Are Management Practices Culturally Contingent?

Evidence from National Culture as a Moderator of the

Effect of Management Practices on Firm Performance

Radboud Universiteit

Alejos Casado, María

Student number: s1021569

Master in Economics, International Business

Supervisor: Dr. Ing. A.A.J. Van Hoorn

Nijmegen School of Management, 17.06.2019

Abstract

Are management practices culturally contingent? Management practices and culture differ significantly across countries. Building on contingency theory and the assumption that behaving in accordance with national culture benefits firm performance, this paper empirically tests the interaction effect between management practices, national culture and firm performance. It evaluates the contribution on firm performance of three operational activities (monitoring, incentives and targets), which are moderated by national culture. Direct effects of national culture on management practices and on performance notwithstanding, results uncover no evidence that the performance consequences of management practices are contingent on culture. Instead more sophisticated practices are positively related to firm performance, independent from national culture.

Keywords: Management practices, national culture, firm performance, contingency theory.

Acknowledgements

This paper is the result of months of hard work and research. I would like to sincerely thank my thesis supervisor, Dr. André Van Hoorn, for his guidance and support through each stage of the process. His extensive expertise, support and encouragement to always go a little further, have enormously contributed to this final piece of work. I would also like to acknowledge the orientation provided by Robbert Rademakers on the software Stata. His willingness to help out and passion on econometrics turned the hardest part into a surprisingly fun ride.

Furthermore, I would like to thank both my Spanish and German family for the support given in the past months. Specially, my admiration goes for Angel, Pili and Simon for their unconditional belief in me and patience showed.

List of contents

CHAPTER 1. INTRODUCTION

Starting in the 1950s, there has been a great deal of critique of US (United States)-centric management research for being ethnocentric and neglecting challenges that may hamper the applicability of American management styles and philosophies in other cultures. From then on and encouraged by the globalization and integration of markets, the black box of culture is open and the body of research in cross-cultural management has arisen.

Recent advances in the measurement of management practices have brought renewed attention to the question whether and how management practices affect the performance of firms. Indeed, several studies came to the conclusion that management practices affect firm performance (Bloom and Van Reenen 2010; Bloom, Genakos, Sadun, & Van Reenen, 2012; Kaynak, 2003; Douglas & Judge, 2001; Das, Handfield, Calantone & Ghosh, 2000; Wilson and Collier, 2000). Until this point, evidence consistently points towards a positive effect of the so-called quality of management practices on firm performance. The use of incentives, monitoring and target-setting practices all appear to have a favorable effect on performance (Bloom and Van Reenen 2010; Bloom et al., 2012). However, it is not certain whether this positive gradient holds universally across countries or is culturally contingent.

In this context, contingency theory must be considered. Its most basic assumption is that no superior management structure exists. Instead, companies adapt to the environment in which they operate (Hofstede, 1980; Donaldson, 1996). Therefore, multinational enterprises (MNEs) need to adapt their structure to different surroundings. The importance of culture and management variation has been seen in failures of companies going abroad. As an example, Lincoln Electric expanded to Europe and applied the same strong incentive system that was successful in the US, which however turned out to be an enormous failure ascribed to differences embedded in cultural roots (Hastings, 1999).

Looking at the published literature, the diversity of management practices across countries has been evaluated and verified (Bloom and Van Reenen 2010; Bloom et al., 2012; Budhwar & Khatri, 2001; Hempel, 2001). The relationship between culture and management practices has been tested as well (Van Hoorn, 2014; Mathews et al., 2001; Newman & Nollen, 1996). In this line of research, there are very few studies that simultaneously consider the main three variables of this paper; management practices, culture and firm performance (Chow, Shields & Chan, 1991). Therefore, there is still much to discover about management practices being culturally contingent. One area that has not been investigated in depth is the potential interplay between culture and certain management practices and their effect on performance, which is addressed in this paper. *How much does national culture moderate the effect of management practices on firm performance?*

This paper seeks to understand which management practices are more performance-enhancing depending on the culture of a particular country. The line of argument is based on contingency theory, thus culture is understood as a contingency factor that shapes organizational behavior. The basic assumption is that companies adapt their management practices to the national culture, which will have a positive effect on firm performance.

The work developed in the following sections provides empirical evidence and a deeper knowledge about the relationship between management practices, culture and firm performance across eighteen countries. Chapter two contains the most relevant theoretical insights in national culture, contingency theory and management practices. Moreover, the research question and related hypothesis are developed according to the theoretical background. Chapter three is concerned with the methodological aspects of the empirical analysis and chapter four presents the results obtained. Lastly, the results are discussed and followed by a conclusion in chapter five and six respectively.

CHAPTER 2. BACKGROUND AND HYPOTHESES DEVELOPMENT

Together with the rejection of universally valid management practices, the role of culture in international business has gained attention in the last decades. With the liberalization of trade, an increasing flow of foreign direct investment (FDI) arises, companies operate worldwide, and a wave of mergers and acquisitions (M&A), where different cultures come in contact with each other, takes place. In this context, culture influences economic outcomes and shapes how a company functions and it is organized. In sum, culture affects management practices.

From a contingency theory perspective, culture is seen as the factor affecting the company and its outcomes. Based on these characteristics, this chapter presents a brief description of the key aspects of this paper; management practices, contingency theory and national culture. The second section offers an overview on related previous studies that led to the research question of this paper. Lastly, hypotheses are developed.

2.1. Background

2.1.1. Management practices

The form in which companies are managed and structured has been a focus of study for a long time. According to Ng (2011) "Management means getting things done effectively through people to achieve the desired results. This requires a combination of leadership, communication and people skills" (Ng 2011, 93). According to this definition, management is defined by the relationships between employees and supervisors, which are strongly influenced by the national culture of those. In the literature concerned with this topic, one can find several publications on management practices. However, this paper is based on the work that has been done by Bloom and his colleagues over the years since their research is based on effective and quantitative measures carried out across many firms and countries.

Their work was created to provide solutions to the questions of why and how management practices differ across countries (Bloom & Van Reenen, 2007). The team developed the World Management Survey (WMS) and groups management practices into three operational activities: monitoring, incentives and targets. According to Bloom & Van Reenen, (2007), monitoring refers to how known the events (e.g., performance), processes, and problems are, its communication and the subsequent establishment of solutions. Target practices describe the settlement of objectives, its nature, the viability to reach them, and the outcomes. Lastly, the term incentives activities refer to the methods through which the company encourages employees to improve their performance (e.g., bonus system). Good employees are compensated and bad employees punished. Consequently, best management practices are described as "those that continuously collect and analyze performance information, that set challenging and interlinked short- and long-run targets, and that reward high performers and fire low performers" (Bloom et al., 2012, 3).

Looking at the WMS in detail, it presents evidence for the lack of homogeneity in management practices. As an example, companies in the US and Japan are the best managed, whereas organizations in India account for the worst run firms. Within Europe, the best-managed firms are located in Germany while the worst managed companies can be found in Greece (Bloom, et al., 2012). Depending on the country, companies specialize in different dimensions of management practices. Concretely, for companies in certain countries such as the US, it is more important to give individual incentives, while other countries, such as Germany, focus on monitoring (Bloom, et al., 2012). This argument leads to the core of this thesis - the interaction between national culture and certain management practices, owing to the fact that companies specialize in particular areas in response to their cultural environment.

2.1.2. Contingency theory

The assumption of one unique and universally valid organizational structure ended with, among other reasons, the failure of US management styles in other locations than their home market. The contingency paradigm started to play a role in the 1950's and the theory itself was being applied in companies (Hofstede, 1980). This meant moving from a reality where one size fits all towards a context where the structure of an organization was adapted to the needs of a particular situation (Donaldson, 1996). In other words, it begun to be accepted that the "worldwide effective and successful" US style of management was not appropriate for every location.

Contingency theory basically says that there is no single organizational structure that is optimal for all organizations (Donaldson, 1996). In this sense, Donaldson states that an organization adapts itself to the current contingencies so that there is a fit between the organization itself and several contextual contingencies. There are several contingency factors that arise internally or externally (environment) and those contingencies affect the organizational structure, requiring adaptation (Donaldson, 2001). Therefore, the company needs to adapt to its environment in order to be successful and improve firm performance (Child, 1975).

Some of the core internal contingency factors are size, technology, task uncertainty, diversification, and environment (Donaldson, 1996). Depending on the characteristics of those factors, the structure of the organization varies. For instance, a small company has few levels of hierarchy, centralized power, few departments, and is not diversified. By contrast, a large firm is decentralized and formally structured allowing for diversification (Donaldson, 2001).

Contingency theory has been developed over the years to include more variables than the mentioned above. However, the effect of national culture was ignored for a long period of time. Evidence was presented that culture is not irrelevant to organizations and consequently to contingency theory, suggesting that its scope should

be broadened to include culture (Child, 1975; Tosi & Slocum, 1984; Tayeb, 1987). More recently, several studies have included culture as a contingency factor (Chow et al., 1991; Newman and Nollen, 1996).

In line with contingency theory, a company could have different structures in different locations as a response to the environment. Therefore, this paper considers culture as a contingency factor coming from the environment in which the firm operates and needs to adapt to.

2.1.3. National culture

Nowadays business takes place around the world 24 hours a day, human capital is internationally mobile, and communication across countries is cheap. In a context where business does not know frontiers, culture plays a crucial role.

Culture is considered to be a network of informal institutions that shape, enable, and constraint human behavior in a society (North, 1990) and refers to the values common to a group that are transmitted from generation to generation (de Jong, 2009). For this paper, Hofstede's definition of culture has been chosen due to its narrow and specific description. He defines culture as "the collective programming of the mind that distinguishes the members of one group or category of people from another" (Hofstede 2001, 9).

This paper emphasizes on the various dimensions of national culture and its differences between countries, including social trust, each of which can be a moderator, at least in principle, between management practices and firm performance. The following sections briefly introduce the work done by Hofstede and Schwartz in regards to the measurement of national culture and conclude with the notion of social trust.

2.1.3.1. Hofstede's six dimensions of national culture

The six dimensions of national culture developed by Hofstede represent the most relevant aspects of a society which help to understand and characterize national cultures.

Power Distance

Power distance refers to the extent in which unequal distribution of power is accepted by members of society (Hofstede, 2013). Individuals living in a society characterized by high power distance (e.g., China) accept status and power domination. Moreover, individuals recognize the authority and obey to the leaders (Hofstede, 2015). Applying this concept to a firm, in large power distance nations the hierarchy is clearly defined and subordinates are told what to do without being consulted (Hofstede, 2011).

Uncertainty Avoidance

The dimension 'Uncertainty Avoidance' measures the extent to which a person feels threatened, stressed or scared when facing uncertainty or ambiguity (Hofstede, 2013). De Jong (2009) illustrates several materializations of this dimension. For instance, in societies where uncertainty avoidance is high, tolerance towards foreign and foreignness tends to be low. Furthermore, there is a need for clear rules. Structure and stability are also highly appreciated. In this sense, bank based societies (e.g., Germany) usually score high in uncertainty avoidance, whereas in market based societies (e.g., US) uncertain situations are accepted. Moreover, societies with low uncertainty avoidance have flexible labor market practices and liberalized trade.

Individualism vs. Collectivism

According to Hofstede (2013), in an individualistic society on the one hand, one is expected to take care of oneself and one's immediate family. On the other hand, in a collectivistic society individuals are tied to groups and networks where loyalty,

cohesion and trust are basic values. For instance, the US is known for its high score on individualism, by contrast, China is known as a collectivistic society. Furthermore, in individualistic societies, individual interest is pursued while in a collectivistic culture, the group interest is always positioned above individual (Hofstede, 2011).

Masculinity vs. Femininity

In a masculine society, gender roles are clearly distinguished. Men should pursue material success and be competitive, while women should be modest and focused on the quality of life. By contrast, in a feminine society, gender roles overlap and both, men and women, are expected to be modest and care about the quality of life (Hofstede, 2013). In a masculine society, work is more important than family and men make important decisions, being the ones legitimate for politics (Hofstede, 2011). Generally, a market based society scores high on masculinity due to the presence of strong competition and has a higher gender gap (de Jong, 2009).

Long vs. Short Term Orientation

This dimension stands for the importance given to short- or long-term returns and outcomes. For instance, if a society is long-term oriented, the results in the long run are more important (Hofstede, 2013) than the short-term results. As an example, individuals in Central Europe (long- term oriented culture) have saving accounts, while in a short-term oriented nation, namely the US, consumption is very high (Hofstede, 2011) and people tend to not save.

Indulgence vs. Restraint

A society which allows individuals to satisfy desires such as sex or consumption and where people consider themselves happy, scores high on indulgence. By contrast, a society, where people do not feel free to enjoy life and have fun, is considered restrained (Hofstede, 2013). As an example, indulgence is high in Sweden whereas

restraint dominates in Iraq or Bangladesh, because many restrictions in daily life exist such as alcohol consumption or strict sexual norms.

2.1.3.2. Schwartz's seven cultural value orientations

This paper relies on further measures of national culture in order to increase the quality of the analysis. Schwartz S. H. (1999) developed seven values respectively pooled in three opposing cultural dimensions. The three dimensions from which the seven values are derived emerge from three issues present in all cultures and their corresponding responses. A concise description is carried out below.

Conservatism or Embeddedness vs. Autonomy

The dimension relates to the issue regarding the relationship between the individual and the group (Schwartz, 1992). In this context, autonomy (which is affective in terms of feelings and leisure, and intellectual in terms of ideas) is promoted when people live on their own, are independent, and pursue individual interests. By contrast, a society pooled in the embeddedness cultural value implies that individuals act accordingly to collective interests (Schwartz, 1999). From an organizational perspective, in societies where embeddedness dominates, employees give more importance to the group than individual interests, group objectives predominate and autonomous work lacks (Sagiv & Schwartz, 2007).

Hierarchy vs. Egalitarianism

The issue addressed in this dimension is measured by the behavior that keeps the social order in society (Schwartz, 1999). If a society scores high on hierarchy, the power is unequally distributed. Within the organization, power is centralized among few managers (Sagiv & Schwartz, 2007). Conversely, if the country is characterized by high levels of egalitarianism, humans are equally viewed and treated.

Mastery vs. Harmony

The last dimension refers to the population's attitude towards the environment (Schwartz, 1999). On the one hand, a national culture could be characterized as mastery when it is legitimate that individuals attempt to change the world and alter the social sphere in order to reach objectives encouraged by ambitious behavior. An opposing solution is represented by high scores on the cultural value harmony, described as the intention of society to fit and adapt to the world without altering the environment and avoiding resource exploitation (Sagiv & Schwartz, 2007).

2.1.3.3. Social trust

Social trust is a crucial aspect reflected in national culture, affecting firms as well. Among researchers it is commonly described as the good culture and represents the values a society holds, which are transmitted from generation to generation (Guiso, Sapienza & Zingales, 2008). In this sense, social trust is high if a society holds values that foster trust and cooperation, which results in visible, aggregated benefits such as an easy distribution of public goods, decrease of criminality, good functioning of governments (Beugelsdijk, 2009) or economic development (Tabellini, 2005). More precisely, social trust can be measured at the firm level, which refers to the resources generated in the network a firm belongs to. This network produces on the one hand positive results, namely tactic knowledge sharing, and on the on the other hand negative results, such as lack of flexibility and lockout to new ideas (Beugelsdijk, 2009). Therefore, social trust affects society and economic outcomes.

As a conclusion for the theoretical background section, it is crucial to put emphasis on the importance of national culture and management variation. Culture varies across countries (Hofstede, 1980) and within countries (Beugelsdijk, Maseland, Onrust, Van Hoorn, & Slangen, 2015). Furthermore, management practices and managerial behavior differ between countries (Bloom, et al., 2012; House & Peterson, 2004) and between

locations within a country (Van Hoorn, 2015). In this sense, contingency theory could serve to establish the link between culture and management practices variation.

2.2. Prior Research

The interest in research on culture and management practices has rocketed together with the rise in economic activities that take place at a global level. This section briefly addresses some of the most relevant contributions in the subject that led to the gap in the literature that encouraged the writing of this paper.

2.2.1. Differences in management practices across countries

The WMS, which has been introduced in last section, is widely known as a research project that digs deep into the how and why management practices differ. Over the years, several conclusions could be derived. Overall, management practices differ considerably across countries and within countries. Family firms are poorly managed and public owned companies score the worst (Bloom, et al., 2012). Moreover, firms facing strong competition and flexible labor regulation derive superior management practices (Bloom, et al., 2012). Additionally, the analysis of the WMS data presents evidence of a positive and significant relationship between management practices and performance (Bloom and Van Reenen 2010; Bloom et al., 2012).

Along with the WMS, further research has been done on the topic. One example is the study developed by Hempel (2001). Here, Chinese and Western managerial practices and the form in which they evaluate performance differ significantly. In this regard, the managers from each region have different perceptions about what performance is, thus the Chinese models do not function efficiently in Western countries and vice versa. For instance, in the Chinese culture, personal characteristics such as loyalty are valued as a proxy for performance, while the focus in Europe is more on tangible outcomes, namely productivity, motivation or analytical skills. Moreover,

the objectives of the organizations are very different. For Chinese companies, the maintenance of full employment is of great importance, while for Western companies economic maximization is a central strategy (Hempel, 2001). Additionally, strong differences have been found in practices such as training or compensation of employees between British and Indian companies (Budhwar & Khatri, 2001).

In general terms, the implementation of quality management has a positive effect on firm performance (Kaynak, 2003; Douglas & Judge, 2001; Das et al., 2000 & Wilson and Collier, 2000; Nair, 2006).

2.2.2. The direct effect of national culture on management practices

It is crucial that management practices are in accordance with the corresponding national culture. Therefore, MNEs expanding across borders need to find the optimal fit between management practices and culture in order to survive and be successful.

The study by Newman & Nollen (1996) sheds more light on the issue showing that organizations act accordingly with a certain national culture and lay more or less emphasis on certain management practices. As a case in point, in individualistic countries such as the US, management practices positively affect performance if individual contribution is accounted. Furthermore, in masculine cultures, performance is higher when merit-based practices are applied due to the high competitive environments. By contrast, individual incentives do not function properly in collectivistic societies such as China, thus requiring different management styles where the emphasis is laid on group results (Newman & Nollen, 1996). Focusing on Europe, the variety of management practices in Portugal, Finland and the United Kingdom (UK) respond to differences in national culture as well (Mathews et al., 2001). By way of illustration, where uncertainty avoidance is strong, rule-based management practices are settled. Alternatively, more responsibility is given where uncertainty avoidance and power distance is weaker (Mathews et al., 2001).

A more recent paper based on prior research and using the WVM has been published by Van Hoorn (2014). He upgrades the literature using firm and country level variables, thereby emphasizing on the effect of individualism on management practices. The results illustrate that countries with higher scores on individualism lead to more sophisticated management practices (Van Hoorn, 2014).

2.2.3. Management practices, culture, and firm performance

Based on the arguments mentioned above, there is a clear need to understand the context in which certain management practices are key to increase firm performance. In this regard, the proposition is to see management practices from a contingency theory perspective where culture shapes the development of the company. In other words, firm performance is determined by management practices, and those are culturally contingent. However, the number of studies linking the three variables concerned (culture, firm performance and management practices) is very limited. Chow and his colleagues (1991) studied the relationship between individualism, management and performance. Nonetheless, they were not able to find any interactive relationship among them (Chow et al., 1991). In the paper written by Sousa & Voss (2008), they stated that research on testing interactions using culture as contingent is very limited. In this context, a paper by Flynn and Saladin (2006) grasps the issue and found significant interactions between different dimensions of culture and management practices. The results showed that, for instance, cultures with low scores on power distance and high on uncertainty avoidance are tied to human resources practices (Flynn & Saladin, 2006). These studies gave importance to the alignment of culture with certain management practices.

In sum, management practices should be adapted to the national culture in order to achieve the best possible outcomes, but which practices are the appropriate ones in each context? In light of prior research, there are no conclusive studies that empirically

analyze the interactions using culture as a contingency factor and its effect on performance over a wide range of firms and countries. Therefore, research in this direction needs to be done. This paper tries to contribute by filling the gap in the literature. Moreover, this paper seeks to overcome the limitations of prior research concerning very few countries and firms included in the samples.

2.3. Hypotheses Development

Contingency theory suggests that the effect of one variable on another depends on a third variable (Donaldson, 2001). Therefore, the effect of management practices on firm performance depends on a third variable, national culture. On this matter, the performance-enhancing effect of certain management practices is stronger in some cultures than in others.

The needs of the context shape the direction of management in a determinate location. This paper seeks to answer the following research question: *How does national culture moderate the effect of management practices on firm performance?*

Answering this question by means of analyzing the moderator effect of culture on management practices and firm performance would contribute to the literature towards the understanding of cross-cultural management. This would give answers to which management practices a company should focus on regarding the country in which it operates. It would also clarify issues related with M&A and the integration process.

Putting all together, the theoretical model on which this paper relies is represented in Figure 1.

Figure 1.Theoretical model.
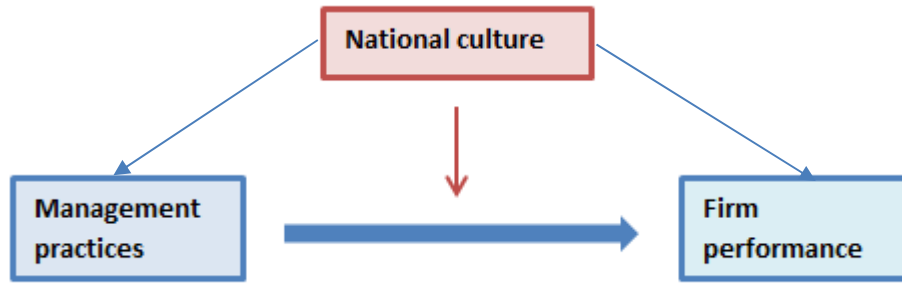
Culture is about individuals interacting with each other and with society. Management basically refers to managers interacting with their subordinates to get things done. Consequently, national culture has a direct influence on defining how management is conducted, which will be materialized in firm performance. However, not all cultural dimensions are relevant for the purpose of this paper, therefore some of them are not included as hypotheses.

Based on the theoretical background presented in the earlier sections of this chapter, several hypotheses in form of interaction terms are developed with the premise that management practices are culturally contingent. Therefore, certain management practices presume to have a stronger positive/negative impact on performance depending on the scores of certain cultural dimensions. Specifically, the three main operational aspects of management practices concerned are incentives, targets layout, and monitoring.

2.3.1. Individualism-collectivism, management practices and firm performance

The individualism dimension is associated with individual responsibility, rewards and autonomous work (Newman & Nollen, 1996). In individualistic societies, individual interest is pursued and objective criteria for hiring, firing, and promotion are used. By contrast, in collectivistic countries, group interest is pursued and the procedures benefit for instance, relatives and informal structures within groups (Hofstede, Hofstede & Minkov, 2010). As a result, employees in collectivist nations perform higher acting

within a group, while in individualistic countries employees perform better when they are individually evaluated. Regarding individualistic employees, they highly value autonomy, independence, individual decisions, initiative, challenging tasks and freedom at work (Hofstede, 1980). Thus, group rewards are successfully established in collectivistic societies, while individual rewards in individualistic nations (Gelfand, Erez & Aycan, 2007).

Moreover and relying on cross-cultural Organizational Behaviour (OB)[1], the paper by Gelfand and his colleagues (2007) presented several insights that deserve attention as well. As an example, individual feedback is appreciated and influences employee motivation in individualistic cultures, whereas group feedback is preferred in collectivistic nations. Moreover, positive feedback and success achievement motivate individualistic employees, while negative feedback and failure avoidance have a stronger motivating effect on collectivistic workers. Concerning incentives, individual rewards such as bonuses are effective in individualistic cultures whereas rewards based on other criteria such as seniority or group performance are at the cusp in collectivistic societies.

These illustrations serve as an argument to strengthen the idea that individualistic societies should emphasize on incentives, thereby motivating, encouraging and rewarding employees individually. In individualistic societies, employees know their goals and are individually encouraged by a powerful incentive system. According to the WMS, management practices that emphasize on incentives are determined by how successfully a company attracts, retains, and develops talent, rewards individual employees, applies a bonus system, and encourages competition and ambition among the workforce. In consequence, in countries with high levels of individualism, the effect

---

[1] OB can be described as the analysis across cultures of similarities and differences in the workplace (Gelfand, Erez & Aycan, 2007).

of incentives practices will have a greater positive impact on performance than in collectivistic societies.

H1: Incentives management practices have a stronger positive effect on firm performance in individualistic countries than in collectivistic countries.

2.3.2. Masculinity-femininity, management practices and firm performance

Turning to another dimension, in countries with high degrees of masculinity, the material success is pursued, competition is high and employees fight to be promoted (Newman & Nollen, 1996). Masculine and feminine societies differ as well in how they manage and solve conflict situations and meetings, seen as a fight in masculine countries and based on negotiation and compromise in feminine countries. Interestingly, in masculine nations a rise in the salary is preferred over a working time reduction, and there is a common aspiration of living to work, whereas the contrary happens in a feminine society. (Hofstede, Hofstede & Minkov, 2010). Moreover, the organization's members in masculine societies put emphasis on salary, recognition, challenging tasks and performance thereby trying to be the number one in large firms (Hofstede, 1980).

Within consequence of these arguments, masculine societies are expected to emphasize on incentives and targets. The reasoning behind lies in the strong competition that is given, the promotion system, the emphasis on earnings, recognition, challenging objectives, individual decisions, and the ambition among the workforce to be the best because work is central focus point in life.

H2a: Incentives management practices have a stronger positive effect on firm performance in countries with a masculine culture than in countries with a feminine culture.

H2b: Targets management practices have a stronger positive effect on firm performance in countries with a masculine culture than in countries with a feminine culture.

2.3.3. Uncertainty avoidance, management practices and firm performance

Formal regulation and informal structures at the work sphere are crucial and highly valued in strong uncertainty avoidance societies (Hofstede, Hofstede & Minkov, 2010). In nations that report high levels of uncertainty avoidance, employees prefer to have structured and defined tasks, standardized processes and clear regulation while they avoid taking risks and do not feel comfortable in unknown situations (Newman & Nollen, 1996). Moreover, employees in this context do not like change, which results in a lack of flexibility, and prefer goals that are easier to achieve because they do not carry uncertainty. In response to it, managers are expected to provide clear answers and guidance to their employees (Hofstede, Hofstede & Minkov, 2010). In line with Hofstede's argument (1980), in societies with strong uncertainty avoidance, members report anxiety, stress at work and are concerned about the future. Furthermore, employees have limited ambitions and prefer to work in larger companies, managed by experienced local or national leaders who are generally risk-averse.

In consequence with the last paragraph, a firm in a strong uncertainty avoidance culture would emphasize in target activities in order to minimize uncertainty. Uncertainty reduction could be addressed though clear targets and a defined horizons as a response to the necessity of written rules, structured activities and less risky behavior characteristic of high uncertainty avoidance contexts.

H3: Targets management practices have a stronger positive effect on firm performance in countries with strong uncertainty avoidance cultures than in countries with weak uncertainty avoidance cultures.

2.3.4. Power distance, management practices and firm performance

In large power distance cultures, hierarchy, inequality and dispersed wages dominate in the firm (Hofstede, 1980). Authoritarian management is preferred in large power distance cultures, whereas in small power distance societies, management is expected to be participative (Gelfand, Erez & Aycan, 2007). According to Newman and Nollen (1996), differences between superiors and subordinates in large power distance nations are strong and they are not treated equally. In such environments, the hierarchy is pyramidal. Power is centralized among old respected managers and employees do not participate in the decision-making process. They are strictly supervised and tasks are clearly communicated (Hofstede, Hofstede & Minkov, 2010; Hofstede 1980). By contrast, in small power distance cultures, individual initiative is valued, the firm's structure is flat, and power is decentralized. Moreover, employees and supervisors are seen as equals whenever they interact with each other. In a large power distance society, managers are reluctant to delegate and they make decisions without consulting their employees, who are afraid to disagree with their supervisors (Hofstede, 1980).

In sum, on the one hand, companies in countries that score high in power distance should focus on practices that require, for example, discipline. On the other hand, companies located in small power distance countries would benefit from practices which require proactive behavior and participation among the workforce (Hofstede, Hofstede & Minkov, 2010). Overall, the expected influence of large power distance cultures on the quality of management practices is negative. In particular, in large power distance countries the quality of monitoring, referring to how problems are exposed to supervisors and how improvements take place, will be lower because employees are afraid to disagree with managers. Moreover, managers make decisions regardless of subordinate's opinions. Dialogs regarding performance or possible conflicts rarely take place.

H4: Monitoring management practices have a stronger negative effect on firm performance in countries with large power distance cultures than in countries with small power distance cultures.

2.3.5. Harmony vs. mastery, management practices and firm performance

Referring to Schwartz's cultural dimensions, mastery and harmony are values linked to management practices as well. According to Schwartz's (1999) line of argumentation, mastery encourages a proactive and dynamic behavior that aims to change the natural and social environment by means of technological advance and innovation. By contrast, harmony stands for accepting and adapting to the environment. In cultures where mastery prevails, work is the central pillar of life (Schwartz, 1999). Mastery promotes ambition, competitiveness, exploitation of resources, motivation and the pursue of success (Sagiv & Schwartz, 2007). As a result, mastery leads to an increased motivation to achieve goals by means of strong encouragement through an incentive system.

H5: Incentives management practices have a stronger positive effect on firm performance in countries with mastery cultural values than in countries with harmony cultural values.

2.3.6. Social trust, management practices and firm performance

Lastly, social trust as good culture is expected to have a positive effect on management practices in general. This is because social trust does not distinguish between any specific behavior as it has been shown above with particular cultural dimensions. In fact, social trust relates to the cooperative environment in societies as a whole. Furthermore, social trust facilitates the flow of ideas and tacit-knowledge within the organizations' network. Therefore, social trust is expected to positively affect monitoring, target and incentives activities.

H6: Countries that score high on social trust will have a greater positive effect of management practices on firm performance than countries with low scores of social trust.

2.3.7. Autonomy-embeddedness, hierarchy-egalitarianism, management practices and firm performance

Taken as a whole, it can be noticed that some dimensions are not directly included as hypothesis in this paper. Firstly, due to its similarity to Hofstede's dimensions, two of Schwartz's dimensions are not included, however they are employed as alternative cultural dimensions in the empirical robustness checks. Taking a look into Schwartz's measures of culture, Hofstede's individualism-collectivism resembles the autonomy-embeddedness dimension because both relate to the attitude of individuals towards the group. Companies, in countries where the culture is characterized by embeddedness, take care of employees as if they were a family (Sagiv & Schwartz, 2007). This limits the effectiveness of hiring and effectively dismissing people. Consequently, this will have a negative effect on incentives due to the bad quality of the hiring process and the refusal to remove poor performing employees. The opposite effect would be expected for countries with high scores on autonomy. Additionally, the dimension developed by Schwartz that classifies cultures into hierarchy or egalitarianism could be compared to the power distance dimension because both are concerned with the unequal distribution of power. In egalitarian cultures, negotiation and cooperation among supervisors and subordinates takes place (Sagiv & Schwartz, 2007), which facilitates internal communication and problem solving. This has a positive impact on monitoring, whereas the opposite is expected in hierarchical cultures.

Secondly, the inclusiveness of certain dimensions does not make sense in congruence with management practices. Linking the cultural dimensions indulgence vs. restraint and long- vs. short term orientation to management practices is not effective

and there is no consistent causal statement that relates those dimensions neither to a certain management practice nor organizational behavior. Therefore they are not included as hypotheses.

The table below illustrates the expected interaction's effect of the different dimensions of national culture, including social trust, and management practices.

Table 1. Overview of hypotheses.

Hypothesis	National Culture (country level)	Management Practice (firm level)	Interaction expected effect
H1	Individualism	Incentives	+
H2	Masculinity	Incentives and targets	+
H3	Uncertainty Avoidance	Targets	+
H4	Power Distance	Monitoring	-
H5	Mastery	Incentives	+
H6	Social Trust	Overall management	+

CHAPTER 3. DATA AND METHOD

This paper relies on a quantitative approach to test the hypotheses empirically. Consequently with the cross-sectional nature of the data, a regression will be run. This paper uses an interaction approach to test the moderating effect of culture on the relationship between management practices and firm performance. Moreover, the data is analyzed at a firm- and country-level. Therefore an appropriate analysis is needed where information (observations) of many individuals from different levels is tested. This is made possible by the use of fixed effects at the country-level, otherwise the results would be misleading.

3.1. Data sources and sample

The main source of data for the empirical analysis is the World Management Survey (WMS) (Bloom et al., 2012), which contains cross-country firm-level data on management practices and firm performance. The data is supplemented with cross-country data from three additional sources. Firstly, measures of national cultural differences developed by Hofstede (Hofstede, 2018) are added. Secondly, the cultural dimensions proposed by Schwartz (Schwartz, 2008) are included as well. Lastly, social trust as good culture is added and retrieved from the World Values Survey (WVS) (Inglehart et al., 2018).

The sample as a whole includes information from eighteen developing and developed countries. A description of the variables included in the model follows in the next section and several tables that include descriptive information are located in appendix 2.

3.2. Variables and measures

3.2.1. Dependent variable

Firm performance, measured at firm-level, is retrieved from the WMS and represented by the Return On Capital Employed (ROCE[2]). This paper relies on this measure because it has been successfully used in previous studies of Bloom and colleagues among others. Moreover, diverse measurements of sales are used as alternative measure of firm performance in the robustness check. Even if the data collected from the interviews ranges from 2002 to 2010, both measures (ROCE and sales) are retrieved from the same sample of the WMS as the independent variables. This means that a company's scores on incentives, targets, and monitoring practices are from the same year as its ROCE and sales information. Moreover, year fixed effects have been added to account for the time variation.

With regard to the validity of the measures, it was effectively checked by the authors of the survey. Both, ROCE and sales, were significantly correlated at 1% level to the management practices (Bloom et al., 2012).

3.2.2. Key independent variables

The quality of management practices and national culture are included in the empirical analysis as main explanatory variables and combined together as diverse interaction terms.

The independent variables are measured at both, country- and firm-level. At the country-level, national culture was accounted as scores on diverse cultural dimensions and level of social trust. The scores on the dimensions of national culture are obtained from the Values Survey Module (VSM) (Hofstede, version 08.12.2015) and from Schwartz's research project (Schwartz, 2008). Moreover, social trust is retrieved from

---

[2] ROCE = Earnings before interest and tax (EBIT) / (Total assets - Current liabilities).

the WVS (Inglehart et al., 2018). At the firm-level, the main independent variable is the quality of management practices in the manufacturing sector, measured through the scores obtained in the WMS between the years 2002-2010 (Bloom et al., 2012). The data was obtained from the WMS project, which is open to the public. In this sense, a more detailed description of the variables is presented in the following lines.

3.2.2.1. National culture

The increasing importance of the impact that culture has in economic outcomes led to a rising interest among scholars in international business. One important contribution was made by Hofstede (1980), who developed a survey whose answers were combined to create scores in six dimensions of culture. The VSM consists of 30 questions that measure participants' values from matched samples of various countries. The responses are then averaged to create a country-level score in each dimension, thus measuring national culture (Hofstede, 2013). A representation of the variation of national culture is included in appendix 1.

Schwartz's seven cultural value orientations are used in this paper as well. Schwartz's research uses, as Hofstede, matched samples and countries as unit of analysis. He developed a survey where matched samples formed by teachers and students from several countries filled out the questionnaire anonymously. The respondents rated values that were supposed to be relevant in life. Possible answers ranged from -1, contrary to participant's values, to 7, supreme relevance (Schwartz, 1999). As a result, the survey obtains scores for seven values nested in three cultural dimensions. The survey has been taken in six waves differentiating by year and country coverage, covering overall from 1988 to 2007 and including more than 80 countries.

The scores on the dimensions on national culture have been criticized for being old and not being updated. However, even though Hofstede's national culture was measured between 1960-1970 (Hofstede, 1980), the scores are still representative and reliable

even if the data seems ancient and does not match the year of WMS. It is certain that culture changes (Shenkar, 2001), but the development is absolute and not relative because all cultures change simultaneously, thus Hofstede's measure is stable and valid (Beugelsdijk et al., 2015). In this sense, the same logic applies for Schwartz's measures of culture as well.

Social trust is measured through the well-known question included in the World Values Survey (WVS): "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" The answers range from 1 (most people can be trusted) to 2 (can't be too careful) with a special item if the respondent does not know. The results are originally reported in percentage, which was converted into a 0-100 scale for its application and use in the empirical analysis.

3.2.2.2. Management practices

The study of management is mostly based on case studies and less on empirical research (Bloom and Van Reenen, 2010). However, the survey developed by Bloom and his colleagues is the most complete research project developed so far and it is taken as a core background of this paper. The WMS consists of a double-blind survey conducted more than 20,000 times to mid-level plant managers in 35 countries. The project aims to increase the knowledge about management practices across firms and countries (Bloom, et al., 2012).

The survey consists of open questions on 18 management practices that are clustered in three dimensions: monitoring, targets and incentives. Important to say is that even if the scope of the WMS has been extended to hospital, schools and retail industry (Bloom, et al., 2012), this paper solely focuses on the manufacturing sector. The scores obtained range from 1 (worst) to 5 (best) and can be transformed into a country average score. The sample includes a range of developing and developed countries, thus increasing its generalizability. In this sense, the survey developed several mechanisms

to avoid potential biases. For instance, managers did not know that their answers led to a score in a questionnaire. Moreover, during the telephone interview, a second person (interviewer) was listening and filling in the questionnaire independently (Bloom, et al., 2012). A visual representation of the variation of management practices across countries is included in appendix 1.

3.2.3. Control variables

In order to increase the robustness of the model, further explanatory variables that presume to have an impact on firm performance are added.

3.2.3.1. Firm-level control variables

Looking at the firm, ownership (private, public, family owned, etc.) is related to the quality of management practices and to firm performance (Bloom, et al., 2012). The variable is obtained from the WMS and added as diverse dummies because it is a binary variable that takes, for instance, value 1 if the company is family owned and 0 if not. In addition, the size of the firm, measured through the number of employees, is taken into account because larger firms have found to be positively related to firm performance (Hofstede, 1980). Furthermore, the company could be domestic (founded in the country that the manager is interviewed in) or it could be a subsidiary from a MNE. Foreign firms also deviate from local management practices, drawing influence from their country of origin. Moreover, the industry to which the firm belongs is also identified through the SIC identification number.

3.2.3.2. Country-level control variables

The variables are measured at both country- and firm-level. Therefore the model includes country fixed effects to account for within country clustering and between countries variation. Consider the example of GDP growth, if a country is growing, it would have an effect on performance, which is more likely to increase (Newmar &

Nollen, 1996). However, by adding fixed effects, the incidence of possible country variables on the dependent variable is removed, such as differences in GDP or the quality of formal institutions. Therefore, no country variables per se are added.

3.3. Empirical model and estimation

The model used is a multiple regression that includes fixed effects. The empirical analysis uses firm- and country-level variables. As in this case firm-level data is nested within countries, the independent variables are correlated with each other at the country-level, thus they are not independent and the basic OLS assumption is violated. This can be solved by using an aggregation approach, which clusters the standard errors at the higher level, in this case country level. By doing this, we allow the observations to correlate within countries (Wooldridge, 2010). This paper uses the described approach over multilevel because of its simplicity and the reduced number of countries that are included in the sample, only eighteen. The equation derived defines firm performance as a function of national culture, management practices and the interactions between both.

$$FP = f \text{ (NC, MP, MP*NC)}$$

Putting everything together, the regression at firm (*f*) and country (*c*) level could be represented as the following equation:

$$FP_{fc} = \beta_0 + \beta_1 Mon_f + \beta_2 Tar_f + \beta_3 Inc_f + \beta_4 IND_c + \beta_5 PD_c + \beta_6 UA_c + \beta_7 MAS_c + \beta_8 Mastery_c$$
$$+ \beta_9 ST_c + \beta_{10} Inc_f*IND_c + \beta_{11} Inc_f*MAS_c + \beta_{12} Tar_f*MAS_c + \beta_{13} Tar_f*UA_c +$$
$$\beta_{14} Mon_f*PD_c + \beta_{15} Inc_f*Mastery_c + \beta_{16} Management_f*ST_c + \varepsilon^3$$

---

[3] FP: Firm performance; Mon: firm score on monitoring; Tar: Firm score on targets; Inc: Firm score on incentives; IND: Score on dimension individualism; MAS: Score on dimension masculinity; UA: Score on dimension uncertainty avoidance; PD: Score on dimension power distance; Mastery: Score on cultural dimension Mastery; ST: Country social trust level. B_0 is a constant and ε the error term.

CHAPTER 4. EMPIRICAL RESULTS

The empirical analysis for this paper has been done by leveraging the features of the software product Stata. This chapter presents the results obtained. The main tables that are crucial for the arguments made are displayed in this chapter and additional tables can be found in appendix 3.

As a starting point, the econometric features of the variables included in the model are described. Then, the baseline results are presented. Firstly, the direct effects of management practices and national culture on firm performance are accounted. Secondly, the interaction terms are added and the moderating effects are evaluated. In section 2, several robustness checks are carried out using alternative dependent variables and interaction terms. Moreover, the fact that one or more independent variables could be strong linearly related (multicollinearity) is taken into account. Lastly, section 3 of this chapter contains an alternative empirical approach that increases the validity of the results.

Appendix 3 includes the summary statistics displayed in Table A.3. It helps to get an overview of the data used in the analysis and contains the name of the variables along with their respective mean, standard deviation and minimum and maximum value. The dependent variable, firm performance, is labeled ROCE. The average of management quality and the three operational practices (targets, incentives and monitoring) are displayed as well. The following variables are firm-level variables and represent respectively: 5 years sales growth rate; sales (logarithmic form); sales per employee; firm ownership; firm size (number of employees); domestic or foreign multinational and industry code (sic). Country refers to the country where the firm is located and it is followed by the national culture measures (power distance, individualism, masculinity, uncertainty avoidance, harmony, mastery, hierarchy, egalitarianism, autonomy, embeddedness) and social trust.

In this context, the variable firm ownership (family, government, dispersed shareholders, etc.) had several observations missing, which were replaced by the term "unknown". Moreover, in some cases, observations with regard to cultural country-level variables in Northern Ireland were missing, which were replaced taking Great Britain as reference due to its similarity. Consequently, each variable has 7,094 observations, hence the problem with missing information has been solved.

Several variables present high fluctuation (maximum and minimum) and the range and/or scale in which the observations were reported is considerably wide. Moreover, due to the cross-sectional nature of the data, it is necessary to check whether the results are driven by a few outliers. The influence of observations with high residuals deserves attention because, if the deviation between the predicted and actual values is notable, the results could be misleading. By having the data winsorized, influential observations have been removed. Therefore, the data has been winsorized[4] and standardized[5], thus it is easier to work with and facilitates the consequent interpretation.

4.1. Baseline results

It is of great importance to evaluate the correlation among the variables included in the model in order to see the positive or negative relationship between two variables. The correlation matrixes that measure the linear dependence between two variables are included in appendix 3.

The correlation coefficients between management practices and firm performance are displayed in Table A.4. Importantly to say is that it can be seen that, logically, management practices overall are strongly positive correlated with incentives, targets and monitoring practices. Moreover, management is positively correlated with ROCE,

---

[4] Possible influential cases are replaced for another observation which is not suspicious of being an outlier. In this thesis they have been replaced at the level 10% and 90%.

[5] A standardized variable has a mean of 0 and standard deviation of 1.

thus a rise in management quality is accompanied by an increase of firm performance. Among the three specific operational activities, incentives are the strongest correlated with firm performance.

Table A.5 illustrates the correlation coefficients of national culture variables, including social trust, with firm performance. According to prior literature, it can be observed that individualism is positively correlated with ROCE because firms perform better in individualistic countries, meaning that if individualism increases, so does ROCE. In contrast, power distance is negatively correlated with ROCE. Importantly, power distance is strongly positively correlated with hierarchy, and individualism with autonomy, which is in line with the hypotheses because hierarchy and autonomy are used as an alternative independent variable to power distance and individualism respectively.

It is not legitimate to make causal statements from a correlation matrix, nevertheless it provides a valuable orientation about the strong or weak linear relationship among variables and its direction.

4.1.1. Direct effect of management practices and culture on quality management and firm performance

Table 2.a, displayed below, contains the results of the first regressions made. It solely reports the direct effects of national culture on management and firm performance (Models 1-2) and the direct effects of incentives, targets and monitor practices on firm performance (Model 3).

In line with previous studies, culture is highly significant as explanatory variable of management and firm performance. Concretely, individualism, masculinity, uncertainty avoidance and social trust on the one hand have a positive impact on management and ROCE. On the other hand, power distance and mastery exert a negative influence on the dependent variables. Looking at the direct effects of management practices, incentives

and targets have a significant and positive influence on firm performance. However, monitor practices are not significant. These results illustrate the importance of culture and its direct relationship with management practices and firm performance, along with the direct effect of incentives and targets operations on firm performance.

Table 2.a. Direct effect of national culture, management and firm performance.

Dependent variable	(1) Management	(2) ROCE	(3) ROCE
Individualism	0.597***	1.19***	
	(6.38)	(14.84)	
Masculinity	0.193**	0.102**	
	(3.21)	(3.14)	
Power Distance	-1.23***	-2.16***	
	(9.56)	(19.26)	
Uncertainty Avoidance	1.85***	3.01***	
	(8.23)	(16.07)	
Mastery	-0.140***	-0.298***	
	(4.51)	(20.7)	
Social Trust	0.641***	0.542***	
	(5.52)	(7.12)	
Incentives			0.058**
			(3.5)
Targets			0.067*
			(2.24)
Monitoring			-0.035
			(1.12)
Size	0.225***	0.002	-0.015
	(6.85)	(0.08)	(-0.46)
MNE domestic	0.038	0.019	0.016
	(1.54)	(1.85)	(1.4)
MNE foreign	0.163***	0.037*	0.023
	(6.45)	(2.22)	(1.58)
Ownership			
Dispersed shareholders	0.113	0.021	0.015
	(1.54)	(0.28)	(0.19)
Family, external CEO	0.130	-0.161	-0.166
	(1.22)	(1.67)	(1.63)
Family, family CEO	-0.367**	-0.181	-0.152
	(2.92)	(2.07)	(1.77)
Founder	-0.283*	-0.067	-0.048
	(2.38)	(0.88)	(0.64)
Government	-0.227	-0.3**	-0.274**
	(-1.84)	(3.25)	(2.91)
Managers	0.099	0.017	0.025
	(0.62)	(0.14)	(0.22)
Country fixed effects	No	No	Yes
N	7094	7094	7094
R²	0.199	0.062	0.069

Note: t statistics in parentheses. *p<0.05; **p<0.01; ***p<0.001. All control variables are included in the regression but not all are reported. Data concerns 7094 firms from 18 countries.

Putting all aspects together, Table 2.b reports the baseline results of firm performance regressed on management practices and national culture simultaneously. The regression includes several firm-level control variables in each model. Additionally, sector, country and year fixed effects are taken into account. Model 7 includes all fixed effects and has the highest R squared (0.14), meaning that the independent variables included explain 14% of the variation in firm performance. In this model, targets, incentives, individualism and uncertainty avoidance are significant and have a positive influence on ROCE. By contrast, power distance, mastery and masculinity (weak effect) are negatively related to ROCE. Remarkably enough, social trust losses its significance as in comparison to Table 2.a. Additionally, firm performance will be hampered if the company is family owned or the government has the control over it.

4.1.2. Moderating effects of national culture

The interaction terms that represent the hypotheses developed in chapter 2 are added one by one and the results are illustrated in Table 3. Each model (8-14) includes one interaction term that reflects a particular interplay between national culture and management practices. In the left column, the interaction term added in the respective model is specified.

The main outcome is that no interaction term is significant. Thereby it is the explanatory power of the models (R squared), similar to the baseline regressions in Table 2.b. This means that adding the interaction terms does not increase the explanatory power of the model. The statistically insignificant coefficients show that the incidence of culture as a moderating effect between management practices and firm performance has been overestimated. With regard to the other variables, the results remain considerably stable. Management practices are still significant and carry the same sign as in the baseline models. Importantly, these results are consistent in all models (8-14) regardless of the interaction term included.

Table 2.b. Baseline results: Management practices, national culture and other determinants of firm performance.

Dependent variable	(4) ROCE	(5) ROCE	(6) ROCE	(7) ROCE
Targets	0.067*	0.067*	0.067*	0.067*
	(2.27)	(2.24)	(2.65)	(2.66)
Monitoring	-0.033	-0.035	-0.034	-0.036
	(1.06)	(1.12)	(1.4)	(1.45)
Incentives	0.053	0.058	0.040*	0.045*
	(3.26)	(3.5)	(2.43)	(2.83)
Individualism	0.930***	1.181***	1.117***	1.342***
	(14.25)	(14.9)	(7.55)	(8.64)
Masculinity	0.130***	0.054	-0.107	-0.176*
	(3.69)	(1.49)	(1.33)	(2.28)
Power Distance	-1.666***	-2.137***	-2.018***	-2.439***
	(19.72)	(19.55)	(7.39)	(8.51)
Uncertainty Avoidance	2.316***	2.927***	2.589***	3.136***
	(16.92)	(16.51)	(7.48)	(8.6)
Mastery	-0.205***	-0.291***	-0.353***	-0.429***
	(16.57)	(18.52)	(6.62)	(7.81)
Social Trust	0.494***	0.471***	0.153	0.132
	(7.49)	(6.42)	(1.35)	(1.2)
Size	-0.0126	-0.015	-0.012	-0.014
	(0.4)	(0.46)	(0.43)	(0.51)
Ownership				
Dispersed shareholders	0.153***	0.015	0.144***	0.016
	(3.97)	(0.19)	(3.19)	(0.29)
Family, external CEO	-0.034	-0.166	-0.046	-0.165
	(0.62)	(1.63)	(0.69)	(1.94)
Family, family CEO	-0.034	-0.152	-0.033	-0.142*
	(0.67)	(1.77)	(0.78)	(2.41)
Founder	0.071	-0.048	0.050	-0.059
	(1.82)	(0.64)	(0.89)	(1.01)
Government	-0.159	-0.274**	-0.121	-0.225*
	(1.78)	(2.91)	(1.17)	(2.29)
Managers	0.150	0.025	0.127	0.013
	(1.08)	(0.22)	(0.71)	(0.08)
Private equity	0.218	0.077	0.212	0.082
	(1.51)	(0.43)	(1.25)	(0.43)
Private individual	0.075	-0.048	0.093	-0.919
	(1.33)	(0.69)	(1.32)	(0.33)
MNE Dummy	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes
Sector fixed effects	No	No	Yes	Yes
Year fixed effects	No	Yes	No	Yes
N	7094	7094	7094	7094
R²	0.061	0.069	0.132	0.140

Note: t statistics in parentheses. *p<0.05; **p<0.01; ***p<0.001. MNE dummy is included and indicates if MNE is foreign or domestic. All control variables are included in the regression but not all are reported. Data concerns 7094 firms from 18 countries.

Table 3. Regression coefficients with interaction effects.

Dependent var.	(8) ROCE	(9) ROCE	(10) ROCE	(11) ROCE	(12) ROCE	(13) ROCE	(14) ROCE
Incentives* Individualism	0.001	-	-	-	-	-	-
	(0.02)						
Incentives* Masculinity	-	0.007	-	-	-	-	-
		(0.84)					
Targets* Masculinity	-	-	-0.013	-	-	-	-
			(1.37)				
Targets* Uncertainty Avoidance	-	-	-	0.008	-	-	-
				(0.46)			
Monitoring* Power Distance	-	-	-	-	-0.018	-	-
					(0.79)		
Incentives* Mastery	-	-	-	-	-	0.012	-
						(0.56)	
Management* Social Trust	-	-	-	-	-	-	-0.026
							(1.24)
Targets	0.067*	0.067*	0.068*	0.068*	0.068*	0.066*	0.065*
	(2.23)	(2.24)	(2.35)	(2.2)	(2.29)	(2.23)	(2.07)
Monitoring	-0.034	-0.035	-0.035	-0.035	-0.035	-0.034	-0.036
	(1.12)	(1.11)	(1.13)	(1.13)	(2.21)	(1.13)	(1.25)
Incentives	0.059**	0.059**	0.060**	0.059**	0.058**	0.06**	0.058**
	(3.39)	(3.54)	(3.65)	(3.49)	(3.43)	(3.28)	(3.6)
Size	-0.015	-0.015	-0.015	-0.015	-0.015	-0.015	-0.014
	(0.47)	(0.46)	(0.47)	(0.46)	(0.47)	(0.46)	(0.45)
Ownership							
Family CEO	-0.151*	-0.151*	-0.151*	-0.149*	-0.154*	-0.149*	-0.146*
	(1.7)	(1.72)	(1.74)	(1.67)	(1.73)	(1.69)	(1.66)
Government	-0.270*	-0.269*	-0.270*	-0.269*	-0.277*	-0.269*	-0.268*
	(2.76)	(2.83)	(2.84)	(2.81)	(2.68)	(2.85)	(2.74)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	7094	7094	7094	7094	7094	7094	7094
R²	0.141	0.141	0.141	0.141	0.141	0.141	0.141

Note: t statistics in parentheses. *p<0.05; **p<0.01; ***p<0.001. ROCE is the dependent variable and the interaction term added is specified in the left column. All models include country, year and sector fixed effects. As country fixed effects are included, national culture variables are not included. All firm-level control variables are included in the regression but not all are reported. Data concerns 7094 firms from 18 countries.

4.2. Robustness checks and extensions

In this section, several robustness checks have been carried out in order to increase the validity of the results presented above. Firstly, alternative dependent variables that capture other aspects of firm performance have been evaluated. Secondly, alternative interaction terms using other dimensions of national culture have been used as substitutes of individualism and power distance. Thirdly, the multicollinearity concern has been addressed.

4.2.1. Dependent variable

In order to use other measures of firm performance such as sales, growth of sales in 5 years, and sales per employee, the correlation matrix of those variables can be analyzed using Table A.6, which is located in appendix 3. The astonishing low correlation degree of ROCE with sales per employee suggests that it is not a robust alternative for firm performance. Among ROCE, sales, and growth of sales in 5 years, the correlation coefficients are highly relevant, reporting sales growth the strongest positive linear relationship with firm performance. This means that an increase in ROCE is accompanied by a rise in the 5 year sales growth variable and vice versa.

The three right columns of Table 4 (Models 18-20) report the regression results with each of the alternatives for the dependent variable suggested. It can be seen that sales per employee (Model 20) lacks significance in most of the explanatory variables and the R squared is very low. This confirms the lack of validity for its use as alternative dependent variable. In the model 19, sales are expressed in logarithmic form and show the most robust results, which improves the statistical fit from approximately 14% in the prior models to 69%. Targets, monitoring, individualism, uncertainty avoidance and mastery are positive and significant, while masculinity and power distance report a negative relationship. However, the incidence of national culture decreases because the coefficients are notably smaller than in the baseline model (Model 7). In addition, it is

crucial to note that size becomes strong, positive and highly statistically significant whereas it was not significant in the baseline model. Nevertheless, these results show overall that the baseline model is robust.

4.2.2. Interaction terms

The models 16 to 17 in Table 4 explore the effects of replacing individualism-collectivism and power distance for other dimensions of national culture, namely autonomy-embeddedness and hierarchy-egalitarianism. The dependent variable, firm performance, has been estimated using alternative interaction terms instead of the ones included in the original hypotheses and reported in Table 3.

As argued in chapter two, several of Schwartz's cultural dimensions, hierarchy-egalitarianism and autonomy-embeddedness, were initially left out due to their similarity to power distance and individualism-collectivism respectively. Therefore, the interaction terms included in these robustness checks contain alternative variables of cultural dimensions. The interaction term incentives*individualism has been replaced by incentives*autonomy. In addition, power distance has been substituted for hierarchy, resulting in the interaction term monitoring*hierarchy. The results are reported in Table 4, using ROCE as dependent variable. As a result, none of the interaction terms assumes statistical significance, thus the interplay between operational activities and national culture does not affect firm performance. Therefore, the initial results (Table 3) are strengthened because the use of alternative cultural dimensions does not alter the outcomes.

As with the previous regressions that included interaction terms, the alternative interaction terms are not significant with the exception of the term monitoring*hierarchy. In accordance with Hypothesis 4, the contingent effect of the cultural dimension power distance on monitoring activities has a negative effect on firm

performance. Table 4 uses the cultural value hierarchy as alternative to power distance and the results support the hypothesis, however the coefficient is very low.

Whether the model is estimated with these alternative interaction terms or with the original ones (Table 3), the main results do not change substantially. Targets, incentives, individualism, power distance, uncertainty avoidance and mastery are significant and carry the same sign in all models. Moreover, the R squared is approximately the same.

4.2.3. Addressing multicollinearity

Due to the cross-sectional research design of this paper, the likelihood of multicollinearity deserves special attention. Multicollinearity means that one or more independent variables are strong linearly related, which could bias the results. In this paper, it is tested by applying VIF (variance inflation factor), which simply consists of regressing an explanatory variable on all the others.

Table A.7, in appendix 3, displays the VIF values of the variables included in the models. The high value that individualism carries can be observed. Consequently, the model has been estimated without individualism, resulting in a lower VIF overall, thus solving the multicollinearity issue. However, since the cultural dimension individualism is crucial in this paper, it cannot be left out.

The exclusion of the cultural dimension individualism-collectivism raises a possible suggestion for future research, which is left to upcoming studies and not discussed in this paper.

Table 4. Robustness checks: Alternative measures of the cultural dimensions Individualism and Power Distance, and ROCE are used.

Dependent var.	(15) ROCE	(16) ROCE	(17) ROCE	(18) Growth sales 5 years	(19) Logarithm sales	(20) Sales per employee
Incentives* Affective Autonomy	0.004	-	-			
	(0.24)					
Incentives* Intellectual Autonomy	-	-0.009	-			
		(0.58)				
Monitoring * Hierarchy	-	-	-0.043*			
			(2.63)			
Targets	-	-	-	0.049	0.046**	0.053
				(1.97)	(3.69)	(1.91)
Monitoring	-	-	-	-0.052	0.038*	-0.023
				(2.02)	(2.45)	(0.59)
Incentives	-	-	-	0.068**	0.048*	0.026
				(3.45)	(2.7)	(1.22)
Individualism	-	-	-	0.613***	0.166**	0.124
				(7.62)	(3.65)	(1.23)
Masculinity	-	-	-	0.331***	-0.148**	-0.014
				(8.77)	(-3.64)	(-0.35)
Power Distance	-	-	-	-0.497***	-0.373***	-0.293
				(4.7)	(5.39)	(2.1)
Uncertainty Avoidance	-	-	-	0.095	0.296**	0.349
				(0.54)	(3.25)	(1.87)
Mastery	-	-	-	-0.546***	0.175***	0.025
				(-15.95)	(11.35)	(1.88)
Social Trust	-	-	-	0.002	0.116	0.101*
				(0.41)	(1.94)	(2.54)
Size	-0.015	-0.014	-0.015	0.179***	0.696***	-0.093
	(0.51)	(0.5)	(0.53)	(7.66)	(31.24)	(2.01)
Ownership						
Family CEO	-0.138*	-0.137*	-0.133*	0.116	-0.163***	-0.038
	(2.39)	(2.35)	(2.37)	(1.45)	(5.5)	(1.17)
Founder	-0.057	-0.056	-0.05	0.259**	-0.238**	-0.108
	(1.00)	(0.97)	(0.89)	(3.1)	(3.40)	(1.82)
Government	-0.220*	-0.215*	-0.228*	-0.208	-0.139	-0.026
	(2.21)	(2.15)	(2.19)	(1.23)	(1.35)	(0.53)
Managers	0.021	0.021	0.023	0.132	-0.373***	-0.203**
	(0.13)	(0.13)	(0.14)	(1.3)	(8.03)	(3.3)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	7094	7094	7094	7094	7094	7094
R²	0.141	0.141	0.142	0.222	0.699	0.023

Note: t statistics in parentheses. *p<0.05; **p<0.01; ***p<0.001. ROCE is the dependent variable for models 15-17 while alternative dependent variables are used for models 18-20. The interaction term added in models 15-17 is specified in the left column. All models include country, year and sector fixed effects. Models 15-17 do not include national culture variables because country fixed effects are included. Control variables are included in the regression but not all are reported. Data concerns 7094 firms from 18 countries.

4.3. Alternative empirical approach á la Myles Shaver 1998

Each organization decides which management practices are applied, thus management practices are self-selected. A company would choose and adopt superior management practices in accordance with the national culture if the expected outcome is higher than the required investment. Therefore, the assessment of firm performance on the basis of the quality of management practices is at risk of bias and could suffer from endogeneity[6].

Alterations in management practices have an effect on firm performance, as well as variations in firm performance could have impact on management practices. In other words, an increased quality of management could positively affect firm performance as well as higher performance would encourage the adoption of superior management practices. A model that addresses the endogeneity of management practices is necessary in order to avoid misleading conclusions (Shaver, 1998).

Relying on the basis of the empirical model developed by Myles Shaver (1998), this paper uses an alternative approach in order to increase the validity of the results. In this regard, if management practices are culturally contingent, culture is expected to be a good predictor of management practices. However, if the predicted and actual values deviate, national culture may not be the best predictor of management practices. The model can be defined as management practices being a function of national culture as represented in the following equation.

$$MP = f\ (NC)$$

---

[6] Endogeneity refers to the presence of an explanatory variable that is correlated with the error term usually caused by an omitted variable or measurement error (Wooldridge, 2000).

From an empirical perspective, the estimated values of management practices are obtained using national culture as a predictor. Then, the deviance between firms' actual and predicted management practices is calculated, generating the new variables *X* and *AX*. The descriptive statistics are shown in the table below.

Table 5. Descriptive statistics of variables *X* and *AX*.

Variable	Obs.	Mean	Std. Dev.	Min	Max
X = Difference between actual and predicted MP	7094	7.89e-10	1	-1.22	4.18
AX = Absolute difference between actual and predicted MP	7094	0.706	0.564	0	3.31

Note: MP is the abbreviation of management practices. The variable X represents the deviance between the actual and the predicted value of management practices. The variable AX represents the absolute difference between the actual and the predicted value of management practices. Both variables have been already winsorized and standardized.

It can be seen that predicted and actual management practices deviate considerably, suggesting that management practices are not strictly predicted by national culture. This raises further questions about the feasibility of management practices contingent on culture.

Additionally, this paper estimates the firm performance consequences of the deviance between actual and predicted management practices. To this end, a model has been developed in which the deviation between actual and predicted management practices is included as explanatory variable.

$$MP = f\ (X, AX, NC, MP)$$

Table 6, displayed below, illustrates the estimation of firm performance with the new explanatory variables added (*X, AX*). Model 21 includes management practices as an explanatory variable while model 22 does not.

Table 6. Regression coefficients with the deviance between actual and predicted management practices as explanatory variable.

Dependent var.	(21) ROCE	(22) ROCE
Management	0.061	-
	(0.29)	
Difference between actual and predicted management	0.008	0.069**
	(0.04)	(3.21)
Absolute difference between actual and predicted management	0.044	0.044
	(1.66)	(1.66)
Individualism	1.306***	1.332***
	(6.04)	(7.74)
Masculinity	-0.127	-0.122
	(1.67)	(1.55)
Power Distance	-2.379***	-2.427***
	(5.92)	(7.54)
Uncertainty Avoidance	3.084***	3.159***
	(5.66)	(7.73)
Mastery	-0.419***	-0.425***
	(5.96)	(7.01)
Social Trust	0.184	0.211
	(1.34)	(1.97)
Size	-0.012	0.002
	(0.23)	(0.05)
MNE domestic	0.012	0.014
	(0.86)	(1.49)
MNE foreign	0.018	0.027
	(0.60)	(1.86)
Ownership		
Family, family CEO	-0.143	-0.160*
	(1.73)	(2.65)
Government	-0.231*	-0.242*
	(2.82)	(2.46)
Fixed effects	Yes	Yes
N	7094	7094
R²	0.135	0.139

Note: t statistics in parentheses. *p<0.05; **p<0.01; ***p<0.001. ROCE is the dependent variable for all models. All models include country, year and sector fixed effects. MNE dummy is included and indicates if MNE is foreign (f) or domestic (d), however is not significant. Data concerns 7094 firms from 18 countries.

The explanatory power of model 22 is slightly higher (0.139). It can be observed that the deviance between actual and predicted management practices is significant and positive. Consequently, a positive difference between actual and predicted management practices will have a positive impact on performance, thus a firm with more sophisticated management practices has a higher firm performance.

As the positive performance consequences of management practices are universal and not culturally contingent, positive differences between actual and predicted management practices have a positive performance effect, while negative differences between actual and predicted management practices have a negative performance effect.

Moreover, Figure 2 represents the universal relationship between management practices and firm performance. It shows a positive and increasing evolution, suggesting that the higher the quality of management, the greater the firm performance regardless of national culture.

Figure 2. Representation Firm Performance and Management Practices.

Note: The oscillation between positive and negative values is because the variables have been previously standardized.

The results derived from the approach developed in this section provide further support to the perspective that management practices are not strictly contingent on culture. In sum, the results presented in this chapter suggest that management practices are not culturally contingent. Instead, the existence of a set of superior management practices that are universally valid is feasible, meaning that the relationship between the quality of management and firm performance is positive and constant across countries.

CHAPTER 5. DISCUSSION

5.1. Validity of hypotheses and interpretation

The main conclusion drawn from the empirical analysis is that the findings do not support the hypotheses, as signified by estimated coefficients for the interaction terms being not statistically significant at usual levels. The models are estimated with and without interaction terms, resulting in very similar outcomes and R squared, around 14%. Therefore, the addition of the interaction terms does not improve the explanatory power of the model. Moreover, several robustness checks have been carried out using alternative dependent variables and interaction terms, showing similar results. A further empirical approach complemented the analysis, and, using national culture as predictor, showed the deviance between the actual and the predicted value of management practices. These results suggest that the effect of management practices on firm performance is not culturally contingent, at least not strictly.

In accordance with prior literature, this paper presents evidence of the direct influence of national culture and management practices on firm performance. In particular, higher scores on the cultural dimensions of individualism and uncertainty avoidance encourage a rise of firm performance, while power distance exerts a negative influence. Looking at management practices, targets and incentives operational activities are favorably related to firm performance, meaning that an increase in the quality of those positively affects firm performance. Moreover, companies owned by either families or the government perform rather poorly. In other words, companies perform better in individualistic cultures where a high degree of uncertainty is avoided, while in high power distance societies firms obtain poorer outcomes.

The analysis of the interplay between culture and management practices and its effect on firm performance is not novel to this paper, however prior research has been very limited and significant results lack (Nair, 2006). For instance, Chow and his

colleagues (1991) analyzed, through an experimental approach, the direct effect of culture and management together with the interaction between them on firm performance. The findings, in line with this paper, showed a significant impact of the direct effects but no significant interactions were found. Another study seeks to explain management by analyzing the interplay between work-related control activities and national culture in Japan and the US, however the interactions were not significant (Chow, Kato & Shields, 1994). In addition, a more recent paper illustrates the ambiguous and mixed results of culture as a contingency factor, using most of the studies a reduced country sample (Chenhall, 2003). One can argue that the misleading results are due to the reduced country sample, sometimes comparing only two nations. Moreover, the use of the same cultural dimensions, mostly individualism, or the experimental nature of the studies is an issue as well. In any case, this paper overcame these limitations and the results are still not consistent, thus raising further doubts about management practices being culturally contingent.

In summary, an increased quality of management practices results in a higher firm performance regardless of national culture. Perhaps more importantly, the role of culture interacting with management practices becomes questionable, making room for alternative explanations.

Looking in depth at the results, this paper provides several valuable implications for future research. Encouraged by the fact that that a set of superior management practices that are universally valid has been present in the literature, it may be said that culture as moderating factor could have been overestimated. In accordance with this paper, the assumption of universal management practices is popular in the manufacturing sector as well, where excellence is possible by using practices such as Just-In-Time (JIT) (Schonberger, 1986). Moreover, in manufacturing firms, the adoption of best management practices and quality management will result in higher firm performance (Voss, 1995; Samson & Terziovsky, 1999). This paper generates reasonable doubts in

this direction, providing support for a set of universal superior management practices instead of culture-bound management. In any case, those management practices represent the basic operational activities included in this paper; incentives, monitoring and targets. In other words, the application of, for instance, JIT (just-in-time) methods, promotion of good employees, and communication are part of superior management practices in any country regardless of its culture. Therefore, maybe the puzzle is not whether management practices have a stronger/weaker effect in certain cultures but to discover why some companies do not adopt superior management. Some reasons could be driven by elevated investment costs, lethargic managers not open for change, or even the lack of knowledge of more sophisticated practices.

Culture has enjoyed a central position in the international business literature for the past decades, responding to the internationalization and rapid spread of multinational firms across the globe. However, this paper suggests a change of direction. It could be legitimate to not entirely reject the paradigm of a superior management system which is valid in culturally diverse countries. Culture shapes the international context of business, nevertheless it is possible that culture has lost importance in today's globalized world. This is not to say that culture has been overestimated by researchers and practitioners, however alternative contingency factors could have been underestimated. For instance, certain high advanced technology or innovation processes could be relevant to management and have not been evaluated or taken into account. Moreover, the age of the firm could serve as moderator because more experienced firms have accumulated more knowledge which positively affects the appropriate use of superior management practices. These arguments imply that other variables apart from culture, such as innovation, R&D or the age of the firm could be considered as possible contingency factor in future research. Furthermore, the term globalization of cultures has gained importance in the past years, opening a new field that requires further

research and which could shed more light on the issue of management being culturally contingent by a global culture.

In sum, further research in this area needs to be done in order to draw valid and robust conclusions about the possible alternative direction of contingency theory, culture and the re-emergence of universal management practices.

5.2. Objections and limitations

In light of the results presented in last chapter and the argumentation exposed above, one may ask oneself whether management practices are certainly culturally contingent. Indeed, not as far as the evidence presented in this paper shows. However, this paper comes with several limitations.

First of all, the development and direction of this study could have been influenced by the personal culture, perceptions and understanding of the researcher. In this sense, the theory could have been incorrectly applied, being the link of management practices, national culture, contingency theory and firm performance not well interpreted.

From an empirical perspective, the small sample size composed of eighteen countries, even though greater than in previous studies, is still a basic concern. Especially being the number of firms clustered in certain countries very low. There is thus a need for more observations in order to detect significant results. Moreover, the solely consideration of manufacturing firms touches upon the inappropriate sample by rejecting other sectors. Management and national culture is about people and the correspondent relations. Therefore, contingency theory is correct but only for certain type of firms because the relationships in manufacturing companies are mostly between humans and machines and not so much between humans and humans.

Thirdly, the results could vary as well depending on the variables used. ROCE, as main dependent variable, could be replaced by other measures of firm performance apart from sales such as customer satisfaction or growth of market share (Sousa & Voss,

2008). This was however not possible for this paper because the WMS lacked the identification necessary to link the observations to an additional dataset. In addition, inappropriate measures of management practices could bias the results and contingency theory may hold but for other management practices other than incentives, targets and monitoring.

Moreover, it could be argued that cultural values and beliefs carry different weight across-countries, thus certain values have potentially more impact in some regions than in others. Furthermore, instead of using national culture, organizational culture could be used, which cannot be done with Hofstede's and Schwartz's cultural dimensions due to the ecological fallacy[7] issue. Additionally, the results could be affected as well by the possibility that differences in national cultures are not extreme enough to provide significant outcomes. Likewise, the high VIF of the cultural dimension individualism needs to be addressed and solved. In this line of argument, Hofstede's dimensions have been widely used in most of cultural research done, thus it could be interesting to use alternative measures of culture such as the GLOBE project or Trompenaars' cultural dimensions. Moreover, assuming within country homogeneity in cultural values deserves special attention. National culture is measured at the country level and, in some nations, the intra-country culture variation is a major issue. For instance, in some regions of Africa, national borders were decided by colonial powers, thus members of one society could have stronger cultural differences with people of that particular country than with citizens of neighbor countries.

Reverse causality is an issue that needs to be solved as well. In this sense, *is performance caused by an increased quality of management or does performance encourage the adoption of more sophisticated management practices?* This complex

---

[7]It refers to the application of reasoning at the higher level (nation) to a lower level (individuals, organizations) which is not appropriate and lead to biased results.

question is not possible to answer with a cross-sectional research design, therefore time-series data would be appropriate to establish causal relationships.

Lastly and as to close this chapter, a question that rose constantly in the writing process of this paper and should inspire the reader: *Why do the US and Japan have nearly opposite cultural values and, in parallel, are very close in management practices scores?*

CHAPTER 6. CONCLUSION

With the rise of internalization of companies several decades ago, it became clear that a unique management style was not suitable for all environments and settings, thus giving importance to the role of cross-cultural management. This paper relies on theoretical insights of contingency theory for the empirical analysis of management practices being culturally contingent.

Relying on Hofstede's and Schwartz's dimensions of national culture, social trust and on the quality of management practices (incentives, monitoring and targets activities), this paper tests the interaction effect of those variables on firm performance. The results present evidence of the direct effect of culture and management practices on firm performance, however they do not support the hypotheses. Being that the interaction terms are not significant, national culture does not exert an effect on the relationship between management practices and firm performance.

The positive impact of the quality of management practices on firm performance is not culturally contingent. Consequently, this paper cannot provide answers related to which concrete management practices are more performance-enhancing and should be applied in alignment with the national culture. Instead, the results suggest that there is a set of superior management practices that are valid across countries. More sophisticated management practices are positively related to firm performance regardless of national culture.

This paper overcame prior limitations related to the nature of the analysis and the number of countries and cultural dimensions included. Nevertheless, the objections accounted in the last chapter encourage further research on the topic in order to find conclusive results that solve the puzzling role of the interplay between culture and management practices.

REFERENCES

Beugelsdijk, S. (2009) *Mapping the landscape of social capital: The need for a two-level approach*, in De Jong, E. Culture and Economics, Routledge, Ch. 8, 137-158.

Beugelsdijk, S., Maseland, R., Onrust, M., van Hoorn, A., & Slangen, A. (2015). Cultural Distance in International Management: From Mean-Based to Variance-Based Measures. *International Journal of Human Resource Management*, 46, 269-276.

Beugelsdijk, S., Maseland, R., & Hoorn, A. (2015). Are scores on Hofstede's dimensions of national culture stable over time? A cohort analysis. *Global Strategy Journal*, 5(3), 223-240.

Bloom, N., Genakos, C., Sadun, R., & Van Reenen, J. (2012). Management practices across firms and countries. Working Paper Series, 17850(17850).

Bloom, N., & Van Reenen, J. (2010). Why do management practices differ across firms and countries*? The Journal of Economic Perspectives*, 24(1), 203-224.

Bloom, N., & Van Reenen, J. (2007). Measuring and explaining management practices across firms and countries. *The Quarterly Journal of Economics*, 122(4), 1351–1408.

Budhwar, P., & Khatri, N. (2001). A comparative study of HR practices in Britain and India. *International Journal of Human Resource Management*, 12(5), 800-826.

Child, J. (1975). Managerial and organizational factors associated with company performance-part II. A contingency analysis. *Journal of Management Studies*, 12(1-2), 12-27.

Chenhall, R. (2003). Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, 28(2), 127-168.

Chow, C., Kato, Y., & Shields, M. (1994). National culture and the preference for management controls: An exploratory study of the firm-labor market interface. *Accounting Organisations and Society*, 19(4/5), 381-381.

Chow, C., Shields, M., & Chan, Y. (1991). The effects of management controls and national culture on manufacturing performance: An experimental investigation. Accounting, *Organizations and Society*, 16(3), 209-226.

Das, A., Handfield, R.B., Calantone, R.J., & Ghosh, S. (2000). A contingent view of quality management - the impact of international competition on quality. *Decision Sciences,* 31(3), 649– 690.

Donaldson, L. (1996). *The Normal Science of Structural Contingency Theory*, in Clegg, S., Hardy, C., & Nord, W. Handbook of organization studies, London: Sage, Ch. 1.2.

Donaldson, L. (2001). *The contingency theory of organizations.* Foundations for organizational science. Thousand Oaks, CA: Sage Publications.

De Jong, E. (2009). *Culture and Economics: On values, economics and international business,* London and New York: Routledge.

Douglas, T.J., & Judge, W.Q. (2001). Total quality management implementation and competitive advantage: the role of structural control and exploration. *Academy of Management Journal*, 44(1), 158–169.

Flynn, B., & Saladin, B. (2006). Relevance of Baldrige constructs in an international context: A study of national culture. *Journal of Operations Management*, 24(5), 583-603.

Gelfand, M., Erez, M., & Aycan, Z. (2007). Cross-cultural Organizational Behavior. *Annual Review of Psychology*, 58(1), 479-514.

Guiso, L., Sapienza, P., & Zingales, L. (2008). Social capital as good culture, *Journal of the European Economic Association*, 6(2-3), 295-320.

Hastings, D. (1999). Lincoln Electric's harsh lessons from international expansion. *Harvard Business Review*, 77(3), 162-180.

Hempel, P. (2001). Differences between Chinese and Western managerial views of performance. *Personnel Review*, 30(2), 203-226.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind*. 3rd ed. McGraw-Hill.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nation*s. 2nd ed. Thousand Oaks, Sage Publications.

Hofstede, G. (1980). Culture and Organizations. *International Studies of Management & Organization*, 10(4), 15-41.

Hofstede, G. (1980). *Culture's consequences: International differences in work-related values.* Cross-cultural research and methodology series, 5. Beverly Hills, London. Calif.: Sage Publications.

Hofstede, G. (1980). Motivation, leadership, and organization: Do American theories apply abroad? *Organizational Dynamics*, 9(1), 42-63.

Hofstede, G. (2013). *Value Survey Module 2013 Manual,* Retrieved from: http://geerthofstede.com/wp-content/uploads/2016/07/Manual-VSM-2013.pdf

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online readings in psychology and culture*, 2(1).

Hofstede, G. (2015). Culture's causes: the next challenge, *Cross Cultural Management*, 22(4), 545-569.

House, R., & Peterson, M. (2004). *Book reviews - culture, leadership, and organizations: The globe study of 62 societies.* Administrative Science Quarterly, 49(4), 641-647.

Kaynak, H. (2003). The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, 21(4), 405-435.

Nair, A. (2006). Meta-analysis of the relationship between quality management practices and firm performance - implications for quality management theory development. *Journal of Operations Management*, 24(6), 948-975.

Newman, K., & Nollen, S. (1996). Culture and congruence: The fit between management practices and national culture. *Journal of International Business Studies*, 27(4), 753-780.

Ng, L. (2011). Best management practices. *Journal of Management Development*, 30(1), 93-105.

North, D. (1990). *Institutions, institutional change and economic performance.* Cambridge: Cambridge University Press.

Mathews, B. P., Ueno, A., Kekäle, T., Repka, M., Lopes Pereira, Z., & Silva, G. (2001). European quality management practices. *International Journal of Quality & Reliability Management*, 18(7), 692–707.

Sagiv, L., & Schwartz, S. H. (2007). Cultural values in organisations: insights for Europe. *European J. of International Management*, 1(3), 176-190.

Samson, D., & Terziovski, M. (1999). The relationship between total quality management practices and operational performance. *Journal of Operations Management,* 17(4), 393-409.

Schonberger, R.J. (1986). *World Class Manufacturing*, Free Press, New York.

Schwartz, S. H. (1992). Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries. *Advances in Experimental Social Psychology*, 25, 1–65.

Schwartz, S. H. (1999). A Theory of Cultural Values and Some Implications for Work. *Applied Psychology*, 48(1), 23–47.

Shaver, J. (1998). Accounting for endogeneity when assessing strategy performance: Does entry mode choice affect FDI survival? *Management Science,* 44(4), 571-585.

Shenkar, O. (2001). Cultural distance revisited: Towards a more rigorous conceptualization and measurement of cultural differences. *Journal of international business studies*, 32(3), 519-535.

Sousa, R., & Voss, C. (2008). Contingency research in operations management practices. *Journal of Operations Management*, 26(6), 697-713.

Tabellini, G. (2005). Culture and Institutions: economic development in the regions of Europe, IGIER, Università Bocconi, Working Paper N°. 292.

Tayeb, M. (1987). Contingency theory and culture: A study of matched English and the Indian manufacturing firms. *Organization Studies*, 8(3), 241-261.

Tosi, H. L., & Slocum, J. W. (1984). Contingency theory: Some suggested directions. *Journal of Management*, 10(1), 9-26.

Van Hoorn, A. (2015). Differences in work values: Understanding the role of intra-versus inter-country variation. *The International Journal of Human Resource Management*, 26(7), 1002-1020.

Voss, C. (1995). Alternative paradigms for manufacturing strategy. *International Journal of Operations & Production Management*, 15(4), 5-16.

Wilson, D.D., & Collier, D.A. (2000). An empirical investigation of the Malcolm Baldrige National Quality award causal model. *Decision Sciences*, 31(2), 361–390.

Wooldridge, J. (2010). *Econometric analysis of cross section and panel data*. (2nd ed.) Cambridge, Mass.: MIT Press.

Wooldridge, J. (2000). *Introductory econometrics: A modern approach.* Cincinnati, OH: South-Western College.

Data Sources

Bloom, N., Genakos, C., Sadun, R., & Van Reenen, J. (2012). WMS data. Manufacturing: 2004-2010 combined survey data (AMP). Retrieved from: https://worldmanagementsurvey.org/survey-data/download-data/

Hofstede G. (2018). Scores on cultural dimensions, version 2015.12.08. Retrieved from: https://geerthofstede.com/research-and-vsm/dimension-data-matrix/

Inglehart, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin & B. Puranen et al., (2018). World Values Survey: Round 5, 6 - Country-Pooled Datafile Version 5, 6. Madrid: JD Systems Institute.

Schwartz, S. H. (2008). The 7 Schwartz cultural value orientation scores for 80 countries. Unpublished. Retrieved from: https://www.researchgate.net/publication/304715744_The_7_Schwartz_cultural_value_orientation_scores_for_80_countries

Appendices

Appendix 1. Figures

Figure A.1. National culture across-countries.
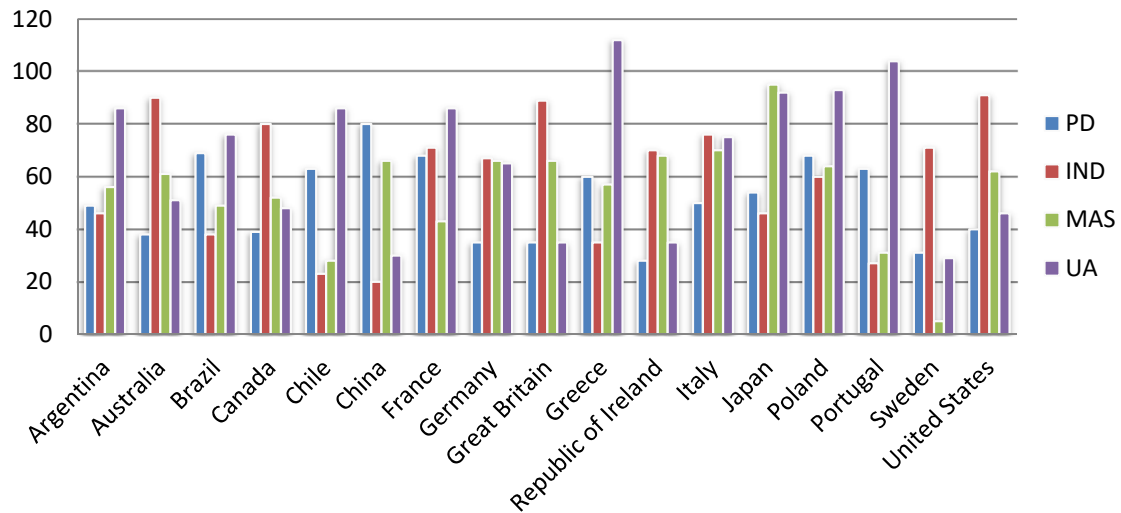
Note: The figure illustrates Hofstede's scores on the cultural dimensions power distance (PD), individualism (IND), masculinity (MAS) and uncertainty avoidance (UA) among the countries included in the sample.

Figure A.2. Average management practices across-countries.
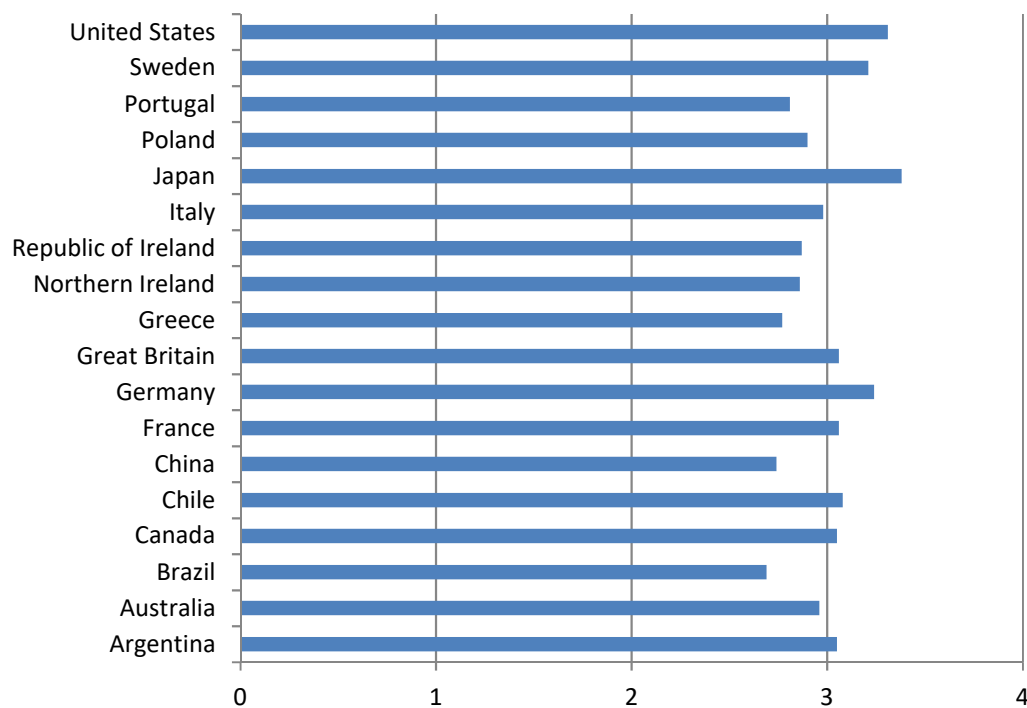
Note: Average management is the average score on all the questions across all firms in the corresponding country.

Figure A.3. Specific management practices across-countries.

Note: The scores of the three operational practices (monitoring, targets and incentives) are averaged and plotted in the figure.

Appendix 2. Data

Table A.1. Main country-level data.

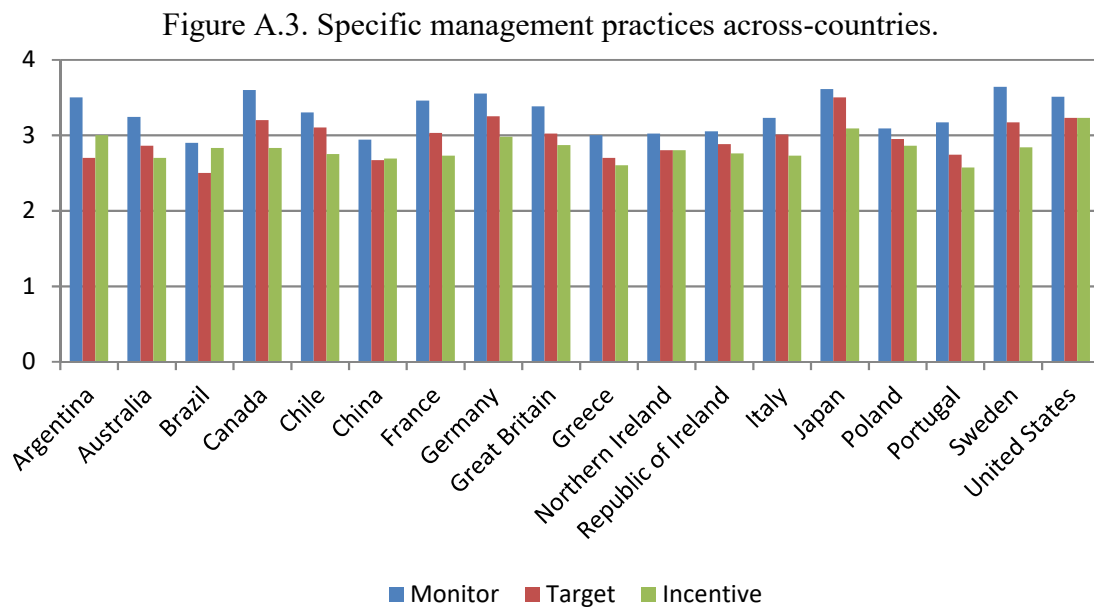| Country	Average Management	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Mastery	Social Trust
Argentina	3.05	49	46	56	86	3.92	19.2
Australia	2.96	38	90	61	51	3.97	51.4
Brazil	2.69	69	38	49	76	3.93	7.1
Canada	3.05	39	80	52	48	4.09	41.8
Chile	3.08	63	23	28	86	3.78	12.4
China	2.74	80	20	66	30	4.41	60.3
France	3.06	68	71	43	86	3.72	18.7
Germany	3.24	35	67	66	65	3.86	44.6
Great Britain	3.06	35	89	66	35	4.01	30.0
Greece	2.77	60	35	57	112	4.25	-
Northern Ireland	2.86	35	89	66	35	4.01	30.0
Republic of Ireland	2.87	28	70	68	35	4.04	30.0
Italy	2.98	50	76	70	75	3.81	27.5
Japan	3.38	54	46	95	92	4.06	35.9
Poland	2.9	68	60	64	93	3.84	22.2
Portugal	2.81	63	27	31	104	4.11	-
Sweden	3.21	31	71	5	29	3.81	60.1
United States	3.31	40	91	62	46	4.09	34.8

Note: Average Management is given in the original scale (1-5). Cultural dimensions and Social Trust are given in a scale 0-100, while Mastery is illustrated in the original scale (-1, 7). Portugal and Greece lacked information regarding Social Trust, which was replaced by Italy for the empirical analysis due to the cultural similarity.

Table A.2. Disclosure management practices scores per country.

Country	Average Management	Average monitoring	Average targets	Average incentives
Argentina	3.05	3.5	2.7	3
Australia	2.96	3.24	2.86	2.7
Brazil	2.69	2.9	2.5	2.83
Canada	3.05	3.6	3.2	2.83
Chile	3.08	3.3	3.1	2.75
China	2.74	2.94	2.67	2.69
France	3.06	3.46	3.03	2.73
Germany	**3.24**	3.55	3.25	2.98
Great Britain	3.06	3.38	3.02	2.87
Greece	2.77	3	2.7	2.6
Northern Ireland	2.86	3.02	2.8	2.8
Republic of Ireland	2.87	3.05	2.88	2.76
Italy	2.98	3.23	3.01	2.73
Japan	**3.38**	3.61	**3.5**	3.09
Poland	2.9	3.09	2.95	2.86
Portugal	2.81	3.17	2.74	2.57
Sweden	3.21	**3.64**	3.17	2.84
United States	**3.31**	3.51	3.23	**3.23**

Note: Average management is the average score on all the questions (18). The highest scores are in bold. Average monitoring, targets and incentives are the average scores in those operational practices respectively. The highest score in each management practice is highlighted in bold.

Appendix 3. Empirical results

Table A.3. Descriptive statistics.

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
ROCE	7094	15.5	15.49	-25	50
Management	7094	3.02	0.617	1.055	4.88
Targets	7094	3	0.716	1	5
Incentives	7094	2.82	0.629	1	5
Monitoring	7094	3.32	0.742	1	5
Growth 5 year sales	7094	0.388	0.686	-3.42	3.17
Logarithm sales	7094	11.1	1.531	1.94	16.59
Sales per employee	7094	326.6	1110.5	0.092	83326.9
Firm ownership	7094	4.7	3.334	1	10
Size	7094	5.81	1.134	0	11.09
MNE domestic	7094	0.131	0.337	0	1
MNE foreign	7094	0.151	0.357	0	1
SIC	7094	318.8	81.65	13	999
Country	7094	11.07	3.82	1	18
Power Distance	7094	50.51	16.45	28	80
Individualism	7094	65.21	23.71	20	91
Masculinity	7094	55.01	20.36	5	95
Uncertainty Avoidance	7094	62.21	29.51	29	112
Harmony	7094	4.11	0.326	3.46	4.62
Mastery	7094	3.98	0.193	3.72	4.41
Hierarchy	7094	2.25	0.479	1.6	3.49
Egalitarianism	7094	4.85	0.324	3.46	5.27
Affective autonomy	7094	3.92	0.401	3.03	4.39
Intellectual autonomy	7094	4.65	0.344	4.46	5.13
Embeddedness	7094	3.4	0.223	3.03	3.86
Social Trust	7094	34.06	13.27	7.1	60.3

Note: The variables illustrated in this table are not winsorized nor standardized. The transformation has been done after.

Table A.4. Correlation matrix: management practices and firm performance.

	ROCE	Management	Incentives	Targets	Monitoring
ROCE	1				
Management	0.105	1			
Incentives	0.105	0.832	1		
Targets	0.093	0.893	0.649	1	
Monitoring	0.073	0.891	0.595	0.742	1

Note: Indicates the correlation coefficients. The maximum value is 1 and means perfect linear correlation.

Table A.5. Correlation matrix: national culture, social trust and firm performance.

	ROCE	PD	IND	MAS	UA	Harmony	Mastery	Hierarchy	Egalit.	Affective Autonomy	Intellectual Autonomy	Embedd.	ST
ROCE	1												
Power Distance	-0.056	1											
Individualism	0.095	-0.733	1										
Masculinity	-0.057	0.051	0.127	1									
Uncertainty Avoidance	0.103	0.55	-0.459	-0.013	1								
Harmony	-0.089	-0.054	-0.193	-0.357	0.399	1							
Mastery	-0.021	0.249	-0.55	0.306	-0.147	-0.426	1						
Hierarchy	0.032	0.41	-0.236	0.392	-0.367	-0.725	0.553	1					
Egalitarianism	-0.047	-0.29	0.235	-0.316	0.247	0.611	-0.499	-0.856	1				
Affective Autonomy	0.066	-0.531	0.57	-0.277	-0.267	0.082	-0.408	-0.302	0.399	1			
Intellectual Autonomy	-0.022	-0.228	0.271	-0.401	0.065	0.709	-0.759	-0.605	0.68	0.571	1		
Embedded	-0.009	0.51	-0.34	0.43	0.206	-0.605	0.506	0.571	-0.599	-0.781	-0.79	1	
Social Trust	0.051	-0.159	-0.261	-0.27	-0.599	0.046	0.36	0.301	-0.381	-0.142	-0.07	-0.044	1

Note: Indicates the correlation coefficients. The maximum value is 1 and means perfect linear correlation. Several variable names on the top row have been abbreviated, however the whole name corresponds with the first column respectively.

Table A.6. Correlation matrix of alternative dependent variables.

	ROCE	Sales per empl.	Sales growth 5 y.	Sales
ROCE	1			
Sales per employee	0.02	1		
Sales growth in 5 years	0.216	0.050	1	
Sales	0.141	0.158	0.183	1

Note: Indicates the correlation coefficients. The maximum value is 1 and means perfect linear correlation. Several variable names on the top row have been abbreviated, however the whole name corresponds with the first column respectively.

Table A.7. Multicollinearity analysis.

With individualism		Without individualism	
Variable	VIF	Variable	VIF
Individualism	16.13	Targets	2.18
Uncertainty Avoidance	8.62	Uncertainty Avoidance	2.58
Social Trust	7.11	Social Trust	2.51
Mastery	4.27	Monitoring	2.46
Power Distance	4.19	Incentives	1.89
Targets	2.68	Power Distance	1.78
Monitoring	2.46	Mastery	1.72
Incentives	1.9	Masculinity	1.57
Mastery	1.75	Size	1.17
Size	1.26	MNE foreign	1.07
MNE foreign	1.08	MNE domestic	1.05
Mean VIF	4.37	Mean VIF	1.86

Note: The coefficients are ranked in the order of most relevant (top row) to least relevant (bottom row).