequent agenda for top management activities	Not at all/Very high extent	0.83	0.86
	Provide a recurring and frequent agenda for subordinate activities		0.82	
	Enable continual challenge of underlying data, assumptions and action plans with subordinates		0.77	
	Focus attention on strategic uncertainties (i.e. threats and opportunities)		0.59	
	Encourage and facilitate dialogue and information sharing with subordinates		0.71	
Performance evaluation measures	Indicate to what extent SBU top management bases subordinates' performance evaluation on:	Not at all/Very high extent		
Financial	Financial measures		0.77	0.68
	Aggregate, summary measures		0.69	
Non-financial	Non-financial measures			n/a
Detailed	Detailed measures (e.g. budget line item, input volume, time, quality)			n/a
Aggregate	Aggregate, summary measures (e.g. EBIT, profit, ROI, ROCE, market share, brand value, brand image, total customer satisfaction)			n/a
Personal	Achievements in leadership behaviour		0.60	0.68
	Actions and activities taken		0.59	

	Individual effort		0.75	
Relative	Indicate to what extent SBU top management evaluates subordinates' performance in relation to:	Not at all/Very high extent		0.63
	Internal benchmarks		0.68	
	External benchmarks		0.61	
	Past performance		0.54	
Number of measures	For how many performance measures does SBU top management hold subordinates accountable?			n/a
Performance evaluation frequency	Indicate how often formalized performance evaluations are conducted in your SBU			
Leadership performance		Monthly, quarterly, three times a year, twice a year, once a year, less frequently than once a year, N/A		n/a
Business performance		Monthly, quarterly, three times a year, twice a year, once a year, less frequently than once a year, N/A		n/a

B.5 Reward and compensation

Construct		Anchors	Factor/PCA loadings	Cronbach alpha
Incentive intensity				
Incentive use	Indicate to what extent:	Not at all/Very high extent		n/a
	Performance-pay contracts are customized for each subordinate		0.78	
	Financial rewards increase as subordinate's performance exceeds targets		0.78	
Incentive proportion	How many percent of their total annual income can subordinates receive as performance-based bonuses in your SBU?	Percent of annual salary		n/a
Incentive determination	Indicate to what extent the following statements describe the way of evaluating and compensating subordinates' performance in your SBU			
Subjective	We determine weights of performance measures as the evaluation takes place		0.84	n/a
	We adjust the amount of bonus based on actual circumstances		0.84	
Objective	We evaluate performance on the basis of quantitative metrics		0.77	0.72
	We use predetermined criteria in evaluation and rewarding		0.73	
Non-financial weight	Indicate weight (%) of each measure in rewarding formula			n/a
Incentive type	Rewarding is:	Not at all/Very high extent		
Financial	Financial (bonuses, share-based rewards)			n/a
Non-financial	Non-financial (e.g. recognition, promotion, training)			n/a

B.6 Cultural controls

Construct	Anchors	Factor/PCA loadings	Cronbach alpha

Selection and promotion	Indicate to what extent:	Not at all/Very high extent		
Based on values	Are psychological tests and values of importance when recruiting for managerial positions?			n/a
Internal promotions	Are promotions made from within the organization?			n/a
Job rotation	Is subordinate rotation between various positions seen as an important precondition for promotion?			n/a
Leadership	Is leadership-based performance connected to significant rewards (e.g. promotions, equity-based rewards)?			n/a
Socialization	Are training and development processes used to reinforce SBU objectives, expectations and norms?		0.77	n/a
	Are social events and functions used to develop and maintain commitment to the SBU?		0.71	
	Are mentoring, orientation and induction programs used to acclimatise new managers to acceptable behaviours, routines and norms?		0.75	
Belief systems	Indicate to what extent:	Not at all/Very high extent		
Value statements	Are the values and purpose of the SBU codified in formal documents? (e.g. value statements, credos, statements of purpose)		0.64	0.82
	Are formal statements of values used to commit subordinates to the long-term objectives of SBU?		0.79	
	Are formal statements of values used to motivate subordinates in sharing responsibility?		0.82	
	Do you count on value and mission statements guiding actions of your subordinates?		0.70	
Vision statements	Is the direction of the SBU codified in formal documents? (e.g. vision statement, statement of strategic intent)		0.65	0.79
	Is the vision statement so concise that your subordinates can remember it all the time?		0.71	
	Is the vision statement so specific that it guides your subordinates to say 'no' for some business opportunities?		0.63	
	Do you count on the vision statement guiding actions of your subordinates?		0.82	

B.7 Control variables

Construct	Items	Anchors	Factor/PCA loadings	Cronbach alpha
Environment				
Unpredictability	Over the past three years: How many changes have occurred that have had a material impact on the nature of your business?	Very few changes/Very many changes		n/a
	Customers		0.57	
	Suppliers		0.60	
	Competitors		0.65	
	Technological		0.60	

	Regulatory		0.55	
	Economic		0.24	
Complexity	How diverse are the product/service requirements of your customers to each other?	Very similar/Very diverse	0.80	n/a
	How diverse are the strategies and tactics of your key competitors to each other?	Very similar/Very diverse	0.80	
Hostility	How intense is the competition for your main products/services?	Not intense at all/Very high intensity	0.74	n/a
	How difficult is it to obtain the necessary inputs for your business?	Not difficult at all/very high difficulty	0.74	
Strategy	Indicate to what extent you agree with the following:	Not at all/Very high extent		
Low cost	We compete by the lowest price			n/a
Innovation	Our success depends on product/ service novelty		0.89	0.70
	Our success is driven by product innovations		0.59	
Ownership	Who is the most significant owner of your organization?	Family, government, institutional, venture capitalists, other		n/a
Firm characteristics				
Firm size	What is the number of employees in your SBU?	Number of employees		n/a
Firm complexity	Please indicate which functions are fully controlled by your SBU, i.e. these functions are not part of shared resource pools with other SBUs in your organization.	Main functions: R&D, inbound logistics, operations, outbound logistics, marketing and sales and after-sales service. Support functions: IT, HRM, accounting and finance and procurement		n/a
SOX compliance	Does your SBU comply with the SOX?	No, partially and yes.		n/a
Stock exchange listing	Is your SBU part of a publicly quoted company?	No and yes.		n/a
Industry	What is your SBU's main industry	Manufacturing, services and wholesale and trade		n/a
HQ location	In which country is your parent company registered?	Country		n/a
Internationalization	In how many countries does your SBU have operations?	Number of countries		n/a

Appendix C
Descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Max
Administrative controls					
Organizational structure					
Delegation of authority					
Strategic decisions	654	3.10	1.22	1	6.75
Business decisions	652	4.13	1.31	1	7
Operational decision	658	3.85	1.21	1	7
Matrix structures	659	3.76	1.52	1	7
Management processes					
Team interaction					
Within SBU	651	0.72	0.65	0.25	6
Across SBU	365	1.47	1.21	0.25	6
Team composition					
Stability within SBU	653	5.58	1.27	1	7
Stability across SBU	363	5.26	1.36	1	7
Breadth within SBU	652	3.91	1.82	1	7
Breadth across SBU	363	3.73	1.75	1	7
Rules and procedures					
Pre-action reviews	659	4.82	1.34	1	7
Boundary systems	658	4.36	1.40	1	7
Strategic planning					
Time horizon	652	3.92	1.45	1	9
Content					
Comprehensiveness	656	5.26	1.13	1	7
Specificity	655	4.62	1.19	1	7
Review frequency					
Ends	656	7.12	5.66	1	36
Means	645	6.75	6.05	1	36
Revision frequency					
Ends	649	11.64	7.38	1	36
Means	641	9.45	7.04	1	36
Subordinate participation					
Ends	655	2.29	1.14	1	5
Means	650	2.69	1.14	1	6
Action planning					
Content	658	5.04	0.87	1	7
Revision frequency					
Targets	659	6.03	4.47	0.25	12
Action plans	656	2.96	3.78	0.25	12
Resource allocations	654	3.32	3.43	0.25	12
Subordinate participation					
Plan development	656	2.48	1.03	1	5
Targets (ends)	657	2.09	0.88	1	5
Targets (means)	654	2.61	1.02	1	5
Performance measurement and evaluation					

Variable	N	Mean	Std. Dev.	Min	Max
Budgets					
Diagnostic use	638	5.39	1.22	1	7
Interactive use	638	4.68	1.23	1	7
Performance measurement systems					
Diagnostic use	608	5.43	1.33	1	7
Interactive use	609	4.77	1.33	1	7
Performance evaluation measures					
Financial	658	5.68	1.48	1	7
Non-financial	658	5.14	1.39	1	7
Detailed	658	4.88	1.58	1	7
Aggregate	658	5.16	1.66	1	7
Personal	657	4.74	1.23	1	7
Relative	659	3.74	1.39	1	7
Number of measures	647	5.53	3.43	0	30
Performance evaluation frequency					
Leadership	634	9.71	4.84	1	24
Business	643	7.03	5.51	1	24
Rewards and compensation					
Incentive intensity					
Incentive use	655	4.09	1.69	1	7
Incentive maximum	650	21.03	21.00	0	400
Incentive determination					
Subjectivity	648	3.11	1.77	1	7
Objectivity	649	5.21	1.77	1	7
Non-financial weight	545	34.28	29.88	0	100
Incentive type					
Financial	652	5.51	1.86	1	7
Non-financial	653	3.75	1.79	1	7
Cultural controls					
Selection and promotion					
Based on values	658	4.58	1.83	1	7
Internal promotions	658	5.16	1.24	1	7
Job rotation	658	3.84	1.63	1	7
Leadership	658	3.97	1.79	1	7
Socialization	658	4.58	1.11	1.33	7
Belief systems					
Value statements	658	4.75	1.35	1	7
Vision statements	658	4.66	1.31	1	7
Control variables					
Environment					
Unpredictability	655	3.97	0.91	1.2	6.67
Complexity	654	3.78	1.32	1	7
Hostility	654	4.75	1.00	1	7
Strategy					
Low cost	656	3.08	1.82	1	7
Innovation	657	4.18	1.48	1	7
Firm characteristics					

Variable	N	Mean	Std. Dev.	Min	Max
Firm size	654	6.61	1.16	3.56	11.17
Firm complexity	654	6.51	2.83	0	10
Internationalisation	653	8.07	18.14	0	220
Dummy variables	**N**	**x=1**			
Ownership					
Family	649	246			
Government	649	49			
Institutional	649	166			
Venture capitalists	649	59			
SOX compliance	656	178			
Stock exchange listing	659	297			