



UNIVERSITI PUTRA MALAYSIA

***EFFECTS OF ORGANIZATIONAL CULTURE ON ENVIRONMENTAL
MANAGEMENT CONTROL SYSTEM AND PERFORMANCE OF
MANUFACTURING FIRMS IN PAKISTAN***

HUSSAIN BAKHSH

GSM 2018 2



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By

HUSSAIN BAKHSH

**Thesis submitted to Putra Business School, Universiti Putra Malaysia in
fulfillment of the requirements for the Degree of Doctor of Philosophy**

January 2018

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DEDICATION

This work is dedicated to my family and friends.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirements for the degree of Doctor of Philosophy

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January 2018

Chairman : Associate Professor Ong Tze San, PhD
Faculty : Putra Business School

Although companies are continuously implementing the environmental discourse in their external reporting, yet, very fewer studies talk about how management control systems (MCS) support sustainability and environmental performance within organizations and embed in the organization. As a consequence of the worldwide environmental issues, companies are trying to start the environmental friendly practices. In response to the threats created by climate change and other environmental issues, companies are trying to prioritize sustainability as a core business issue. Many companies have already learned that sustainability can be a competitive advantage; however, in developing countries, the majority of companies in manufacturing industry have been failed to address these challenges.

Therefore, the role of MCS is critical for the contemporary business arena as a source of controlling the behavior of employees and evaluating organizational resources for implementing strategies efficiently and effectively. Despite the fact that organizations continuously recognize environmental discourse in their external reporting, yet, a countable have discussed the importance of MCS that support sustainability and environmental performance within organizations. Existing literature reveals that organizational culture plays a vital role for successful implementation, yet little empirical research has been done to describe the relationship between organizational culture and MCA. In this context, this research fills this gap by investigating the role of organizational culture (OC) for development of environmental management control systems (EMCS) for better firm performance.

Using survey data from a sample of Pakistan manufacturing firms, 314 responses were collected and analyzed by using Smart-PLS 3.2.6. Results suggest that flexible values of OC led to the development of the informal EMC, and stable values led to

development of formal EMC. The formal and informal EMCS result in better firm performance. The results reveal that mediation of formal EMCS with the mission and environmental performance, and formal EMCS with the mission and social performance were not significant. The full mediation has been observed for consistency in its relationship with formal EMCS and economic and social performance and partial mediation in the relationship between formal EMCS and environmental performance. The most surprising aspect of an indirect impact of the mission on the environment and social performance which is not significant without any mediation and the only direct effect is significant. The relationship of involvement with economic and social performance is significant and positive. The relationship of involvement with environmental performance is not significant. The findings show that there is no significant impact of adaptability on economic, environmental and social performance. The consistency is also not significant with the relationship of firm performance. The findings reveal that mission is significantly associated with the environmental and social performance.

The findings of this empirical research make three contributions. First, it demonstrates how companies align OC to develop an environmental culture that supports the development of EMCS, and that as a result improves firm's performance. Based on the contingency theory, this study provides evidence that OC directly affects the design and use of MCS. The results further reveal that EMCS fully mediate the effect of OC on economic performance. Thus, EMCS can be used to translate environmental strategies into high firm performance, supporting earlier research with broad empirical evidence. Furthermore, this study contributes to the literature regarding environmental practices and sustainability. This study extends previous research on the effect of EMCS into a more traditional MCS. The current study's results revealed that firm performance including the environmental performance is much higher when environmental aspects are integrated into a more traditional MCS. Third, the study demonstrates that integration of an environmental culture leads to more developed EMCS. Companies with substantial environmental issues (i.e., manufacturing industry in Pakistan) may develop strategies that seriously address environmental concerns and implement additional measures to improve their environmental performance.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**KESAN KEBUDAYAAN ORGANISASI PADA SISTEM KAWALAN
PENGURUSAN ALAM SEKITAR DAN PRESTASI PERUSAHAAN
PEMBUATAN DI PAKISTAN**

Oleh

HUSSAIN BAKHSH

Januari 2018

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Walaupun syarikat-syarikat sentiasa menerapkan wacana alam sekitar dalam laporan luaran mereka, namun sangat sedikit kajian membincangkan bagaimana Sistem Kawalan Pengurusan (MCS) menyokong kelestarian dan prestasi alam sekitar dalam organisasi dan penerapan di dalam organisasi. Hasil daripada isu-isu alam sekitar di seluruh dunia, syarikat cuba untuk memulakan amalan mesra alam. Sebagai tindak balas terhadap ancaman dari perubahan iklim dan isu-isu alam sekitar yang lain, syarikat berusaha untuk mengutamakan kelestarian sebagai isu utama perniagaan. Banyak syarikat telah mengetahui bahawa kelestarian boleh menjadi kelebihan daya saing; walau bagaimanapun, di negara-negara membangun, majoriti syarikat dalam industri pembuatan gagal menangani cabaran-cabaran ini.

Oleh itu, peranan MCS adalah penting untuk arena perniagaan kontemporari sebagai sumber kawalan tingkah laku pekerja serta menilai sumber organisasi bagi melaksanakan strategi dengan cekap dan berkesan. Walaupun organisasi terus mengiktiraf wacana alam sekitar dalam laporan luaran mereka, namun yang penting adalah untuk membincangkan kepentingan MCS yang menyokong kelestarian dan prestasi alam sekitar dalam organisasi. Penulisan sedia ada mendedahkan bahawa budaya organisasi memainkan peranan penting untuk pelaksanaan yang berjaya, tetapi hanya sedikit kajian empirikal telah dijalankan untuk menerangkan hubungan antara budaya organisasi dan MCA. Dalam konteks ini, kajian ini mengisi jurang ini dengan mengkaji peranan budaya organisasi (OC) bagi pembangunan Sistem Kawalan Pengurusan Alam Sekitar (EMCS) untuk prestasi firma yang lebih baik.

Menggunakan data kajian daripada firma-firma pembuatan di Pakistan, 314 maklum balas dikumpulkan dan dianalisis menggunakan Smart-PLS 3.2.6. Keputusan menunjukkan bahawa nilai OC yang fleksibel menyebabkan pembangunan EMC yang

tidak formal, manakala nilai yang stabil menyebabkan pembangunan EMC yang formal. EMCS formal dan tidak formal menghasilkan prestasi firma yang lebih baik. Keputusan menunjukkan bahawa pengantaraan EMCS formal dengan misi dan prestasi alam sekitar, dan EMCS formal dengan misi dan prestasi sosial tidak signifikan. Pengantaraan penuh diperhatikan untuk memastikan konsistensi dalam hubungannya dengan formal EMCS dan prestasi ekonomi dan sosial dan juga separa pengantaraan dalam hubungan antara formal EMCS dan prestasi alam sekitar. Aspek paling mengejutkan kesan tidak langsung misi terhadap alam sekitar dan prestasi sosial adalah tidak signifikan tanpa sebarang pengantaraan, manakala satu-satunya kesan langsung adalah signifikan. Hubungan penglibatan dengan ekonomi dan prestasi sosial adalah signifikan dan positif. Manakala hubungan penglibatan dengan prestasi alam sekitar tidak signifikan. Dapatan kajian menunjukkan bahawa tiada kesan yang signifikan terhadap kebolehsuaian terhadap prestasi ekonomi, alam sekitar dan sosial. Konsistensi juga tidak signifikan dengan hubungan prestasi firma. Hasil kajian ini mendapati bahawa misi adalah signifikan dengan prestasi alam sekitar dan sosial.

ACKNOWLEDGEMENTS

This dissertation has been a long and difficult task for me. Thanks to Almighty Allah SWT for without His blessing this study would not been complete.

Looking back to 2012 when I first decided to do my MS leading to PhD and I realize that I have sailed on a journey that has changed my life forever. A journey that was full of challenge, learning, work, achievements, failures, joy, pain, and friendship. Today, I want to express my gratitude to my supervisory committee chairman, Associate Professor Ong Tze San. Her continuous support, guidance, patience, and generosity are the main reasons to make this possible. I am especially grateful for her willingness to share her vast research skills experience and for developing my abilities to conduct research. I want to thank Dr. Ho Jo Ann who provided me with a necessary technical and morale lift to complete my work. I am equally grateful to Dr Ahmad Fahmi Sheikh Hassan for his presence on my committee and for his valuable feedback that helped me improve my work. Finally, I want to thank Professor Fong and Professor Muali for there early guidance and for introducing me to the field of research.

I would also like to express my sincere gratitude and affection to my beloved parents for their endless prayers, blessings and support throughout my journey. I want also to thank my PhD colleagues: Mir Dost, Amdadullah, Balach Rasheed, Jawad, Aziz, Khalil, Abdul Sattar, Yaqoon, Obaid, Naveed, Adeel, Wasim, Abdul Rehman, Habibullah Magsi, Kamal, Nadeem, and Zafarullah. Thank you for your friendship and for the great moments we shared together. I am also very grateful to everyone at the Putra Business School for the support you gave me all those years. My special thanks to Lasbela University of Agriculture, Water and Marince Sciences for giving me opportunity to expend my learning horizon.

I certify that a Thesis Examination Committee has met on 24th January, 2018 to conduct the final examination of Hussain Bakhsh on his thesis entitled “Effects of Organizational Culture on Environmental Management Control System and Performance of Manufacturing Firms in Pakistan” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy. Members of the Thesis Examination Committee were as follows:

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CA	Cronbach's Alpha
CETP	Common Effluent Treatment Plants
CFA	Confirmatory Factor Analysis
CFO	Chief Financial Officer
CP	Cleaner Production
CR	Composite Reliability
CSR	Corporate Social Responsibility
CT	Contingency Theory
CVF	Competing Values Framework
EMA	Environmental Management Accounting
EMAS	Environmental Management Accounting System
EMCS	Environmental Management Control System
EMS	Environmental Management System
ERP	Enterprise Resource Planning
EU	European Union
GDP	Gross Domestic Product
GoF	Goodness of Fit
GoP	Government of Pakistan
LL	Lower Limits
LSM	Large-Scale Manufacturing
LV	Latent Variable
MA	Management Accounting
MAS	Management Accounting System
MCS	Management Control System
NEQS	National Environment Quality Standards
OC	Organizational Culture
PLS	Partial Least Squares
PMS	Performance Management System
RBV	Resource-Based View
SCS	Sustainability Control Systems

SD	Sustainable Development
SEM	Structural Equation Modeling
SPSS	Statistical Package for Social Science
SRMR	Standardize Root Mean Square Residual
UL	Upper Limits
VRNI	Valuable, Rare, Non-substitutable and Inimitable
WHO	World Health Organization
ZLD	Zero Liquid Discharge



CHAPTER 1

INTRODUCTION

1.1 An overview

This chapter introduces the background of the study concerning on environmental issues in the manufacturing industry, the importance of organizational culture for sustainability and role of environmental management control system for better firm performance. This chapter also details out the problem statement, objectives, research questions, significance of the study, and scope of the study. This chapter also discusses the overview of this thesis.

1.2 Background

Environmental disasters such as British Petroleum's oil spill in the Gulf of Mexico and Chernobyl and issues like global warming and ozone depletion are mainly happening due to the industrial mode of development (Wiens, 2015). The main source of the world's pollution is from specific industries which release more pollutants than others do. Usage of fossil-fuel, chemical companies, pulp and paper mills, metal mines and production of heavy metals, and oil and gas are among the more polluting industries. These industries have been creating a significant impact on the environment and with the approaches to be outlined later, it is believed improve the environmental performance of the firm (Dudeney, Chan, & Bouzalakos, 2013; Zhou, He, Romankiewicz, Fridley, & Fino-Chen, 2015). Often irritation is felt from the noise and health problems due to the exhaust of vehicles and pollution created by these industries. Although, industrial development signifies economic progress, yet, it also results in environmental degradation, which indicates that the interests of business and the integrity of the natural environment are two opposite sides of one coin (Carroll & Shabana, 2010).

Global warming has increased environmental consciousness all over the world and firms are facing more pressure from stakeholders to become environmentally friendly. Especially, firms involved in the inefficient use of natural resources, processing, supply, and transfer may not be seen positively by stockholders, employees, and consumers, unless those enterprises provide environmentally friendly products (Crivelli & Gupta, 2016; Ilgin & Gupta, 2010). As a result, firms have started adopting environmental management practices (Govindan, Kaliyan, Kannan, & Haq, 2014) and it has become an important part of their strategy. In recent times, researchers have given substantial attention to the environmentally conscious in manufacturing and on sustainability such as the recovery and recycle of materials and products, and waste and pollution control (Henri & Journeault, 2010; Pondeville, Swaen, & De Rongé, 2013). In spite of more than two decades of increasing attention from the people, scholars, and stakeholders, issues of sustainability remain at the periphery for many

business firms (Bertels, Papania, & Papania, 2010). According to a study by Accenture (2010), ninety-three percent of more than 1,000 CEOs who responded the corporate sustainability survey regarded sustainability as a key to success (Lacy, Cooper, Hayward, & Neuberger, 2010).

Managers increasingly recognize the potential for corporate sustainability to yield a competitive advantage (Porter & Kramer, 2011). Furthermore, a recent study by KPMG's (2013) suggested that corporate responsibility reporting practices were 83% of the G250 companies that have a corporate responsibility strategy. Despite these findings, instead of disconnections between management views about the efficacy of sustainability as a successful tool relating to a degree to which CEOs have actually incorporated sustainability into their business plans. Indeed, the Accenture (2010) survey refers to "business caught in a cycle of 'pilot paralysis' individual, small-scale projects, programs and business units with an incremental impact on sustainability metrics (p. 11)." Thus, substantial challenges to the adoption of comprehensive, integrated sustainability strategies remain.

Previously, exploitation of natural resources was used mainly for financial benefits regardless of environmental concerns (Cronin & Pandya, 2009). Due to the growing environmental awareness of the public, laws passed by countries to regulate the firms, and pressures from the general public, and non-governmental organizations are traditionally considered to be main factors that influence companies to embrace an environmental management system policy (Jalil, Abar, & Dadashian, 2016). The firms have realized the significance of environmental threats and consequently develop business strategies and different plans to become environmental friendly (Pondeville et al., 2013). Christ & Burritt (2013) mentioned that the business world activities to answer the increasing pressure from stakeholders to reduce the environmental damage from operational activities and embrace new techniques in securing the challenge of environmental sustainability. One widely accepted practice to line up business actions with the environmental strategy is Environmental Management Accounting (EMA).

Similarly, Battista, Michael, & Daniel (2015) stated that increasing concern for the firms regarding the environment reflects the appropriate methods that account for the relevant movement of environmental information. Currently, academicians and practitioners are encouraging EMA as a resource to integrate the environmental data into daily business activities and decisions and also strengthen the green management performance. Moreover, stakeholders have knowledge about the sustainability of international business activities. As a result, it becomes vital for the firms to develop Management Control System (MCS) for the following reasons: (1) MCS plays an important role in embracing sustainability as a strategic goal to better face their social and environmental responsibilities and (2) pushing them down the path of sustainability (Gond, Grubnic, Herzig, & Moon, 2012; Henri & Journeault, 2010; Songini & Pistoni, 2012). There are several definitions of MCS. For example, Malmi & Brown (2008), defines MCS as "systems, rules, practices, values, and other activities management put in place in order to direct employee behavior" (p. 290).

MCS creates and changes the practices and behaviors of firm players (Ahrens & Chapman, 2007), it also supports strategy (Langfield-Smith, 1997), and facilitates the attainment of organizational goals. There is the consensus among the research scholars that the topic of environmental or sustainability management control systems is gaining momentum in the management literature (Gond, Grubnic, Herzig, & Moon, 2012; Henri and Journeault, 2010; Pondeville et al., 2013; Schaltegger, 2011).

MCS involves organization, resource distribution, motivation and the measurement of human, physical and financial resources. It may also be effective for embedding sustainability issues into firm's strategy (Stokes, Baker, & Lichy, 2016; Burritt, Schaltegger, & Burritt, 2010; Schaltegger & Burritt, 2010). The application of MCS facilitates the integration of sustainability into the firm. And it can reduce the use of natural resources, promote healthy workspaces, and provide a better view the way environmental and social changes and challenges impact businesses (Bebbington & Thomson, 2013). Therefore, the current empirical study potentially contributes to a timely and growing area of research by exploring Environmental Management Control System (EMCS). EMCS is an extension in MCS for considering the environmental aspect of the control system. EMCS refer to "a set of formal, information-based practices and procedures that executives use to retain or change patterns in organizational deeds, precisely regarding the environmental aspects of organizational performance" (Pondeville et al., 2013, p.318).

Literature categories Organizational culture (OC) into two broad perspectives - a managerially changeable and a fixed contextual variable (Alvesson & Sveningsson, 2015; Scott & Davis, 2015; Smircich, 1983). Proponents of the latter perspective conceptualize OC as historically constructed and constrained by inertia (Hannan & Freeman, 1984; Ouchi, 2009; Smith, 2017). Based on this viewpoint, followers of resource-based view (RBV) theory, OC strategically provides an appropriate source of competitive advantage (Barney, 2015; Barney, 1991; Nason & Wiklund, 2015) and lead to embedding EMCS into the firm. Extending this notion, RBV theory predicts it as a resource-bundle - valuable, rare and inimitable - that can be deployed through organizational capabilities (Helfat & Peteraf, 2015; Zollo & Winter, 2002).

From the perspective of RBV theory, EMCS is not a common practice in the market, and if the environmental aspect is added to the control system, therefore it can be a source of competitive advantage. However, while numerous firms may possess control system, not all firms have an OC that provides the platform for environmental practices. OC consists of two values namely, flexible and stable. These values might provide the support to embed the EMCS to enhance the firm's performance and promote the experiential learning in an unstable environment. A large number of researchers have investigated the role of culture on various management systems, especially managerial accounting (Ekanayake, 2004; Etemadi, Dilami, Bazaz, & Parameswaran, 2009; Verbeeten & Spekle, 2015). Although, the findings of these studies have confirmed the effects of culture on the relationship between control

systems and firm performance, yet little attention has been paid to the effects of OC on EMCS.

Henri (2006b) found that firms with cultures that valued flexibility (e.g., spontaneity, change, openness, adaptability, and responsiveness) used performance measurement systems interactively (to focus organizational attention, support strategic decision-making, and to legitimize actions). Although Simons (1994, p. 170) explicitly did not add the OC from the diagnostic-interactive concepts, as provided by (Chenhall, 2003, p. 131). Chenhall suggests that the interactive use of informal control systems embed with the theme of flexible communication. Flexibility values promote “open and lateral channels of communication, and free flow of information” (Henri, 2006b, p. 80), which is highly consistent with the view that interactive control “generates dialogue” (Simons, 1994, p. 151) in “a positive informational environment that encourages information sharing”. Heinicke, Guenther, & Widener (2016) tested the relationships between a flexible culture and MCS through the levers of control (LoC). Despite the profound investigations and interesting outcomes, still, there is the grave importance of conducting an empirical research on firm’s environmental performance by focusing on the interactive use of MCS with OC. Hence, the debate about flexibility-adaptability, and involvement- and stable (consistency, and mission) values of OC gained fresh attention from the researchers who argue that it leads to the development of EMCS. Building on the foundations of the above arguments, this research examines the mediating role of EMCS between OC and firm performance. The study further examines the relationship between flexible and stable values of Denison’s organizational cultural traits on EMCS.

Contextually, this research focuses manufacturing industry of Pakistan. The manufacturing industry plays a critical role in the strengthening of the both, developed and developing economies. It plays a vital role in producing goods and services in the economy (Rashid et al., 2017). The classical examples are the manufacturing industries China, the Republic of Korea which have significantly strengthened their economies through the development of manufacturing industries. Likewise, Pakistan’s economy mostly depends on agriculture (Aldosari, Al Shunaifi, Ullah, Muddassir, & Noor, 2017). It is evident in the report published by (Government of Pakistan, 2016) that manufacturing has emerged as a major contributing sector in the gross domestic product (GDP). As it constitutes 13.3 percent of Pakistan’s GDP and 14.2 percent of its total employed labor force (Government of Pakistan, 2016)¹. This indicates that improvements in the manufacturing industry can accelerate the economic and human development of a nation. However, with the rise of industrial and agricultural events, energy demands, urbanization, traffic concentration, population growth, and environmental degradation is increasing at an alarming rate and remains a grave concern for international buyers, non-government organizations, and population around manufacturing industries. Similarly, global warming and related environmental issues have recently become more significant. As a result, the

¹ Economic survey of Pakistan 2016 issued by Ministry of Finance, Pakistan

environmental concerns expressed by international buyers and other stakeholders (governments of importing countries, non-governmental organizations) have increasingly affected manufacturing industry to give more attention to environmental performance (Christmann, 2004; Paulraj, 2009).

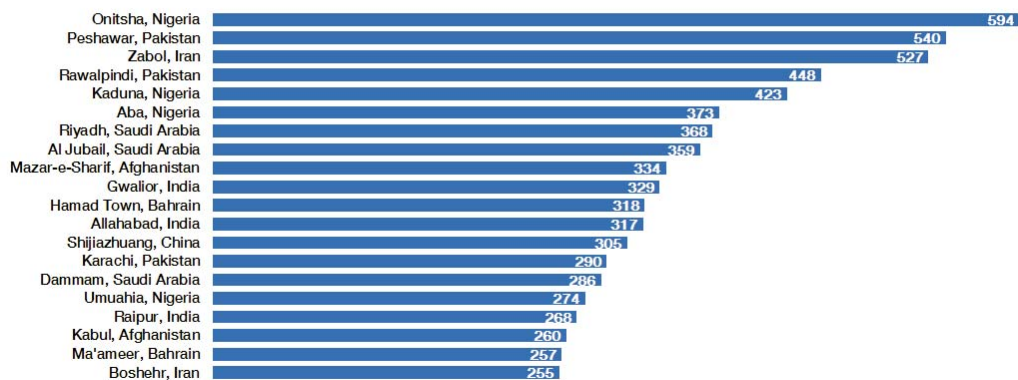
Environmental degradation is considered as the direct outcome of industrialization as it creates environmental issues within the country (Ahmed, Shahbaz, Qasim, & Long, 2015). A survey was carried out to analyze the National Environmental Quality Standards (NEQS) compliance of Pakistan. The survey included 57 leather tanneries and textile processing mills. The findings revealed that only 15 large firms were aware of the NEQS, and only one-third of the 42 small and medium-sized enterprises (SMEs) had even heard of the standards. Only three of the 57 firms were in compliance with the NEQS; all three compliant firms were large and engaged in exports (Sanchez-Triana, Ortolano, & Afzal, 2012).

In particular, it is likely that international buyers may like the inefficient utilization of the natural resources. The stakeholders i.e., governments, employees or consumers in developed economies appreciate the provision and availability of environmentally friendly products (Nishimura, 2014). Therefore, firms adopt environmental management practices as an important part of the strategy (Wiengarten et al., 2013). To address the concerns related to environmental issues, particularly in the manufacturing industry, firms have progressively started sustainable activities to overcome the increasing pressure from stakeholders through reducing environmental damage from operational activities and adopting new techniques that promote environmental sustainability (Christ and Burritt, 2013).

1.3 Problem Statement

The 20 most polluted cities in the world

PM10 particulate concentration, micrograms per cubic meter, annual mean



Source: World Health Organisation Urban Ambient Air Pollution database, 2016 update

Figure 1.1 : Most Polluted Cities in World
(Source: WHO (2016))

According to WHO (2016) report published by World Economic Forum (WEF), Pakistan's cities: Peshawar, Rawalpindi, and Karachi are in the top twenty polluted cities in the world, see figure 1.1. It reflects a serious environmental threat to nature. Above mentioned environmental issues in the manufacturing industry potentially lead to hinder the entrance of entering into markets like the European Union (EU). Consumers in EU demand high environmental compliance from their suppliers and often require certification to international standards, such as ISO 14001 (Sánchez-triana, Biller, Nabi, Ortolano, Dezfuli, Afzal, 2014).

The survey was conducted by International Standardized Organization (ISO) 14001. The results revealed that only 56% of the 39 SMEs were aware of the said standard, while nearly 93% of the 14 large firms had heard of it. There is a strong correlation exists between ISO 14001 awareness and export-orientation, with firms that were engaged in exports were inclined towards cognizant of ISO 14001. The result that sales overseas appears to play a key role in firms' awareness of ISO 14001 is not surprising given the increasing importance attached to the environmental performance of suppliers by business customers in the European Union (EU) and the US, Pakistan's two largest export markets. In contrast to awareness of ISO 14001, the levels of compliance with ISO 14001 were very low, even for large firms. Large firms clearly have more opportunities to hire staff members that specialize in ISO-related issues, and they, at least in this sample, are more likely to export some or all of their outputs (Sánchez-Triana et al., 2014; Sanchez-Triana, Ortolano, & Afzal, 2012).

As highlighted in the previous section that environmental issues are mainly happening due to the industrial mode of development and manufacturing activities creating environmental issues. As a result, there is a compromise of the quality of life as it includes a significant percentage of a fine and ultrafine percent of particulate matter. According to the statistics, there are 6,634 registered industries in the Pakistan and 1,228 are considered to be highly polluting (Sial, Chaudhary, Abbas, & Latif, 2006). Heavy metal contamination of soil and water caused by industrialization has become a major environmental issue (Afzal, Shabir, Iqbal, & Mustafa, 2014). The unsound management of chemicals, specifically in the manufacturing sector, has further compounded environmental issues (Khwaja, 2012).

In manufacturing activities, usage of fossil fuels is a significant source of air pollution (Sánchez-Triana et al., 2014, p. 132). They suggest that outdoor air pollution is most severe in urban areas, where the concentrations of industrial activity, vehicles, and other sources of air pollution are the highest in Pakistan, and contribute to pollutant concentrations significantly exceeding World Health Organization (WHO) guidelines. In Pakistan, more than 35 percent of the population lives in urban areas, most of the cities with the inhabitation of more than a million people (WHO, 2015).

The literature has consistently argued that EMCS is an important corporate phenomenon for competitive advantage (Pondeville et al., 2013). Based on the literature, there is an increased call for the firm to demonstrate and take on the responsible action in relation to environmental issues. In this context, EMCS is seen as a central stage for developing a transparent, accountable and effective system (Solovida & Latan, 2017). This may emerge from the customers or stakeholders' pressure and the curiosity from society about the organizations' actions regarding environmental issues. Consequently, firm ought to be aware of and account for the environmental impacts of their activities. Therefore, EMCS is considered an important practice for the organizations' sustainability, particularly for the manufacturing industry.

Furthermore, for the purpose of enhancing performance in the firm, the stakeholders, and customer pressure itself may not necessarily be the only factors. Likewise, literature also emphasized that the without an appropriate environmental strategy, the firm cannot survive in the long run (Rueda, Garrett, & Lambin, 2017; Telesford & Strachan, 2017). Thus, the EMCS would be a primary managerial task and is considered as an important phenomenon for firms. An environmental strategy is considered as a strategic choice that explains the determinations of courses of action a firm has deliberated upon in relation to a chosen strategy. Therefore, EMCS is considered by the researcher as an influential factor for a firm's performance.

In the context of Pakistan, the EMCS is essential to embed the sustainability into the firm. Furthermore, prior research in the field of accounting has intensely focused the role of EMCS by controlling environmental practices and less focus on, the role of OC. The study corroborates that EMCS is compatible with the combination of stable and flexible values reflected by OC. The existing research has been rather selective in respect of examined basics of EMCS. These studies mainly emphasized on measurement systems, including planning and administrative controls, but have rarely examined the relationship between OC and EMCS (Guenther et al., 2016). The current study examines the role OC on the development of EMCS as a mechanism to translate environmental culture into environmental performance. Furthermore, this study formulates and tests the relationship between stable and flexible values of OC with formal and Informal EMCS to achieve better environmental performance. Most of the empirical studies have emphasized management commitment (Adams and Larrinaga; González, 2007; Parisi, 2013; Yang et al., 2013) and strategy as an antecedent of EMCS (Christ and Burritt, 2013; Ferreira et al., 2010; Gates and Germain, 2010). On the other hand, OC is considered as an important tool to improve the understanding and implementation of sustainability in an organizational practice (Morsing and Oswald, 2009). OC encompasses the shared values and norms of a collective organization, considered as an important building blocks and a key determinant of firm's success (Schein, 1990). Similarly, the theoretical foundations of EMCS have been somewhat subjective, also reference broader theories that are rather rare in the empirical literature. Furthermore, as per the limited knowledge of this researcher, there is no single theory explains the factors and contexts influencing the development of EMCS (Guenther et al., 2016).

As firms work through these changes, OC plays a fundamental part in the shift towards sustainability and environmental practices. Implementation of sustainable practices needs proper embedding of OC (Bertels et al., 2010). Research in management accounting is essentially contingent; it decides which particular frameworks may be most appropriate for specific firms in particular circumstances (Otley, 2016). Based on Otley's (2016) definition and contingency theory, the current study argues that improved industrial environmental performance is essential in the settings of the manufacturing industry of Pakistan to become competitive in international market. Better environmental performance requires sustainability embedded into an OC. Firms' performance can be improved by consolidating sustainability ideas into everyday work activities (Kerr et al., 2015; Stubbs and Cocklin, 2008). Thus, OC becomes the contingent factor for environmental practices and a cause of change in MCS. As mentioned earlier, the applicability of MCS depends on a firm's circumstances, the status of environmental practices, and pressure from stakeholders. OC promotes environmental practices and ultimately leads to the development of EMCS and better firm performance.

1.4 Research Objectives

The main objective of this research was to investigate the relationship between organizational culture on firm's performance and the mediating role of environmental management control system in the manufacturing industry of Pakistan. Following are the objectives of this research:

1: To investigate the relationship between OC and EMCS.

1A: To examine the impact of OC flexible values (involvement and adaptability) on informal EMCS.

1B: To examine the impact of OC stable values (consistency and mission) on formal EMCS.

2: To investigate the relation between EMCS on firm performance.

2A: To examine the impact of informal EMCS on economic performance.

2B: To examine the impact of informal EMCS on environmental performance.

2C: To examine the impact of informal EMCS on social performance.

2D: To examine the impact of formal EMCS on economic performance.

2E: To examine the impact of formal EMCS on environmental performance.

2F: To examine the impact of formal EMCS on social performance.

3: To investigate the mediating role of EMCS between OC firm performance.

3A: To investigate the mediating role of informal EMCS between OC flexible values (involvement and adaptability) and firm performance (economic, environmental, and social).

3B: To investigate the mediating role of formal EMCS between OC stable values (consistency and mission) and firm performance (economic, environmental, and social).

4: To investigate the relationship between OC and firm performance.

4A: To investigate the relationship between involvement and economic performance.

4B: To investigate the relationship between involvement and environmental performance.

4C: To investigate the relationship between involvement and social performance.

4D: To investigate the relationship between adaptability and economic performance.

4E: To investigate the relationship between adaptability and environmental performance.

4F: To investigate the relationship between adaptability and social performance.

4G: To investigate the relationship between consistency and economic performance.

4H: To investigate the relationship between consistency and environmental performance.

4I: To investigate the relationship between consistency and social performance.

4J: To investigate the relationship between mission and economic performance.

4K: To investigate the relationship between mission and environmental performance.

4L: To investigate the relationship between mission and social performance.

1.5 Research Questions

Based on the specific objectives, this empirical research addresses four important questions.

Question 1: What is a relationship between OC and EMCS?

1A: What is a relationship between OC flexible values (involvement, and adaptability) and informal EMCS?

1B: What is a relationship between OC stable values (consistency, and mission) and formal EMCS?

Question 2: Does EMCS effect on the firm performance?

- 2A: Does informal EMCS effect on economic performance?
- 2B: Does informal EMCS effect on environmental performance?
- 2C: Does informal EMCS effect on social performance?
- 2D: Does formal EMCS on effect economic performance?
- 2E: Does formal EMCS effect on environmental performance?
- 2F: Does formal EMCS effect on social performance?

Question 3: Does the EMCS mediate the relationship between OC and firm performance?

- 3A: Does informal EMCS mediates the relationship between OC flexible values (involvement, and adaptability) and firm performance (economic, environmental and social)?
- 3B: Does formal EMCS mediates the relationship between OC stable values (consistency, and mission) and firm performance (economic, environmental and social)?

Question 4: Does OC effect on the firm performance?

- 4A: Does involvement effect on economic performance?
- 4B: Does involvement effect on environmental performance?
- 4C: Does involvement effect on social performance?
- 4D: Does adaptability effect on economic performance?
- 4E: Does adaptability effect on environmental performance?
- 4F: Does adaptability effect on social performance?
- 4G: Does consistency effect on economic performance?
- 4H: Does consistency effect on environmental performance?
- 4I: Does consistency effect on social performance?
- 4J: Does mission effect on economic performance?
- 4K: Does mission effect on environmental performance?
- 4L: Does mission effect on social performance?

1.6 Significance of the Study

The following sections discuss the significance of current study

1.6.1 Theoretical Significance

The purpose of this study is to contribute to both research and practice. For research, the study attempts to potentially contribute “making significant advances in the conceptual development of a managerially relevant phenomenon”. As mentioned in the introduction, the study addresses a research gap for four reasons: (1) Environmental Management Control System itself, (2) the relation between environmental management control and OC, and (3) the influence of cultural values - flexibility and stability- on Environmental Management Control System in general are all relatively unexplored topics in management accounting research (4) The consequences of EMCS (5) The theoretical foundation of EMCS (6) The effect of firm size and industry/sector leads to Environmental Management Control System.

Current study advances in the literature to provide explanations on how OC can be used and addressed in the context of EMCS and how it will enhance the firm performance in the presence of EMCS. Thus, the study focuses on the relationship between EMCS and OC in a normative way. Furthermore, the review of the EMCS and OC contributes to the literature on MCS based on prior studies examined the relationship of MCS and OC (Goddard, 1997a, 1997b; Henri, 2006a; Stede, 2003). The contribution of this study in management control literature by empirically addressing the OC values helps the organization to adopt the MCSs in an environmental management context. Moreover, this study adds to the environmental management literature by illustrating how OC improves environmental performance and practices.

Lastly, this study addresses the theoretical foundation of EMCS based on contingency theory that OC directly affects the design and use of EMCS. Thus, EMCS can be used to translate environmental strategies into better firm performance. Contingency theory demonstrates how companies align OC to develop an environmental culture that supports the development of EMCS, which improves performance. The current research has extended the RBV is exploring the development of EMCS with the support of OC values for better performance. OC controls the firm in its activities to become the important resource which would increase the firm performance. RBV demonstrate that the accomplishment of proper strategic activities like OC and EMCS to use the firm’s resources efficiently to higher the firm performance.

1.6.2 Methodological Significance

Methodologically, this study has used the Smart PLS method to test the relationship of OC and EMCS, EMCS to firm performance and the fact that this study is one of the few studies to examine the mediating impact of EMCS in OC and firm performance relationship in developing countries context. Another contribution in the methodology was using Denison model and testing its relationship with EMCS and firm performance including; economic, environmental and social in developed countries. Previous studies and models of OC have used this concept in different settings. This study has filled this gap in management accounting by investigating the EMCS that influence the culture and firm performance relationship in the manufacturing industry which it might be useful to generalize. In addition of that, the data collection method comprised of three stages, the first phase was purposive sampling where author picked four territories to give a more homogeneous sample and more support to generalized the results from the population that are being examined. The second phase ten districts were taken which comprised of 61 percent of total population. After the selection of firm from each province, in last stage respondent was chosen as subjects of study by systematic random sampling.

1.6.3 Managerial Significance

For managerial contribution, the study attempts to provide a deeper knowledge of the relationship between EMCS and OC. As the practical issues demonstrated, the subject of this study has high importance for any business. Knowing more about how culture can be influenced in order to achieve effective environmental controls potentially supports the protection of future failures. The research can contribute to the policy makers to initiate environmental management control system supported by OC and motivate firm to develop such systems. This study also contributes to the management to implement the environmental practices and achieve sustainability.

1.6.4 Practical Significance

Although the importance of EMCS practices has been recognized in the literature, however, still many factors are associated with its application and particularly in developing country such as Pakistan where it needs a study to examine the factors related to its adoption. Whenever we consider a change within an OC plays a vital role. Therefore, this dissertation aims to examine the role of OC values in the development of EMCS. The dissertation acknowledges that there has been an unbalanced interest in accounting research concerning environmental management and environmental accounting, as well as the aspect of OC and majority of the studies in MCS context, talk about the national culture (e.g., Awasthi, Chow, & Wu, 1998; Chenhall, 2003; Chow, Lindquist, & Wu, 2001; Chow, Shields, & Wu, 1999; Harrison & McKinnon, 1999). Most studies established in the area focused on the determinants and effects of environmental disclosures and legitimacy.

The previous literature findings indicate in general that investors do take into account voluntary environmental disclosure or information that is accessible from external sources (e.g., Berthelot, Cormier and Magnan, 2003; Berthelot & Cormier, 2003; Cormier & Magnan, 2015). However, few studies on the interplay among external sustainability reporting and internal management control mechanisms have also started to shed light on the instances in which external reporting initiatives may spur management accounting change towards more sustainable business operations (e.g., Adams & McNicholar, 2007; Bouten & Hoozée, 2013). If the disclosure is just for legitimacy, then it is not considered environmental friendly and reflects that firms are not responding or taking care of the environment. Embedding the EMCS will also lead to better environmental performance and will reduce the environmental harm, which is an emerging issue of all countries particularly developing countries where they still have to develop their economies but not at the cost of environment. This study may help them to use MCS and increase the environmental performance.

1.7 Scope of the Study

Pakistan has a vibrant, vigorous and export-oriented manufacturing industry with a large impact on the economy. Like a large portion of other South Asian nations, similarly, Pakistan's economy had been heavily relying on agriculture. However, in recent years, manufacturing and service sector have likewise risen as the main contributing factors to the economy. The growth in manufacturing from 13.6 percent in 2015 to 30 percent by 2030, has been imagined in vision 2030 (Khwaja, 2012; Government of Pakistan, 2016). This segment gives 15.3 percent of employment to the aggregate labor force (Government of Pakistan, 2016). The manufacturing is the most vital subpart of the industrial segment providing 65.4 percent share in the overall sector (Government of Pakistan, 2016).

The rising industrial exercises and population development, the degradation of air, water, and land is disturbingly developing and remains a genuine concern. In response to growing pollution, most developed countries achieved little success in enacting environmental laws. On the other hand, developing countries face significant challenges in implementing regulations. There is certainly overwhelming evidence that inadequate environmental compliance is leading to increasing urban and rural pollution (Cordeiro & Tewari, 2015; Khanna & Anton, 2002). Pakistan is no exception to the prevailing trend of increasing regulations and increasing pollution. While it has a strong set of national environmental quality standards (NEQS), air and water pollution are major problems, particularly in urban industrial areas (Samad, Gulzar, & Ahmed, 2015).

Therefore, improved industrial environmental performance is important if the Pakistani manufacturing industry is to be competitive in export markets in which business customers asks for high environmental compliance from their suppliers (Sánchez-Triana et al., 2014; Wijk, Danse, & Tulder, 2008). It will be troublesome for Pakistani manufacturing industry to stay competitive and to meet its objectives for

extending exports unless the organizations turn out to be more proactive about upgrading environmental performance. A 2008 World Bank study estimated the total cost of environmental risk factors in Pakistan at about 9 percent of GDP. Another 2011 World Bank study projected that in the province of Sindh, environmental degradation, including both natural resource depletion and the effects of pollution on human health, had a cost equivalent to 15 percent of the province's GDP. These figures reflect direct and indirect costs linked to different aspects of environmental degradation (Sánchez-Triana et al., 2014).

Environment protection and environmental management strategies are key elements of any firm or government. At the same time, environment protection becomes more and more important for the Pakistan industries either in order to compete in the international market and satisfy the demand of international buyers. For businesses, this means increasing export opportunities. Hence, the overall aim of our thesis is to assist Pakistani industries to realize business and environmental benefits through adopting an environmentally friendly approach. By doing so, we aim to reinforce the efforts that Pakistan is already making by initializing activities and creating winning situations for all involved stakeholders. Given that the reason for this study is to enhance the involvement of organizational cultural values builds up environmental practices in manufacturing industry lead to a sustainability-driven change in its plan of action, a cross-sectional study was considered for studying the phenomenon. Hence, the study undertakes an investigation into the manufacturing industry.

1.8 Operationalization of Terms

Organization Culture: From the perspective of environmental practices current study adopts the definition of OC by Schein (1990), where OC is defined as shared values and norms of a collective organization, is an important building block and a key determinant of an organization's success. This research has operationalized the Denison's OC Model. The model has four traits: (a) Adaptability, (b) consistency, (c) Involvement, and (d) Mission. Adaptability is the extent an organization can respond and adapt to changes in the environment and customer demands. Consistency is the extent to which an organization has internalized a governance based system to coordinate and control its systems. Involvement is the extent to which employees feel a sense of ownership and responsibility for the organization. The Mission is the extent the organization's mission is communicated, understood, and internalized within the workforce (Denison & Mishra, 1995).

Environmental Management Control System: EMCS has been classified into formal and informal control systems. The formal control system is based on rules, standard operating procedures and controls that can promote environmental performance (Fryxell and Vryza, 1999; Langfield-Smith, 1997; Pondeville et al., 2013) On the other hand, the informal systems incorporate employees' participation, managers' Involvement, and teamwork to solve environmental problems (Pondeville et al., 2013).

Firm Performance: In this thesis, firm performance classified into three types of performance: (1) Economic performance (2) environmental performance and (3) social performance.

Economic Performance: Financial performance refers to the ability to generate profits (Henri & Journeault, 2010).

Environmental Performance: Mainly refers to the environmental impacts generated in the conduct of business, such as hazardous waste recycled (Al-Tuwaijri et al., 2004)

Social Performance: Refers to the practices of the firm in line with accepted social values (Lisi, 2016).

1.9 Overview of the Thesis

The remainder of this thesis is organized as follows.

Chapter Two: a literature review. It starts with the literature pertaining to EMS, Environmental Management Accounting, MCS and its link to sustainability, focusing on the usage of the EMCS. Later part of the literature review has focused on the relationship of OC and EMCS, and how OC is important to adopt the EMCS. The chapter finishes with an assessment of the treatment of OC in the MCS literature, with an emphasis on flexibility values of the OC.

Chapter Three: Framework and Hypotheses Development. This chapter begins with an overview of contingency theory and Resource-Based View theory (RBV). After that, a conceptual framework is discussed in detail. Four sets of hypotheses are developed. The first set of hypotheses concerns OC using Denison traits to supports the EMCS by using contingency theory. The second set of hypothesis uses the RBV theory to explain the relationship between EMCS and firm performance. The third set of hypotheses uses mediation effect of EMCS between OC and firm performance. The last set hypothesizes the relationship between OC – flexible and stable values - and firm performance – economic, environmental and social.

Chapter Four: Research Methodology. This chapter discusses a cross-sectional self-reported survey that was employed with internet formats and personal visits. The statistical technique of partial least squares (PLS) is selected for data analysis purposes and measurement scales are extensively developed and selected according to the functionality and requirements of this technique. The chapter also presents the sampling and survey distribution strategies that were developed, and pre-tested and pilot testing procedures described.

Chapter Five: Results and Analysis. This chapter discusses the analysis and results carried on the data collected from the respondents from manufacturing industry of Pakistan by using Smart-PLS and SPSS. The measurement model and structure models results are also outlined in the chapter.

Chapter Six: Discussion, Implications, and Conclusion. This chapter consists of four parts. First, it begins with the discussion of the finding revealed by the data. The second it explicitly outlines the theoretical, managerial and policy implications of this empirical research. Third, the chapter concludes the overall work that has been documented. Lastly, the chapter also discusses the limitations and directions for the future researchers.



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