



European
Doctoral Programmes Association in Management
and Business Administration

EDAMBA JOURNAL

15th Thesis Competition 2017

EDAMBA

European Doctoral Programmes Association in Management and Business Administration

ISSN: 1334-8078

EDAMBA Journal

**Thesis Competition 2017
Summaries**

Editor
Agnes Zsokà

Foreword from the President

EDAMBA, the **European Doctoral programmes Association in Management and Business Administration** has the mission to support and facilitate cooperation by providing and managing a network to exchange information, disseminate best practices and raise the quality of doctoral education among its members in Europe and beyond. For the past quarter century, **EDAMBA** has helped the participating schools to increase the quality of their Doctoral programmes, as well as to create an environment of excellence with a European perspective, all the while pursuing diversity. In many ways it has proved to be an unparalleled forum of discussion to schools that have a long established tradition of doctoral education and also to those who have recently started this new practice. The ultimate goal is to have the **EDAMBA** network reach as far and wide as possible, while at the same time maintaining the integrity of the various programmes within the network.

Currently EDAMBA has 60 doctoral programmes as members of the Association coming from 24 countries. It is governed by the General Assembly, which elects each year an Executive Committee. The main current activities of the Association are the Annual Meetings, the Research Summer Academy, the Consortium on Doctoral Supervision, the Thesis Competition.

The Annual meetings have become during the years the main platform for discussing common problems and issues, discussing impressive changes in the doctoral landscape and promoting best practices among the Directors of Doctoral programmes in the association. The Summer Academy operating since 1992 with its international dimension has been the privileged forum for dialogue on research paradigms and methodologies while building a strong scholarly network among doctoral students coming from a broad range of programmes and disciplines.

The Winter Academy launched in 2008 aims at improving the quality of doctoral supervision by fostering a dialogue among senior and junior faculty and developing competent supervisors for addressing the shortage of qualified faculty in Business and Management studies in the European Universities and Business Schools. In the steps of the Winter Academy, as a joint initiative between the EIASM and EDAMBA in shaping the new landscape of global doctoral education, EDAMBA runs a Consortium on the importance of supervision in doctoral education. A European Code of Practice for Doctoral Studies in Management and Business has just been published for consultation with our membership and wider community.

The Thesis Competition was first launched in 2003. It aims at distinguishing high-quality doctoral dissertations which have significantly contributed to new knowledge in all areas of business studies and management. The top-3 peer reviewed abstracts are given prizes and the short-list of selected abstracts is published in this EDAMBA journal. With this publication, we hope to contribute to the dissemination of distinguished doctoral dissertations from throughout our network in Europe and worldwide.

Dimitris ASSIMAKOPOULOS
EDAMBA President

List of reviewers - 2017

EDAMBA acknowledges the expertise, time and effort in the important review process of the 2017 EDAMBA Thesis Competition

Agell, Nuria	ESADE Business School, University Ramon Llull
Balaton, Karoly	Miskolc University
Batteau, Pierre	Aix-Marseille University
Bonet, Eduard	ESADE Business School, University Ramon Llull
Bonesso, Sara	Ca' Foscari University of Venice
Bown, Robin	University of Gloucester
Collet, Francois	ESADE Business School, University Ramon Llull
Collins, Claire	Henley Business School at The University of Reading
Comacchio, Anna	Ca' Foscari University of Venice
Csillag, Sara	Corvinus University of Budapest
Hackney, Ray	Brunel University
Hand, Chris	Kingston University
Harangozo, Gabor	Corvinus University of Budapest
Kayas, Oliver	Manchester Metropolitan University
Kocsis, Tamas	Corvinus University of Budapest
Moretti, Anna	Ca' Foscari University of Venice
Perri, Alessandra	Ca' Foscari University of Venice
Sierra, Vicenta	ESADE Business School, University Ramon Llull
Széchy, Anna	Corvinus University of Budapest
Ulhoi, John Parm	University of Aarhus
Wright, Gillian H.	Manchester Metropolitan University
Zsoka, Agnes	Corvinus University of Budapest

Contents

Strategic Perspectives on Corporate Sustainability: Alternative Views on the Field's Business Case Predominance Grewatsch Sylvia, Aarhus University	p. 6
The Association between Earnings Management and Executive Compensation – Evidence from the FTSE 350 Index of Companies Tahir, Muhammad, Kingston University	p. 17
21st-Century Brands: An Innovation Opportunity and an Ethical Challenge Markovic Stefan, ESADE Business School	p. 34
The Negative Aspects of Flow: Examining Relationships between Flow and Unethical Behavior Aleksic Darija, University of Ljubljana	p. 45
Governance of Inter-Organizational Collaborations When Engaged in Open Innovation Bagherzadeh Niri Mehdi, ESADE	p. 61
The Impact of International Alternative Funds to the Real Economy Ilić Miroslav, University of Zagreb	p. 62
Financing International Business: Distance, the Cost of Capital, and Financial Structure Lindner Thomas, Vienna University of Economics & Business	p. 76
Integrating the Intuitive into User Acceptance of Technology Theory Mcaran Danny, Henley Business School at University of Reading	p. 88
Executive Coaching: An Exploration of the What, How and Who of Coaching Practices from a Cognitive-Emotional and Cross-Cultural Perspective Mosteo Leticia, ESADE Business School	p. 107
Unveiling the Catalysing Power of Emotional Intelligence over General Intelligence and Learning Performance Truninger De Albuquerque Margarida, ESADE Business School	p. 125

FIRST AWARD

Strategic perspectives on corporate sustainability: Alternative views on the field's business case predominance

Grewatsch Sylvia

Aarhus University, Denmark

Abstract

In my dissertation, I investigate the predominance of business case thinking in corporate sustainability research. The overall research question guiding the dissertation revolves around: "What is the relevance of the business case in corporate sustainability and how do we move beyond it?". To approach this research question, I focus on the constituent elements of the business case in corporate sustainability and its inherent problems of missing concreteness in theoretical understanding and research design. The dissertation aims to assess the increasing critique of business case thinking and to propose alternative views toward a more complex and detailed understanding of corporate sustainability.

INTRODUCTION

Initially focused on environmental issues, such as climate change, water scarcity, and ecosystem preservation, and on social issues, such as labour practices, working conditions, human rights, and transparency, research in sustainability has witnessed an increasing dominance of an a priori instrumentally-driven business case thinking over the last 50 years. Exploring the business case of corporate sustainability has become one of the - if not *the* - most important field in sustainability research (Carroll & Shabana, 2010; Linnenluecke & Griffiths, 2013). The quest for finding empirical evidences that a firm can '*do well by doing good*' has transformed sustainability towards being a subject of strategic management away from concerns of sustainable development and the secured well-being of society and nature in future.

Businesses have become the central subject in sustainability research, because they have the power, the influence, and the financial capital to enforce meaningful sustainable changes. Therefore, sustainability research has received the added prefix '*corporate*' signaling the goal of a firm's organizational performance. By naming it corporate sustainability, sustainability refers to a firm's *ability to sustain* (Ehrenfeld & Hoffman, 2013). Thereby sustainability becomes recognized with the underlying organizational goal to keep the firm growing almost indefinitely, which attracted businesses' and researchers' interest and fascination to identify the economic rationale and financial benefits resulting from corporate sustainability engagement and investments. In this context, '*When and how does it pay to be good?*' is an omnipresent research question, intended to

build justifications for firms to invest in corporate sustainability issues and initiatives. The primary focus is to finding definite causal connections between corporate sustainability and corporate financial performance.

However, after decades of persistent inconclusive findings, the search for a universal business case has received some critique (Aguinis & Glavas, 2012; Margolis & Walsh, 2003). The most common criticisms are poor measurement and weak theory, leading to oversimplification and under-theorization of the corporate sustainability performance – corporate financial performance relationship (Gao & Bansal, 2013; Orlitzky, Schmidt, & Rynes, 2003). For sustainability research to move forward, it may be necessary to critically examine the evidence that has led to inconclusive findings and to begin discussions about alternative theoretical and empirical views on the business case of corporate sustainability.

Motivated by this developing critique on the field's business case predominance, this dissertation is guided by the overall research question: "*What is the relevance of the business case in corporate sustainability and how to move beyond it?*". The dissertation is composed of three research articles, each organized around a question illustrating vital aspects of the overall research question. Overall, I aim at contributing to alternative views on corporate sustainability performance, corporate financial performance, and their potential main relationship. By doing so, I follow a recent theoretical perspective on cognition in corporate sustainability and I provide alternative measurements for assessing the business case of corporate sustainability.

In this dissertation summary, I first outline the research questions, aims, and contribution. Then, I elaborate on the business case of corporate sustainability as an academic discipline and its theoretical and methodological critique. I follow by presenting the dissertation's research method and design, and an overview of the three constituent research articles, each providing a new perspective on the academic discipline.

THEORETICAL POSITIONING

The business case as an academic discipline

Before describing the academic discipline focused on the business case of corporate sustainability, it is necessary to briefly define the individual key constructs: *corporate sustainability*, a *business case*, and the combined construct *the business case of corporate sustainability*. I then provide a short historical overview of the academic discipline.

Corporate sustainability. Corporate sustainability builds on the concepts of sustainable development, which is commonly defined as "*meeting the needs of the present without compromising the ability of future generations*" (World Commission on Environment and Development (WCED), 1987). In this sense, sustainability in general aims at securing intergenerational equity and similar opportunities for present and future generations. Applied to businesses, this means that firms should be at least as profitable in the future as in the present and past, but ideally with opportunities and profits for growth. Hence *corporate sustainability* can be defined as "*the ability of firms to respond to their short-term financial needs without compromising their ability to meet their future needs*" (Bansal & DesJardine, 2014, p. 71). Building on the WCED's definition of sustainable development, corporate sustainability is understood as (i) a tridimensional construct integrating economic, environmental, and social dimensions in a triple-bottom line (Bansal, 2005; Dyllick & Hockerts, 2002; Montiel, 2008), (ii) representing intertemporal trade-offs of short-term and long-term aspects (Bansal & DesJardine, 2014; Dyllick &

Hockerts, 2002), and (iii) requiring the consumption of income rather than capital (Dyllick & Hockerts, 2002).

Confusion often exists between corporate social responsibility (CSR) and corporate sustainability. Whereas CSR aims to create value for business and society in the short-term, corporate sustainability emphasizes the long-term viability and alignment of micro- and macro-systems (Bansal & DesJardine, 2014). Consequently, corporate sustainability becomes an umbrella term that includes CSR environmental management. During the last years, CSR and corporate sustainability seem to have converged and are used more and more interchangeably in literature and practice, even though CSR and corporate sustainability have divergent historical backgrounds and conceptual differences (Montiel, 2008; Van Marrewijk, 2003). Therefore researchers, such as Montiel (2008), call for one merged construct that accounts for all environmental- and social-related issues in business and the management field. Based on this development, in my PhD project I use the concept of corporate sustainability both to describe firms that work towards becoming more responsible and sustainable and to support research that strives for a common definition favoring corporate sustainability as a strengthened overall umbrella term.

A business case. A business case is “a pitch for investment in a project or initiative that promises to yield a suitably significant return to justify expenditures” (Kurucz, Colbert, & Wheeler, 2009, p. 84). Thus, a business case expresses a project’s rationale in support of a particular business need. A formal business case adequately considers quantifiable characteristics and outcomes of initiated projects (Schaltegger & Wagner, 2006).

The business case for corporate sustainability. The business case of corporate sustainability covers questions around how voluntary environmental and social initiatives and actions relate to firm success. It addresses the pitch that a firm can ‘do well by doing good’: perform well financially by considering its responsibility to a better society as well as its core business activities by (Kurucz et al., 2009; Schaltegger & Wagner, 2006). Firms behave responsibly not only because managers become more public-spirited and sustainability conscious, but because they see responsibility and corporate citizenship as a source of competitive advantage, resulting in better financial performance (Vogel, 2006). Theoretical and empirical examination of the business case of corporate sustainability has become an autonomous academic discipline, focused on conceptualizing, specifying, and testing the relationship between corporate sustainability and corporate financial performance.

Brief outline of the academic discipline. The quest for financial reasons for corporate sustainability initiatives has developed over decades (Carroll & Shabana, 2010; Linnenluecke & Griffiths, 2013). The 1960s and early 1970s were the ‘awareness’ eras of corporate sustainability issues. Business owners' social consciousness changed and they began to recognize their responsibility for ethical concerns, such as community affairs, racial discrimination, and poverty alleviation (Carroll & Shabana, 2010). This awareness was primarily motivated by external social consciousness and not by improved financial returns, and therefore criticism and questions arose with more time and resources spent. At that time Friedman triggered a still lively debate against this movement by stating: “A corporate’s social responsibility is to make profit” (1970 (reprint from 1962)). He argued that a firm’s only responsibility is to its shareholders and not to society in general. In response, researchers sought to find positive evidence for financial benefits from corporate sustainability initiatives. Moskowitz (1972) published the first empirical study showing that corporate sustainability firms are good investments.

In the 1980s, research on the link between corporate sustainability and corporate financial performance exploded. Early influential contributions from that time are Cochran and Wood (1984), Aupperle, Carroll, and Hatfield (1985), and Ullmann (1985). In the 1990s, the trend continued with growing international attention. Researchers have focused mainly on aspects of environmental management and corporate citizenship. Since the 2000s, the business case of corporate sustainability has become one of the four main academic disciplines in sustainability research (Linnenluecke & Griffiths, 2013) and an integral part of business practices. Most business leaders have accepted that there is a beneficial connection between corporate sustainability and corporate financial performance (Dyllick & Hockerts, 2002). To summarize, since the 1960s, the business case of corporate sustainability has moved from an ethical orientation and a macro-social level of analysis to a performance orientation and focus on organizations as a level of analysis.

However, even after more than 50 years of research in this academic discipline, no clear findings exist regarding how corporate sustainability improves the financial bottom line. Arguments for and against the business case of corporate sustainability are still present as in the 1960s (Carroll & Shabana, 2010). Theoretical insights have become more fine-grained and empirical qualitative and quantitative methods have improved, but curiosity and uncertainty still exist regarding the potential link between corporate sustainability and corporate financial performance. Therefore over the last ten years, researchers (Barnett, 2007) have called for a more contingent view on underlying factors in this relationship and for a critical revision of existing measures and theories, in order to explain the ‘disappointing’ results. This is the point this PhD project takes up. Based on the increasing critique on the business case thinking and its academic discipline, I aim to provide alternative, more fine-grained views to advance the academic discussion about corporate sustainability and its benefits.

RESEARCH METHODOLOGY, METHOD, AND DESIGN

I adopted as a research method a survey based on a quantitative methodology. Two of the dissertation’s research articles are empirical and both are based on a comprehensive survey conducted in 2014 in Denmark. Here, I provide a short overview of the applied research method and design.

Survey method

Empirical setting and sampling. Through an online-based questionnaire among 301 manufacturing firms in Denmark in 2014, I collected information on the firm’s corporate sustainability management and the top management’s perspective on a firm’s social and environmental issues and activities. To identify the firms surveyed, I extracted a sample of manufacturing firms with more than 100 employees from the national firm registration database. I focused only on manufacturing firms, because I was interested in the integration of corporate sustainability throughout a firm’s complete value chain activities. Considering service firms was problematic because management of manufacturing and service firms has important differences around production strategies, assessment of effectiveness and efficiency, and relevant environmental and social concerns (Bowen & Ford, 2002). I used large Danish firms, because Denmark is a leader in corporate sustainability (Strand, Freeman, & Hockerts, 2015; UNEP, 2015). In 2009, Danish financial reporting law added a voluntary requirement for the 1100 largest to report on corporate sustainability¹. While the quality

¹ The Danish Action Plan comprises §99a and b, which require a firm to report about its corporate sustainability policies, implemented actions, and results. There are no specific requirements on the content and degree of those

of reporting remains variable, this voluntary requirement has positively influenced business-driven corporate sustainability efforts in Denmark (Strand et al., 2015; UNEP, 2015). Therefore, I focused in the survey only on the largest manufacturing firms, as these firms should show a high awareness and managerial interest in corporate sustainability due to the national requirement.

Response rate. The final survey sample consisted of 301 manufacturing firms in Denmark. I called all 301 firms before sending out the questionnaire. I sought to explain the purpose of the survey, get the firm's agreement to participate, and identify the key person in the top management responsible for corporate sustainability. Two months after sending the survey I received 124 valid questionnaires. This represents a response rate of 41.20 percent, higher than the average response rate of 35.7 percent for studies with a survey approach directed at the top management (Baruch & Holtom, 2008). I found no difference between the responding and non-responding firms regarding common organizational characteristics, i.e. firm size, geographical location, and financial performance in 2014. It is possible that non-responding firms differ in their attitude to corporate sustainability, compared to responding firms. If so, the survey results might overestimate the level of the actual situation.

Questionnaire design. The survey questionnaire was structured according to the main topics of the business case identified through the comprehensive systematic literature review and the objects of the empirical studies. The questionnaire asked about (i) scope of corporate sustainability activities, (ii) corporate sustainability integration, (iii) organizational capabilities, (iv) organizational performance, and (v) general socio-economic questions about the firm and the respondent. Within each topic, more specific questions were formulated based on appropriate existing literature. The questionnaire used an ordinal scale (Cox III, 1980; Hinkin, 1995), ranging from 1 (not at all) to 5 (a very great extent), or respective a 5-point-Likert scale ranging from 1 (decreased a lot) to 5 (increased a lot). Respondents expressed their perceived level of agreement/-disagreement (Likert scale) or perceived level of impact (ordinal scale). I did a focus group meeting with MBA students and the consultation of five senior researchers before sending out the questionnaire, in order to get feedback on the questionnaire and to ensure understanding, reliability, and content validity of the questionnaire (Hinkin, 1995).

OVERVIEW OF THE CONSTITUENT RESEARCH ARTICLES

As described earlier, the dissertations' overall research questions of this dissertation investigate the relevance of the business case in corporate sustainability and aims at presenting alternative views on this, to move forward this academic discipline. I structured the three research articles accordingly. In the following, I briefly present the content of the individual research articles, identifying how they address the dissertation's overall research question, and how they contribute to broader literature. I close with a tabulated overview and summary of the three research articles.

Research article 1 – “When does it pay to be good? Moderators and mediators in the corporate sustainability–corporate financial performance relationship: A critical review” by Grewatsch & Kleindienst, 2015 (Forthcoming at Journal of Business Ethics)

Motivated by the omnipresent research question ‘*When does it pay to be good?*’ and by the fragmented knowledge about the business case of corporate sustainability, this research article illuminates the relationship between corporate sustainability –corporate financial performance. It

reported information. Corporate sustainability is still seen as voluntary for firms, but if a firm has no corporate sustainability policy it needs to state information to that effect explicitly.

provides a contingency perspective on this much-researched relationship, because underlying factors such as moderators and mediators have been overlooked in the quest for finding a general direct relationship.

To identify the relevant literature, we systematically searched studies published in highly ranked management and sustainability journals. We used major databases, such as Business Source Complete, Web of Science, and Science Direct, and looked at the period between 1972 and 2013. Based on a broad set of keywords we identified 274 potential studies, which we narrowed through an iterative process to 32 studies. Analysis and review of the 32 studies focused on several characteristics, such as applied constructs, main arguments, research settings, and findings. Overall, we reveal in our systematic literature review that this research stream has made some progress. However, we also find this research stream to be characterized by three major shortcomings: a low degree of novelty, insufficient investment in theory building, and a lack of research design and measurement options. To address these shortcomings, we suggest moderators and mediators for future research. We also argue for a stronger emphasis on the strategic perspective of corporate sustainability and a greater integration of the corporate sustainability–corporate financial performance relationship into the strategic management literature.

This research article contributes to the general management and sustainability literature in multiple ways. It provides a more systematic and critical understanding of contingencies, in terms of moderators and mediators, in the corporate sustainability–corporate financial performance relationship. The detailed overview summarizes the recent status quo and identifies future directions in this academic discipline. For the PhD dissertation, this literature review is of major importance. It provides a detailed summary of the business case of corporate sustainability, with a specific focus on the indirect relationship between corporate sustainability and corporate financial performance. Through its critical standpoint, this literature review sets the foundation for the following two research articles with the intention to facilitate moving beyond the business case thinking.

Research article 2 – “Corporate sustainability and the effect on organizational capabilities: A cognitive perspective” by Grewatsch & Kleindienst, 2016 (Conditionally accepted at Long Range Planning)

Previous research on the business case of corporate sustainability has primarily focused on measuring corporate sustainability through activities and initiatives of firms. Researchers have most commonly used the KLD database to gather data about a firm’s corporate sustainability performance, because of convenience and accessibility. For similar reasons a firm’s financial performance has generally been the dependent variable for assessing the benefits of corporate sustainability. Therefore, the lack of concreteness of the independent and the dependent variable in this relationship remained unquestioned. In this research article, we consider alternative measurements for assessing the benefits of corporate sustainability. We focus on organizational capabilities, using the theoretical background of organizational cognitive frames. Guided by the research question “How does corporate sustainability encourage the development of organizational capabilities?”, we suggest evaluating corporate sustainability in terms of its relative importance in a firm’s organizational cognitive frame. Through this cognitive perspective, it becomes less appropriate to consider financial performance as the dependent variable. The development of organizational capabilities in a firm might be more valuable and insightful. Organizational capabilities are a necessary pre-condition for achieving a competitive advantage and superior financial performance.

To assess the perceived relative importance in an organizational cognitive frame, we drew on data from our survey among 301 manufacturing firms in Denmark. As top managers are the ones who mostly influence and shape a firm's prevailing organizational cognitive frame, we approached top management representatives in each firm. We used their answers to identify to what extent corporate sustainability is perceived as important and integrated in a firm and throughout its strategic decision-making processes. By applying a partial least squares (PLS) structural equation model, we show the effects of corporate sustainability, in terms of its relative importance, on four different organizational capabilities. To develop a more fine-grained understanding of our findings and underlying mechanisms, we additionally conducted eight interviews with firms from the survey sample.

This research article contributes in multiple ways to the management and sustainability literature and the overall aim of the PhD project. R. The article provides alternative measurements for assessing the benefits of corporate sustainability. It departs from the usually applied theories by adopting a cognitive lens. Finally, it presents unique data from Denmark. In this way, we seek to address the disciplinary shortcomings identified in our systematic literature review (research article 1).

Research article 3 – “Between business case and paradoxical frame: Different management approach but same financial implications” by Grewatsch, 2016 (Working paper)

To overcome the predominance of the business case thinking in corporate sustainability and the shortcomings of its underlying instrumental logic (Gao & Bansal, 2013), researchers have recently sought to follow more integrative cognitive perspectives on corporate sustainability. Most prevalent in this discussion is the suggestion of the paradoxical organizational cognitive frame, as the corresponding counterpart to the business case organizational cognitive frame (Hahn, Preuss, Pinkse, & Figge, 2014; Van der Byl & Slawinski, 2015). The main difference between the two cognitive frames lies in how a firm acknowledges and manages inherent tensions in corporate sustainability. Little is known about whether these two organizational cognitive frames exist in practice, and if so, how decision-makers then deal with tensions between economic, environmental, and social concerns. This research article addresses this gap, guided by the research questions “*How do top managers address and make sense of tensions among economic, environmental, and social issues under the business case and the paradoxical frame? What implications do these managerial differences have on financial performance?*”. I investigate the differences in managerial practices and financial performance between the business case and the paradoxical organizational cognitive frame. The research article supports viable alternative perspectives on business case thinking and reveals how they are experienced and managed in practice.

In this research article, I study large-scale evidences from practices on different managerial aspects between the business case and the paradoxical organizational cognitive frame. Based on the survey of 301 manufacturing firms in Denmark, I classified the responses from 119 into two distinct clusters of firms, representing the business case and the paradoxical organizational cognitive frame. In these two clusters, I applied tests of differences to compare differences in managerial practices and the financial performance. The results showed significant differences between the prioritization of issues, organizational orientation, and strategic intentions. I also compared the financial performances of both organizational cognitive frames, but without significant results. The applied organizational cognitive frame had no effect on the financial performance.

For the management and sustainability literature, this research article provides a more fine-grained picture of organizational cognitive frames in corporate sustainability and a better understanding of how they are realized in practice. Of particular importance are the similar findings for several financial performance indicators, which seem to make both organizational cognitive frames equally profitable. This result challenges the economically-driven business case organizational cognitive frame. For the PhD dissertation, this research article contributes by empirically exploring a viable alternative view on the business case of corporate sustainability. In particular, the cognitive perspective on corporate sustainability offers a more sophisticated picture of the dependent variable in this relationship; moving beyond past considerations of only firm sustainability activities and initiatives.

The following Table 1 presents a short overview and summary of the three research articles.

**** Insert Table 1 about here****

CONCLUSION

Strategic perspectives on corporate sustainability traditionally address the business case of corporate sustainability. Business case thinking has become the primary way to find financial bottom line-related arguments and other beneficial reasons for firms to engage in corporate sustainability initiatives and activities. Despite the long tradition of this academic discipline, findings and theoretical arguments remain inconclusive and fragmented. These gaps are due to lack of concreteness in theoretical methodological approaches, which leads to critique of the relevance of the business case of corporate sustainability among researchers and practitioners. In this dissertation, I suggest conceptual and empirical alternative views on the business case in corporate sustainability to move this academic discipline forward. These alternatives range from a more contingent perspective on the relationship between corporate sustainability and corporate financial performance, to a cognitive perspective that considers different organizational cognitive frames regarding corporate sustainability.

With this dissertation, I make several theoretical and empirical contributions to the field. (1) I provide a critical overview of the status-quo of research on the business case in corporate sustainability and relevant moderating and mediating factors. (2) I foster cognitive thinking in sustainability research by looking at corporate sustainability through the cognitive lens rather than through the performance lens focused on actions, principles, procedures, and observable outcomes (Wood, 1991). (3) I provide an alternative measure for the benefits of corporate sustainability on firms by looking at organizational capabilities, in addition to financial performance. (4) I examine an underexplored research setting by collecting my own primary data in Denmark.

Table 1: Overview and summary of the three research articles

	Aspect of the business case	Research question	Research approach	Main argument	Findings
Paper 1: Moderators and mediators in the CSP-CFP relationship	Main relationship	When does it pay to be good?	<p><i>Design</i> Descriptive Inductive Theory elaboration</p> <p><i>Method</i> Systematic literature review</p> <p><i>Data</i> 32 research articles</p>	More research needs to be done to investigate underlying factors in the direct CS-CFP relationship	Missing investments in: i) degree of novelty, ii) theory building iii) research design and measurement options
Paper 2: The effect of CS on capability development	Dependent and independent variable	How does corporate sustainability encourage the development of organizational capabilities?	<p><i>Design</i> Explanatory Deductive Theory testing</p> <p><i>Method</i> Quantitative PLS-SEM Qualitative Interviews</p> <p><i>Data</i> Survey data Sample 301 firms Interviews 8 firms</p>	If the relative importance of CS in a firm's prevailing organizational cognitive frame is high, then CS issues are conceptualized along an opportunity/threat dichotomy, which encourages the development of organizational capabilities	Positive effect on: i) collaboration ii) market sensing iii) organizational learning Marginal negative effect on: iv) strategic planning
Paper 3: Cognitive frames of CS	Independent variable	How do top managers address and make sense of tensions among economic, environmental, and social issues under the business case and the paradoxical frame? What implications do these managerial differences have on financial performance?	<p><i>Design</i> Explorative Deductive Theory elaboration</p> <p><i>Method</i> Quantitative Cluster analysis, t-test</p> <p><i>Data</i> Survey data Sample 301 firms</p>	Different cognitive frames reflect different managerial approaches towards tensions in CS, which might result in differences in financial performance	Significant managerial differences between cognitive frames in: i) Issue prioritization ii) Organizational orientation iii) Strategic intention No significant differences in: Financial performance

Index: CS Corporate Sustainability; CSP Corporate Sustainability Performance; CFP Corporate Financial

References

- Aguinis, H., & Glavas, A. 2012. What we know and don't know about corporate social responsibility a review and research agenda. *Journal of Management*, 38(4): 932-968.
- Aupperle, K. E., Carroll, A. B., & Hatfield, J. D. 1985. An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal*, 28(2): 446-463.
- Bansal, P. 2005. Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26(3): 197-218.
- Bansal, P., & DesJardine, M. R. 2014. Business sustainability: It is about time. *Strategic Organization*, 12(1): 70-78.
- Barnett, M. L. 2007. Stakeholder influence capacity and the variability of financial returns to corporate social responsibility. *Academy of Management Review*, 32(3): 794-816.
- Baruch, Y., & Holtom, B. C. 2008. Survey response rate levels and trends in organizational research. *Human Relations*, 61(8): 1139-1160.
- Bowen, J., & Ford, R. C. 2002. Managing service organizations: does having a "thing" make a difference? *Journal of Management*, 28(3): 447-469.
- Carroll, A. B., & Shabana, K. M. 2010. The business case for corporate social responsibility: A review of concepts, research and practice. *International Journal of Management Reviews*, 12(1): 85-105.
- Cochran, P. L., & Wood, R. A. 1984. Corporate social-responsibility and financial performance. *Academy of Management Journal*, 27(1): 42-56.
- Cox III, E. P. 1980. The optimal number of response alternatives for a scale: A review. *Journal of Marketing Research*: 407-422.
- Dyllick, T., & Hockerts, K. 2002. Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, 11(2): 130-141.
- Ehrenfeld, J., & Hoffman, A. 2013. *Flourishing: A frank conversation about sustainability*: Stanford University Press.
- Friedman, M. 1970 (reprint from 1962). The social responsibility of business is to increase its profits. *New York Times Magazine*, September 13: 122-126.
- Gao, J., & Bansal, P. 2013. Instrumental and integrative logics in business sustainability. *Journal of Business Ethics*, 112(2): 241-255.
- Hahn, T., Preuss, L., Pinkse, J., & Figge, F. 2014. Cognitive frames in corporate sustainability: Managerial sensemaking with paradoxical and business case frames. *Academy of Management Review*: amr. 2012.0341.
- Hinkin, T. R. 1995. A review of scale development practices in the study of organizations. *Journal of Management*, 21(5): 967-988.
- Kurucz, E., Colbert, B., & Wheeler, D. 2009. The business case for corporate social responsibility. In A. Crane, A. McWilliams, D. Matten, J. Moon, & D. S. Siegel (Eds.), *The Oxford Handbook of Corporate Social Responsibility*, 2nd ed.: 83-112: Oxford University Press.
- Linnenluecke, M. K., & Griffiths, A. 2013. Firms and sustainability: Mapping the intellectual origins and structure of the corporate sustainability field. *Global Environmental Change*, 23(1): 382-391.
- Margolis, J. D., & Walsh, J. P. 2003. Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quarterly*, 48(2): 268-305.
- Montiel, I. 2008. Corporate social responsibility and corporate sustainability separate pasts, common futures. *Organization & Environment*, 21(3): 245-269.

- Moskowitz, M. 1972. Choosing socially responsible stocks. *Business and Society Review*, 1(1): 71-75.
- Orlitzky, M., Schmidt, F. L., & Rynes, S. L. 2003. Corporate social and financial performance: A meta-analysis. *Organization Studies*, 24(3): 403-441.
- Schaltegger, S., & Wagner, M. 2006. Managing and measuring the business case for sustainability: Capturing the relationship between sustainability performance, business competitiveness and economic performance, *Managing the Business Case for Sustainability: The Integration of Social, Environmental and Economic Performance*, Vol. 1: 1-28: Greenleaf Publishing in association with GSE Research.
- Strand, R., Freeman, R. E., & Hockerts, K. 2015. Corporate social responsibility and sustainability in scandinavia: An overview. *Journal of Business Ethics*, 127(1): 1-15.
- Ullmann, A. A. 1985. Data in search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of US firms. *Academy of Management Review*, 10(3): 540-557.
- UNEP. 2015. Evaluating national policies on corporate sustainability reporting.
- Van der Byl, C. A., & Slawinski, N. 2015. Embracing tensions in corporate sustainability A review of research from win-wins and trade-offs to paradoxes and beyond. *Organization & Environment*, 28(1): 54-79.
- Van Marrewijk, M. 2003. Concepts and definitions of CSR and corporate sustainability: Between agency and communion. *Journal of Business Ethics*, 44(2-3): 95-105.
- Vogel, D. 2006. *The market for virtue - The potential and limits of corporate social responsibility*. Washington, DC: Brookings.
- Wood, D. J. 1991. Social-issues in management- Theory and research in corporate social responsibility. *Journal of Management*, 17(2): 383-406.
- World Commission on Environment and Development (WCED). 1987. *Our common future*. New York: Oxford University Press.

SECOND AWARD

The Association between Earnings Management and Executive Compensation – Evidence from the FTSE350 Index of Companies

Tahir Muhammad
Kingston University

Abstract

This study investigates the association between executive compensation and earnings management by using discretionary accruals and real activities management. Firstly, it explores whether earnings are manipulated in self-interest to reach pre-specified bonus levels and increase compensation. Secondly, it examines the extent of manipulation when bonuses are deferred or when long-term compensation is offered. Finally, the effect of non-financial performance measures in assessing performance is examined, when they are used alongside financial performance measures, and also when given equal or more weight.

Keywords: earnings management, executive compensation, performance measures, discretionary accruals, real activities

Background of the Research

There has been a growing concern over the last decade that managers have benefited from excessive compensation and the issue has received a great deal of comment from both shareholders and the members of the general public. Criticism has mainly focused on the level of bonuses awarded to executives. These have often been regarded as unjustified, particularly in underperforming companies, some of which are partly publicly owned. Shareholders have voiced their concern at annual general meetings over the level of executive compensation (hereafter, EC) and have attempted to vote down proposals which they consider to be inappropriate in relation to the performance of the company. In January 2016, more than a third of the shareholders of Aberdeen Asset Management claimed that payment of £4.3m to the CEO was excessive and unjustified (Hosking and Cameron, 2016). The media has also dealt at length with the subject, for example bonuses awarded to executives of WPP and RBS (Garside and Kollwe, 2014). Many employees in the UK feel demotivated when on average they are paid £27k per annum whilst the CEOs receive on average £5m (Keate, 2015). There is considerable evidence that executives manipulate earnings to increase their personal compensation. Although there have been attempts to control earnings management (hereafter, EM) through increased regulation, EM is still taking place and further measures are due.

Earlier studies on CEO pay which focus on CEO bonus contracts in the US (e.g. Healy, 1985; Holthausen et al. 1995) suggest that executives adjust accruals to achieve their bonus targets and following the introduction of the Cadbury Report (1992) in the UK, it was hoped that the stricter regulation would reduce the incidence of EM. Peasnell et al. (2005) find that less EM has taken place since Cadbury's recommendation that there should be a higher proportion of outside directors on company boards. In addition, Athanasakou et al. (2011) find that the adjustment of discretionary accruals (hereafter, DAC) is not carried out by UK companies' executives to meet analysts' forecasts. Although these studies report a lower incidence of EM in the UK post-Cadbury, it remains to be seen whether later regulatory requirements on executive pay disclosure are more successful in restricting CEOs' use of DAC and real accounts manipulation (hereafter, RAM) to achieve their bonus levels.

Research Questions and Approach

The three research questions explore the motives of managers engaging in EM and the degree of manipulation in certain circumstances:

Do executives manipulate earnings around pre-specified bonus thresholds?

Do managers engage in more or less earnings manipulation when their bonuses are deferred and is there any difference when long-term compensation is offered?

Is there less manipulation by executives when non-financial measure of performance are introduced in bonus contracts alongside financial measures, giving equal or more weight?

The relationship between EM and EC is examined using unbalanced panel data in a longitudinal design with a deductive approach. A random effects estimation method is chosen on the basis of Hausman test results. The sample data is selected from the FTSE350 index for the 10 years 2005-2014 and the final number of non-financial companies is 209, with 1,955 firm-year observations.

The association between EC and EM is investigated by using both DAC and RAM. For the purpose of this study the Kothari et al. (2005) model is used to estimate proxies for discretionary accruals. Proxies for abnormal sales, abnormal discretionary expenses and abnormal overproduction are estimated using the Roychowdury (2006) models. The ordinary least squares method is used to estimate the residuals by industry for each year of the sample period covered. The EC data is hand collected and the high level of detail obtained regarding CEO bonuses, such as minimum, target and maximum levels, provides useful information not previously used in relation to UK companies. The data relating to deferred bonus and long-term compensation is also hand collected. Financial performance measure (hereafter, FPM) and nonfinancial performance measure (hereafter, NFPM) data is also hand collected with particular attention given to the degree of weighting used. This data enables the present study to investigate the association between EM and EC in a unique manner not previously utilised in relation to UK companies.

Three groups of hypotheses

The hypotheses are grouped in three main classifications: the first group concerns the relationship between short-term incentives and EM, the second group examines long-term

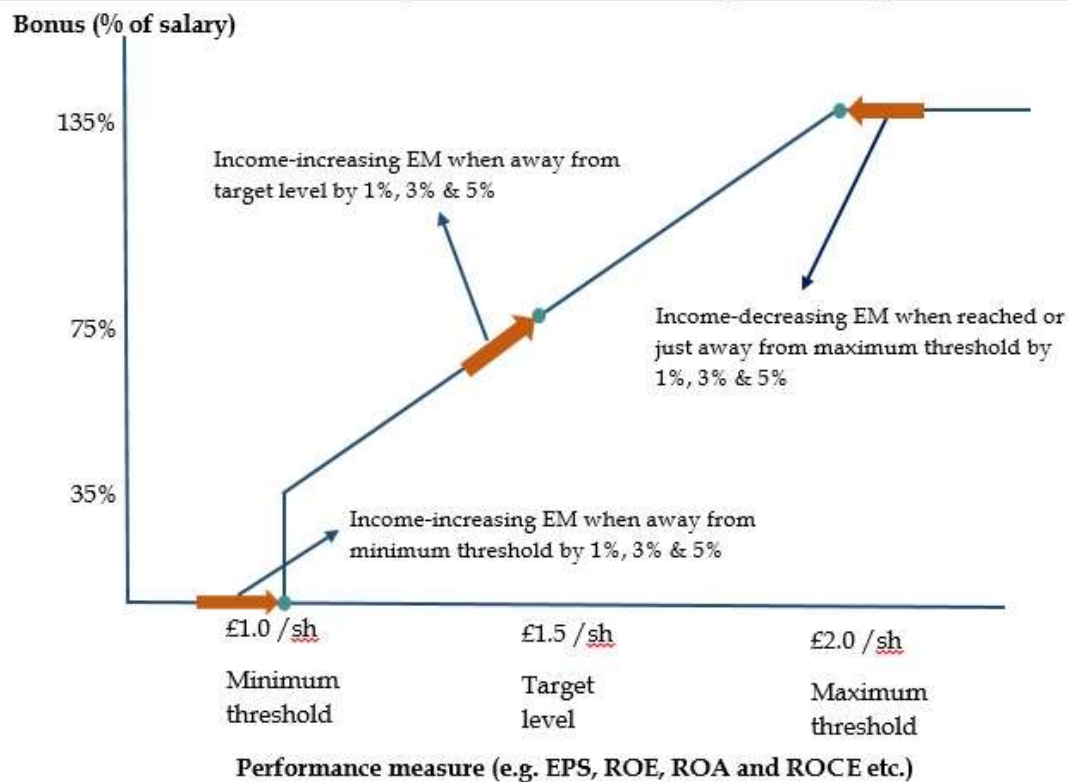
incentives and EM and the third group tests the extent of EM when alternative performance measures are used.

Group 1: Short-term Incentives and Earnings Management

There are three commonly used thresholds for determining bonuses: minimum threshold (hereafter, MINTHR), target (hereafter, TRGBON) and maximum threshold (hereafter, MAXBON). These are based on company performance assessed by accounting measures, earnings per share (EPS), return on equity (ROE), return on assets (ROA), return on capital employed (ROCE) and cash flow from operations (CF) or market-based measures (e.g. stock returns). The performance levels adopted in any particular circumstance are often considered to be commercially confidential and are not then publicly disclosed (Healy, 1985; Holthausen et al. 1995). For this reason it is difficult to obtain actual data and proxies have to be used.

Chart 1 shows the relationship between the bonus payments (as a percentage of salary) and the performance measures. The chart indicates percentage bonuses at the three aforementioned levels, which represent averages from data collected for this study. It is hypothesised that income-increasing EM is adopted as MINTHR and TRGBON are approached and income-decreasing EM is adopted as MAXBON is approached. I use observations with deviations within 1%, 3% and 5% from the earnings thresholds. As an example, in the 2008 annual report of Royal Mail, a MINTHR of £189,000 is shown. The actual bonus paid in that year was £190,000. Therefore the actual deviation is calculated as 0.05% $\{(\text{actual bonus} - \text{MINTHR}) / \text{actual bonus}\} \{(\text{£190,000} - \text{£189,000}) / \text{£190,000} = 0.05\}$. This observation therefore represents a company that has paid a bonus to its CEO within 1%. The same exercise is repeated for deviations between 0% and 3% and between 0% and 5%. Although this does not directly account for observations that would have pre-managed earnings below the MINTHR, it does indicate which observations were close to the MINTHR after manipulation. It is considered that this new approach extends and complements the evidence of previous researchers.

Chart 1: Framework of anticipated income-increasing/decreasing EM



Hypothesis 1 proposes that when company earnings are below but close to managers' pre-specified minimum bonus threshold, executives tend to adopt income-increasing earnings management.

Empirical research on the relationship between earnings management and MINTHR is mixed. Some studies find evidence of income-decreasing manipulation if the MINTHR cannot be reached (Healy, 1985 and Murphy and Jensen, 2011). However, Holthausen et al. (1995) find no evidence to support the view that executives manipulate earnings downwards when earnings are below the MINTHR. Gaver et al. (1995) find evidence of income-smoothing which is inconsistent with the bonus maximization hypothesis in Healy (1985).

The present study finds a positive association between abnormal DAC and the approach of MINTHR as managers attempt to boost earnings at all percentage levels. The coefficient is a positive figure of 0.035 with 0.07 p-value (at 1% above MINTHR), 0.026 with p-value 0.07 (at 3%) and 0.015 with p-value 0.06 (at 5%).

The results show that there is a positive association between abnormal sales (hereafter, SALES) and the approach of MINTHR at all three percentages. This is indicated by the coefficient of 0.231 with 0.08 p-value (at 1%), 0.116 with p-value 0.08 (at 3%) and 0.056 with p-value 0.08 (at 5%). The findings of this study show that, as demonstrated by Roychowdhury (2006) and Gunny (2010), managers engage in sales manipulation, by cutting prices, giving discounts or more lenient credit terms, in an attempt to increase earnings so that bonus thresholds are met. There is a danger however that by doing this they will compromise the following year's earnings and they will then have to consider greater manipulation. The analysis demonstrates a strong association between abnormal discretionary expenses (hereafter, DISEXP) and bonus entitlement (coefficient -1.820 with p-value 0.06 at 1% and coefficient -1.029 with p-value 0.07 at 3%). Roychowdhury (2006) explains that although

discretionary expenditures are usually charged in the year in which they are incurred, they can be pushed forward in time with the effect of increasing current earnings. Advertising is also an area where adjustment can be made to either increase or decrease earnings and Holthausen et al. (1995) find that advertising expenditure is lowest when earnings are below the MINTHR, whereas it is at its highest when the upper limit has been reached. Both methods of RAM support hypothesis 1.

Hypothesis 2 proposes that when company earnings are below but close to managers' pre-specified bonus target, executives tend to adopt income-increasing earnings management.

As anticipated, the findings of this study support H2 that there is a positive association between DAC and TRGBON. The coefficient of TRGBON is 0.226 with p-value 0.02 (at 1%), 0.178 with p-value 0.08 (at 3%) and 0.104 with p-value 0.07 (at 5%). These findings are consistent with Healy (1985) who suggests that managers have an incentive to adopt income-increasing accruals when earnings before DAC fall between lower and upper bonus bounds. However, Murphy and Jensen (2011) suggest that managers may prefer to reduce earnings in the current year once the target has been reached as, although this may limit further bonus up to the maximum cap, it may prevent the target being raised in the following year. Kim and Yang (2014) stress the importance of including a performance target in the bonus plan. They claim that a target has a significant psychological effect both on personal performance and perception by colleagues. The present study clearly demonstrates that upward EM using DAC is exercised by CEOs.

It is found that there is a positive association between SALES and TRGBON. The coefficients is 0.017 with p-value 0.03 (at 1%), 0.006 with p-value 0.07 (at 3%) and 0.003 with p-value 0.08 (at 5%). This provides a strong evidence that EM by adjustment of sales is commonly practised.

It is found that DISEXP are significantly related to TRGBON (coefficient -0.230 with p-value 0.05 at 1% and -0.283 with p-value 0.06 at 3%). Managers may look for any means to achieve the target and adjustment of DISEXP is widely used. Holthausen et al. (1995) state that managers adjust DISEXP such as postponing R&D and advertising to reach bonus levels. Graham et al. (2005) report that to meet earnings targets 80% of respondents would decrease DISEXP and 55% would delay a new project.

Hypothesis 3 proposes that when company earnings are above managers' pre-specified maximum bonus level, executives tend to adopt income-decreasing earnings manipulation.

The results of the present study are in line with the proposition of hypothesis 3 and reveal a strong association between DAC and the approach of executives' MAXBON (coefficient -0.034 with p-value 0.01 at 1% and -0.021 with p-value 0.05 at 3%). These findings are consistent with other researchers, that managers undertake income-decreasing EM if income before DAC is beyond the limit of MAXBON (Healy, 1985 and Hothausen et al. 1995). Additionally, managers have an incentive to reduce their efforts when earnings reach their MAXBON cap so that the subsequent period will be ameliorated (Healy, 1985 and Murphy and Jensen, 2011).

A strong relationship is revealed between SALES and the approach of MAXBON (coefficient -0.052 with p-value 0.03 at 1% and -0.077 with p-value 0.05 at 3%). Sales are manipulated to reduce earnings by mechanisms such as increasing prices, reducing discounts and giving more

disadvantageous credit terms. This is opposite to the methods used to increase earnings as outlined by Roychowdhury (2006) and Gunny (2010).

Group 2: Long-term Incentives and Earnings Management

Although an executive may prefer a short-term reward for his performance, usually through an annual bonus, some companies take the view that a sudden burst to increase the current year's earnings is at the expense of future earnings. Short-termism may encourage an executive to make a quick kill, maximising his bonus and moving on to new pastures. Consequently, companies may prefer to offer long-term incentives over a period of time so that they retain the executive's services. There are various types of long-term incentives, ranging from a simple deferred bonus (hereafter, DEFBON) to complicated investment option plans.

Hypothesis 4 proposes that when the amount of deferred annual bonus is equal to or greater than the current amount paid, executives tend to engage in less income-increasing earnings manipulation.

The findings indicate a negative association between DAC and DEFBON (coefficient -0.019 and p-value 0.04). This suggests that firms with higher DEFBON engage less in income-increasing manipulation than those with less DEFBON.

The study finds a negative relationship between abnormal overproduction (hereafter, OVPROD) and DEFBON (coefficient -0.076 and p-value 0.06), suggesting that firms with higher DEFBON engage less in OVPROD. This may be because they are already satisfied with the amount of DEFBON and OVPROD would involve costs such as storage, tying up of capital resources and possible stock deterioration.

Hypothesis 5 proposes that when the proportion of long-term bonus to total remuneration is equal to or greater than the proportion of annual bonus to the same total, managers tend to engage in less income-increasing earnings manipulation.

The findings show that companies with higher long-term bonus (hereafter, LTBON) engage in less income-increasing manipulation than those with lower LTBON (coefficient -0.018 and p-value 0.04). This is contrary to the findings of other researchers who have used mainly stock options in their studies – e.g. Bartov and Mohanram, 2004 and Burns and Kedia, 2007). The possible explanation is that, in addition to share options, the present study also includes company investment plans, long-term incentive plans and save-as-you-earn schemes. It also examines only a position where cash bonus is in a particular relationship to LTBON.

The results show that there is a significant negative association between SALES and LTBON (coefficient -0.036 and p-value 0.01). There is also an association between DISEXP and LTBON: coefficient 0.089 and p-value 0.06. A negative significant association between OVPROD and LTBON is found where LTBON is equal to or greater than cash bonus (coefficient -0.061 and p-value 0.03).

Group 3: Performance Measures and Earnings Management

The degree of EM is also assessed by examining both FPMs and NFPMs used in bonus contracts. When determining EC, FPMs are typically based on either total revenue or EPS.

However, NFPMs may be used, either alone or in conjunction with FPMs (Said et al. 2003 and Ibrahim and Lloyd, 2011).

Hypothesis 6 proposes that there will be less income-increasing earnings manipulation by executives when performance is assessed by both financial and non-financial measures.

The present study finds a significant negative association between abnormal DAC and NFPM (coefficient -0.819 and p-value 0.00), meaning that executives engage in less income-increasing EM when these two performance measures are in place. Ibrahim and Lloyd (2011) find that when FPM are used alone to determine cash bonuses EM may be encouraged and argue that NFPM should be used, either alone or together with FPM.

The association between DISEXP and FPMs and NFPMs (coefficient 0.007 and p-value 0.03) indicates that when firms employ both FPM and NFPM together, DISEXP are not manipulated extensively to increase income. This may be because NFPMs are more closely related to long-term performance.

Hypothesis 7 proposes that there will be less income-increasing earnings manipulation by executives when performance is assessed by giving equal or more weights to non-financial performance measures than financial performance measures.

It is found that there is a significant negative association between High_NFPM and abnormal DAC (coefficient -0.001 and p-value 0.03). This is consistent with other researchers, who find that managers whose compensation is based on NFPM will pay less attention to short-term objectives and as a result will engage in less EM (Banker et al. 2000 and Ibrahim and Lloyd, 2011).

The results indicate that there is a significant negative relation between High_NFPM and SALES (coefficient -0.002 and p-value 0.09). A significant positive association is found with regard to DISEXP and High_NFPM (coefficient 0.001 and p-value 0.08). There is a significant negative association between abnormal OVPROD and High_NFPM (coefficient -0.052 and p-value 0.08).

The findings confirm the proposition of H7 that there is a lower degree of EM when NFPM are introduced alongside FPM in an equal or greater proportion when assessing executives' performance for bonus purposes.

This study controls for corporate governance variables particularly related to EC. Although there has been increased regulation in an attempt to diminish manipulation of company results, the findings show that stronger corporate governance rules have a minimal effect in controlling EM.

Summary of the Main Findings

The main findings are summarised in table 1. Seven hypotheses are proposed to investigate the association between earnings management and executive compensation. The overall findings suggest that executives manipulate earnings upwards by adjusting accruals and real activities to achieve their bonuses. In certain circumstances they may manipulate downwards. Results also suggest that the existence of deferred and long-term bonuses have significant effect in constraining earnings management. It is found that when CEO's performance is assessed by NFPM alongside FPM, less earnings management take place. Evidence suggests that NFPM

have more significance on reducing EM when they are given equal or more weight compared with FPM.

Table 1 – Summary of the findings of the hypotheses

No.	Hypothesis	Dependent Variable	Independent Variables	Methodology	Results
H1	Income-increasing EM takes place around MINTHR.	DAC (1%)	MINTHR, INSTOWN, RMUCIND, BSIZE, BIND, DUALITY, AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY	Univariate and multivariate analysis	Supported at p < 0.10
		DAC (3%)			Supported at p < 0.10
		DAC (5%)			Supported at p < 0.10
		SALES (1%)			Supported at p < 0.10
		SALES (3%)			Supported at p < 0.10
		SALES (5%)			Supported at p < 0.10
		DISEXP (1%)			Supported at p < 0.10
		DISEXP (3%)			Supported at p < 0.10
		DISEXP (5%)			Not supported
		OVPROD (1%)			Not supported
OVPROD (3%)	Not supported				
OVPROD (5%)	Not supported				
H2	Income-increasing EM occurs around TRGBON.	DAC (1%)	TRGBON, INSTOWN, RMUCIND, BSIZE, BIND, DUALITY, AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY	Univariate and multivariate analysis	Supported at p < 0.05
		DAC (3%)			Supported at p < 0.10
		DAC (5%)			Supported at p < 0.10
		SALES (1%)			Supported at p < 0.05
		SALES (3%)			Supported at p < 0.10
		SALES (5%)			Supported at p < 0.10
		DISEXP (1%)			Supported at p < 0.05
		DISEXP (3%)			Supported at p < 0.10
		DISEXP (5%)			Not supported
		OVPROD (1%)			Not supported
OVPROD (3%)	Not supported				
OVPROD (5%)	Not supported				
H3	Income-decreasing EM is used around MAXBON.	DAC (1%)	MAXGBON, INSTOWN, RMUCIND, BSIZE, BIND, DUALITY, AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY	Univariate and multivariate analysis	Supported at p < 0.01
		DAC (3%)			Supported at p < 0.05
		DAC (5%)			Not supported
		SALES (1%)			Supported at p < 0.05
		SALES (3%)			Supported at p < 0.05
		SALES (5%)			Not supported
		DISEXP (1%)			Not supported
		DISEXP (3%)			Not supported
		DISEXP (5%)			Not supported
		OVPROD (1%)			Not supported
OVPROD (3%)	Not supported				
OVPROD (5%)	Not supported				
H4	Low income-increasing EM occurs when DEFBON is equal to or greater than annual bonus.	DAC SALES DISEXP	DEFBON, INSTOWN, RMUCIND, BSIZE, BIND, DUALITY, AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY	Univariate and multivariate analysis	Supported at p < 0.05
		OVPROD			Not supported
H5	Less income-increasing EM takes places the proportion of LT BON to the total remuneration is equal	DAC	LTBON, INSTOWN, RMUCIND, BSIZE, BIND, DUALITY,	Univariate and multivariate analysis	Supported at p < 0.05
		SALES DISEXP			Supported at p < 0.01
		OVPROD			Supported at p < 0.10
					Supported at p < 0.05

	to or greater than the proportion of annual bonus.		AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY		
H6	Less income-increasing EM occurs when performance is assessed by both FPM and NFPM.	DAC SALES DISEXP	F&NFPM, INSTOWN, RMUCIND, BSIZE, BIND, DUALITY, AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY	Univariate and multivariate analysis	Supported at $p < 0.01$ Not supported Supported at $p < 0.05$
		OVPROD	AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY		Not supported
H7	Less income-increasing EM occurs when performance is assessed by giving equal or more weight to NFPM.	DAC SALES DISEXP	High_NFPM, INSTOWN, RMUCIND, BSIZE, BIND, DUALITY, AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY	Univariate and multivariate analysis	Supported at $p < 0.05$ Supported at $p < 0.10$ Supported at $p < 0.10$
		OVPROD	AUDCIND, LEV, SIZE, GROWTH, CFO, ROA, CRISIS, INDUSTRY		Supported at $p < 0.10$

All variables are defined in appendix I

Main Contributions of the Research

There are several contributions from features in this study which have not, to the best of my knowledge, been researched before. Firstly, although DAC is recognised as a major EM technique, it is easily detectable. RAM is more difficult to identify and although several studies have been made in the US using DAC and RAM, to the best of my knowledge there has been no research in the UK relating RAM to EC. My study addresses this aspect and gives a wider understanding of the issue.

Secondly, this study extends research relating to EM and EC in the UK by investigating the extent of EM at percentages close to the minimum, target and maximum bonus levels. Previous research, mainly restricted to the US (e.g. Healy, 1985; Holthausen et al. 1995 and Murphy and Jensen, 2011), did not address this aspect of percentage of closeness.

Thirdly, the effectiveness of deferred bonus on restricting EM has often been overlooked by previous researchers, perhaps because the relevant data was not available as it was not a requirement of the regulatory authorities at that time. There is now an opportunity to provide this important additional information in the present study.

Fourthly, with regard to long-term compensation, researchers, Bartov and Mohanram (2004) and Burns and Kedia (2007) have mainly concentrated on the relationship between EM and stock based compensation. The present study considers all kinds of long-term compensation, such as share options, save-as-you-earn and other long-term incentives (LTIP).

Fifthly, earlier research mainly focuses on FPM; for example, Zakaria (2012) and Curtis and Patrick (2015) and NFPM have received little attention. There is now a requirement under the Directors' Remuneration Report Regulations (2002) for disclosure of performance measures and the degree of weighting. This additional information is used in the present study and I

believe this contributes to the extant literature in a way which has not been explored before in the UK.

Finally, another important difference is that corporate governance-related control variables (see appendix I) which are closely linked with EC are used to examine their effect on EM. These have been largely ignored by previous researchers; for example, Jones and Wu (2010) and Ibrahim and Lloyd (2011). It is considered that the inclusion of these variables in the present models adds significant importance.

Practical Implications and Recommendations for Regulatory Changes

Despite continuous improvements in the UK Corporate Governance there are still some weaknesses that need to be addressed in order to allay stakeholders concerns regarding CEOs' pay and bonuses.

Regulatory bodies warned of the danger of giving high levels of pay without accompanying increase in corporate or individual performance and recommended that bonuses linked to results should be agreed by the remuneration committee, who should also decide whether payment should be immediate or deferred. The period of deferment and the percentage are not specified, although in practice deferment has been between 3 and 7 years. There is no requirement that deferment should take place and the present study of FTSE350 2014 companies shows that only 39% deferred their CEOs bonuses. It is found that when the amount of deferred bonus is equal to or greater than immediate annual bonus less income-increasing EM takes place. It is recommended therefore that regulators should require that some degree of bonus deferment should always take place, the period being left to the remuneration committee, but perhaps longer rather than shorter.

The findings of this research reveal that when the proportion of long-term bonus to total compensation is equal to or greater than the proportion of annual bonus to the same amount, less income-increasing EM takes place by adopting DAC and RAM. This implies that remuneration committees should determine this ratio and apply it advantageously to discourage the incidence of EM.

This study also finds that when both FPM and NFPM are used together there is less incidence of EM. The degree of weighting given to each is also important and it is found that when the weighting of NFPM is equal to or greater than that given to FPM less income-increasing EM occurs. Whilst there is no obligation to have any NFPM, it is recommended that at least one is included in the assessment of executive performance and this should be made mandatory.

Prior research expect a strong relationship between EM and governance variables. However, the present study shows that corporate governance has little effect in reducing EM. This implies that the present regulations may need to be strengthened.

When collecting executive remuneration data, it was noted that remuneration reports vary considerably in length and detail. Some are very informative whilst others are inadequate,

giving only scant information. There is a necessity for standardisation of reports so that all information is presented in the same way.

Limitations of the Research

All research projects have limitations due to such factors as availability of suitable data, time constraints and funding restrictions and this study also has several which are outlined below.

This study is relative to UK companies only and is restricted to larger firms. It cannot be generalised and utilised in research in other circumstances, for example overseas companies where corporate governance rules are different. Smaller firms are not required under the UK Corporate Governance Code (2010) to comply with all the regulations so that some of the information required for this study is not available.

Another limitation is that only compensation characteristics of CEOs have been examined in the present research and it would be informative if other executive directors, such as CFO had been included. It is expected, however, that results would be similar for all top executives.

Further Research

The present study is comprehensive but there is always room for improvement and further research. In particular, the inclusion of executive directors other than the CEO may be an improvement. Many other executives have an interest in increasing their compensation and can do so by using EM. This is particularly true of the CFO.

With regard to long-term incentive plans (LTIP), only the effect of achieved bonus on EM has been studied and it may be beneficial to also include the achievement of target levels.

This study examines the influence of both FPM and NFPM on EM and does so by combining all the weights of the individual performance measures to arrive at one overall value. It may be useful to consider whether the separate examination of each individual performance measure is more informative.

A quantitative approach has been followed in the present study and the addition of a qualitative technique may confirm the results of the quantitative investigation. However, this would be time consuming, involving gathering information directly from executives, although it may reveal more about the psychology and motives of the perpetrators of EM.

As this study is restricted to UK companies it may be useful to extend it to other countries which have different corporate governance and regulatory constraints. There may be other country-specific factors such as environmental, political, cultural, demographic and geographical issues that would affect the incidence of EM differently than in the UK.

References

- Athanasakou, V., Strong, N. C. & Walker, M. (2011) 'The market reward for achieving analyst earnings expectations: does managing expectations or earnings matter?', *Journal of Business Finance & Accounting*, 38(1-2), pp.58-94.
- Banker, R. D., Potter, G. & Srinivasan, D. (2000) 'An empirical investigation of an incentive plan that includes nonfinancial performance measures', *The accounting review*, 75(1), pp.65-92.
- Bartov, E. & Mohanram, P. (2004) 'Private information, earnings manipulations, and executive stock-option exercises', *The Accounting Review*, 79(4), pp.889-920.
- Burns, N. & Kedia, S. (2007) 'The impact of performance-based compensation on misreporting', *Journal of financial economics*, 79(1), pp.35-67.
- Cadbury, A. (2002) *Corporate Governance and Chairmanship, A Personal View*. Oxford Press.
- Curtis, A., Li, V. & Patrick, P. H. (2015) 'The Use of Adjusted Earnings in Performance Evaluation', Available at SSRN 2682652.
- DRR (2002) 'The Directors' Remuneration Report Regulations 2002' [Online] Available at: <http://www.opsi.gov.uk/si/si2002/20021986.htm>
- Garside, J., and Kollwe, J. (2014) 'Furious investors attack WPP and RBS over excessive bonuses and pay' *The Guardian*, 25 June [Online] Available at: <http://www.theguardian.com/business/2014/jun/25investors-wpp-rbs-bonuses-pay-martin-sorrell>
- Gaver, J. J., Gaver, K. M. & Austin, J. R. (1995) 'Additional evidence on bonus plans and income management', *Journal of accounting and Economics*, 19(1), pp.3-28.
- Graham, J. R., Harvey, C.R. & Rajgopal, S. (2005) 'The economic implications of corporate financial reporting', *Journal of accounting and economics*, 40(1), pp.3-73.
- Gunny, K. A. (2010) 'The Relation Between Earnings Management Using Real Activities Manipulation and Future Performance: Evidence from Meeting Earnings Benchmarks', *Contemporary Accounting Research*, 27(3), pp.855-888.
- Healy, P. M. (1985) 'The effect of bonus schemes on accounting decisions', *Journal of accounting and economics*, 7(1), pp. 85-107.
- Holthausen, R. W., Larcker, D. F. and Sloan, R. G. (1995) 'Annual bonus schemes and the manipulation of earnings', *Journal of accounting and economics*, 19(1), pp. 29-74.
- Hosking, P., and Cameron, G. (2016) 'Aberdeen boss dismisses pay revolt' *The Times*, 28 January [Online] Available at: <http://www.thetimes.co.uk/tto/business/industries/banking/article4676060.ece>

- Ibrahim, S. S. (2009) 'The usefulness of measures of consistency of discretionary components of accruals in the detection of earnings management', *Journal of Business Finance & Accounting*, 36(9-10), pp.1087-1116.
- Ibrahim, S., & Lloyd, C. (2011) 'The association between non-financial performance measures in executive compensation contracts and earnings management', *Journal of Accounting and Public Policy*, 30(3), pp.256-274.
- Jones, R. A. & Wu, Y. W. (2010) 'Executive compensation, earnings management and shareholder litigation', *Review of Quantitative Finance and Accounting*, 35(1), pp.1-20.
- Keate, G. (2015) 'Bosses 'should reveal pay gap' to their staff' *The Times*, 18 December [Online] Available at:
<http://www.thetimes.co.uk/tto/business/economics/article4643988.ece>
- Kim, D.S. and Yang, J. (2014) 'Beating the target: Performance management around the annual incentive target', *Kelley School of Business Research Paper*, (2014-19).
- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005) 'Performance matched discretionary accrual measures', *Journal of accounting and economics*, 39(1), pp.163-197.
- Murphy, K.J. and Jensen, M.C. (2011) 'CEO bonus plans: And how to fix them', *Harvard Business School NOM Unit Working Paper*, pp.12-022.
- Peasnell, K. V., Pope, P. F. and Young, S. (2005) 'Board monitoring and earnings management: do outside directors influence abnormal accruals?', *Journal of Business Finance & Accounting*, 32(7-8), pp.1311-1346.
- Royal Mail Group Plc (2008) 'Royal Mail Group Plc Annual Report' [Online]. Available at:
<http://www.royalmailgroup.com>
- Roychowdhury, S. (2006) 'Earnings management through real activities manipulation', *Journal of accounting and economics*, 42(3), pp.335-370.
- Zakaria, I. (2012) 'Performance measures, benchmarks and targets in executive remuneration contracts of UK firms', *The British Accounting Review*, 44(3), pp.189-203.

Appendix I: Definition of Variables

Variable	Symbol	Definition
Discretionary Accruals	DAC	Estimated by the Kothari et al. (2005) model: $TA_{it-1} = \beta_0 (1 / A_{it-1}) + \beta_1 [(\Delta REV_{it} - \Delta REC) / A_{it-1}] + \beta_2 (PPE_{it} / A_{it-1}) + \beta_3 ROA_{it-1} + \varepsilon_{it}$
Abnormal Sales	SALES	Estimated by the Roychowdhury (2006) model: $CFO_t / A_{t-1} = \alpha_0 + \alpha_1 (1 / A_{t-1}) + \beta_1 (S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \varepsilon_{it}$
Abnormal Discretionary Expenses	DISEXP	Estimated by the Roychowdhury (2006) model: $DISEXP_t / A_{t-1} = \alpha_0 + \alpha_1 (1 / A_{t-1}) + \beta (S_{t-1} / A_{t-1}) + \varepsilon_{it}$
Abnormal Overproduction	OVPROD	Estimated by the Roychowdhury (2006) model: $PROD_t / A_{t-1} = \alpha_0 + \alpha_1 (1 / A_{t-1}) + \beta_1 (S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \beta_3 (\Delta S_{t-1} / A_{t-1}) + \varepsilon_{it}$
Minimum Threshold Bonus	MINTHR	A dummy variable that takes the value of 1 if the actual paid bonus is above the minimum threshold bonus by 1%, 3% and 5% and 0 otherwise
Target Bonus	TRGBON	A dummy variable that takes the value of 1 if the actual paid bonus is above the target bonus by 1%, 3% and 5% and 0 otherwise
Maximum Bonus	MAXBON	A dummy variable that takes the value of 1 if the actual paid bonus is below the maximum threshold bonus by 1%, 3% and 5% and 0 otherwise
Deferred Bonus	DEFBON	A dummy variable that takes the value of 1 if the amount of annual bonus deferred is equal to or greater than the immediate amount paid and 0 otherwise
Long-term Bonus	LTBON	A dummy variable that takes the value of 1 if the proportion of long-term bonus to total remuneration is equal to or greater than the proportion of annual bonus to the same total and 0 otherwise

Financial and Non-Financial Performance Measures	F&NFPM	A dummy variable that takes the value of 1 if the firm uses NFPM along with FPM and 0 otherwise
Non-Financial Performance Measures	<u>High_NFPM</u>	A dummy variable that takes the value of 1 if the NFPM are equal to or greater than FPM and 0 otherwise
Institutional Ownership	INSTOWN	The number of shares held by the institutional investors divided by the issued number of shares by the company
<u>Blockholder</u> Ownership	BLOCK	A dummy variable that takes the value of 1 if the company has outside shareholder holding 10% or more of the company's outstanding shares and 0 otherwise
Remuneration Committee Independence	RMUCIND	A dummy variable that takes the value of 1 if the remuneration committee is exclusively composed of independent or non-executive directors and 0 otherwise
Board Size	BSIZE	The number of directors on the board
Board Independence	BIND	The proportion of independent or non-executive directors to the total number of board directors
CEO-Chairman Duality	DUALITY	A dummy variable that takes the value of 1 if the positions of CEO and chairman are held by the same person and 0 otherwise
Audit Committee Independence	AUDCIND	The proportion of independent or non-executive directors in the audit committee to the total number of directors in the audit committee
Leverage	LEV	The ratio of total debt to total assets
Size	SIZE	The natural logarithm of total assets at year-end

Growth	GROWTH	Market-to-book-ratio
Cash Flow from Operation	CFO	Cash flow from operating activities divided by beginning of period total assets
Return on Assets	ROA	Net income divided by total assets at the beginning of the year
Crisis	CRISIS	A dummy variable that takes the value of 1 if the data are from 2007-2009 and 0 otherwise
Industry Effect	INDUSTRY	Dummy variable to control for industry effect

THIRD AWARD

21st-Century Brands: An Innovation Opportunity and an Ethical Challenge

Markovic Stefan
ESADE Business School

Abstract

The current improved brand-stakeholder interconnectivity has provided brands with both the opportunity to engage stakeholders in co-creation and the challenge to have an ethical image. Accordingly, this PhD thesis has two overarching research objectives: to investigate co-creation from the managerial perspective, and to examine the effects of customer perceived ethicality of corporate services brands on brand and customer outcome variables. The first objective is addressed by conducting 20 in-depth interviews, and the second is tackled with 2179 surveys. Results show how managers can realize the potential of co-creation, and which the positive consequences of having an ethical brand image are.

Summary

Since their origins, brands have experienced transformations and have adapted to the different socioeconomic environments that have emerged, such as the growth of the services sector (Wikström, 1996). Nowadays, brands face a socioeconomic scenario that is generally characterized by online communities, decentralized organizations, and a rapid evolution of information technologies (Lindfelt and Törnroos, 2006). This evolution of information technologies has led to an improved brand-stakeholder interconnectivity (Merz et al., 2009), which has provided brands with the opportunity of involving their key stakeholders in innovation projects (Ind et al., 2013). However, this improved interconnectivity, together with the subsequently increased transparency (Lindfelt and Törnroos, 2006) and the recent growth in ethical consumerism (Carrigan and Attalla, 2001), has also provided brands with the challenge of having an ethical image (Fan, 2005; Singh et al., 2012).

The opportunity of innovating together

The current enhanced brand-stakeholder interconnectivity has made innovation initiatives more practical than ever (Chesbrough, 2006). Accordingly, several authors have acknowledged that an effective way in which brands can co-create value together with their

customers and other stakeholders is by involving them in innovation projects (Iglesias et al., 2013; Ind et al., 2013). From this perspective, co-creation is defined as “an active, creative and social process based on collaboration between organizations and participants that generates benefits for all and creates value for stakeholders” (Ind et al., 2013, p. 9). Accordingly, several scholars have recently acknowledged that customers are not passive receivers of innovations anymore, but they have the skills and expertise that permit them to undertake an active role in co-creation (e.g., Cova and Dalli, 2009). In fact, the informed, networked, empowered, and active customers of the current environment pursue to participate ideally in every stage of the co-creation process, from idea generation to implementation (Sawyer, 2008). This movement toward the involvement of customers and a greater organizational openness has nurtured the recent development of open innovation and open business models (Chesbrough, 2006).

Nowadays, brands have identified new ways to become close to and engage customers (Ind et al., 2013). They have started to listen in to brand communities and ask customers to test and comment their offerings (Ind et al., 2013). Instead of trying to figure out what customers may want by analyzing market research data or observing them in focus groups, managers are now able to actively and directly involve them in co-creation processes (Iglesias et al., 2013). This customer involvement has potential benefits for both customers themselves and brands. On the one hand, customers want to take part in co-creation for a variety of self-development, social, and hedonic reasons (Carù and Cova, 2015). On the other hand, it is in the best interest of brands to embrace co-creation, as it can lead them to several advantages, such as better insights, new ideas, cost efficiencies, speed to market, and competitive advantage (Hatch and Schultz, 2010; Kazadi et al., 2015).

As it is likely to result in benefits for both parties, previous research in the field of co-creation has mainly studied the interactions and relationships between customers and brands (Hatch and Schultz, 2010). Scholars have predominantly conducted this research from the customer perspective (Ind et al., 2013), focusing on customer motivations (e.g., Ind et al., 2013), resources (e.g., Gummesson and Mele, 2010), and experiences (e.g., Prahalad and Ramaswamy, 2004). Yet, they have conducted little research on co-creation from the managerial perspective (Frow et al., 2015; Kazadi et al., 2015). This is surprising because, while it is valuable to know about customer motivations, resources and experiences, managers also need to know how to best manage co-creation so as to realize its potential (Frow et al., 2015; Kazadi et al., 2015). To deal with this research gap, the first overarching research objective of this PhD thesis is to empirically investigate co-creation from the managerial perspective. This first overarching research objective is addressed in the following article:

- “The co-creation continuum: from tactical market research tool to strategic collaborative innovation method” (Article #1 hereafter) (Article published in the Special Issue on Co-creation of the Journal of Brand Management). Concretely, this article aims to empirically investigate how managers use co-creation, and what they believe it is best suited to deliver. This article also intends to empirically explore which the barriers to the realization of the potential of co-creation are, and how to overcome them. These specific research objectives are addressed by conducting 20 in-depth interviews with managers that have led co-creation initiatives in 20 well-known brands from different sectors and geographies. Data analysis and interpretation are conducted using NVivo 10 by means of a coding process that allows for the theory to emerge (Creswell, 2007). This research finds diverse views of co-creation – from

tactical market research tool to strategic collaborative innovation method, and shows that brands can be positioned along a continuum between these two polarities.

The challenge of having an ethical image

Apart from providing brands with an opportunity, the current improved brand-stakeholder interconnectivity has also turned ethicality into a more salient concern for brands (Lindfelt and Törnroos, 2006). Nowadays, customers are increasingly expecting brands to adopt ethical values and portray their ethical commitment, ideally during every single brand-customer interaction and touch-point (Singh et al., 2012). This has emphasized the brand challenge of having an ethical image (Singh et al., 2012). Accordingly, many brands have started to consider ethicality as a strategic dimension that can help them to improve their image (Fan, 2005). The reason is that brands are becoming increasingly aware that, in the current highly-networked environment (Libert et al., 2015; Merz et al., 2009), those brands that have an unethical image are likely to be penalized not only by their customers, but also by the rest of their stakeholders (Singh et al., 2012). Thus, several scholars have argued that all brands ought to be perceived as ethical (Fan, 2005; Story and Hess, 2010).

Accordingly, recent research has introduced the term of “consumer perceived ethicality” (e.g., Brunk, 2010), defining it as the “consumers’ aggregate perception of a subject’s (i.e., a company, brand, product, or service) morality” (Brunk and Bluemelhuber, 2011, p. 134). The importance of these consumer perceptions of ethicality (i.e., ethical image) has resulted in a growing body of literature on corporate social responsibility and business ethics in recent decades (Luo and Bhattacharya, 2006). As corporate social responsibility and business ethics are intertwined in nature and objectives (Brunk, 2010), scholars have often used the two terms in an interchangeable way (Fan, 2005), and studied the effects of socially responsible or ethical initiatives/practices on: product evaluation, customer trust, financial performance, and purchase intentions (e.g., Carrigan and Attalla, 2001; Luo and Bhattacharya, 2006; Sen and Bhattacharya, 2001). Most of these studies have been developed in the field of marketing, concurring with Fan’s (2005) observation that ethics are increasingly researched in the fields of marketing and business. Nevertheless, although various scholars have emphasized that ethics should be at the core of every corporate brand (e.g., Rindell et al., 2011), there is still scarce research on business ethics in the field of brand management (Fan, 2005).

This scant body of research includes just a few studies at the crossroads of business ethics and corporate brands, which are either conceptual (e.g., Fan, 2005; Gustafsson, 2005) or have been empirically conducted in relation to the field of products/goods (e.g., Brunk, 2010; Rindell et al., 2011). Nevertheless, there is a lack of empirical research at the intersection of business ethics and corporate brands in the area of services (Singh et al., 2012). This is surprising, because corporate brands are more relevant in the area of services than in the field of products/goods, due to the distinct nature of services (i.e., intangible, heterogeneous, inseparable, and perishable), and the subsequent greater number of customer-brand interactions and touch-points that services contexts entail (Grönroos, 2006). To cover this research gap, the second overarching research objective of this PhD thesis is to empirically examine the effects of customer perceptions of a corporate services brand ethicality on brand

and customer outcome variables. This second overarching research objective is addressed in the following two articles:

- “Does ethical image build equity in corporate services brands? The influence of customer perceived ethicality on affect, perceived quality, and equity” (Article #2 hereafter) (Article published in Journal of Business Ethics – Q1 in Ethics, FT Top 50). This article specifically aims to empirically examine the effect of customer perceived ethicality of a corporate services brand on the relevant brand outcome variable of brand equity, considering the roles that brand affect and perceived quality have in this relationship. The hypothesized model is tested with structural equations, using data collected for eight service categories by means of a panel composed of 2179 customers. The test of measurement equivalence between these categories is conducted using generalizability theory. Confirmatory factor analysis marker technique is applied in order to check for common method variance. The results of the hypothesized model indicate that customer perceived ethicality has a positive, indirect impact on brand equity, through the mediators of brand affect and perceived quality. However, there is not empirical evidence for a direct effect of customer perceived ethicality on brand equity.
- “How does the perceived ethicality of corporate services brands influence loyalty and positive word-of-mouth? Analyzing the roles of empathy, affective commitment, and perceived quality” (Article #3 hereafter) (Article published in Journal of Business Ethics – Q1 in Ethics, FT Top 50). This article, apart from dealing with the pronounced dearth of research at the crossroads of business ethics and corporate services brands, also intends to analyze the role of employee empathy in determining the success of such brands. Specifically, this article aims to empirically examine the effect of customer perceived ethicality of a corporate services brand on the relevant customer outcome variables of customer loyalty and customer positive word-of-mouth, considering the roles of employee empathy, customer affective commitment, and customer perceived quality. The hypothesized structural model is tested using path analysis, based on data collected for eight service categories using a panel of 2179 customers. The generalizability theory is applied to test for the measurement equivalence between these service categories. The marker variable technique is applied to check for common method variance. The results show that, in addition to a direct effect, customer perceived ethicality has a positive and indirect effect on customer loyalty, through the mediators of customer affective commitment and customer perceived quality. Further, employee empathy positively influences the impact of customer perceived ethicality on customer affective commitment, and customer loyalty positively impacts customer positive word-of-mouth.

All in all, this PhD thesis has addressed an opportunity and a challenge that brands have in the current environment. On the one hand, by addressing the brand opportunity of innovating together with customers and other stakeholders, this PhD thesis has contributed theoretically and practically to the field of co-creation. On the other hand, by dealing with the brand challenge of having an ethical image, this PhD thesis has contributed theoretically and practically to the field of ethical branding, which stands at the crossroads of the areas of business ethics and brand management.

Theoretical and practical contributions to the field of co-creation

Article #1 first contributes to the literature by introducing the concept of the co-creation continuum. Although the previous literature has generally contemplated co-creation as a tactical research tool to obtain occasional inputs from customers on specific internal projects (e.g., Nambisan and Nambisan, 2008), it has recently recognized a more strategic approach to co-creation that consists of building long-term innovation-oriented relationships with customers and other stakeholders (e.g., Ind et al., 2013). Article #1 empirically builds on and

reconciles these two approaches to co-creation by placing them on the two extremes of a continuum along which brands can move, from the more tactical extreme to the more strategic one. This is a relevant contribution, because although brands have the opportunity to involve organizational outsiders in every stage of their co-creation processes, not all of them are able to realize the potential of co-creation and use it a strategic collaborative innovation method (Kazadi et al., 2015).

Second, article #1 contributes to the literature by describing the distinct traits of each extreme of the co-creation continuum. On the one hand, the managers that use co-creation as a tactical market research tool consider that, while brand employees are the ones who have the required expertise for developing innovations, customers can just improve insights, and test and refine internally generated ideas. This result resonates with the previous literature suggesting that customers do not have the technical capabilities to generate concrete and relevant innovations (Nambisan and Nambisan, 2008). Accordingly, when managers use co-creation in a tactical way, customer-brand relationships are short-term in nature, and customers are only involved in co-creation processes on an ad-hoc basis when brands need them. Consistently, these brands generally have a closed culture, and tend to be concerned about the confidentiality of their innovation projects. This finding is in line with and further builds, from an empirical standpoint, on the previous literature that suggests that co-creation processes raise issues related to intellectual property and mutual dependency (Stanislawski, 2011).

On the other hand, the managers that use co-creation as a strategic collaborative innovation method generally consider that, in addition to brand employees, customers can also valuably contribute their knowledge and creativity to the creation of relevant innovations. In fact, many customers are real brand experts, and they know even more about the brand than brand employees themselves. This finding concurs with the previous literature that proposes that customers, and especially lead-users, can be more aware of the functionality of the brand offerings than many internal stakeholders (Füller et al., 2006). Moreover, customers can be more creative than brand employees, because their thinking is not bounded by the technological limitations of the brand. Thus, brands should stop considering customers as targets of their offerings, and start seeing them as valuable innovation partners. The brands that see customers as innovation partners generally have an open and participatory culture that enables and fosters collaborative interactions and relationships. This result is aligned with and empirically complements the recent conceptual research that suggests that brands should see co-creation as a strategic asset that facilitates the creation of a collaborative innovation network (Libert et al., 2015).

Third, article #1 contributes to the literature by empirically identifying four key obstacles to the realization of the potential of co-creation (i.e., for moving from using co-creation as a tactical market research tool, to use it as a strategic collaborative innovation method). The first and most empirically supported obstacle is the high uncertainty regarding the final outcome of co-creation. The second barrier is the large scope of the investment – in terms of both time and money – that brands need to make in order to embrace co-creation as a strategic collaborative innovation method. The third issue is related to the cultural elements that impede the adoption of the strategic view of co-creation. An important cultural element that can inhibit realizing the potential of co-creation is the abovementioned prior assumption of some brands that customers do not have the required technical knowledge to participate in the creation of relevant innovations (Nambisan and Nambisan, 2008). Another important cultural element that can obstruct the strategic approach to co-creation is the fear that some brands associate with co-creation, such as the fear of sharing internal information with

organizational outsiders (Stanislawski, 2011). The fourth impediment are the hierarchical and rigid organizational structures that limit the fluid, collaborative and enduring interactions and relationships with such outsiders (Ind et al., 2013).

Finally, article #1 contributes to the literature by empirically identifying two ways to overcome these barriers to the realization of the potential of co-creation. First, brands should adopt the strategic view of co-creation, and integrate it at the center of their identities. It is important that this strategic view of co-creation spreads across the whole organization, and is well understood and adopted by brand employees, because brand employees are the ones who will primarily interact with organizational outsiders during co-creation processes. Second, brands ought to build an open and participatory culture, and support a humble and inclusive leadership style. This is important because it can facilitate the creation of enduring and long-term relationships with customers and the rest of stakeholders, and thereby foster their active and continuous involvement in co-creation processes.

Theoretical and practical contributions to the field of ethical branding

Articles #2 and #3 are the first papers to empirically examine the effects of customer perceived ethicality in the context of corporate services brands. More specifically, article #2 contributes to the literature by showing that customer perceptions of a corporate services brand ethicality have a positive effect on brand equity. However, unlike it has been previously found in the field of goods (e.g., Hur et al., 2014), this effect is not direct. This implies that, in the area of services, relevant mediators for the impact of customer perceived ethicality on brand equity are required. Accordingly, article #2 shows that, in the services sector, developing perceived quality and brand affect is key for transferring customer perceptions of corporate brand ethicality into brand equity. Considering the same mediators (but terming them as customer perceived quality and customer affective commitment, respectively), article #3 complements article #2 by adopting the customer outcome perspective. Namely, article #3 is the first paper to show that, in the services sector, developing customer perceived quality and customer affective commitment to a brand is essential for translating customer perceptions of corporate brand ethicality into customer loyalty. This further emphasizes the importance of the mediating variables of customer perceived quality (or perceived quality in article #2) and customer affective commitment (or brand affect in article #2) in the context of corporate brands operating in the services sector.

On the one hand, customer perceived quality should be a fundamental concern for those corporate services brands that want to improve brand equity and customer loyalty. The main reason is that while corporate product brands can supply offerings with a standardized level of quality, the intangible nature of services makes it difficult for corporate services brands to homogenize their offerings (Booms and Bitner, 1981). Moreover, corporate services brands entail a greater number of customer-brand interactions and touch-points than corporate product brands do (Grönroos, 2006), which further highlights the need to ensure a positive and consistent service quality across these interactions and touch-points if corporate services brands want to build brand equity and customer loyalty (Iglesias et al., 2011).

On the other hand, customer affective commitment ought to also be a fundamental concern for those corporate services brands that intend to enhance brand equity and customer loyalty. The reason is that, in addition to the difficulty that corporate services brands have in standardizing their offerings (Booms and Bitner, 1981), customers also face the challenge of evaluating service quality mainly due to the lack of tangibility of services offerings

(Athanasopoulos et al., 2001). Thus, it becomes crucial that corporate services brands work on developing customer affective commitment, because then customers become less sensitive to the possible poor service performance and tend to relate potential service failures to external causes or even to themselves (Story and Hess, 2010).

Apart from showing the relevant mediating effects of customer perceived quality and customer affective commitment in the services sector, both articles #2 and #3 also provide empirical evidence for a direct impact of customer perceived quality (or perceived quality in article #2) on customer affective commitment (or brand affect in article #2). This finding further highlights the need for corporate services brands to work on developing customer quality perceptions of services offerings. Moreover, the lack of standardization of services offerings leads customers to largely rely on the emotions and affect that they have toward the brand (Gruen et al., 2000). Accordingly, findings show that when customers develop quality perceptions of services offerings and/or have positive affect toward the brand, brand equity (article #2) and customer loyalty (article #3) are likely to increase. This is important because, as article #3 shows, when customer loyalty increases, customers engage in positive word-of-mouth communications regarding the brand. A positive word-of-mouth is particularly relevant in the services sector, because the intangibility of services offerings increases customer perceived purchase risk (Choudhury, 2014), making customers mainly rely on the opinions and recommendations of others. All in all, studying the effects of customer perceived quality (or perceived quality in article #2) and customer affective commitment (or brand affect in article #2) on brand equity and customer loyalty, and the impact of customer loyalty on customer positive word-of-mouth has highlighted many particularities of corporate services brands and how they ought to be managed in comparison with corporate product brands.

However, the main particularity and management challenge that corporate services brands have in relation to corporate product brands are employees. More specifically, employee empathy adopts a central role in services settings, being the key determinant of successful employee-customer interactions (Giacobbe et al., 2006). Although the role of employee empathy has been investigated in the services literature (e.g., Giacobbe et al., 2006), there is a lack of previous research studying it in the context of corporate services brands. Covering the subsequent research gap, article #3 provides empirical evidence for a positive influence of employee empathy on the impact of customer perceived ethicality on customer affective commitment. This novel finding resonates with the previous literature that suggests that during employee-customer interactions, employees ought to adopt an empathic attitude (Wieseke et al., 2012), because when customers perceive that employees behave in an empathic manner, they are likely to create positive emotions and affect toward the brand (Lee et al., 2011). Moreover, this novel finding suggests that employee empathy is essential for those corporate services brands that aim to leverage their investments in ethicality.

Transversal theoretical and practical contributions

Apart from their specific contributions to the fields of co-creation and ethical branding, the articles that constitute this PhD thesis also entail two key transversal contributions among these fields. The first transversal contribution is related to the key role of employees in both co-creation processes and corporate services brands. On the one hand, many brands, and specifically those that use co-creation as a tactical market research tool, consider that employees are the main contributors to co-creation processes, because they usually have the required skills and expertise for developing relevant innovations. This finding is in line with

the previous literature that suggests that employees have a central role in co-creation processes (Iglesias et al., 2013), and especially in those that take place in technology-based businesses that require a high level of specialized technical knowledge that most customers do not have (Nambisan and Nambisan, 2008). On the other hand, employees are also crucial in corporate services brands, because of the great number of employee-customer interactions that services contexts entail (Grönroos, 2006). Accordingly, the key role of employees has been repeatedly highlighted in the literature on services brands (e.g., Brodie, 2009). When delivering the service, employees can make or break the brand. That is the reason why employee empathy becomes crucial in services contexts (Giacobbe et al., 2006), which is not necessarily the case in products/goods contexts where customers mainly interact with tangible products. However, regardless of the context, the role of employees is inevitably surrounded by the culture of the brand.

The second transversal contribution is related to the encompassing role that culture adopts in both co-creation processes and corporate services brands. On the one hand, the brands that want to realize the potential of co-creation need to develop an open and participatory culture that enables and fosters long-term relationships with customers and other stakeholders. Consistently, the managers of these brands need to adopt an inclusive and humble leadership style, and thus value and take into account the inputs of organizational outsiders. These results concur with the previous literature that proposes that the ideal brand environment for co-creation to flourish is both open and participatory (Iglesias et al., 2013). On the other hand, the brands that want to have an ethical image also need to develop an open culture that listens to and integrates in the business strategies the ethical concerns of customers. This is especially emphasized in the current hyper-connected and transparent environment (Lindfelt and Törnroos, 2006), where an ethical consumerism is rapidly spreading (Carrigan and Attalla, 2001), and customers are increasingly expecting brands to portray their ethical commitment at a corporate level (Rindell et al., 2011).

References

- Athanassopoulos, A., Gounaris, S., & Stathakopoulos, V. (2001). Behavioural responses to customer satisfaction: An empirical study. *European Journal of Marketing*, 35(5/6), 687–707.
- Booms, B. H., & Bitner, M. J. (1981). Marketing strategies and organization structures for service firms. *Marketing of Services*, 25(3), 47–52.
- Brodie, R. J. (2009). From goods to service branding: An integrative perspective. *Marketing Theory*, 9(1), 107–111.
- Brunk, K. H. (2010). Exploring origins of ethical company/brand perceptions— A consumer perspective of corporate ethics. *Journal of Business Research*, 63(3), 255–262.
- Brunk, K. H., & Blümelhuber, C. (2011). One strike and you're out: Qualitative insights into the formation of consumers' ethical company or brand perceptions. *Journal of Business Research*, 64(2), 134–141.

- Carrigan, M., & Attalla, A. (2001). The myth of the ethical consumer—Do ethics matter in purchase behaviour? *Journal of Consumer Marketing*, 18(7), 560–578.
- Carù, A., & Cova, B. (2015). Co-creating the collective service experience. *Journal of Service Management*, 26(2), 276-294.
- Chesbrough, H. W. (2006). *Open innovation: The new imperative for creating and profiting from technology*. Boston, MA: Harvard Business Press.
- Choudhury, K. (2014). Service quality and word of mouth: a study of the banking sector. *International Journal of Bank Marketing*, 32(7), 612–627.
- Cova, B., & Dallı, D. (2009). Working consumers: the next step in marketing theory? *Marketing Theory*, 9(3), 315-339.
- Creswell, J.W. (2007). *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. Thousand Oaks, CA: Sage Publications.
- Fan, Y. (2005). Ethical branding and corporate reputation. *Corporate Communications: An International Journal*, 10(4), 341–350.
- Frow, P., Nenonen, S., Payne, A., & Storbacka, K. (2015). Managing Co-creation Design: A Strategic Approach to Innovation. *British Journal of Management*, 1-21.
- Füller, J., Bartl, M., Ernst, H., & Mühlbacher, H. (2006). Community based innovation: How to integrate members of virtual communities into new product development. *Electronic Commerce Research*, 6(1), 57-73.
- Giacobbe, R. W., Jackson, D. W, Jr, Crosby, L. A., & Bridges, C. M. (2006). A contingency approach to adaptive selling behavior and sales performance: Selling situations and salesperson characteristics. *Journal of Personal Selling and Sales Management*, 26(2), 115–142.
- Grönroos, C. (2006). Adopting a service logic for marketing. *Marketing Theory*, 6(3), 317–333.
- Gruen, T., Summers, J., & Acito, F. (2000). Relationship marketing activities, commitment and membership behaviors in professional associations. *Journal of Marketing*, 64(3), 34–49.
- Gummesson, E., & Mele, C. (2010). Marketing as value co-creation through network interaction and resource integration. *Journal of Business Market Management*, 4(4), 181-198.
- Gustafsson, C. (2005). Trust as an instance of asymmetrical reciprocity: An ethics perspective on corporate brand management. *Business Ethics: A European Review*, 14(2), 142–150.
- Hatch, M. J., & Schultz, M. (2010). Toward a theory of brand co-creation with implications for brand governance. *Journal of Brand Management*, 17(8), 590-604.

- Hur, W. M., Kim, H., & Woo, J. (2014). How CSR leads to corporate brand equity: Mediating mechanisms of corporate brand credibility and reputation. *Journal of Business Ethics*, 125(1), 75–86.
- Iglesias, O., Singh, J. J., & Batista-Foguet, J. M. (2011). The role of brand experience and affective commitment in determining brand loyalty. *Journal of Brand Management*, 18(8), 570–582.
- Ind, N., Iglesias, O., & Schultz, M. (2013). Building brands together. *California Management Review*, 55(3), 5-26.
- Kazadi, K., Lievens, A., & Mahr, D. (2015). Stakeholder co-creation during the innovation process: Identifying capabilities for knowledge creation among multiple stakeholders. *Journal of Business Research*, 1-16.
- Lee, S., Comer, L. B., Dubinsky, A. J., & Schafer, K. (2011). The role of emotion in the relationship between customers and automobile salespeople. *Journal of Managerial Issues*, 23(2), 206–226.
- Libert, B., Wind, Y., & Beck Fenley, M. (2015). What Apple, Lending Club, and AirBnB Know About Collaborating with Customers. *Harvard Business Review*. [<http://hbr.org/2015/07/what-apple-lending-club-and-airbnb-know-about-collaborating-with-customers>].
- Lindfelt, L. L., & Törnroos, J. Å. (2006). Ethics and value creation in business research: comparing two approaches. *European Journal of Marketing*, 40(3/4), 328–351.
- Luo, X., & Bhattacharya, C. B. (2006). Corporate social responsibility, customer satisfaction, and market value. *Journal of Marketing*, 70(4), 1–18.
- Merz, M. A., He, Y., & Vargo, S. L. (2009). The evolving brand logic: A service-dominant logic perspective. *Journal of the Academy of Marketing Science*, 37(3), 328–344.
- Nambisan, S., & Nambisan, P. (2008). How to profit from a better 'virtual customer environment'. *MIT Sloan Management Review*, 49(3), 53-61.
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, 18(3), 5-14.
- Rindell, A., Svensson, G., Mysen, T., Billström, A., & Wilén, K. (2011). Towards a conceptual foundation of 'Conscientious Corporate Brands'. *Journal of Brand Management*, 18(9), 709–719.
- Sawyer, K. (2008). *Group genius: The creative power of collaboration*. New York, NY: Basic Books.
- Sen, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. *Journal of Marketing Research*, 38(2), 225–243.

- Singh, J. J., Iglesias, O., & Batista-Foguet, J. M. (2012). Does having an ethical brand matter? The influence of consumer perceived ethicality on trust, affect and loyalty. *Journal of Business Ethics, 111*(4), 541–549.
- Stanislawski, S. (2011). The Service-Dominant Logic of Marketing and the Ethics of Co-Creation. *The Bulletin of the Graduate School of Commerce - Waseda University, 73*, 109-133.
- Story, J., & Hess, J. (2010). Ethical brand management: customer relationships and ethical duties. *Journal of Product and Brand Management, 19*(4), 240–249.
- Wieseke, J., Geigenmüller, A., & Kraus, F. (2012). On the role of empathy in customer-employee interactions. *Journal of Service Research, 15*(3), 316– 331.
- Wikström, S. (1996). Value creation by company-consumer interaction. *Journal of Marketing, 12*(5), 359-374.

The Negative Aspects of Flow: Examining Relationships Between Flow and Unethical Behavior

Aleksic Darija

University of Ljubljana, Slovenia

Abstract

In my doctoral dissertation I examined novel theoretical mechanisms in explaining the link between flow and two potentially negative consequences: ethical blindness and workaholism. I used a bibliometric co-citation analysis and systematic review to analyze the flow literature and collected qualitative data and five different quantitative data sets to develop a multidimensional ethical blindness scale and to test my models. I found empirical evidence for too-much-of-a-good-thing effect of flow at work. Specifically, I found that flow at work decrease ethical blindness. However, we should pay attention when introducing factors that stimulate flow at work because flow may lead to workaholism.

INTRODUCTION

Flow has become a central component within positive psychology (Seligman & Csikszentmihalyi, 2000) and is defined as a state when individuals become engaged in an activity that is challenging, controllable, and intrinsically motivating (Csikszentmihalyi, 1997). Studies have shown that individuals more often experience flow during their work than during free/non-work time (Csikszentmihalyi & LeFevre, 1989; Rodríguez-Sánchez, Schaufeli, Salanova, Cifre, & Sonnenschein, 2011). Furthermore, studies have demonstrated the positive effect of flow on various work-related outcomes such as higher productivity (Wells, 1988), constant search for challenges (Ceja & Navarro, 2011), exploratory behavior and many others. Individuals who often experience flow at work sense the positive consequences of flow, which also affects the organization by increasing creativity at work, the commitment to work and organizational spontaneity (Ceja & Navarro, 2011). Thus, flow has been perceived as a positive phenomenon that stimulates positive, organizationally relevant outcomes (Debus, et al., 2014).

However, Csikszentmihalyi, the father of flow theory, illustrated the possibility of some negative aspects of flow. When in flow, the experience itself is so enjoyable that individuals will do it event at a great cost (Csikszentmihalyi, 1997). Furthermore, Keller and Bless (2008) argue that “flow is not necessarily related to positive ethical or social consequences because flow experiences can become addictive (e.g., gambling, video games) and flow can be experienced when individuals engage in antisocial activities (e.g., crime and warfare)” (pp. 198-199). Moreover, individuals can also experience flow when engaged in destructive, addictive or wasteful activities (Csikszentmihalyi, 1999).

Nakamura and Csikszentmihalyi (2002) also acknowledged that individuals can also seek flow in activities that are neutral or even destructive to the self and/or work/culture. Further, flow also occurs during activities that involve high levels of risk and expertise (Csikszentmihalyi, 1997). Namely, high levels of flow were found in activities performed

illegally and with a risk of being caught by authorities (e.g., graffiti spraying) (Peifer, et al., 2014). Even though several studies have suggested that flow may have negative consequences, there is a paucity of research about the negative consequence of flow at work. However, scholars must gain more knowledge regarding the negative consequences of experiencing flow before fully embracing the recommendation to promote or stimulate the experience of flow in organizations. Gaining more knowledge regarding the negative consequences of flow may enable us to prevent these possible unintended negative consequences.

Thus, the aim of the dissertation was to examine two potentially negative consequences of flow. To accomplish this aim, the following steps were undertaken: a qualitative and quantitative literature review was conducted (Chapter 1), a scale for ethical blindness in the workplace scale was developed (Chapter 2), and quantitative research was conducted to empirically examine the relationship between flow and its two potential negative consequences: ethical blindness (Chapter 3) and workaholism (Chapter 4). In the next section I elaborate on the four main chapters of the thesis. The final part of the paper discusses the main contributions of the thesis and provides implications and relevance for researchers and practitioners.

RESEARCH DESIGN, METHODS, AND RESULTS

Chapter 1: Flow experience: bibliometric co-citation analysis and a systematic review of the literature

In Chapter 1, I used bibliometric co-citation analysis to investigate the relationships among prior work to explore the patterns within the flow theory intellectual tradition (Baker, 1990). I used the Social Sciences Citation Index (SSCI) of the Web of Science to retrieve citation data. 854 articles formed the data sample for the analysis. I exported the bibliographic data with cited references for these articles to BibExcel for bibliometric analysis, as recommended by Zupic and Čater (2015). Based on the bibliometric co-citation analysis, I identified four dominant disciplines: psychology, sport psychology, marketing, and computer–human interaction (Figure 1).

Table 1: Summary of the main findings and contributions – Chapter 1

Flow experience: bibliometric co-citation analysis and a systematic review of the literature

Research objective	<p><i>O1:</i> To summarize research evidence on flow experience from various domains. <i>O2:</i> To investigate the characteristics, antecedents, and consequences of flow. <i>O3:</i> To identify and compare similarities and differences between flow and other related constructs. <i>O4:</i> To synthesize past findings into a comprehensive framework of flow at work.</p>
Study type	<p>Quantitative and qualitative literature review, co-citation analysis, systematic review analysis.</p>
Main findings	<p>The flow literature is fragmented, operationalized, tested, and applied in numerous ways across various domains. Identification of four dominant disciplines within flow theory. Identification of 39 individual and environmental antecedents of flow, among which only four individual and four environmental antecedents were applied or tested in the work environment. Identification of 40 consequences of flow, among which only six were applied or tested in the work environment. Identification of six related constructs (engagement, involvement, passion, thriving, intrinsic motivation, and peak experience). Identification of the most important issues within the field.</p>
Theoretical contributions	<p>Synthesis of past research findings on flow experience across various disciplines. Application of the findings across various domains to flow in the work context. Development of a comprehensive framework of flow at work.</p>

Chapter 2: Developing a measure of ethical blindness in the workplace

In order to empirically examine the relationship between flow and unintentional unethical behavior, I first developed an ethical blindness scale. Palazzo, Krings, and Hoffrage (2012) defined *ethical blindness* as an unconscious, context-bound, and, thus, temporary state in which individuals are “not aware of the fact that they deviate from their own values and principles and/or that they cannot and do not access those values when making a decision” (Palazzo et al., 2012, p. 325). Individuals who fail to perceive that they behave unethically may be convinced that they are doing the right thing and are thus unlikely to seek ways to improve their behavior (Eldred, 2012).

To ensure that the measure was psychometrically sound, I followed a systematic procedure (e.g., DeVellis, 2003; Hinkin, 1998) for developing new measures, using several steps and multiple types of samples to empirically validate the measure of ethical blindness (Table 2). Interviews described how ethical blindness is manifested, and the first study suggested that there are three different types of ethical blindness at work – rationalization, routine and ignorance – that are demonstrably separate from organizational and interpersonal deviance as well as counterproductive work behavior. In the second study, confirmatory factor analysis provided evidence that the hypothesized three-factor structure fit the data. Finally, in the third study, confirmatory analysis was conducted on a larger sample (study 3), providing additional evidence that the hypothesized three-factor structure fit the data. The objectives, main findings, theoretical contributions and practical implications of the chapter are presented in Table 3.

Table 2: Scale summary – factor loadings across studies

	EFA Study 1	CFA Study 2	CFA Study 3
Factor 1: Rationalization			
1. I have to perform tasks that are against my personal values to keep my job.	0.613	0.791	0.747
2. I have mixed feelings about what counts as right and wrong.	0.624	0.736	0.615
3. I have to behave unethically to protect my coworkers.	0.899	0.813	0.728
4. I do unethical things to keep my job and justify this by saying, “If I will not do it, someone else will.”	0.873	0.894	0.821
5. I do something against my values because I am under pressure to do so.	0.699	0.838	0.805
Factor 2: Routine			
6. I do not think much about ethics when performing tasks that I have a lot of experience in.	0.732	0.675	0.510
7. I do not think about the ethical component when using the standardized procedures in my organization.	0.870	0.582	0.724
8. When making routine decisions I forget to think about ethics.	0.651	0.726	0.871
9. I forget to pay attention to the ethical component of the activity I perform.	0.472	0.671	0.797
Factor 3: Ignorance			
10. I do something unethical without even knowing it. I realize the wrongdoing after some time.	0.553	0.685	0.714
11. I unintentionally do something unethical due to lack of experience.	0.849	0.762	0.726
12. I behave unethically due to lack of knowledge.	0.712	0.825	0.698
13. I unintentionally do something unethical.	0.837	0.795	0.839
Ethical blindness			
Rationalization	-	0.601	0.806
Routine	-	0.976	0.813
Ignorance	-	0.521	0.878

Table 3: Summary of the main findings and contributions – Chapter 2

Developing a measure of ethical blindness in the workplace	
Research objective	<i>O1</i> : To develop a comprehensive scale that measures ethical blindness at work.

Study type

Semistructured interviews – 17 interviews with employees from Slovenia, Croatia, and Germany from different sectors; pilot study (n = 27); three field studies (n₁ = 185; n₂ = 109; n₃ = 178) – primary data, collected from European employees; content validity evaluation; internal consistency analysis; exploratory factor analysis; confirmatory factor analysis.

Main findings

Development of 13-item multidimensional measure of ethical blindness.
Identification of three dimensions of ethical blindness in the workplace.
Providing preliminary evidence of construct and discriminant validity.
Scale validation.

Theoretical contributions

Conceptualization of ethical blindness at work.
Providing empirical evidence that ethical blindness is a multidimensional construct consisting of the 13 items measuring the following dimensions: rationalization (five items), routine (four items), and ignorance (four items).
Providing empirical evidence that three dimensions of ethical blindness at work – rationalization, routine, and ignorance – are demonstrably separate from organizational and interpersonal deviance as well as counterproductive work behavior.

Practical implications

Managers should create a safe work environment to reduce the rationalization.
Managers should highlight the importance of the ethical components when performing routine tasks.
Managers should decrease ignorance by sharing knowledge among employees, drawing attention to important information and knowledge, and supervising employees who may become ethically blind due to the lack of experience.

Chapter 3: The relationship between the specific goals, flow, time pressure and ethical blindness

This chapter aims to examine the antecedents and negative consequences of flow at work. Drawing on the goal-setting theory, I first proposed that employees who are faced with clear and specific goals will more likely experience flow. Namely, clear and specific goals may promote flow at work, as it provides clear information about what is expected to be done (Fullagar & Kelloway, 2009). However, is flow, stimulated by clear and specific goals, always beneficial? We can find examples of people who enjoyed doing unethical things. For example, Hitler had a clear, specific goal and, like many other tyrants, also enjoyed many of the cruelties for which he was responsible (Glad, 2002). We can also find another example of individuals with normal or even high levels of integrity and the ability for moral reasoning who also enjoyed being unethical. Lance Armstrong, a former professional road-racing cyclist, also enjoyed his work (i.e., was experiencing flow) and had clear goals; however, he used drugs to win his races (i.e., behaved unethically).

Thus, I proposed that flow, stimulated by clear and specific goals, promotes ethical blindness. Specifically, I examined flow as a mediating variable that strengthens the relationship between goal clarity and ethical blindness. Namely, because of the bounded awareness caused by flow, individuals may become ethically blind and behave unethically without being aware of it. In addition, I proposed that time pressure moderates the relationship between goal clarity and ethical blindness, mediated by flow. Under perceived time pressure individuals may lose sight of their ethical obligation in rushing to accomplish pressing goals (Moberg, 2000). The objectives, hypothesis and their status, main findings, theoretical contributions and practical implications of the chapter are presented in Table 4.

Table 4: Summary of the main findings and contributions – Chapter 3

Antecedents and consequences of flow: examining the relationship between goal clarity, flow, and ethical blindness

Hypothesis (status)	<p><i>Hypothesis 1:</i> Goal clarity is positively associated with ethical blindness. (not supported)</p> <p><i>Hypothesis 2:</i> Flow mediates the association between specific goals and ethical blindness. (supported)</p> <p><i>Hypothesis 3:</i> Time pressure moderates the indirect relationship between clear goals and ethical blindness, as mediated by flow. The higher the time pressure, the more positive the relationship. (partially supported)</p>
Study type	Field study – 151 respondents, mediation, moderated mediation, moderation.
Main findings	<p>Goal clarity reduces ethical blindness at work.</p> <p>The higher the time pressure, the more negative the indirect relationship between clear goals and ethical blindness, as mediated by flow.</p> <p>Low levels of time pressure and flow lead to low level of ethical blindness at work.</p> <p>When flow is high, ethical blindness will be low, irrespective of the level of time pressure.</p>
Theoretical contributions	<p>Providing an explanation and empirical evidence of causal mechanisms for flow occurrence.</p> <p>Conceptualization of the relationship between flow and ethical blindness.</p> <p>Providing empirical evidence for positive consequences of flow when applied to ethics.</p> <p>Providing empirical evidence that flow can mitigate the negative consequences of time pressure.</p>
Practical implications	<p>Theoretical conceptualization and empirical examination of antecedents of ethical blindness in organizations.</p> <p>When selecting employees, managers should also consider whether work characteristics and challenges will allow individuals to experience a high level of flow at work.</p> <p>Managers should set clear and specific goals and thereby promote flow at work, decrease ethical blindness at work, and reduce the negative consequences of time pressure.</p>

Chapter 4: The role of flow, job crafting, and future time perspective in workaholism

This chapter aims to examine the negative consequences of flow at work. Drawing on the flow theory, I propose that employees who often experience flow at work will more likely experience workaholism. Workaholism is defined as “the compulsion or the uncontrollable need to work incessantly” (Oates, 1971, p. 11). Workaholics dedicate an excessive amount of time, energy and effort to their work and thereby neglect other, non-work aspects of their lives (Tabassum & Rahman, 2012). Employees often in flow are highly motivated to work, enjoy their work, feel happier, and can work actively for longer (Csikszentmihalyi & LeFevre, 1989). Thus, when experiencing flow at work, employees are willing to devote more time and energy to work and may experience workaholism.

Furthermore, I propose that job crafting mediates the relationship between flow and workaholism. To achieve flow over and over again, an individual has to seek greater challenges and develop greater skills to reach them (Csikszentmihalyi, 1997). Job crafting is a proactive behavior consisting of increasing job resources, increasing job challenges, and decreasing job demands (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012; Tims & Bakker, 2010). Through it, employees can redesign their jobs to allow them to experience flow continuously. Thereby, they often sense the positive consequences of flow and become willing to spend much more time on work-related activities, which may lead to workaholism.

I further propose that future time perspective reinforces the indirect relationship between flow and workaholism, as mediated by job crafting. Future-oriented employees are more likely to sacrifice their time and become fully dedicated to work (seek new resources and challenges) to achieve long-term goals. I thus hypothesize that employees who experience flow at work can craft their job, are future-oriented, and will more likely experience workaholism. Finally, in relation to workaholism, I propose the inverted U-shaped relationship between flow at work and SWLB. The objectives, hypothesis and their status, main findings, theoretical contributions and practical implications of the chapter are presented in Table 5.

Table 5: Summary of the main findings and contributions – Chapter 4

Consequences of flow: the role of flow, job crafting, and future time perspective in workaholism

Hypothesis (status)	<p><i>Hypothesis 4:</i> Flow is positively associated with workaholism. (supported) <i>Hypothesis 5:</i> Job crafting mediates the association between flow and workaholism. (supported) <i>Hypothesis 6:</i> Future time perspective moderates the indirect relationship between flow and workaholism, as mediated by job crafting. The higher the future time perspective, the more positive the relationship. (partially supported) <i>Hypothesis 7:</i> There will be an inverted U-shaped relation between flow at work and SWLB. (supported)</p>
Study type	<p>Field study – 169 professors, teachers, and researchers from 24 European countries; random coefficient modeling using HLM, mediation, moderated mediation.</p>
Main findings	<p>The more often employees experience flow at work, the more likely they will become workaholics. High future time perspective orientation strengthens the association between job crafting and workaholism. There is an inverted U-shaped relation between flow at work and SWLB.</p>
Theoretical contributions	<p>Revealing and explaining the conditions under which enjoyment may lead to workaholism. Introducing new behavioral reinforcements in the work environment (i.e., job crafting) that may cause workaholism. Conceptualization of the relationship between flow and workaholism. Providing empirical evidence that flow at work may lead to addition. Providing empirical evidence for too-much-of-a-good-thing effect of flow.</p>
Practical implications	<p>Managers should pay attention when introducing factors that stimulate flow experience at work. Managers should provide employees with opportunities to experience flow at work and stimulate job crafting. Managers should be careful when promoting job crafting behavior, in light of its contribution to workaholism.</p>

CONTRIBUTIONS AND IMPLICATIONS

Theoretical contributions

This dissertation takes a step toward understanding flow in the work setting and thereby suggests several contributions for *flow theory*. To the best of my knowledge, to date no review has synthesized past research findings of flow across different domains. Bibliometric methods, reviews, and meta-analyses of flow literature are rare and narrowly focused on specific facets of flow experience (e.g., D’Mello, 2013;). Thus, I contribute to the flow theory synthesizing past research findings on flow experience across various domains (Chapter 1).

Further, I contribute to the flow literature by providing evidence of overlaps between diverse and fragmented research on flow theory and research on flow at work. I also identify and describe differences and similarities between flow and related constructs. Knowledge about flow in work settings remains limited (Llorens et al., 2013). Therefore, I contribute to theoretical knowledge about flow at work by synthesizing the past research findings on flow theory across the dominant disciplines and combine them into a comprehensive framework of flow at work.

One of the most important contributions of my dissertation is its conceptualization and empirical examination of important and novel theoretical mechanisms in explaining the link between flow and its potentially negative consequences (Chapter 3 and 4). In Chapter 3, I examine the relationship between goal clarity, flow, time pressure, and ethical blindness. Thereby, I make two distinct contributions to the flow literature: (i) I propose and demonstrate that goal clarity is the contextual factor that promotes flow at work, and (ii) I provide a theoretical conceptualization and empirical research on the relationship between flow and ethical blindness. To the best of my knowledge, this study is the first study that empirically examined consequences of flow when applied to ethics. I follow Keller and Bless’s (2008) acknowledgement and propose that flow increases ethical blindness in the organization.

Contrary to expectations, I found that flow prevents ethical blindness. Moreover, empirical evidence from Chapter 3 also suggests that high levels of flow can mitigate the negative consequences of time pressure. Thereby, I provide evidence for another novel positive consequence of flow. In addition, in Chapter 4, I investigate the relationship between flow and workaholism, which is another potential negative consequence of flow (Chapter 4). I contribute to the flow theory by providing evidence that high levels of flow at work may activate addiction through repetition of work activities (Trayes et al., 2012), leading to workaholism. Moreover, I also contribute to the flow theory by providing evidence for an inverted U-shaped relation between flow at work and SWLB. I thereby demonstrate the too-much-of-a-good-thing effect of flow. Finally, I provide evidence that flow promotes job crafting.

My findings also suggest several contributions for *ethical blindness construct*. Even though ethical blindness has been identified as a construct that can help us to better understand unethical behavior, knowledge about the presence of ethical blindness in

organizations, the conditions in which it occurs, and its consequences remains limited. This may be due to the lack of an instrument appropriate for evaluating ethical blindness in organizations. Thus, in Chapter 2 I empirically examine how ethical blindness is manifested and provide evidence that ethical blindness is a multidimensional construct consisting of 13 items measuring the following dimensions: rationalization (five items), routine (four items), and ignorance (four items). Therefore, I contribute to the understanding of the ethical blindness construct by conceptualizing, developing, and testing a comprehensive scale to measure ethical blindness in the workplace.

Further, in Chapter 3 I contribute to the theory by examining the mechanisms that influence the occurrence of ethical blindness in organizations. More precisely, I find empirical evidence that flow at work decreases ethical blindness, whereas, under some conditions, time pressure increases its occurrence. To the best of my knowledge, this is the first empirical examination of antecedents of ethical blindness in a work context.

Further, I provide important insight into the conditions under which workaholism occurs and thereby contribute to *workaholism theory*. I answer the call to examine the relationship between enjoyment and workaholism (McMillan, Brady, O'Driscoll, & Marsh, 2002) and contribute to workaholism theory by examining the conditions under which enjoyment influences workaholism. Specifically, I introduce new behavioral reinforcements in the work environment (e.g., job crafting) and demonstrate that when employees, often in flow, have the opportunity to craft their work, they are more likely to become workaholic. Moreover, I demonstrate that this is even truer for employees who are future oriented (i.e., have strong future time perspective). Taken together, I contribute to workaholism theory by examining the circumstances under which workaholism occurs and by considering flow experience, job crafting, and future time perspective as causal mechanisms.

Finally, my dissertation contributes also to *job crafting theory* by answering the call to explore the dark sides of job crafting (Grant & Ashford, 2008). Namely, I provide empirical evidence that job crafting may lead to workaholism. In addition, I proposed and found that future-oriented employees will more likely craft their jobs and thereby are more likely to become workaholics. Moreover, I contribute to job crafting theory by providing evidence that the desire to continuously experience flow at work presents the possible antecedent for job crafting.

Practical implications

This dissertation offers several implications for managers. First, I identified eight environmental antecedents of flow (job resources, goal-directed activities, job characteristics, service system, job dimensions, interactivity, culture, and leadership style). This gives managers an idea of how they could promote flow at work and thereby its positive, organizationally relevant outcomes (e.g., creativity, performance, learning, knowledge sharing). Second, the research also shows that the work environment has an important influence on ethical blindness at work. In order to reduce rationalization (one of the dimensions of ethical blindness), managers should clearly communicate

organizational rules. They thereby decrease the likelihood that employees will behave unethically due to mixed feelings about what counts as right or wrong in the organization. In relation to that, managers should create a safe environment in which employees will be able to give their opinion without being afraid that they will lose their job because of this.

This research also suggests that managers should set clear and specific goals and therefore set standards and help their employees clearly understand what is expected of them in terms of their task outcome. In doing so, they will increase the occurrence of flow and decrease the likelihood of ethical blindness, resulting in lower financial, reputational, and emotional costs for the organization (Karpoff et al., 2008). However, managers should pay attention when introducing factors that stimulate flow experience at work because too much flow at work leads to workaholism and entails direct and indirect costs in terms of employee well-being and physical and mental health (Ng et al., 2007). Related to this, even though job crafting can influence outcomes that are perceived as positive (by the organization), managers should be aware that job crafting may also be related to higher costs due to workaholism.

Moreover, there are several important implications for human resource professionals that arise from this dissertation. First, I identified 31 individual antecedents of flow experience. This list of individual characteristics needed for experiencing flow could be useful when selecting new employees. Specifically, when selecting new employees human resource professionals can check whether individuals have the proper characteristics to allow them to experience flow at work. Further, when selecting new employees, human resource professionals should also consider whether work characteristics and challenges will allow individuals to experience a high level of flow at work.

REFERENCES

- Baker, D. R. (1990). Citation analysis: A methodological review. *Social Work Research and Abstracts*, 26(3), 3-10.
- Ceja, L., & Navarro, J. (2011). Dynamic patterns of flow in the workplace: Characterizing within individual variability using a complexity science approach. *Journal of Organizational Behavior*, 32(4), 627-651.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. Pennsylvania, U.S.A: Harper Collins Publishers.
- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy? *American Psychologist*, 54(10), 821-827.
- Csikszentmihalyi, M., & LeFevre, J. (1989). Optimal experience in work and leisure. *Journal of Personality and Social Psychology*, 56(5), 815-822.

- Debus, M. E., Sonnentag, S., Deutsch, W., & Nussbeck, F. W. (2014). Making Flow Happen: The Effects of Being Recovered on Work-Related Flow Between and Within Days. *Journal of applied psychology, 99*(4), 713-722.
- DeVellis, R. F. (2003). *Scale development: Theory and applications*: Newbury Park: Sage.
- D'Mello, S. (2013). A selective meta-analysis on the relative incidence of discrete affective states during learning with technology. *Journal of Educational Psychology, 105*(4), 1082.
- Eldred, T. W. (2012). Prescriptions for Ethical Blindness: Improving Advocacy for Indigent Defendants in Criminal Cases. *Rutgers Law Review, 65*(2), 333-394.
- Fullagar, C. J., & Kelloway, E. K. (2009). Flow at work: An experience sampling approach. *Journal of Occupational and Organizational Psychology, 82*(3), 595-615.
- Glad, B. (2002). Why Tyrants Go Too Far: Malignant Narcissism and Absolute Power. *Political Psychology, 23*(1), 1-2.
- Grant, A. M., & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in organizational behavior, 28*, 3-34.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational research methods, 1*(1), 104-121.
- Karpoff, J. M., Lee, D. S., & Martin, G. S. (2008). The cost to firms of cooking the books. *Journal of Financial and Quantitative Analysis, 43*(03), 581-611.
- Keller, J., & Bless, H. (2008). Flow and regulatory compatibility: An experimental approach to the flow model of intrinsic motivation. *Personality and social psychology bulletin, 34*(2), 196-209.
- Keller, J., & Blomann, F. (2008). Locus of control and the flow experience: An experimental analysis. *European Journal of Personality, 22*(7), 589-607.
- Llorens, S., Salanova, M., & Rodríguez, A. M. (2013). How is flow experienced and by whom? Testing flow among occupations. *Stress and Health, 29*(2), 125-137.
- Locke, E. A. (1968). Toward a theory of task motivation and incentives. *Organizational Behavior and Human Performance, 3*(2), 157-189.
- McMillan, L. H., Brady, E. C., O'Driscoll, M. P., & Marsh, N. V. (2002). A multifaceted validation study of Spence and Robbins'(1992) Workaholism Battery. *Journal of Occupational and Organizational Psychology, 75*(3), 357-368.
- Moberg, D. J. (2000). Time pressure and ethical decision-making: The case for moral readiness. *Business & Professional Ethics Journal, 19*(2), 41-67.
- Nakamura, J., & Csikszentmihalyi, M. (2002). The Concept of Flow. In C. R. Snyder & S. S. Lopez (Eds.), *Handbook of Positive Psychology* (pp. 89-105). Oxford, UK: Oxford University Press.
- Ng, T. W., Sorensen, K. L., & Feldman, D. C. (2007). Dimensions, antecedents, and consequences of workaholism: A conceptual integration and extension. *Journal of Organizational Behavior, 28*(1), 111-136.
- Oates, W. (1971). Confessions of a workaholic: The facts about work addiction. *New York: World*.
- Palazzo, G., Krings, F., & Hoffrage, U. (2012). Ethical Blindness. *Journal of Business Ethics, 109*, 323-338.

- Peifer, C., Schulz, A., Schächinger, H., Baumann, N., & Antoni, C. H. (2014). The relation of flow-experience and physiological arousal under stress—Can u shape it? *Journal of Experimental Social Psychology*, *53*, 62-69.
- Petrou, P., Demerouti, E., Peeters, M. C., Schaufeli, W. B., & Hetland, J. (2012). Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior*, *33*(8), 1120-1141.
- Pittaway, L., Robertson, M., Munir, K., Denyer, D., & Neely, A. (2004). Networking and innovation: a systematic review of the evidence. *International Journal of Management Reviews*, *5/6*(3&4), 137-168.
- Rodríguez-Sánchez, A. M., Schaufeli, W., Salanova, M., Cifre, E., & Sonnenschein, M. (2011). Enjoyment and absorption: An electronic diary study on daily flow patterns. *Work & Stress*, *25*(1), 75-92.
- Salanova, M., Bakker, A. B., & Llorens, S. (2006). Flow at Work: Evidence for an Upward Spiral of Personal and Organizational Resources*. *Journal of Happiness Studies*, *7*(1), 1-22.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*(1), 5-14.
- Wells, A. J. (1988). Variations in mothers' self-esteem in daily life. *Journal of personality and social psychology*, *55*(4), 661.
- Tabassum, A., & Rahman, T. (2013). Gaining the insight of workaholism, its nature and its outcome: A literature review. *International Journal of Research Studies in Psychology*, *2*(2), 81-92.
- Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology*, *36*(2), 1-9.
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, *14*(3), 207-222.
- Trayes, J., Harré, N., & Overall, N. C. (2012). A Youth Performing Arts Experience Psychological Experiences, Recollections, and the Desire to Do It Again. *Journal of Adolescent Research*, *27*(2), 155-182.
- Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of personality and social psychology*, *77*(6), 1271.
- Zupic, I., & Čater, T. (2015). Bibliometric Methods in Management and Organization. *Organizational Research Methods*, *18*(3), 429-472.

Governance of Inter-Organizational Collaborations When Engaged in Open Innovation

Bagherzadeh Niri Mehdi
ESADE Business School

Abstract

Using external knowledge, through collaborative projects with external partners, leads to greater innovation performance. But, many collaborative innovation projects have failed completing their objectives. The thesis examines this problem by studying the governance mechanism of collaboration process in both execution and formation phases of projects. I seek to understand the nature of collaboration dynamics and the attributes of projects affecting governance mechanisms. To do so, three specific studies are framed: 1) How do firms manage the dynamics of collaboration process? 2) Does a formalized joint technology-development process help that a collaborative innovation project is successfully completed? 3) Which open innovation modes do managers choose for projects by different attributes?

[Link to Paper](#)

The Impact of International Alternative Funds to the Real Economy

ILIĆ Miroslav
University of Zagreb

Abstract

This dissertation analyses the impact of alternative capital funds to the real economy and economic growth. Venture capital funds have an important role to supply high risk capital, which is crucial for the development of new innovative enterprises. Private equity funds can increase the productivity and accelerate restructuring of economic subjects and contribute to increased productivity in economy through technological and products development, strategy development and introduction of optimal business models. This dissertation also discusses the possibilities and key factors of integration of alternative funds in the financial system, investor motives and funds international capital flows.

Keywords: alternative funds, private equity, venture capital, economic development, economic growth, economic development

1. Introduction

Private equity and Venture capital funds are considered alternative investments and represent a newer form of financial institutions that has a very important and irreplaceable position in developed countries and their financial markets. In a narrow sense, private equity investments represent an investment of specialized financial institutions in assets that are not listed on public exchanges and are rather privately held (Kaplan and Strömberg, 2009, Cornelius, 2011). Modern private equity capital can be more broadly defined. Today's modern private equity funds are making the investments in various forms of assets that are not quoted on the stock exchanges and have limited liquidity. These funds are very often engaged in operations of companies of their investments and influence on the company's management to achieve goals and changes what is a regular case at such of the transactions. Such investments can be standard private equity but also what comes out of the classical framework of investments as a mezzanine capital (Berman, 2013, Nijs, 2014), hybrid capital, distressed debt (Altmann and Hotchkiss, 2005), the minority equity stakes and recapitalisation of existing enterprises. Modern funds private equity investments have the usual structure of the limited partnerships but there are alternative investment funds that are quoted on the stock exchanges and those that are owned by the individual persons or legal entities (Fraser-Sampson, 2007, LPEQ, 2008, Gompers et al, 2015). The first private equity activities were developed in the United States and later, especially after 1990. Funds activity spread practically all over the world. Today, the majority of private equity transactions and by amount and range performed outside the US (Steinberg and von Bismarck, 2008). Many alternative investments and their investment process are related

to institutions (Fang et. al., 2013, Morkoetter and Wetzler, 2015) in financial system that facilitates this process.

Recent development of funds activity, their structure and growing relationships with the financial markets require review and development of knowledge about them, especially in context of recent economic changes. Especially important is the impact of Private equity funds on the companies and the real economy through the restructuring of enterprises (Jensen, 1989, Kaplan and Strömberg, 2009, Popov and Roosenboom, 2009, Paglia and Harjoto, 2014, Olsson and Tåg, 2015, Gompers et al, 2015). That important scientific issue has not been sufficiently researched up to day. Relatively high rates of return (Harris et al., 2015) on investment are stimulating additional allocation of money in the alternative investment funds, which today represent the inevitable category in the portfolios institutional investors in developed countries. Business and macroeconomic impact of alternative investment funds can be manifested through the impact on the employment, increasing productivity and helping the development of enterprises and innovation (Lerner et all., 2011, Dessi and Yin, 2012, Chemmanur et al., 2014). Additionally, Venture capital (Sahlman and Gorman, 1989) helps establishing new companies, often in sector of higher technologies that can achieve higher growth rates of employment but also raise the overall technological and business level of the economy. Such processes can increase the competitiveness and adaptability of the economy over the long term and contribute to the long-term employment growth, reducing the trade deficit, reducing external debts and with the transfer of technology and business skills, which are deficit in many economies. Just the introduction of the optimal business model with an adequate funding can bring in many companies in the short term a much better business results. Literature lacks adequate research on real effects of the alternative investments, especially of Private equity and Venture capital funds. Therefore, this PhD thesis researches very important, actual and relevant areas of investments that have real business effect and are important for the financial system and the economic growth.

2. Research motives and goals

This thesis primarily wants to research main influence factors of international private equity funds to the real economy. Also in line with the funds activity and their value proposition, this thesis researches the integration of these funds into the financial system.

Main research aspects and factors of this PhD thesis were developed and realized as following scientific goals in order to:

1. Define, explain and theoretically analyse the types and the forms of alternative funds, their structure, modalities of activity and other relevant activity factors;
2. Consider and explore actual trends in development of alternative investment funds, especially with regard to opportunities and changes in today's financial environment;

3. Explore and analyse the essential institutional aspects of these types of funds on modern financial markets;
4. Give detailed analysis and overview of investment risk and possibilities to reduce them;
5. Analyse Private equity and Venture capital funds relationship with the real economy through the impact on the establishment, development and restructuring of companies;
6. Research, summarize and present overview of Private equity and Venture capital history, particularly in the context of business development and important business transactions;
7. Analyse the impact and influence of government policies on Private equity and Venture capital funds activity;
8. Explore and present possibilities to increase business activity and economic growth with the alternative investments.

This thesis also contributed with its research to business and applicative goals in order to:

1. Explore and determine potential, modalities and effects of alternative funds in developing and optimizing businesses;
2. Explain and analyse modalities of activity of Private equity and Venture capital funds and other relevant factors, especially in business context;
3. Analyse risk and return performances of Private equity and Venture capital funds as major factor for investors and the financial system;
4. Explore and analyse integration of Private equity and Venture capital funds in financial system and financial markets, particularly on the business and deal level;
5. Explore the international transfers of alternative investment funds capital and their international investments, and to analyse possible obstacles to international competitiveness in attracting their investments;
6. Determine possibilities of Private equity and Venture capital funds in context of each economy, particularly in the context of developing economies with high growth potential.

3. Dissertation structure research design and research on alternative investments

This PhD thesis is primarily structured throughout research studies and theoretical base in all of its chapters. Research concepts and scope is different in each chapter and are thematically aligned with the research purpose. Dissertation's chapters give comprehensive and systematic overview of Private equity and Venture capital as a very important modern phenomena and research area. The research was based on use of multiple data sources and other very relevant knowledge resources in order to achieve quality results. Qualitative analysis also gives broader understanding for the context of alternative investments, investor motives and investments results. Market overview in this chapter shows the typology of selected categories of alternative investments with their respective market size. This thesis uniquely combines effects on the company level with their cumulative impact on economic growth.

Table 1. Research design, data, scope and properties

Research part	1	2	3	4
Theme	Framework and institutional aspects of Private equity and Venture capital funds, Historical context	Fund integration in financial system and returns	International flows of Private equity and Venture capital investments	Economic impact of Private equity and Venture capital funds
Analysed factors/variables	Scope / modalities / Institutional and deal structure/value of activity	Scope and value of activity, Returns on investment (IRR), amounts of capital invested	International capital transfers	GDP growth rate, Activity modalities
Data type	Markets and business structures, Case studies, Assets and transactions values			Macroeconomic data, Volume of funds activity, Business concept
Main data sources for the analysis	Own research, Corporate publications, Historical context	PREQIN, Bloomberg, Own research	EVCA, PREQIN	EVCA, World Bank, OECD, Standard & Poor
Analysis method	Qualitative analysis	Descriptive statistics	Descriptive statistics, Panel analysis (n=210)	Qualitative analysis, Panel analysis (n=309), 3 models

Research part 1 and 2: Conceptual framework, business aspects and integration of Private equity and Venture capital funds into financial system

Private equity and Venture capital funds activity require full understanding both from academia, financial markets and the entire business community. Previous research is limited and does not give consensus on some very important questions. First chapter gives broad thesis introduction, outline of the thesis with the research design and expected contributions. Second chapter where the thesis and the research begins gives thorough overview of this asset class with detailed theoretical assumptions, literature review and selected data. This chapter gives detailed overview of Private equity and Venture capital funds, their structure and properties and about their placement as alternative investments. Venture capital funds are analysed in detail regarding their stage and modality of investments. Furthermore, this chapter analyses the returns of these funds' categories, primarily in the context of above average return rates as major investment motive. The research is based on the usage of returns data from various sources with the goal to analyse the characteristics of the returns and their variations, which are important part of the entire investment. Private equity and Venture Capital funds generally have bigger return rates than average investments (Cumming et al., 2013). Their investment success can be relatively shown in quartiles ranked by funds success. In addition, vintage year of each fund has influence on their success. Despite the results of average funds, top performers in each fund category in upper quartile have relatively big return rates, often in area of above 20 % IRR. This underlines the importance of good fund selection for which guidelines were given in thesis, as investments returns are not homogenous.

Furthermore, this research motives and approach of investors in global context is what gives broader overview and understanding of this asset category as a base for the business activities. This chapter gives an extensive overview and identification of risk properties for this asset class that influence business activity and their result. Proper risk framing is very important for this asset category due to their complexity and management requirements (e. g. Ljungqvist and Richardson, 2003, Harris et. all., 2014, Buchner et. all, 2015). Research in this chapter gives a comprehensive overview of possibilities to mitigate and reduce risk in this asset category with practical guidelines for business practitioners. This research finds that failure rates of Private equity backed companies despite higher debt and risk levels are not significantly larger than in other companies. This aspect underlines importance of good management practices and cost control in Private equity based companies. Results of investments in Venture capital backed companies are mixed, with greater differences between top performers and unsuccessful investments. This is in line with higher risk in early stage companies and higher rewards in best performing companies than can be in some cases even bigger than ten times return on investment. Chapter is concluded with an extensive historical overview of Private equity and Venture capital history, which gives a broader perception of the research and presents many interesting cases with results in sense of the investment nature and real economic growth. Historical development of The Private equity and Venture capital gives

many examples of companies that would not exist or at least exist in this form without help of these funds.

Next chapter analyses business aspects of Private equity and Venture capital funds, primarily from the functional perspective. Various aspects of fund management and structure were discussed theoretically and practically with the regard to business use. Research in this thesis gives an overview of important factors of fund's relations with investors and develops important factors that determine fund's fundraising. As research in the thesis shows previous success and experience influences investor attitude and in this case, persistence of certain fund managers can result quicker and stronger fundraising. This research shows increasing amounts of money allocated into various alternative funds despite recent financial crisis. Average annual fund-raising for global Private equity funds is above 400 billion USD and un-invested capital is in range of more than trillion USD! Research work in this chapter also provides typology and research of other less conventional types of Private equity related funds, which was not researched in previous literature. This chapter provides a comprehensive and up-to date overview and research of actual effects of regulatory practice in Europe. This research finds that alternative funds have increasing potential despite recent financial crisis, macroeconomic problems and other major uncertainties. Data from this research show recovery in both investing and fundraising, although with reduced external debt availability and deal size.

Research part 3: International transfers of Private equity and Venture capital funds

Research in this chapter analyses intentional flows and international country competitiveness for alternative investment funds and their investments. Research work in this chapter examines properties and characteristics of intentional money flows to Private equity and Venture capitals flows. In addition, this chapter gives statistical overview of Private equity and Venture capital funds activity in European regions with historical and actual perspective. This research considers and compares segment of alternative investments in various countries and analyses their prevalence. Research finds that European system of alternative investment funds is highly determined with international capital flows, especially for some countries. In recent years, the European Private equity transactions were predominantly financed sources outside of Europe (most often the USA) and also cross border investments inside Europe are very important. Concentration of Private equity and Venture capital investments is primarily in countries with big tradition of such investments, and these investments are unequally distributed in Europe, with higher levels in developed countries that have tradition and understanding for such investments and higher levels of innovation. Yearly investments of these funds range from under million Euros to almost 10 billion Euros in some European countries. That aspect underlines the importance of business culture and general acceptance for such investments as shown in this research. This research also aims to analyse and identify which factors cause these differences and influences international competitiveness for such investments. Panel analysis with fixed effects, with broad European sample and long time period (25 years) in this thesis, shows the significance of economic development as GDP per capita and research and development expenses as positive factors for increasing intentional Private equity and Venture capital investments. This research identifies factors

that can hinder such alternative investments and reduce competitiveness as guideline to reduce such problems. As determined in this thesis, the economic factors like economic development, research and development investment and scope of investment opportunities are very important for international flows of alternative investments. Findings from the research are generally consistent with the investment practice.

Research part 4: Real effects of Private equity and Venture capital investments

Respective chapter analyses the most important part of this dissertation – the real effects of Private equity and Venture capital investments and factors that accompany these effects. Research in this chapter provides in-depth analysis of Private equity and Venture capital effects on companies and real economy. This part also considers the results, data and analysis from studies in previous chapters to consider scope and possibilities of fund's activities. This research analysis separately and together both Private equity and Venture capital funds as they have different ways of influencing real companies and businesses. The research in this chapter analyses and identifies various influence factors of Private equity funds on portfolio companies and their value adding properties, particularly in comparison with conventionally managed companies without fund's investments. All identified aspects improve business productivity and growth when properly introduced by Private equity funds as shown in the thesis. The research in this chapter is based on functional and conceptual perspective of such investments, which enables better overview of business effects. The main influence factors of Private equity funds are oriented towards increasing company productivity (based on industry standards), introducing and accelerating development processes and human resources optimizing as identified in this research.

This research found that private equity funds bring in companies optimized management, developed products and services, technological innovation and what is very important - business growth orientation. Private equity funds in portfolio companies redefine human resources and rationalize them. Despite these rationalizations, the research does not find massive workers' layoffs, and the long-term employment growth is possible with the company growth. The main value proposition of Private equity funds in this thesis is based on the introduction of optimal business model in portfolio companies. As suggested in this research, this optimal business model presents an optimal combination and properties of all important business factors in portfolio companies in order to make them competitive and achieve their business goals. Experienced private equity funds have insight and in-depth analyse capacity to define and introduce necessary business changes. As shown in this research and previous chapters, this factor can significantly differ between funds, which makes them more or less successful. I find large support for potential of positive influence of Private equity funds on portfolio companies.

Venture capital funds have an irreplaceable role in economy to finance high risk and innovative projects that are not eligible for classical financing and many of today's largest and most innovative companies would not even exist without their help. This research can support the view of Venture capital funds as pools of knowledge and risk management tools to optimize effect, use and allocation of riskier assets, reduce failure rates with the funds knowledge and experience, for both investors and new entrepreneurs. This directly contributes to economic growth. The research shows the importance of

developed Venture capital system for concentration of entrepreneurs and their ambition to start business in certain regions. In addition, there is an effect of giving a role model to other entrepreneurs to start their own business. This is an important, underestimated cultural aspect of Venture capital and his development in some regions. The typology of Venture capital influence on portfolio investments was researched and developed in this research. In an early phase of company's founding, this influence is identified towards the development of business idea, start-up financing and creation of business structure. Later stages are supported through monitoring of business functions, entrepreneur's personal development, continued advising and other help for commercialization of ideas. The research shows that companies that are backed by Venture capital funds have bigger growth rates than other companies, and lower failure rates than other new companies. Other studies suggest big importance in creating new jobs what is in line with this study. This study analyses factors and possibilities of Corporate Venture capital as these funds have great potential, which is a sector limited with orientation and strategy of their parent corporation. Furthermore, this chapter researches in detail the government and state support for alternative funds. This analysis finds positive influence and modalities of government programs to increased availability of risk capital. Additionally, a special panel model was created in this research with fixed effects, long period (25 years), control variables and broad European sample to empirically investigate positive influence of Venture capital and Private equity funds on economic development. Analysis was made for both combined and separately Private equity and Venture capital investments. The research results confirm this research hypothesis about positive influence of these on economic growth rate. Both funds' categories show robust positive results separately and combined. Results are statistically stronger for positive influence of Venture capital funds than Private equity funds.

4. Theoretical and empirical scientific contributions to the research field

1. Analyse and define the types of alternative investment funds, their structure, modalities of activity and other relevant business activity factors

Research in the thesis provides added value with more accurate typology of such funds, especially relating to their more sophisticated variations, as well as more detailed overview than in other literature. Furthermore, work in this thesis further interconnects funds' properties with their financial aspects and business activity aspects. This detailed overview in this thesis presents an extensive overview of these funds in actual and functional context. Full familiarisation with this kinds of institutions and funds, as well as their modalities of activity represents a scientific and professional interest.

2. To analyse and consider the important business and institutional aspects of these types of funds

A very broad sphere of stakeholders in such transactions was addressed in this thesis with a comprehensive review of and knowledge about the structure and the business principles of alternative investment funds, what was presented in detail in this thesis. Research in this thesis gives broader access to knowledge and analysis for this investment type regarding its complexity and what is very important-limited liquidity. This thesis particularly gives unique and systematic overview of risk management process of these funds as key factor of achieving investment result and preventing losses.

3. Explore the international transfers of capital of alternative investment funds and their international investments and obstacles to competitiveness

Although classic economic theory classifies alternative investment funds in direct foreign investments, such investment mechanisms and criteria are essentially different. International competitiveness for this type of investment is very little researched area and relevant options are not sufficiently well known. These intentional capital flows are primarily as determined in thesis, between developed countries and are predominantly between countries with developed markets and tradition for such investments. Research in this thesis reduced research gap in functioning of Private equity and Venture capital international investments in Europe, especially in countries with insufficient fundraising.

4. To determine a relationship with the real economy through the impact on establishment, development and restructuring of the companies

Private equity and Venture capital investments have macroeconomic effects with regard to the comprehensiveness of the business of the company in which are they investing. These effects were not previously sufficiently known and they may vary on many external factors. Research work in this thesis has analysed impact of these factors, and factors like impact on wages, human resources, technology and research and development showed as very important. It is determined empirically with theoretical assumptions that macroeconomic effects of fund's investments contribute to increase productivity and economic growth. Research also shows importance of adequate investment targets which that operate sub-optimally have space to business improvement with economic goals. It was also determined crucial importance of Venture capital funds for financing of innovative companies, which lack capital resources and business knowledge. Research in this thesis systemized impact factors for influence of this fund to real economy. By my knowledge this the most comprehensive and broad research work about real effects of these funds with macroeconomic impacts.

5. Business contribution and added value

This PhD thesis provides valuable contribution to business throughout interconnecting theory and up-to-date praxis. The types and properties of alternative funds are analysed in detail with their individual properties in the business and investment context. That provides a more in-depth overview of this asset class by today's standards with practical business contribution than it did before. It complements this under researched area

represents modern business phenomena out of classical investment area with significant and growing potential. This detailed overview can help investment planning and provision of management ideas to business practitioners in Venture capital funds that manage investment, as well as for companies that receive such Venture capital financing. With factors analysed in this PhD thesis, the Investors can have better insight regarding which investments with their respective indicators to select while preserving capital and avoiding sub-optimal deals. Research in this thesis can help new entrepreneurs and funds that finance them to run and plan investments better and with greater certainty. With the assistance of Venture capitalists it can be much easier to overcome that risky phase and optimize money use as shown in this research. This is attributable to specific knowledge of Venture capital funds in sectors and routine in certain start-up business aspects.

Systematic overview of business factors and possibilities for each fund type in this thesis is much broader than in other literature and gives them presented in one place what greatly increases their availability to business practitioners. That is very important in context of quick and consequent business decisions with long-term effects what is necessity in today's business environment. Findings from the thesis could be very valuable to asset managers and other investors in this asset class, especially in the context of previous lesser exposure and knowledge about this asset class. That can help them to evaluate investments, not only in financial sense but also in the context of long-term company effects and viability. With better understanding of the investment process investors are more able to select investment funds regarding to their business process quality. Historical business context of Private equity and venture capital investments helps better understanding of long-term effects of such investments and gives business ideas.

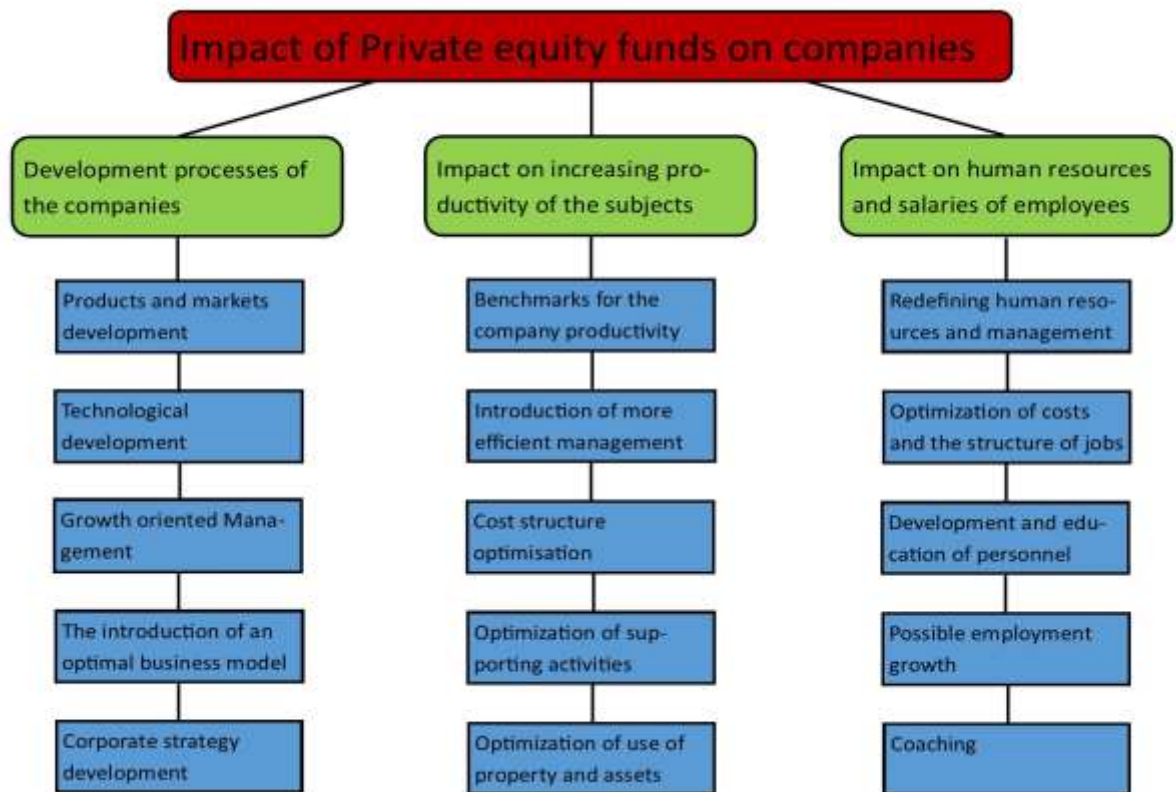
6. Conclusion and future research agenda

This PhD thesis gives more integrative approach to alternative investments regarding their complexity and individual differences from the institutional context. Findings from this thesis recognize optimal modalities of institutional aspects regarding Private equity and Venture capital funds and their investments. This thesis can present a reference work that covers the whole investing process from the standpoint of all practitioners in such business transactions. Those findings have decreased the research gap about integration of alternative investment funds in the financial system. This thesis developed an extensive conceptual framework for development and optimisation of companies by Private equity and Venture capital funds, which provides a good basis for future research. Also, the impact of future dynamics of financial system and related uncertainties is important research question regarding future investor attitude and business decisions. However, data scope for such research is limited.

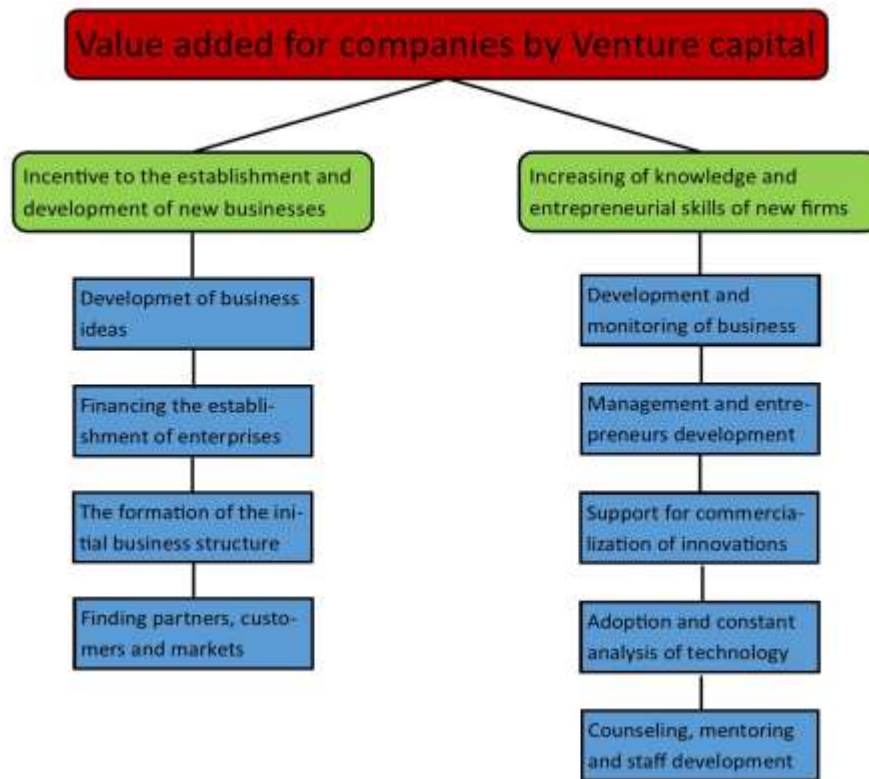
This thesis conducted an in-depth review of available investment statistics, legislation, guidelines, selected investment cases, strategies, fund types, market movements and recent investment praxis. Future cumulative impact of these factors could be more researched on deal level effect. The research confirms the importance of Private equity and Venture capital funds for both financial systems and economic systems. This unique

asset category has both positive influence on economic growth and positive contribution for investors return expectations. Framework analysed and identified in this thesis can help to optimize investment programs of these funds and to achieve optimal results. There is a potential for future research of that the impact in real companies regarding their individual properties and in future economic environment. Research results in the whole thesis are showing good value proportions for stakeholders and long-term perspectives despite occasional fluctuations in the economy. Individual business process quality of funds and their impact on investments could present interesting future research area. Business processes quality and value adding mechanisms on investments can benefit both real economy and investors, what makes such research very important. This topic is under-researched in previous literature, particularly in context of deal flow and investment opportunities. Combined use of several influence instruments of these funds with good underlying economy fundamentals could achieve good results. Future research of these guidelines can help the development of Private equity and Venture capital investments in developing and post-transition countries with the goal of achieving economic growth. There is insufficient research on the real effect of Private equity and Venture capital in literature, and this research gives scientific and applicative contribution. Particularly in the context of the economies where this type of investment represents less known category and where is necessary to adequately consider the essential features of the relations with such institutions.

Picture 1: Identified impact factors of Private equity funds on companies



Picture 2: Identified value adding factors by Venture capital funds



Selected references

Altman, E. I. and Hotchkiss, E. (2005), *Corporate Financial Distress and Bankruptcy*, Wiley Finance, Hoboken, New Jersey, USA

Berman, A. (2013), Mezzanine Debt and Preferred Equity in Real Estate, Baker H. and Filbeck G. (ed.), *Alternative Investments: Instruments, Performance, Benchmarks and Strategies*, John Wiley & Sons, Hoboken, NJ, USA, 163-183.

Buchner, A., Abdulkadir M. and Schwienbacher, A. (2015), *Does Risk Explain Persistence in Private Equity Performance*, Working paper

Chemmanur, T., Loutskina, E. and Tian, X. (2014), Corporate Venture Capital, Value Creation, and Innovation, *Review of Financial Studies*, 27 (8), 2434-2473.

Cornelius, P. (2011), *International Investments in Private Equity: Asset Allocation, Markets, and Industry Structure*, Academic Press. London, UK.

Cumming, D., Hass, L. H. and Schweizer, D. (2013), Private Equity Benchmarks and Portfolio Optimization, *Journal of Banking and Finance*, 37 (9), 3515-3528.

- Dessi R. and Nina Yin N. (2012), The Impact of Venture Capital on Innovation, Douglas Cumming (ed.), *The Oxford Handbook of Venture Capital*, Oxford University Press.
- Fang, L. H., Ivashina, V. and Lerner, J. (2013), Combining Banking with Private Equity Investing, *Review of Financial Studies*, 26 (9), 2139-2173.
- Fraser-Sampson, G. (2007), *Private Equity as an asset class*, John Wiley & Sons Ltd, Chichester, England.
- Gompers, P., Kaplan, S. and Mukharlyamov, V. (2015), *What Do Private Equity Firms Say They Do?*, Harvard Business School Finance Working Paper No. 15-081
- Harris, R., Jenkinson, T. and Kaplan, S. (2014), Private Equity Performance: What Do We Know?, *The Journal of Finance*, 69 (5), 1851–1882.
- Harris, R., Jenkinson, T. and Kaplan, S. (2015a), *How Do Private Equity Investments Perform Compared to Public Equity?*, Darden Business School Working Paper No. 2597259.
- Jensen, M. (1989), Eclipse of the Public Corporation, *Harvard Business Review*, 76 (2), 323-335.
- Kaplan, S. and Strömberg P. (2009), Leverage Buyouts and Private Equity, *Journal of Economic Perspectives*, 23 (1), 121-146.
- Lerner, J., Sorensen, M. and Strömberg, P. (2011), Private equity and long-run investment: The case of innovation Working Paper, *The Journal of Finance*, 66 (2), 445–477.
- LPEQ (2008), *How Do Institutional Investors Regard Listed Private Equity: A Research Survey of 100 European LPs*, LPEQ Listed Private Equity, London.
- Ljungqvist, A. and Richardson M. (2003), *The cash flow, return, and risk characteristics of private equity*, NBER Working Paper No. 9454.
- Morkoetter, S. and Wetzler, T. (2015), *Do Private Equity Funds Benefit from Their Relationships with Financial Advisors in M&A Transactions?*, University of St.Gallen, School of Finance Research Paper No. 2015/15.
- Olsson, M. and Tåg, J. (2015), *Private Equity, Layoffs, and Job Polarization*, IFN Working Paper No. 1068.
- Paglia, J. and Harjoto, M. A. (2014), The Effects of Private Equity and Venture Capital on Sales and Employment Growth in Small and Medium Sized Businesses, *Journal of Banking and Finance*, 47, 177-197.
- Popov, A. and Roosenboom P. (2009), *On the real effects of private equity investment: evidence from new business creation*, ECB Working Paper No.1078.
- Sahlman, William and Gorman, Michael, What Do Venture Capitalists Do? (1989), *Journal of Business Venturing*, 4 (4), 231-248
- Nijs, L. (2014), *Mezzanine Financing*, John Wiley & Sons, Chichester, U.K.

Financing International Business: Distance, the Cost of Capital, and Financial Structure

Lindner Thomas

Vienna University of Economics & Business

Abstract

Firms face strategic imperatives because of their asset and financing positions. These imperatives are functions of where businesses are present. This dissertation connects the strategy and finance literatures to explain how firms operate in global markets. Information theory is used to understand how firms react to different environments around the world. Theory on information asymmetry is extended to understand liabilities of foreignness in global bond markets. Finally, asymmetries in firm's M&A strategies depending on investment from developed to developing countries and vice versa are investigated. Together, the three essays of the dissertation contribute to theory and practice of corporate global strategy.

Summary

Introduction

What firms want to do strategically is a function of their internal resources and capabilities, as well as the cost of interactions in the market. Yet, what firms can do, and how they value the opportunities that present themselves, are largely a function of what they have on their balance sheet (Teece, Pisano, & Shuen, 1997). The right side of the balance sheet, the source of capital, however, has long played a subordinate role in strategy literature. Firm capital structure and the cost of raising new financing are both constraints to what firms can do (Bowe, Filatotchev, & Marshall, 2010, Kochhar, 1996, Kochhar & Hitt, 1998), as well as cognitive anchors for managers who make investment decisions (Fama & French, 2004, Gallo, 2015, Sharpe, 1964). Finance literature provides insights into these and many other positions in the balance sheet. Therefore, more research on the integration of finance and strategy research is called for to make use of the full scope of firm actions in deriving strategy recommendations. This holds true particularly in the light of potential synergies between well-understood data on the finance side and well-grounded theory on the strategy side. As global integration makes isolated analysis of national markets both difficult and less relevant, I contribute to closing this gap using multinational analyses.

Capturing national institutions, and their differences, makes the analysis of financial constraints on international strategy possible (Berry, Guillén, & Nan, 2010). Yet, despite increasing understanding of which national-level characteristics drive firm strategies,

there is a lot to be done with regards to conceptual clarity of institutions and institutional distance (Shenkar, 2001, Shenkar, Luo, & Yehekel, 2008). Chapter one of this three-essay-dissertation extends critique on cross-national distance from prior literature and proposes a way to capture institutional distance using capital market data. This approach accomplishes two goals. First, an institutional distance measure with a straightforward interpretation helps in understanding what determines financial constraints to cross-border strategic action. Second, bringing together the international strategy and finance literatures in such a measure facilitates the application of finance theory in an international context. This sets the stage for the analysis of strategic action in the remaining chapters of the dissertation at hand. Following a much-used categorization in corporate finance, I look into a topic connected with the origin of funds, and one connected with the use of funds in the remaining chapters. In chapter two, I look into the cost of raising debt capital abroad. There is a strong connection to country characteristics in the pricing of debt (Longstaff & Schwartz, 1995), which connects well with the first chapter on how to capture national differences. Chapter two investigates biases against foreign firms in the international capital markets termed “capital market liabilities of foreignness” (Bell, Filatotchev, & Rasheed, 2012). These biases are associated with a lack of legitimacy (Zaheer, 1995), which necessitates an investigation into how organization legitimacy (Suchman, 1995) is formed and maintained. As a result, a connection to a much-discussed topic in strategy literature can be made. The topic of chapter three is international corporate acquisitions. Here, the trade-off between opportunities and challenges of international expansion is particularly clear. On the one hand, investments in distant countries are hard to manage because managers are unfamiliar with the foreign environment. On the other hand, investments in distant markets can be expected to yield returns that are largely uncorrelated with returns in the home market. An interesting conflict of strategic and financial reasoning emerges. Also here, understanding cross-national distance in terms of both strategy and finance is necessary which connects well with chapters one and two.

Chapter 1. Capturing Cross-National Distance: An Evaluation, Development, and Tests

A holistic approach to cross-national distance based on financial market information addresses at least two severe challenges associated with the current research presented in the introduction above, a measurement problem (i.e. related to quantification) and a conceptual (i.e. related to assumptions) one. First, the tendency of increasing the depth of existing distance measures has led to the development of a large number of constructs, all contributing to the cross-national distance between two countries (Berry, Guillén, & Nan, 2010, Dow & Karunaratna, 2006), Kogut and Singh (1988). At the same time, developing a construct that holistically measures the overall distance between countries has been missed out upon. Second, most existing concepts, while representing “distance”, do not fulfil the assumptions that the metaphor to geographic distance implies (Shenkar, Luo, & Yehekel, 2008). This has led to “illusions” about their characteristics and to challenges with deriving normative implications for multinational companies (Shenkar, 2001).

There is agreement that national financial markets largely represent behavior of investors regarding the activities of local firms (Coval & Moskowitz, 1999). Accordingly, I expect financial markets to reflectively integrate institutional environments into prices of securities. I conceptualize cross-national distance on the country-pairing level. It is measured by quantifying the differences in investors' appraisal of firms' actions across countries. Ideally, I would account for all economic activities that take place in the respective countries. Since this is impractical, I look at the center-of-gravity of national economies: the lead index of their main stock exchanges.

There has been intense discussion on the efficiency of financial markets in several terms. With regards to efficiency in appraising information, research has moved from strong assumptions of efficiency (Fama, 1970) to a more skeptical approach (Choudhry & Jayasekera, 2014). My interpretation is based in communication theory (Krippendorff & Bock, 2009). Clearly, some underlying information is not reflected in financial markets' assessment. At the same time, financial markets may introduce additional noise to the process. Yet, their assessment is related to the underlying information. Using a reflective measurement, I only need the relationship between the latent construct and the measure, not a complete measurement for the measure to be valid (Jarvis, MacKenzie, & Podsakoff, 2003).

Using Shannon entropy (Bandt & Pompe, 2002) I directly measure cross-national distance by capturing the amount of information that is necessary to explain the behavior of one index given another. Formally, I consider the difference in returns between two lead indices as a time series x_t with N observations of T points in time. Then, I count how often certain sequences (π) occur and normalize by the number of observations (corrected for n , the length of the sequences). This figure (p) is interpreted as a probability and the Shannon (H) entropy of this probability is computed. The result is normalized by the length of the sequences (Bandt & Pompe, 2002) and market distance (h), a reflective and holistic measure of cross-national distance, is obtained. The maximum value of this distance is one which indicates the amount of information contained in a time series of white noise. The minimum is zero which indicates two series that are equivalent except for an intercept.

$$p(\pi) = \frac{\#\{t | t \leq T - n, (x_{t+1}, \dots, x_{t+n}) \text{ has type } \pi\}}{T - n + 1}$$

$$H(n) = - \sum p(\pi) \cdot \log_2 p(\pi)$$

$$h_n = \frac{H(n)}{n - 1}$$

I apply this procedure to the difference between 30 day (n) moving averages of daily returns of 48 indices from countries that jointly represent close to 90% of world GDP. Given some unavailable data, this results in 754 distances computed per period of observation (which ranges from the late 1800s to 2014).

I put market distance in context with existing measures of cross-national distance and investigate them regarding the match with the assumptions that underlie the concept of distance in strategy research. I also propose a formal derivation and empirical test (not available in this summary for lack of space) for the degree to which the respective conceptualizations of distance (e.g. Berry, Guillén, & Nan, 2010, Dow & Karunaratna, 2006, Kogut & Singh, 1988) match the underlying metaphor and therefore avoid the "illusion of symmetry" (Shenkar, 2001). I show empirically that market distance is

related to existing measures of cross-national distance. Finally, this chapter shows applications of the novel measure to questions relevant in international strategy: which organizational structures firms use to enter new markets and whether they choose to acquire an existing firm over founding a new one. These applications provide evidence that market distance is able to both explain variation beyond existing measures and capture effects that so-far have been overlooked.

Chapter 2. Peeling the Onion: Building Legitimacy in Global Capital Markets

Research on organizational legitimacy has provided important guidance that benefits organizations in many regards (Bitektine, 2011, DiMaggio & Powell, 1983, Zimmerman & Zeitz, 2002). Many ways to conceptualize organizational legitimacy have been proposed (Ruef & Scott, 1998). Only recently, however, the dynamic process of audiences assessing legitimacy based on different stakeholders' perceptions and signals has been investigated (Bitektine, 2011, Tost, 2011). Depending on the ability and willingness to commit resources, audiences rely on different degrees of cognitive shortcuts and heuristics (Tversky & Kahneman, 1974) to make decisions about perceived legitimacy under conditions of uncertainty and bounded rationality. So far, no attempt has been made to conceptually understand and empirically assess the process of legitimacy formation in a layered (or dynamic) process that is relevant for business practice. I address this gap by proposing a model of audiences' increasing reliance on cognitive shortcuts with decreasing resource commitment to the evaluation process. This model is applied to a process where explicit legitimacy judgements are made, that is dynamic (i.e. several audiences are addressed sequentially), and that is highly relevant for businesses at the same time: issuing debt capital in an international context.

Approximately one trillion US Dollar worth of bonds are raised internationally every year (Asquith, Au, Covert, & Pathak, 2013, Gozzi, Levine, & Schmukler, 2010). That is one third of all corporate debt traded on exchanges. Yet, the literature is largely silent about how internationally raised capital is priced. The price tag associated with debt is driven by the investors' assessment of the legitimacy of a repayment claim. In this assessment, investors infer this legitimacy based on the issuing organization's legitimacy, but also use cognitive shortcuts based on experts' assessments. In addition, firms can build relational legitimacy by associating with reputable actors in the financial markets. I argue that the key to minimizing the cost of debt is to build legitimacy (Suchman, 1995) with different audiences. First, rating agencies have to be convinced that the issuing firm is making a legitimate claim about repayment of the debt issued. Then, investors assess essentially the legitimacy of the same claim and judge how much they demand in return for the risk they assume when lending money to the company. In their judgement, investors take cognitive shortcuts: they rely on the experts' (e.g. the rating agencies') assessment and other heuristics.

Information diffuses from firms to non-expert audiences through several layers. I suggest that the more reputation an entity has at stake and the more resources it invests in finding out about a firm, the more resources it will invest and the less it will rely on cognitive shortcuts to make a public judgment. I then apply this reasoning to the bond issuing process using the conceptualization of legitimacy as proposed by Suchman (1995). Figure 1 shows the resulting expected relationships in the bond issuing process.

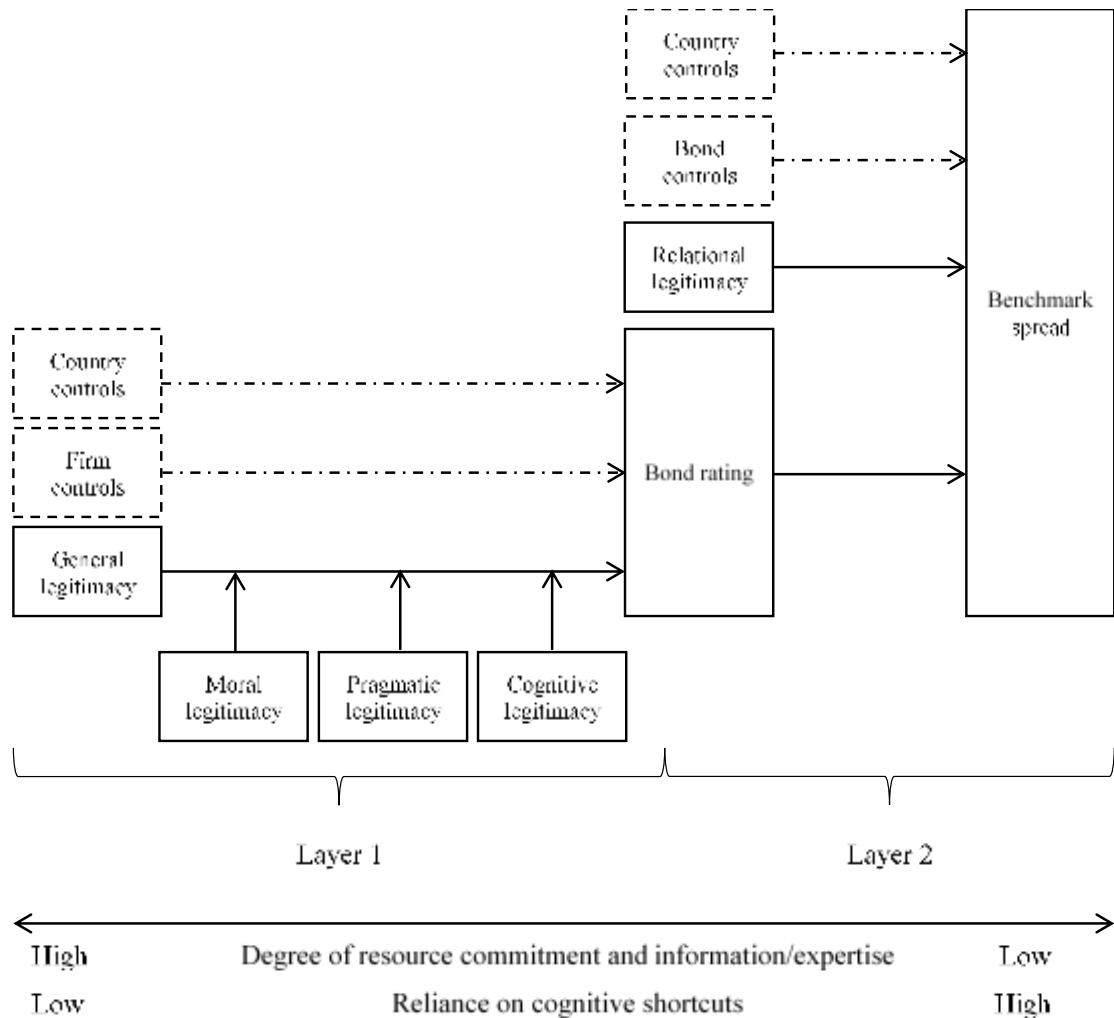


Figure 1: Conceptual model of the legitimacy formation process in the bond issuing process. For simplicity, I model only two layers of the legitimacy formation. Solid lines are variables of interest in this model, dotted / dashed lines are control variables.

I test these expectations on a dataset of 853 bonds issued outside the issuing firms' home capital markets. The data are from four host capital markets and on firms from 26 home countries. I build on previous research in the field as a source for the relevant control model (Atilgan, Ghosh, Yan, & Zhang, 2015). I use a custom-made measure of cross-national cultural distance based on the GLOBE study (House, Hanges, Javidan, Dorfman, & Gupta, 2004), and a custom-made measure of underwriter quality based on (Loughran & Ritter, 2004) and (Elo, 1978) to capture general and relational legitimacy (see Figure 1 above), respectively. I capture firms' efforts to build moral, pragmatic, and cognitive legitimacy through the firm-level signals they send with their levels of profitability, capital expenditure, and whether they cross-list equity. In the first layer, the cross-listed bond's S&P rating at issuance is the relevant DV, in the second layer it is the benchmark spread over the respective treasury bond with equivalent maturity in the host capital market. I find general support for the notions presented in Figure 1. It also becomes evident, that non-expert market participants rely much more on experts' judgments than

on their own research of the underlying bond issuer. The mediation analysis (as an example for one of the relevant firm-level variables) in Figure 2 shows how the effect of firm assets on the benchmark spread at issuance is fully mediated by the bond rating agency's judgment of the issuing firm.

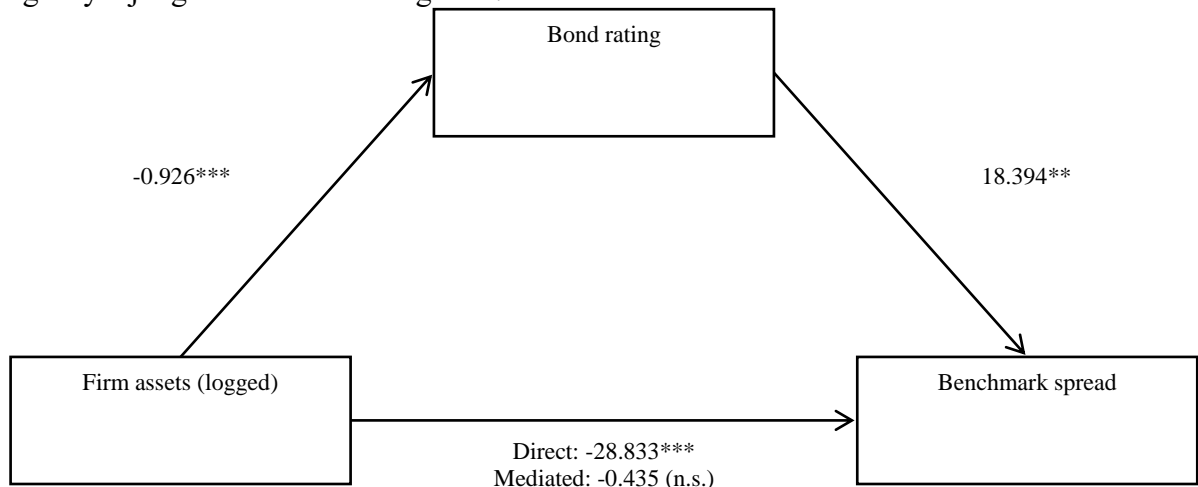


Figure 2: Mediation analysis of the effect of logged firm assets on benchmark spreads.

Chapter 3. The Impact of Institutional Distance on the Debt-Equity Choice in International Corporate Acquisitions

Having explored institutional distance itself and one of its application in a financial context where two countries are involved, chapter three moves the analysis to a more general setting where multinational firms add a country to their portfolio of activities. Strategy literature has extensively explored the strategic drivers and organizational outcomes of international mergers and acquisition (IM&A) activities (Datta, Pinches, & Narayanan, 1992, Homburg & Bucerius, 2006, Kang, 1993, Reuer, Shenkar, & Ragozzino, 2004, Stahl & Voigt, 2008). However, one key precondition for international corporate acquisitions has not been explored sufficiently from the strategy perspective: the availability of financial resources. Clearly, companies need to raise financial resources for strategic acquisitions, and a critical driver for investors' willingness to finance corporate acquisitions is company risk, which, in turn, is strongly linked to the international presence of a company (Buch, Koch, & Koetter, 2012, Kwok & Reeb, 2000, Reeb, Kwok, & Baek, 1998).

In particular, debt finance has been argued to be strongly affected by the extent of international presence because of the liquidity constraints it imposes on companies (Mansi & Reeb, 2002). When investing in a company that is already risky because of either high leverage or its investment portfolio, debt providers are less willing to finance additional investment projects, a phenomenon that finance theorists called an "underinvestment problem" (Myers & Majluf, 1984). Some scholars, however, indicate that international corporate acquisitions can provide potential to diversify risk by generating cash flows that are uncorrelated with those the firm obtains from the home

country (Lewellen, 1971, Longin & Solnik, 1995, Reuer & Leiblein, 2000). These research streams combined indicate that international acquisitions provide opportunities to alleviate debt constraints associated with IM&As and raise financing without de-leveraging when a company faces an underinvestment problem. What has not been explored in prior research both theoretically and empirically is how this possibility to alleviate resource constraints on IM&As can be fostered by institutional distance between the acquiring firm's home and host countries.

In this chapter, I start from the trade-off theory of capital structure (Kraus & Litzenberger, 1973). It suggests that firms manage their capital structure such that the firm value generated from tax-deductible tax shields from interest on debt is maximized under the boundary condition of firm-value that is lost because of increased probability of default as debt ratios increase. I decompose the probability of default into a financial risk component that is related to capital structure and a business risk component that is driven by firm activities. If a firm adds an international investment to its activities, it may reduce business risk if it invests in a country that has an economic cycle that is disharmonious with its home market. This may allow it to make a partially debt-financed investment that would not be possible in its home market because the diversifying effect resulting from an investment in a foreign market would not exist. In short, I hypothesize that firms with higher debt ratios will use less debt to finance a new investment (baseline H1). However, this negative relationship will be positively moderated by the distance in the economic cycles between the home and host countries in an international acquisition (H2).

The dataset used to test these hypotheses on are 840 full (100%) cross-national acquisitions. The dataset has 337 unique pairs of home and target countries. This generates a lot of variation in the distance between economic cycles. The method employed is hierarchical linear modelling (Hox, 2002) with clusters on the level of country pairs, as well as industry and time fixed effects. The dependent variable, debt used in acquisition, is captured following Chkir and Cosset (2003). The independent variables, debt ratios and economic institutional distance, are taken from the orbis database and Berry, Guillén, and Nan (2010), respectively. The control model is based on Fama and French (2002). I find support for both the baseline effect as well as its contingency on economic institutional distance. Following Myers and Majluf (1984), cases where acquiring firms have high debt ratios are associated with an "underinvestment problem" being present, while the opposite case is associated with a more unconstrained situation.

Contribution and Conclusion

My dissertation contributes to the integration of strategy and finance literatures in an international context. There is much to be gained by such integration because, as argue above, what strategic options firms have is often a function of their balance sheets (Teece, Pisano, & Shuen, 1997). In principle, many of the concepts discussed in the dissertation exist in finance or international management. Yet, they are not well connected with each other and, for some topics, they are differently advanced. Therefore, important theoretical insights resulting from integration have not been gained. While the overall contribution of the dissertation is to the integration of literatures, the specific

chapters represent stand-alone research projects with deeper and more concrete contributions to specific strands of literature. Each of the three chapters takes an innovative perspective on a problem that is relevant for firm strategy. Taken together, the three chapters make inroads into the explanation of phenomena in corporate finance that are affected by cross-national distance.

In the first chapter, I combine financial market data with important international management theory. A contribution is made to resolving the controversial debate about hidden assumptions in cross-national distance in international management (Shenkar, 2001, Shenkar, Luo, & Yehekel, 2008, Zaheer, Schomaker, & Nachum, 2012). Then, this criticism is translated into the development of a reflective measure that quantifies institutional distance based on how financial markets differently bundle information about institutional characteristics on a national level, which is the first key contribution of this chapter. Secondly, the discussion of the relationship between cross-national in a broad and geographic distance in a narrow sense is strengthened by explicitly stating and analyzing the match between assumptions among the two. Thirdly, rich empirics from financial markets are combined with highly relevant theory from management literature. This connection allows insights into finance problems using management theories and the other way around. Fourthly, it is a topic of debate in the finance literature whether and to what extent financial markets are globally integrated. This chapter provides evidence for substantial differences between financial markets around the globe and quantifies the extent to which such differences exist among markets.

The second chapter of my dissertation provides relevant implications for both theory and business practice. Most generally, legitimacy theory is extended to represent a more realistic view of how legitimacy is formed in a multi-stakeholder-world. Using the metaphor of a multi-layered onion, I provide insights into how legitimacy with non-expert stakeholders can be gained by employing highly reputable intermediaries. As these intermediaries vouch for the legitimacy of a claim, legitimacy with less specialized stakeholders can be gained. An elaborate method to rate banks that provide bond underwriting services is developed and provided online for future researchers to use. I clarify the workings behind capital market liabilities of foreignness in international debt markets. Understanding by which effects foreignness affects the perceived probability of default and how this probability in turn affects yields solidifies the theoretic basis of the valuation of international debt. The tremendous volume of such debt outstanding makes the explanation of its pricing highly relevant for theory and practice. Chapter two also connects the finance and strategy literatures by providing levers for reducing rating bias by building legitimacy. Similarly to factor markets, legitimacy of claims is highly relevant for capital markets. Particularly in cases of co-location of financing and operational activities, theory is advanced by a perspective on liabilities of foreignness that is similarly developed for factor and capital markets. Chapter two makes recommendations to strategists concerning how listing decisions are at interplay with firms' ability to effectively signal to gatekeepers in the listing location. For business practice I provide guidelines concerning the tools that can be used to minimize the cost of capital, as well as a handy and easy-to-interpret rating model for underwriting banks. In general, the contribution aims at reducing the cost of capital for firms that want to raise money internationally. This increases the scope of projects that are profitable, therefore releases constraints to strategic choices. Alternatively, if the location is not given

exogenously, managers can choose a location to issue debt in where liabilities of foreignness are not as strong to start with.

In the third chapter, institutional theory is linked with the trade-off theory of capital structure. The trade-off theory of capital structure has much to say about risk in the multinational enterprise. The foundations of that risk and how it relates to firm strategy and financial structure are combined with insights into how cross-border acquisitions affect constraints to strategic choices. This chapter contributes to literature's understanding of a negative and a positive effect of distance on firms. Firstly, an analysis on how the international dimensions change constraints to firm strategy as opposed to the domestic context is provided. The focus is on constraints to the ability to raise debt capital that are imposed by a firm's international presence. Secondly, a positive effect of distance is outlined in line with the positive organizational scholarship perspective (Cameron, Dutton, & Quinn, 2003). Trade-off theory predicts that internationalization brings along diversification benefits as well. Both contributions will guide practitioners in further refining firm strategy. Particularly, negotiations with providers of capital are facilitated because a theoretically founded and empirically tested framework for efficient capital structure choice given strategic and country choices is provided.

Overall, I hope the topics discussed in my dissertation will further the discussion on how IB and finance literature can be brought together. On the level of the individual chapters, my aspiration is that the lines of argumentation put forward and the empirical contributions made solidify the understanding of how the right hand side of the balance sheet both impacts and is influenced by firms' presence in a global market. Using this understanding, firms can make better use of their strategic opportunities and create value for all stakeholders.

References

- Asquith, P., Au, A. S., Covert, T., & Pathak, P. A. 2013. The market for borrowing corporate bonds. *Journal of Financial Economics*, 107(1): 155-82.
- Atilgan, Y., Ghosh, A., Yan, M., & Zhang, J. 2015. Cross-Listed Bonds, Information Asymmetry, and Conservatism in Credit Ratings. *Journal of Money, Credit and Banking*, 47(5): 897-929.
- Bandt, C. & Pompe, B. 2002. Permutation entropy: a natural complexity measure for time series. *Physical Review Letters*, 88(17): 174102.
- Bell, R. G., Filatotchev, I., & Rasheed, A. A. 2012. The liability of foreignness in capital markets: Sources and remedies. *Journal of International Business Studies*, 43(2): 107-22.
- Berry, H., Guillén, M. F., & Nan, Z. 2010. An institutional approach to cross-national distance. *Journal of International Business Studies*, 41(9): 1460-80.
- Bitektine, A. 2011. Toward a theory of social judgments of organizations: The case of legitimacy, reputation, and status. *Academy of Management Review*, 36(1): 151-79.
- Bowe, M., Filatotchev, I., & Marshall, A. 2010. Integrating contemporary finance and international business research. *International Business Review*, 19(5): 435-45.
- Buch, C. M., Koch, C. T., & Koetter, M. 2012. Do banks benefit from internationalization? Revisiting the market power-risk nexus. *Review of Finance*: rfs033.
- Cameron, K., Dutton, J., & Quinn, R. E. 2003. *Positive organizational scholarship: Foundations of a new discipline*: Berrett-Koehler Publishers.
- Chkir, I. & Cosset, J.-C. 2003. The effect of international acquisitions on firm leverage. *The Journal of Financial Research*, 24(4): 501-15.
- Choudhry, T. & Jayasekera, R. 2014. Market efficiency during the global financial crisis: empirical evidence from European banks. *Journal of International Money and Finance*, 49: 299-318.
- Coval, J. D. & Moskowitz, T. J. 1999. Home bias at home: Local equity preference in domestic portfolios. *The Journal of Finance*, 54(6): 2045-73.

- Datta, D. K., Pinches, G. E., & Narayanan, V. 1992. Factors influencing wealth creation from mergers and acquisitions: a meta-analysis. *Strategic Management Journal*, 13(1): 67-84.
- DiMaggio, P. & Powell, W. W. 1983. The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48(2): 147-60.
- Dow, D. & Karunaratna, A. 2006. Developing a multidimensional instrument to measure psychic distance stimuli. *Journal of International Business Studies*, 37(5): 578-602.
- Elo, A. E. 1978. *The rating of chessplayers, past and present*: Arco Pub.
- Fama, E. F. 1970. Efficient capital markets: a review of theory and empirical work. *The Journal of Finance*, 25(2): 383-417.
- Fama, E. F. & French, K. R. 2004. The capital asset pricing model: theory and practice. *The Journal of Economic Perspectives*, 3(18): 25-46.
- Fama, E. F. & French, K. R. 2002. Testing trade-off and pecking order predictions about dividends and debt. *Review of Financial Studies*, 15(1): 1-33.
- Gallo, A. 2015. A Refresher on the Cost of Capital. *Harvard Business Review*.
- Gozzi, J. C., Levine, R., & Schmukler, S. L. 2010. Patterns of international capital raisings. *Journal of International Economics*, 80(1): 45-57.
- Homburg, C. & Bucerius, M. 2006. Is speed of integration really a success factor of mergers and acquisitions? An analysis of the role of internal and external relatedness. *Strategic Management Journal*, 27(4): 347-67.
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. 2004. *Culture, leadership, and organizations*. Thousand Oaks, CA: Sage Publications.
- Hox, J. J. 2002. *Multilevel analysis: Techniques and applications*: Psychology Press.
- Jarvis, C. B., MacKenzie, S. B., & Podsakoff, P. M. 2003. A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of Consumer Research*, 30(2): 199-218.
- Kang, J.-K. 1993. The international market for corporate control: Mergers and acquisitions of US firms by Japanese firms. *Journal of Financial Economics*, 34(3): 345-71.
- Kochhar, R. 1996. Explaining firm capital structure: The role of agency theory vs. transaction cost economics. *Strategic Management Journal*, 17(9): 713-28.
- Kochhar, R. & Hitt, M. A. 1998. Linking corporate strategy to capital structure: diversification strategy, type and source of financing. *Strategic Management Journal*, 19(6): 601-10.
- Kogut, B. & Singh, H. 1988. The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3): 411-32.
- Kraus, A. & Litzenberger, R. H. 1973. A state-preference model of optimal financial leverage. *The Journal of Finance*, 28(4): 911-22.
- Krippendorff, K. & Bock, M. A. 2009. *The content analysis reader*: Sage.
- Kwok, C. C. & Reeb, D. M. 2000. Internationalization and firm risk: an upstream-downstream hypothesis. *Journal of International Business Studies*, 31(4): 611-29.
- Lewellen, W. G. 1971. A pure financial rationale for the conglomerate merger. *The Journal of Finance*, 26(2): 521-37.
- Longin, F. & Solnik, B. 1995. Is the correlation in international equity markets constant: 1960-1990? *Journal of International Money and Finance*, 14(1): 3-26.
- Longstaff, F. A. & Schwartz, E. S. 1995. A simple approach to valuing risky fixed and floating rate debt. *The Journal of Finance*, 50(3): 789-819.
- Loughran, T. & Ritter, J. R. 2004. Why has IPO underpricing changed over time? *Financial Management*, 33(3).
- Mansi, S. A. & Reeb, D. M. 2002. Corporate diversification: what gets discounted? *The Journal of Finance*, 57(5): 2167-83.
- Myers, S. C. & Majluf, N. S. 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2): 187-221.
- Reeb, D. M., Kwok, C. C., & Baek, H. Y. 1998. Systematic risk of the multinational corporation. *Journal of International Business Studies*, 29(2): 263-79.
- Reuer, J. J. & Leiblein, M. J. 2000. Downside risk implications of multinationality and international joint ventures. *Academy of Management Journal*, 43(2): 203-14.
- Reuer, J. J., Shenkar, O., & Ragozzino, R. 2004. Mitigating risk in international mergers and acquisitions: the role of contingent payouts. *Journal of International Business Studies*, 35(1): 19-32.

- Ruef, M. & Scott, W. R. 1998. A multidimensional model of organizational legitimacy: Hospital survival in changing institutional environments. *Administrative science quarterly*: 877-904.
- Sharpe, W. F. 1964. Capital asset prices: a theory of market equilibrium under conditions of risk. *The Journal of Finance*, 19(3): 425-42.
- Shenkar, O. 2001. Cultural distance revisited: towards a more rigorous conceptualization and measurement of cultural differences. *Journal of International Business Studies*: 519-35.
- Shenkar, O., Luo, Y., & Yeheskel, O. 2008. From “distance” to “friction”: substituting metaphors and redirecting intercultural research. *Academy of Management Review*, 33(4): 905-23.
- Stahl, G. K. & Voigt, A. 2008. Do cultural differences matter in mergers and acquisitions? A tentative model and examination. *Organization Science*, 19(1): 160-76.
- Suchman, M. C. 1995. Managing legitimacy: strategic and institutional approaches. *Academy of Management Review*, 20(3): 571-610.
- Teece, D. J., Pisano, G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic management journal*, 18(7): 509-33.
- Tost, L. P. 2011. An integrative model of legitimacy judgments. *Academy of Management Review*, 36(4): 686-710.
- Tversky, A. & Kahneman, D. 1974. Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157): 1124-31.
- Zaheer, S. 1995. Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2): 341-63.
- Zaheer, S., Schomaker, M. S., & Nachum, L. 2012. Distance without direction: restoring credibility to a much-loved construct. *Journal of International Business Studies*, 43(1): 18-27.
- Zimmerman, M. A. & Zeitz, G. J. 2002. Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management Review*, 27(3): 414-31.

Integrating the Intuitive into User Acceptance of Technology Theory

McARAN Dan

Henley Business School

Abstract

The Technology Acceptance Model (TAM) is modified to include the proposed Perceived Intuitiveness (PI) construct. Legal professionals were solicited using social media and PLS-SEM is used to evaluate these relationships. A second level construct is created consisting of two first order reflective constructs, PI and Compatibility, and identified as User Experience (UE). The resultant model is identified as the Technology Acceptance User Experience (TAUE) model and consists of the UE construct, Perceived Usefulness (PU), and the dependent variable USE. This provides an approach to resolving the “TAM logjam” by providing a link to intuitive technology design.

Keywords: Perceived Intuitiveness, User Experience, Technology Adoption, TAM

Introduction

The Technology Acceptance Model (TAM) originated in the doctoral research of Davis (1986). Intuitive design is an emerging area of research (Blackler 2006; Blackler and Hurtienne 2007; O’Brien, Rogers, and Fisk 2010).

The research hypothesis is that the creation of a Perceived Intuitiveness (PI) construct and the integration of the PI construct into TAM will contribute to the resolution of what has been characterized as the “TAM Logjam” (Straub and Burton-Jones 2007, p. 223).

Literature Review

Technology Acceptance Model

Lee, Kozar, and Larsen (2003) identify TAM as the dominant theory for the acceptance of information systems. However, as Bagozzi (2007) details, there is a need for renewal in TAM. TAM is an adaptation of the Theory of Reasoned Action (TRA) to user acceptance (Davis 1986) and has been replicated across a number of technologies (Venkatesh, Davis, and Morris 2007).

Compatibility

Chau and Hu (2002) added Compatibility (COM) to the Technology Acceptance by Individual Professionals (TAIP) model they developed to study technology acceptance of tele-medicine technology by Hong Kong physicians because it was their view that physicians would find technology desirable that fit with their practice style and preference.

In the doctoral research of Shaw (2011) “fit”, which is the active verb in all the measurement items of the COM construct, was used by a research respondent to describe the mechanism by which Electronic Medical Records was found to be “intuitive”. Consequently, COM is included as one of the constructs in the research model designed to investigate acceptance of technology used by legal professionals.

Degree of Voluntary Use

The first exploration of voluntariness did not come from the TAM research stream directly but from the research of Moore and Benbasat (1991) which focused on technology acceptance from a diffusion of innovations perspective.

Technology acceptance research using TAM is based on TRA. Sheppard, Hartwick, and Warshaw (1988) analyzed 87 studies and found strong evidence for TRA’s predictive ability. A central postulate of TRA is that performance is voluntary.

Subsequently, Kroenung, and Eckhardt (2015) performed a meta-analysis of 119 articles from 14 top IS journals to identify significant factors that influence the attitude-behavior relationship: one of factors identified as having a significant effect was voluntariness.

Degree of Voluntary Use (VOL) is hypothesized in this research to have a moderating effect on the paths from the exogenous variables to the endogenous variable. In addition, consistent with the non-binary nature of voluntary use identified by Moore and Benbasat (1991), VOL is measured in this research using a slide bar using a 1-100 scale.

Intuition Research

Shirley and Langan-Fox (1996) reviewed the psychological literature and found limited research into intuition. They define intuition “as a feeling of knowing with certitude on the basis of inadequate information and without conscious awareness of rational thinking” (p. 564).

In his seminal work, Simon (1996) equates design to “Creating the Artificial” (p. 11). It can be postulated that the user acceptance of technology is a design problem and, as such, this research looks to the design of technology perceived as “intuitive” as a potential solution to the design of technology acceptance.

Intuitive in relation to technology means more than “familiar, easy to use, or easy to understand” (O’Brien et al. 2010, p. 7). Blackler, Popovic and Mahar (2010) state “intuitive interaction adds a further dimension than simple knowledge transfer or prior experience – that of non-conscious or implicit knowledge” (p. 13).

O’Brien et al. (2010) provide the following definition: “intuitive HCI (Human-Computer Interaction), interactions between humans and high technology in lenient learning environments that allow the human to use a combination of prior experience and feedforward methods to achieve their functional and abstract goals” (p. 107).

Blackler and Popovic (2015) in their editorial *Towards Intuitive Interaction Theory* in the special issue of *Interacting with Computers* identify the importance of intuitive

interaction to practitioners. The importance to practitioners of “intuitive” technology can also be seen in the Apple design guidelines (Apple 2015, 2016). Because of the importance of intuitive interaction in technology design, the PI construct is hypothesized to have a positive effect on all constructs in the model.

The Perceived Ease of Use Construct

In a pre-test of the measurement items, Davis (1986, p. 86-87) clustered the responses received into three categories: (1) Physical effort, (2) Mental effort, and (3) Easy to learn. Davis dropped three items related to error recovery, unexpected behavior, and error proneness which did not cluster into the above three categories and received low priority ratings by participants.

The dropped items would have correspondence to the elements of “feedforward methods” and “lenient learning environments” which form part of the O’Brien et al. (2010) definition of Intuitive Human-Computer Interaction. An additional item was dropped: “The electronic mail system provides helpful guidance in performing tasks”. This eliminated item “provides guidance” has some correspondence to the findings of this research which identified “adapts” and “It is always clear to me what I have to do use the product” as elements of the intuitive nature of technology. The concept of intuitive can be seen to be more inclusive than the existing TAM PEOU measurement items.

This significant reduction of measurement items for the TAM PEOU construct may have prevented full capture of the domain content of PEOU related to intuitive interaction. This may also be the partial cause for the relatively weak explanatory power of PEOU (Davis 1986, p. 108).

Methodology

Hypothesis

The following hypotheses for this research are derived from the literature review:

H1: Perceived Intuitiveness is positively related to Perceived Usefulness.

H2: Perceived Intuitiveness is positively related to Perceived Ease of Use.

H3: Perceived Intuitiveness is positively related to Compatibility.

H4: Perceived Intuitiveness is positively related to the combined measure of USE (consisting of Degree of Use and Degree of Feature Use).

H5: The degree to which the technology use is voluntary will have a significant moderating effect on the paths from Perceived Intuitiveness, Perceived Usefulness, Perceived Ease of Use, and Compatibility to USE (consisting of Degree of Use and Degree of Feature Use).

Definitions

Compatibility is defined as the degree to which the use of technology used to do legal work is perceived by the legal professional to be consistent with their practice style or preferences (Adapted from Chau and Hu 2002).

Perceived Ease of Use is defined as “the degree to which an individual believes that using a particular system would be free of physical and mental effort” (Davis 1986, p. 26).

Perceived Intuitiveness is defined as the degree to which use of the legal technology product is perceived by the legal technology user as capable of being used without conscious awareness of rational thinking (Adapted from Shirley and Langan-Fox 1996, p. 564).

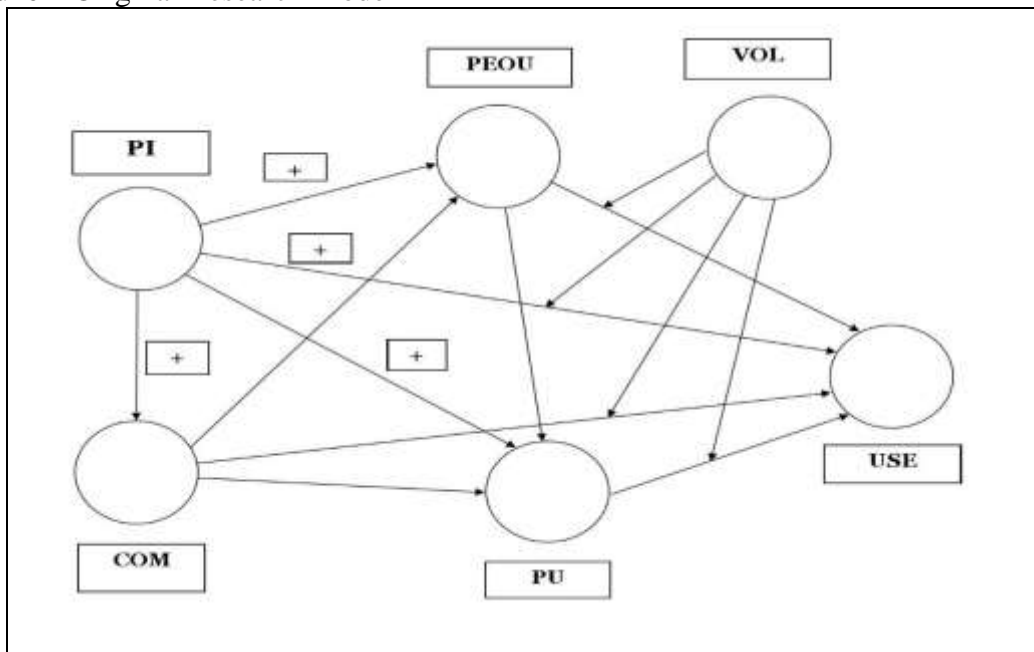
Perceived Usefulness is defined as “the degree to which an individual believes that using a particular system would enhance his or her job performance” (Davis 1986, p. 26).

Degree of Voluntary Use is defined as “the degree to which use of the innovation is perceived as being voluntary or of free will” (Moore and Benbasat 1991, p. 195).

The unit of analysis is the individual legal technology user.

Research Design

Figure 1 Original Research Model



COM – Compatibility; PEOU – Perceived Ease of Use; PI – Perceived Intuitiveness; PU – Perceived Usefulness; VOL – Degree of Voluntary Use

The research model appears in Figure 1. PEOU and Perceived Usefulness (PU) are from the TAM Model of Davis (1986). COM is from Chau and Hu (2002) and uses the same hypothesized relationships as in their paper. There were 15 measurement items developed from the literature for the PI construct (reduced to 10 based on the results of the pre-tests).

Subsequent to the development of the measurement items for PI Intuitiveness, the *Questionnaire for the Subjective Consequences of Intuitive Use* (QUESI) instrument was identified (Naumann and Hurtienne 2010). Thirteen of the QUESI measurement items

were reformatted and included among the measurement items for PI in the quantitative pilot study, for a total of 23 measurement items.

The Dependent Variable

In this research, the dependent variable USE is measured using two reflective indicators: Degree of Use and Degree of Feature Use. These are both measured using a slide bar (sliding) scale allowing for responses from 1 to 100 as an indication of the degree of use (Hair, Celsi, Money, Samouel, and Page 2016). This slide bar scale is also used to measure VOL.

In this research there is only one instrument, but the method of measuring USE is not the same method, but the slide scale from 1-100 whereas the exogenous constructs are measured using Likert scales. Consequently, the risk of Common Method Bias (CMB) may be reduced.

Quantitative Pilot Study

Based on the quantitative pilot study, the 23 original measurement items developed for the PI construct were reduced to 15 items. Further, based on the pilot study results, the decision was made to list six commonly used legal technology products as the basis of responses. Respondents were able to also “write in” a legal technology product.

It was also decided to retain the COM construct in the model despite the fact that in all rotated solutions the COM construct cross loaded on the factors identified. The decision was based on the literature review, particularly the work of Chau and Hu (2002) which identified “fit” as high importance in the acceptance of telemedicine technology by physicians.

Research

The research was conducted in the eight-month period from October 2014 to May 2015 using the following methods:

- Posts to LinkedIn (www.linkedin.com) social media legal groups.
- Use of the LinkedIn InMail service with InMails sent to 958 LinkedIn members.
- Emails to 180 legal professionals who had posted on Technolawyer (www.technolawyer.com).

Results

Total responses received to the Qualtrics online survey were 218 with 154 usable responses; the response rate was 19.15%. Tests for CMB and non-response bias indicated they were not of concern. The results were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 3 (Ringle, Wende, and Becker 2015).

It was decided to perform the primary analysis of the results on a subset of the data which consisted of responses concerning legal research technology (henceforth identified as the Westlaw data set) which is a homogeneous set of technology. When the Westlaw data set ($n=94$) was run in the original research model, the Bootstrap test found only 3 of 10 paths in the model significant. The Fornell-Larcker Criteria analysis revealed a violation of the

discriminant validity criteria for PI. In addition, COM showed high correlation with PEOU (.7015) and PI (.7898). This has been interpreted as the “suppressor effect” (Hair, Black, Babin, and Anderson 2010, p. 203). Hair, Hult, Ringle, and Sarstedt (2014) suggest use of a second-order construct to address collinearity issues.

Figure 2 First User Experience Second Level Construct Model

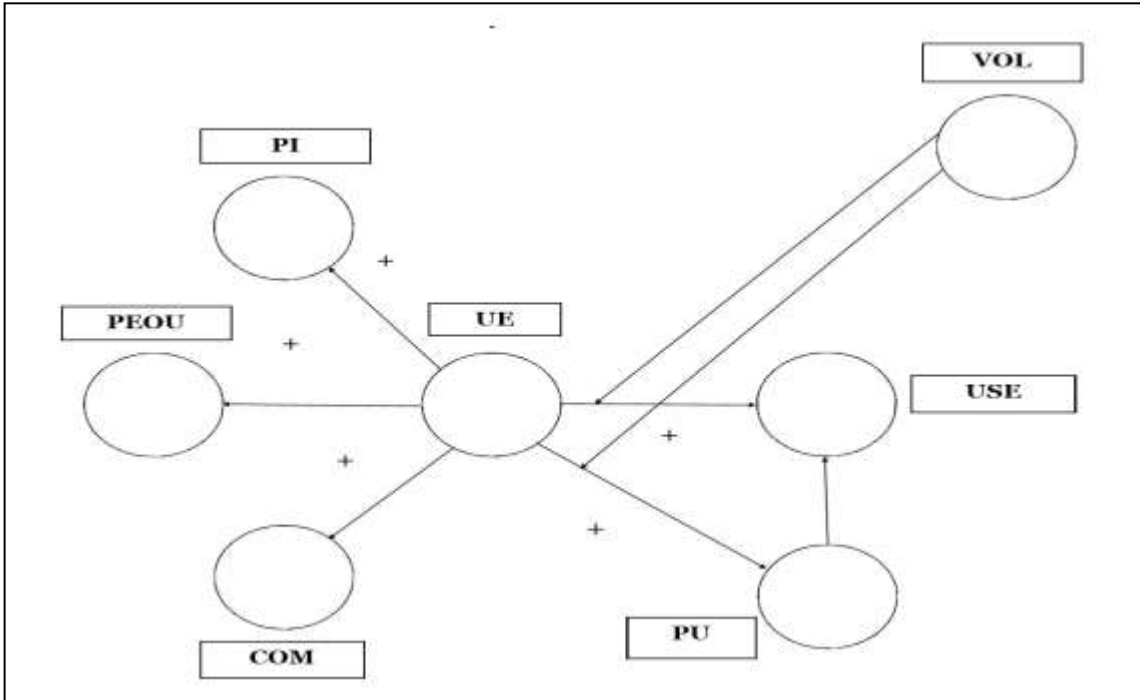
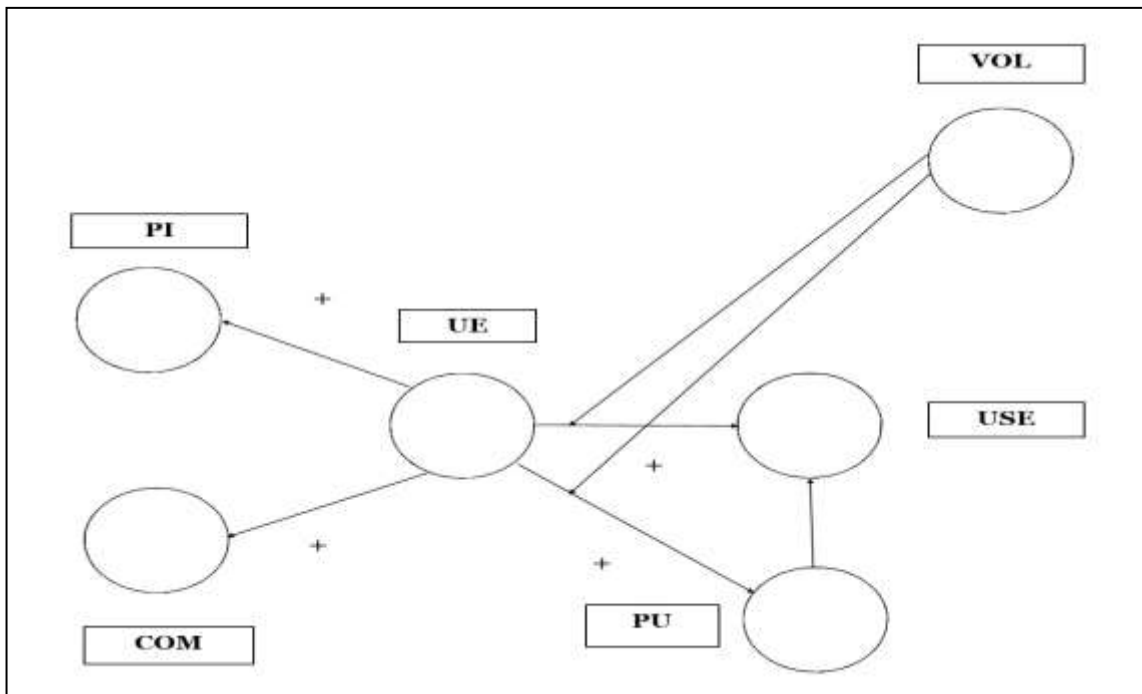


Figure 3 Final Model: Technology Acceptance User Experience Model



COM – Compatibility; PEOU – Perceived Ease of Use; PI – Perceived Intuitiveness; PU – Perceived Usefulness; UE – User Experience; VOL – Degree of Voluntary Use

Based on these indications of collinearity it was decided to re-organize the model using a second order construct. In addition, the literature review suggested the emergence of an overall evaluative concept for computer technology identified as User Experience (UE; Laugwitz, Held, and Schrepp 2008). This emergent concept was created as a second order construct with the existing first order reflective constructs (PEOU, PI, and COM). To create the UE second order construct using the repeated indicators method (Hair et al. 2014) the “best” three PI items were determined based on contribution to R^2 . The revised model showed only positive paths and had acceptable R^2 ; in addition, bootstrap analysis showed all paths as significant except for the paths for the moderator variable VOL to USE.

The next step was the evaluation of the effect size (f^2) of this revised model. An attempt was also made to evaluate the f^2 effect of removing each of the component first order constructs of UE: this procedure gave unexpected results. Removing PEOU resulted in an increase in R^2 : the consequent f^2 was negative: -.0109. When the COM construct was deleted, the R^2 was slightly increased with an f^2 of negative: -.0001. A similar analysis was performed in regards to the Predictive Relevance, Q^2 and q^2 , and showed similar

results. This analysis introduces the concept of a partial f^2 and q^2 analysis for component first order constructs related to a second order construct. Removing PEOU from the model increased the explanatory ability of the model (increasing R^2) and makes the model more parsimonious.

The resulting model, now identified at the Technology Acceptance User Experience (TAUE) model is shown in Figure 3. All of the remaining PLS-SEM analysis is presented in regards to this model only. For this revised model R^2 , f^2 and q^2 , Q^2 are evaluated in Table 6 and 7.

The results for the designated holdout sample, the non-Westlaw data ($n=60$), consisting of a heterogeneous set of 36 legal technology products, are not as robust as with the primary homogenous Westlaw data set with the UE to USE path having a value of only .034 and not significant. A review of the normality plot for Degree of Use for the non-Westlaw data set ($n=60$) showed normality violations. It could be that for the products that comprise the non-Westlaw data set the user experience of the product is not as important as the usefulness of the product. Alternatively, the cause of the non-significance of the path UE to USE could be that the size of the effect is small and the sample size is only 60.

Measurement Model

Table 1 Indicator Reliability		
Westlaw Data Set ($n=94$)		
	Composite Reliability	Cronbach's Alpha
COM	0.9160	0.8612
PI	0.8477	0.7318
PU	0.9059	0.8596
UE	0.8936	0.8549
USE	0.8527	0.6548

Cronbach's Alpha for USE is less than .70 at .6548; however, Composite Reliability is over .70 with a value of .8527. Hair et al. (2014) advise values over .60 are acceptable for exploratory research.

Table 2 Fornell-Larcker Criteria						
Westlaw Data Set ($n=94$)						
	COM	VOL	PI	PU	UE	USE
COM	0.8858					
VOL	0.1636	1.0000				
PI	0.6441	0.2148	0.8073			
PU	0.6394	0.1457	0.2675	0.8417		
UE	0.9370	0.2023	0.8703	0.5378	0.7675	
USE	0.3712	0.0568	0.3022	0.4107	0.3804	0.8621

Diagonals are the square root of the Average Value Extracted (AVE). The square root of the AVE for UE (.7675) is less than the correlation between COM and UE (.9370) and the correlation between PI and UE (.8703). The cause can be related to the high correlations between COM1 and the PI measurement item “It is always clear what I have to do” (.6517) and COM2 and this same item (.6144). Because of the importance of the domain content of this measurement item it is retained.

Table 3 Average Value Extracted	
Westlaw Data Set ($n=94$)	
COM	0.7847
VOL	1.0000
PI	0.6517
PU	0.7084
UE	0.5891
USE	0.7432

The AVE for all constructs exceeds .50 as recommended by Hair et al. (2014, p.107).

Structural Model

Table 4 R^2 Values		
Westlaw Data Set ($n=94$)		
	R^2	R^2 Adjusted
COM	0.8780	0.8767
PI	0.7575	0.7548
PU	0.2892	0.2814
USE	0.3612	0.3249

Notably, an analysis of the total effects of the paths of the model showed the total effect of UE on USE is .5276 and the total effect of PU on USE is .3209.

Table 5 Bootstrap Results (5,000 samples)		
Westlaw Data Set ($n=94$)		
	<i>t</i> -statistic	<i>p</i> -value
VOL to USE	0.2391	0.8111
Interaction: PU to USE	0.7416	0.4584
Interaction: UE to USE	2.1030	0.0355
PU to USE	2.6006	0.0093
UE to COMP	72.4085	0.0000
UE to PI	23.5443	0.0000
UE to PU	7.4400	0.0000
UE to USE	2.6821	0.0073

Notably all paths are significant except for VOL to USE and the interaction term for PU to USE. The hypothesis that VOL has a significant effect on USE is thus not supported. It is notable that in an analysis of the use confidence intervals from the PLS bootstrap results show that the PU to USE confidence includes 0.00, whereas the UE to USE confidence interval does not.

Table 6 R^2 and f^2 with User Experience Second Order Construct with Perceived Intuitiveness and Compatibility First Order Constructs: Model R^2 .3612	
Excluded Construct	R^2 : f^2
User Experience	R^2 .2509 : f^2 .1726 (medium)*
Perceived Usefulness	R^2 .2896 : f^2 .1120 (small)*

Table 7 Q^2 and q^2 with User Experience Second Order Construct with Perceived Intuitiveness and Compatibility First Order Constructs: Model Q^2 .1929	
Excluded Construct	Q^2 : q^2
User Experience	Q^2 .1360 : q^2 .0705 (small)*
Perceived Usefulness	Q^2 .1778 : q^2 .0187 (small)*

*Hair et al. (2014, p. 198-199): q^2 and f^2 effect size: .02 low, .15 medium, and .35 high.

Figure 4 Structural Model Paths

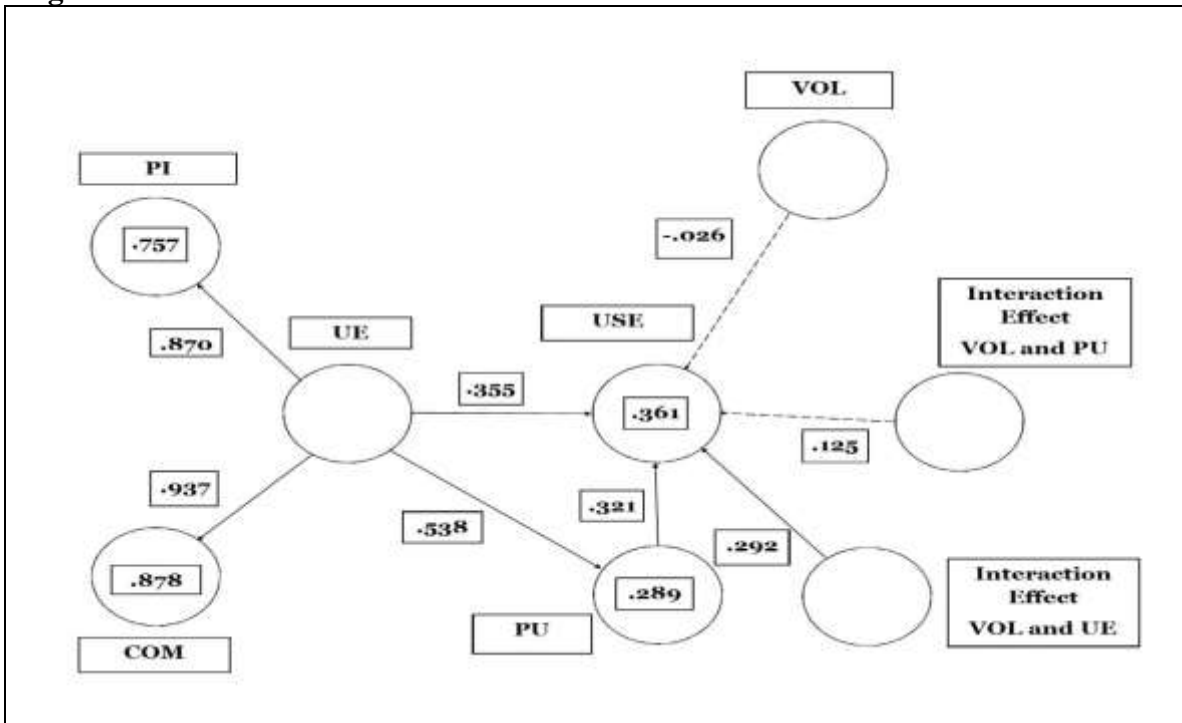
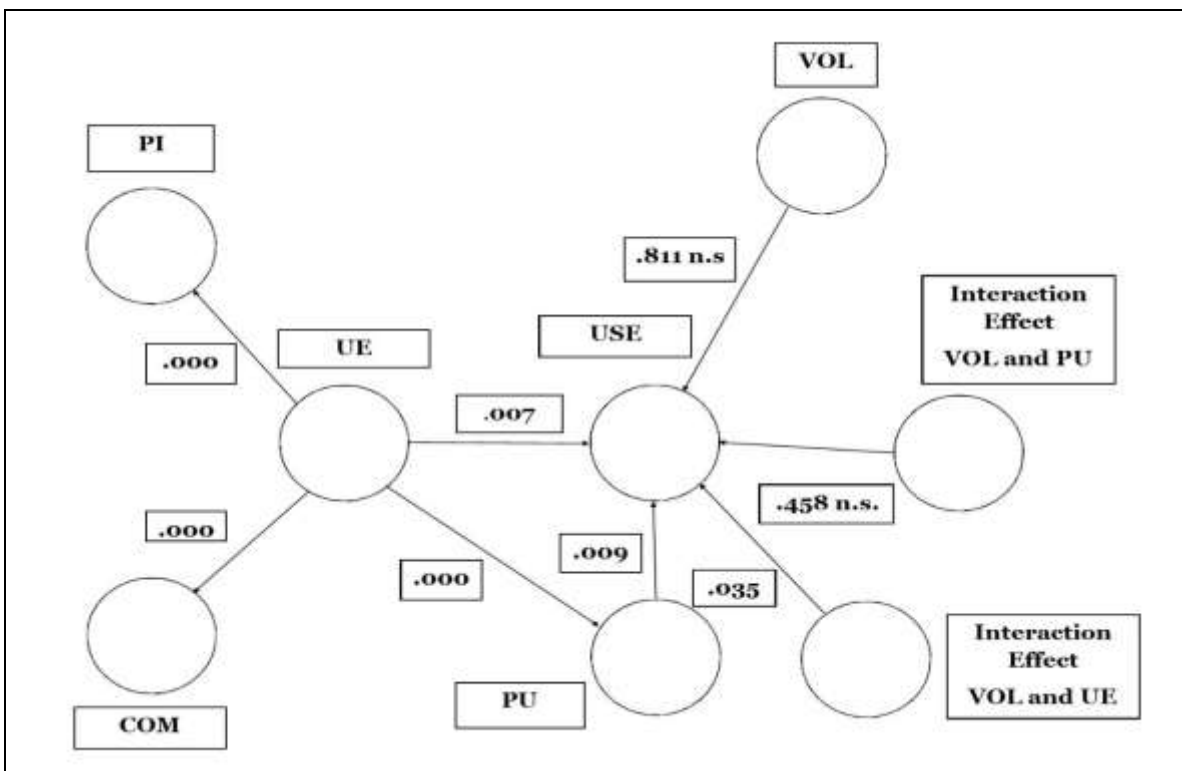


Figure 5 Structural Model Bootstrap



COM – Compatibility; PI – Perceived Intuitiveness; PU – Perceived Usefulness; UE – User Experience; VOL – Degree of Voluntary Use; Dashed lines indicate nonsignificant paths.

Table 8 compares the results obtained for the Westlaw data set used in this research using the TAUE model and the TAM model (Davis 1986).

Table 8 Comparative Results TAUE and TAM Models			
Data Set	TAUE	TAM	Comments
Westlaw Data Set (n=94)	R^2 .3612 Bootstrap paths significant: ($p < .01$) UE to USE** UE to PU PU to USE**	R^2 .3063 Bootstrap paths significant: ($p < .01$) PEOU to PU PU to USE** Bootstrap path not significant PEOU to USE** $p = .1935$	The TAUE model has better R^2 than the TAM model. In addition, all bootstrap paths are significant with the TAUE model but in the TAM model the path PEOU to USE** is not significant.
All Data (n=154)	R^2 .2731 Bootstrap paths significant: ($p < .01$) UE to USE** UE to PU Bootstrap paths significant: ($p < .05$) PU to USE**	R^2 .2145 Bootstrap paths significant ($p < .01$) PU to USE** PEOU to PU Bootstrap paths not significant PEOU to USE** $p = .1557$	The TAUE model has better R^2 than the TAM model. In the TAM model the path PEOU to USE** was not significant.

*In this comparison of the models, the same 3 measurement items for PI are used. **USE is comprised of two reflective components Degree of Use and Degree of Feature Use. Other segments of the data were examined and in all cases the TAUE model provided better R^2 than the TAM model.

Discussion

Perceived Intuitiveness

The R^2 found for the TAUE model using the Westlaw data set ($n=94$) was 0.3612, which is similar to the overall level of explanation found in IS research (Burton-Jones and Straub 2006, p. 230).

In the TAUE model, PI has replaced PEOU. Writing concerning the emergent Internet of Things (which they refer to as “IoT”) Fantana, Riedel, Schlick, Ferber, Hupp, Miles, Michahelles, and Svensson (2013) comment, “Simple, intuitive use and (almost) self-explaining are important for the overall IoT application acceptance. The IoT application

should ideally be context aware and adapt to the skills of the user and location or environment aspects” (p. 159).

The references to technology that is “self-explaining”, “context aware” and “adapt to the skills of the user and location or environment aspects” (p. 159) are similar to the three measurement items identified for the PI first level reflective construct associated with the second level UE construct:

- I find this legal technology product can be used in my practice with minimal training.
- When I use this legal technology product in my practice, it is always clear to me what I have to do use the product.
- When I use it in my practice, this legal technology product adapts to my specific goals as I enter responses.

The results support the emerging convergence of the concept of intuitiveness and ease-of-use; support is also found in the literature. Kappelgaard and Bala (2011) investigated intuitiveness and ease-of-use at the same time for three growth hormone injection devices. Members of an “intuitiveness” group were given minimal instruction and compared to a second group who were given full instruction. The data gathered was time taken to dose and dose accuracy. Questionnaires were also used to measure intuitiveness and ease of use: both groups rated one device as most intuitive and easiest to use.

Marchal, Moerman, Casiez, and Roussel (2013) in their paper on multi-touch 3D navigation techniques mention intuitiveness and ease of use as jointly desirable design objectives; notably they did not delineate any differences between these two concepts. Petter, DeLone, and McLean (2013) included ease of use and intuitiveness together as examples of the System Quality IS success factor.

In this research PEOU was dropped from the model as adding no additional explanatory power. This finding is partially supported by the research of Chau and Hu (2002) in regards to the use of telemedicine technology by physicians in which the total effect on PEOU on BI was .05

User Experience

The second level construct used in the TAUE model has been identified as user experience because user experience has emerged as a summative term for user interaction with technology. It could be inferred that Perceived Intuitiveness and Compatibility would be subsumed in user experience. In this instance, however, the UE construct would not contain any of the hedonic sub-dimensions also associated with the user experience (Laugwitz et al. 2008).

Research Hypotheses

The hypotheses for this research were as follows:

H1: Perceived Intuitiveness will have a positive effect on Perceived Usefulness.

In the TAUE model the UE construct, which consists of PI and COM as first order reflective constructs, was found to have a positive effect on PU. This hypothesis is supported.

H2: Perceived Intuitiveness will have a positive effect on Perceived Ease of Use.

In the TAUE model, PEOU was not present as a construct. This hypothesis was not supported.

H3: Perceived Intuitiveness will have a positive effect on Compatibility.

In the TAUE model, COM was combined with PI as a second order construct identified as UE. This hypothesis was not supported.

H4: Perceived Intuitiveness will have a positive effect on the combined measure of USE consisting of Degree of Use and Degree of Feature Use.

In the TAUE model, the UE construct, which consists of PI and COM as first order reflective constructs, was found to have a positive effect on the combined measure of USE consisting of Degree of Use and Degree of Feature Use. This hypothesis is supported.

H5: The degree to which the technology use is voluntary will moderate the paths from Perceived Intuitiveness, Perceived Usefulness, Perceived Ease of Use, and Compatibility to USE (consisting of Degree of Use and Degree of Feature Use).

In the TAUE model, Degree of Voluntary Use did not have a significant effect on the paths to the combined measures of USE (Degree of Use and Degree of Feature Use). The interaction term for Degree of Voluntary Use on the path from UE to the combined measures of USE (Degree of Use and Degree of Feature Use) was significant ($p=.0355$) and a path coefficient of .2923. The hypothesis is partially supported.

Non-Significance of Degree of Voluntary Use

The first reason VOL did not have a significant effect may be that the question was not clearly understood. Alternatively, even in a mandatory environment the respondents may use a technology at the absolute minimum because the user experience is poor, or they do not find it useful. It is notable that the VOL interaction term for UE to USE is positive and significant: this could indicate people will use technology with good user experience if they are free to do so.

Limitations, Future Research, and Management Implications

Limitations

There are three general limitations to this research:

1. This research does not evaluate the effects of the TAUE model over an extended period of time (longitudinally).
2. The research provides limited extension of the dependent variable USE in regards to the extent of use and to the degree to which specific features are utilized. In addition, this research uses self-reported use.
3. The research reached a segment of the legal profession target population who had sufficiently good skills to use internet social media; they may not be representative of the entire target population.

Future Research

It would be particularly interesting to explore the differences in factors that influence user acceptance of technology among law, medicine, engineering, and accounting practitioners. Further research could evaluate the effects of the new PI construct over time with continued use of the technology. An extension of the present research would be to include additional measure items related to the hedonic aspect of user experience.

Management Implications

The most significant factors that determine the perceived intuitiveness of legal technology are: (1) the degree the technology can be used without training, (2) the degree that the technology adapts to the user and user input, and (3) the degree to which the user is always clear in what they have to do to use the product. These are practical concerns for which metrics can be developed for a technology product and included in user acceptance testing.

Conclusion

This research has identified PI as an emergent latent construct in technology acceptance. As far as the author is aware this is the first technology acceptance research that has integrated a perceived intuitiveness construct into TAM, used legal technology as the basis of the research, measured the dependent variable using a slide bar scale of 1-100, and solicited respondents using social media (LinkedIn).

References

- Apple. 2015. "OS X Human Interface Guidelines," (available at: <https://developer.apple.com/library/mac/documentation/UserExperience/Conceptual/OSXHIGuidelines/DesignPrinciples.html>). [Accessed May 1, 2016].
- Apple. 2016. "iOS Human Interface Guidelines," (available at <https://developer.apple.com/library/prerelease/ios/documentation/UserExperience/Conceptual/MobileHIG/>). [Accessed March 9, 2016].
- Bagozzi, R. P. 2007. "The Legacy of the Technology Acceptance Model and a Proposal for a Paradigm Shift," *Journal of the Association for Information Systems* (8:4), pp. 243-254.
- Blackler, A. 2006. "Intuitive Interaction with Complex Artefacts," Unpublished doctoral dissertation. Queensland University of Technology, Brisbane, Australia.
- Blackler, A., and Hurtienne, J. 2007. "Towards a unified view of intuitive interaction: Definitions, models and tools across the world," *MMI-Interaktiv* (13), pp. 37-55.
- Blackler, A., and Popovic, V. 2015. "Editorial: Towards Intuitive Interaction Theory," *Interacting with Computers* (27:3), pp. 203-209.
- Blackler, A. L., Popovic, V., and Mahar, D. P. 2010. "Investigating users' intuitive interaction with complex artefacts," *Applied Ergonomics* (41:1), pp. 72-92.
- Burton-Jones, A., and Straub, D. W. 2006. "Reconceptualising System Usage: An Approach and Empirical Test," *Information Systems Research* (17:3), pp. 228-246.
- Chau, P. Y. K., and Hu, P. J. 2002. "Examining a Model of Technology Acceptance by Individual Professionals: An Exploratory Study," *Journal of Management Information Systems* (18:4), pp. 191-229.
- Davis, F. D. 1986. "A technology acceptance model for empirically testing new end-user new information systems: theory and results," Unpublished doctoral dissertation. MIT Sloan School of Management, Cambridge, MA.
- Fantana, N. L., Riedel, T., Schlick, J., Ferber, S., Hupp, J., Miles, M., Michahelles, F., and Svensson, S. 2013. "IoT Applications — Value Creation for Industry," in Vermesan, O., and Frie, P. (eds.), *Internet of Things: Converging Technologies for Smart Environments and Integrated Ecosystems*, Aalborg, Denmark: River Publishers, pp. 153–206.
- Hair, J. F., Black, W. C., Babin, B. B., and Anderson, R. E. 2010. *Multivariate Data Analysis, A Global Perspective*, Upper Saddle River: Pearson.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M. 2014. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, Thousand Oaks: Sage.
- Hair, J. F., Celsi, M., Money A. H., Samouel, P., and Page, M. 2016. *Essentials of Business Research Methods 3rd Edition*, New York: Routledge.
- Kappelgaard, A., and Bala, K. 2011. "Comparison of Intuitiveness, Ease of Use and Preference in Three Growth Hormone Injection Devices," in *Abstracts of the Pediatric Endocrinology Nursing Society Convention*, Indianapolis, IN.

- Kroenung, J., and Eckhardt, A. 2015. "The attitude cube - A three-dimensional model of situational factors in IS adoption and their impact on the attitude-behavior relationship," *Information & Management* (52:60), pp. 611-627.
- Laugwitz, B., Held, T., and Schrepp, M. 2008. "Construction and evaluation of a user experience questionnaire," in Holzinger, A. (ed.) *USAB 2008, LNCS 5298*, pp. 63-76.
- Lee, Y., Kozar, K. A., and Larsen, K. R. T. 2003. "The Technology Acceptance Model: Past, Present, and the Future," *Communications of the AIS* (12), pp. 752-780.
- Marchal, D., Moerman, C., Casiez, G., and Roussel, N. 2013. "Designing Intuitive Multi-touch 3D Navigation Techniques," in *Proceedings of INTERACT'13, the 14th IFIP TC13 Conference on Human-Computer Interaction*, pp.19-36.
- Moore, G. C., and Benbasat, I. 1991. "Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation," *Information Systems Research* (2:3), pp. 192-222.
- Naumann, A., and Hurtienne, J. 2010. "Benchmarks for intuitive interaction with mobile devices," in *Proceedings of the 12th international conference on Human computer interaction with mobile devices and services (MobileHCI '10)*, ACM, New York, NY, USA, pp. 401-402.
- O'Brien, M. A., Rogers, W. A., and Fisk, A. D. 2010. "Developing an Organizational Model for Intuitive Design. Technical Report HFA-TR-100," Georgia Institute of Technology School of Psychology – Human Factors and Aging Laboratory Atlanta, GA. (available at <http://smartech.gatech.edu/bitstream/handle/1853/40563/HFA-TR-1001IntuitiveDesignConceptualOverview.pdf?sequence=1>). [Accessed October 26, 2011].
- Petter, S., DeLone, W., and McLean, E. R. 2013. "Information System Success: The Quest for the Independent Variables," *Journal of Management Information Systems* (29:4), pp. 7-61.
- Ringle, C. M., Wende, S., and Becker, J. M. 2015. *SmartPLS 3*. Bönningstedt: SmartPLS GmbH.
- Shaw, N. 2011. "Exploring systems usage at the feature level by reconceptualizing the dependent variable as a formative construct," DBA dissertation, Henley Business School, Henley-on-Thames, United Kingdom.
- Sheppard, B., Hartwick, J., and Warshaw, P. 1988. "The Theory of Reasoned Action: A Meta Analysis of Past Research with Recommendations for Modifications and Future Research," *Journal of Consumer Research* (15:4), pp. 325-343.
- Shirley, D. A. and Langan-Fox, J. 1996. "Intuition: A Review of the Literature," *Psychological Reports* (79) pp. 363-384.
- Simon, H. A. 1996. *The Sciences of the Artificial, Third Edition*, Cambridge, Mass: The MIT Press.
- Straub, D. W., and Burton-Jones, A. 2007. "Veni, Vidi, Vici: Breaking the TAM Logjam," *Journal of the Association for Information Systems* (8:4), pp. 223-229.
- Venkatesh, V., Davis, F. D., and Morris, M. G. 2007. "Dead or Alive? The Development, Trajectory and Future of Technology Adoption Research," *Journal of the Association for Information Systems* (8:4) pp. 267-286.

Executive Coaching: An Exploration of the What, How and Who of Coaching Practices from a Cognitive-Emotional and Cross-Cultural Perspective

MOSTEO Leticia P.
ESADE Business School

Abstract

Executive coaching, as part of leadership development programs, has gained significant momentum despite scarce empirical evidence on its impact and key factors. The overarching objective of this doctoral dissertation is providing a novel contribution to the understanding of how coaching processes work by examining three differentiate yet complementary core dimensions (what, how, and who of coaching practices), using a mixed-methods approach. By systematically analyzing how is built the coaching connection, we provide robust insights on how the ‘magic’ of coaching works, what coaches essentially do and could do better, and how clients perceive processes and indeed respond to coaching interactions.

A premise

My research interests have long lied on adult development processes – understood as change processes, and the specific key factors which might help boosting those processes on people and organizations. Albeit the research on change and development seems to harp on the importance of others in the process itself, the actual process of development and the role of the ‘helper‘ (e.g., mentor, coach, or others) are often treated like mysterious ‘black boxes’.

Concretely coaching, as a person-centered approach that supports personalized and challenging learning, holds the potential for positive, transformative outcomes; it provides a perspective on learning as a personal engagement with change. Certainly, the practice of coaching has been around for millennia in the form of individualized professional advice yet has only recently been formally recognized as a psychological construct within the corporate and academic arenas. Thus, its fast spread poses a unique challenge to the field of management research since it represents a new configuration of behavior in both organizations and managerial education. The obvious risk of this intense growth is that the field ends up in chaos, lacks transparency, drops in the quality of services, and hence, might become a short-lived organizational fad that passes quickly (Grant, Passmore, Cavanagh & Parker, 2010).

Theoretical Background

Coaching has usually been viewed as a way to ‘correct’ poor performance and to link individual effectiveness with organizational performance. We contend that to stimulate stronger performance in a sustainable way is only possible when primarily focusing on the client’s strengths, aspirations, and personal development.

Though several theoretical attempts have been made in the literature to classify the existing coaching schools, none of these approaches has been empirically validated (Segers, Vloeberghs, Henderickx, & Inceoglu, 2011). In short, the results of the most prominent coaching outcomes studies report that executive coaching in an organizational setting is significantly linked to individual performance and commitment (Smither, London, Flautt, Vargas & Kucine, 2003), self-efficacy, leader effectiveness and work satisfaction (Baron & Morin, 2007).

The fact that coaching has become part of leadership development programs has prompted studies that try to justify the use of coaching techniques to increase self-awareness through consciousness-raising experiences (Mirvis, 2008), boost reflective practices by managers enhancing decision-making processes within MBA programs (De Déa Roglio & Light, 2009), accelerate career development (Parker, Hall, & Kram, 2008), and improve performance by supplementing coaching with multisource feedback (Hooijberg & Lane, 2009). Yet few have examined the process of executive coaching in depth through a multidimensional rigorous perspective.

Simultaneously, the accreditation of coaches is still controversial; most coaches practicing today do not use theoretically coherent approaches and scientifically-validated techniques and measures. Much of the coach training industry appears to have been driven by a need for credibility and status and a demand for ‘accreditation’. While competency modeling distinguishes top performers from average performers in any field, executive coaching competency models do not explicitly cite related supporting empirical research; do not provide conceptual clarity on cultural competence in coach education, nor state the procedures employed in developing competency models (Mosteo, Maltbia, & Marsick, 2014). In fact, the need to take *cultural sensibility* into account turns evident when considering a co-constructed process such as coaching: a coach’s own cultural lens impacts his/her coaching practice, while also the competency model to which one adheres to is impacting his/her coaching interactions in the way it is defined and implemented, considering the cultural nuances that might be embedded on the competency model itself.

Thus, practitioner and academic communities have called for coaches to enhance cultural awareness skills (Plaister-Ten, 2009). It is therefore evident we cannot, for instance, raise the quality of the training of coaches or improve the selection process of professional coaches used in leadership development programs if we are not confident on the specific characteristics of the industry and the critical elements that need to be incorporated in the coaching process to maximize its success (Maltbia, Marsick, & Ghosh, 2014). From our work, we go a step further by recalling credentialing associations to examine the level of cultural sensitivity embedded in their competency models as a first step in building more culturally sensitive capabilities in coaches around the world.

Comprehensiveness of the research studies that built up the thesis

Still, current research on coaching seems to be primarily occupied by the question, ‘*Does it work?*’ This is reasonable since evidence of effective outcomes is critical for establishing legitimacy. Yet, ‘*How do coaches help clients make meaningful and lasting change in their lives?*’ This question is central for coaching practice, and becomes particularly relevant to high-engagement coaching relationships that involve a holistic, developmental approach to enhancing leadership capability. To the best of our knowledge, no research project has yet focused on the entire three core dimensions that

constitute what has been referred as to the *coaching cube*²: (1) coaching agendas (*what*); (2) coaching approaches (*how*); (3) coaches' competencies (*who*). Explicitly, we posit that understanding coaching as a specific form of lifelong human development in both organizational and managerial educational contexts, is a function of examining its (a) *content* (or the 'what' going beyond coaching agendas, in terms of *value perception from the coachee's perspective* as the main recipient of the process) —considered as a research phenomenon; (b) *context* (or 'how' coaching is deployed through specific approaches while engaging the coachee) —grounded in the philosophical orientation of constructivism; and finally (c) *conduct* (or 'who' can act as a coach, the builder of the coaching space, using specific core competencies) —grounded in the philosophical substrate of behaviorism. As such, the continuum of an executive coaching process encompasses all elements bearing on the science of human performance —*content*, *context*, and *conduct*. Hence, the overarching research questions on which this thesis is built are:

1. *Which are the crucial components that might moderate the coachee's value perception of an executive coaching process? (What)*
2. *Which is the impact of coaching and what might be the moderators of the coaching process outcomes? (How)*
3. *What are the key core coaching competencies and how might culture be embedded in the most widely-used set of coaching competencies? (Who)*

Despite the main body of my thesis provides with detailed answers to these three fundamental questions, in this summary I provide the reader with initial answers in order to theoretically position my doctoral dissertation and to anticipate the main empirical results. In the *Conclusions*, I will provide an overview of the main contributions of the thesis.

Main Empirical Heritage

This doctoral dissertation is articulated in several chapters, three of them corresponding to the main empirical studies developed in form of papers. A visual depiction of them is as follows:

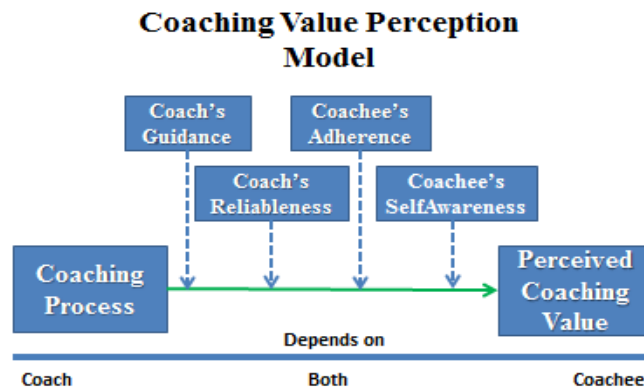
² The *Coaching Cube* is an internationally recognize theoretical framework which has recently helped to structure and understand the coaching industry. This dissertation uses it as an overall umbrella that on the one side helps on guiding the diverse research studies encompassed, while goes further by adding elements that enhance the complexity of the referred cube model. See: "Structuring and Understanding the Coaching Industry: The Coaching Cube" (Segers, Vloeberghs, Henderickx & Inceoglu, 2011). *Academy of Management Learning and Education*, 10(2), 204-221.

Empirical study	Main research questions	Main theoretical frameworks	Empirical approaches/ research designs	Samples	Key findings
Study 1: <i>An Integrative Framework on Executive Coaching Perceived Value from the Coachee's Side</i>	-What are the crucial factors that might be moderating executive's value perception of an executive coaching process? -To what extent might those moderators depend on the coach's or coachee's side?	High Quality Relationships (Boyatzis, Smith, & Beveridge, 2012; Dutton & Heaphy, 2003; Gregory & Leavy, 2010); Coaching Relationship (Baron & Morin, 2009; De Haan, Duckworth, Birch & Jones, 2013)	Literature review; Interrater reliability through Thematic Analysis of a consistent sample of Interviews	197 Bank Branches Executives	Perception of coaching value is contingent on a set of at least 4 moderators which not only depend on the coach but also on the coachee (<i>Coach's Reliability & Guidance, Executive's Self-Awareness & Willingness</i>)
Study 2: <i>Understanding Cognitive-Emotional Processing through a Coaching Process: the Influence of Coaching on Vision, Goal-directed Energy, and Resilience</i>	-To what extent might an ICT-based coaching process affect ideal-self, goal-directed energy, and resilience? -Are there moderators of the ICT-based coaching impact?	Intentional Change Theory (ICT; Boyatzis, 2001, 2006, 2008); Positive and Negative Emotional Attractors (PEA/NEA) (Boyatzis & Akrivou, 2006; Howard, 2006; Boyatzis, Smith & Beveridge, 2012).	Quantitative; Within-subjects pre-post design non-equivalent dependent variables (NEDV)	76 Executive MBA from a European Business School	Significant main effects reported in ideal self, pathways thinking, and resilience as a result of the coaching process. Effect on ideal self dimensions and resilience were positively moderated by the perceived quality of the relationship and the coachee's levels of self-efficacy.
Study 3: <i>Coaching for Cultural Sensitivity: Content Analysis applying Hofstede's Framework to a Select Set of the International Coach Federation (ICF) Core Competencies</i>	-Which is the level of cultural sensitivity embedded in ICF's competency model? -How could be both the competencies definition/ indicators and their depiction, more culturally sensitive?	Cultural Intelligence (CQ) & Cross-Cultural Competence (Dolan & Kawamura, 2015; Hampden-Turner & Trompenaars, 2000); Intercultural Sensitivity (Bennett, 2006); Hofstede's Research Based Cultural Framework (1980;2005).	Selective integrated literature review; Interrater reliability through a critical qualitative content analysis on the competency model selected.	Competency Model of ICF (6 out of 11 executive competencies analyzed; the grounded core ones).	4 of the 5 Hofstede dimensions fully affect 3 of the 6 ICF competencies (<i>questioning, direct communication, awareness</i>) A composite cultural profile of the 6 competencies is provided as an artifact of the collective cultural assumptions embedded in the model.

Paper I

In the first study, by tapping into a consistent sample of executives, we are able to provide an empirical, evidence-based model framework of constructs which might work as moderators in any coaching process when the overall value is assessed by its recipients (the coaching clients – *coachees*). The predominant research question this study seeks to answer is: *What are the crucial elements that might be moderating clients' value perception of an executive coaching process?* The research data was generated from 197 semi-structured face-to-face interviews to executive bank branches executives (M=44, sd=2.91; 73% men) who participated in a 3 months coaching process offered by their employer to improve their leadership skills. The subsequent data-coding was developed by using *thematic analysis* methodology (Boyatzis, 1998). The *inter-rater reliability agreement* (IRR) of the analysis was pursued by using two independent coders through four separate coding phases. Based on the number of times (*frequency of presence*) that a construct was mentioned across the gathered information and within a specific coding group, were identified a set of *moderator factors* ($\kappa \geq 0.8$ in each of them).

Driven on the evidence reported, the following model illustrates the specific moderating dimensions that may anticipate the perception of value when a coaching process assessed:



As a result of this inductive exploratory approach, we posit that our model specifically helps in: (1) identifying the evidence-based active ingredients perceived by executives as highly valuable over their coaching processes, from both the coach side (i.e., *reliableness*, as a composite of *trust*, *transparency* and *presence deployed by the coach*, as combined to *meaningful guidance*, *specific actions taken by the coach in pro-actively approaching coaching goals*) and the executive side (i.e., perception of increased *self-awareness*, described as *in-sessions acquired understanding of strengths and weaknesses*, as a *requirement to develop an agenda based on personal vision*); (2) predicting the potential effectiveness of vision-based coaching processes; (3) signaling directions toward further

research on willingness to be coached – *coachability* – and its specific impact on coaching effectiveness moderators.

The results of this first study suggest that executive's value perception of a coaching process effectiveness under strength, visioning-based dynamics – orienting individuals to primarily focus on things they do well and inspire, is contingent on a set of moderators that lies in both coach's and coachee's side. Those insights uncover a thought-provoking road to research beyond the coaching agendas sphere sharpened by literature. Specifically, with regard to coachee's side, our analysis connect to the individual's *coachability*, *the executive's deep intent on wanting to change and develop* as evidenced by two of the factors consistently emerged: *executive's self-awareness deployment* and *executive's adherence to be coached and to reflect upon the overall process*.

One of the overall clearest contributions emanating from this qualitative exploratory design is that coaching relationship is not only playing a powerful role in coaching outcomes (i.e., *reinforced commitment to goals connected to vision*), but is indeed also significant itself on the perception of high value. The 95% of the executive coachees in this sample explicitly or indirectly referred to the quality of the relationship as a crucial factor on their processes value assessment. These insights signal and allow common ground for further explorations on this research direction, especially with regard to the moderator factors that specifically build up a vision-based high quality coaching conversation.

We consider that the constructs emerged from this study may be a valid artifact to further measure the extent to which those specific dimensions are present in forging a high quality coaching relationship, yet additional dimensions might remain still untangled since the constructs have been driven from a reflective approach.

Paper II

From their suggested theoretical framework, Segers *et al.*, (2011: 208) observed that the biggest gap in the existing coaching literature is in the “*how*” dimension of their ‘coaching cube’ (i.e. *which coaching approaches are being used?*) and particularly, with regards to the differences in *impact* and the *effectiveness of approaches*.

As a continuation of the previous study and given the lack of theory related to the central elements that build the quality of the coach-coachee relationship and its potential implications on coaching outcomes regarding the internal processing of the individual being coached, through the second main study of the dissertation (published in the *Journal of Applied Behavioral Sciences – JABS*), we are able to enrich the evidence-based theorizing on coaching process and impact with a focus on the specific theoretical approach of *Intentional Change Theory* (ICT; Boyatzis, 2006). According to ICT, high-quality relationships are the center around which desired and sustained change evolve. In our study, the key dimensions of the coaching connection are represented as *shared vision*, *shared compassion*, and *overall positive mood between coach and coachee*. These elements are referred throughout the paper as ‘emotional saliency’, describing the relational tone attained through the coaching space (from the coachee's perspective). Hence, this paper proposes ICT-based coaching as an alternative to traditional approaches

by primarily emphasizing the exploration and articulation of an individual's ideal self³ (IS) as the deep driver of any adult developmental process.

Concretely, we offer rigorous evidence with regard to the coaching impact on executive MBA's cognitive-emotional processing – in terms of IS construction (revealed in their personal vision), goal-directed energy levels, and resilience (as the capacity to rebound with more energy from challenges). In addition, we examine whether the quality of the coaching connection (*emotional saliency*) and the coachee's general self-efficacy affect the expected coaching outcome⁴.

As a consistent coaching framework having evolved from the self-directed learning theory (Kolb & Boyatzis, 1970), ICT is a change methodology that embraces a non-linear process model which has successfully been implemented in the context of management education (Batista-Foguet, Boyatzis, Guillen, & Serlavos, 2008). Specifically, ICT-based coaching assists individuals in creating sustained and desired change through a process involving several epiphanies: discovery and articulation of IS (values, core identity, intrinsic aspirations); assessment of real self (current realities) as compared to the IS; formulation of learning goals; implementation of deliberate practices; and development of a mutually positive coaching relationship. When the coaching process engages in exercises such as envisioning a meaningful future, reconnecting with personal values, discovering strengths, and expressing gratitude for supportive relationships in the client's context, the "PEA"⁵ state is evoked.

Our ultimate aim in this study is to shed light on how coaches using ICT effectively build coaching dynamics that help individuals engage in sustainable change, which enriches both their leadership careers and lives. In particular, the main research questions that have certainly guided this paper are:

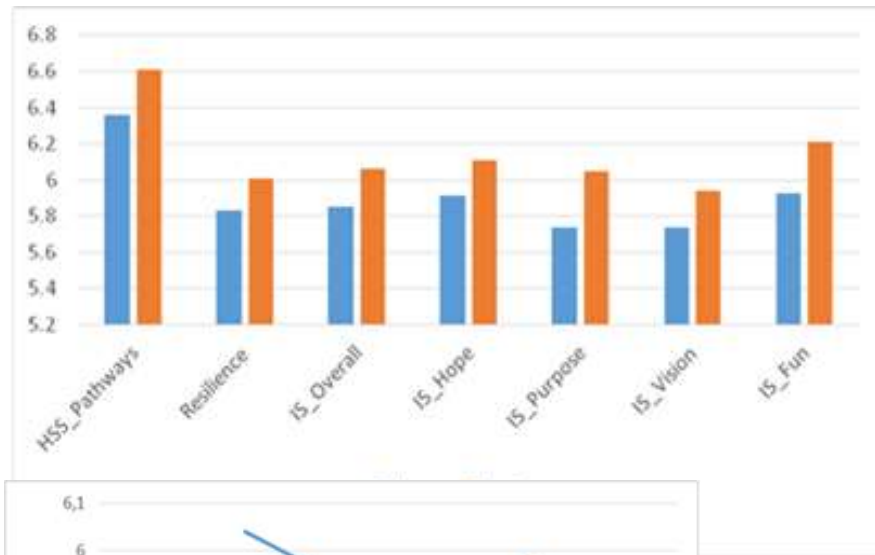
- *Does a coaching process primarily connected to PEA significantly influence the coachee's personal vision; goal directed thinking; resilience?*
- *To what extent does the coachee's general self-efficacy moderate the potential impact of coaching outcomes?*
- *To what extent does the quality of the coaching session, as perceived by the coachee, moderate the potential impact of the coaching session?*

³ From our perspective, the overall measure of Ideal Self (i.e., IS overall) provides consistent information regarding the level of vision comprehensiveness and strength. Specifically, personal vision includes (a) a compelling image of a person's IS; (b) a comprehensive sense of his or her real self as the core identity (e.g., strengths, traits, and other dispositions); and (c) hope (whose constituents are self-efficacy and optimism; Boyatzis et al., 2012).

⁴ The independent variables are the treatment (i.e., coaching sessions), the perception of the quality of the coaching connection by the coachee (through *shared vision, shared compassion and overall positive mood*), and the coachee's general self-efficacy.

⁵ Coaching with regard to the PEA –*Positive Emotional Attractors*– involves focusing on the client's agenda, emphasizing his/her ideal self, and maintaining an overall positive emotional tone. In contrast, coaching to the *Negative Emotional Attractors* (NEA) involves using external standards, performance pressure, or controls on the individual being coached. Albeit both states are necessary to the developmental process, ICT posits that clients who experience greater PEA (relative to NEA) are more likely to sustain behavioral changes in a long term perspective.

Figure 1.
Presentation
Pre-Post
Changes in
Dependent
Variables

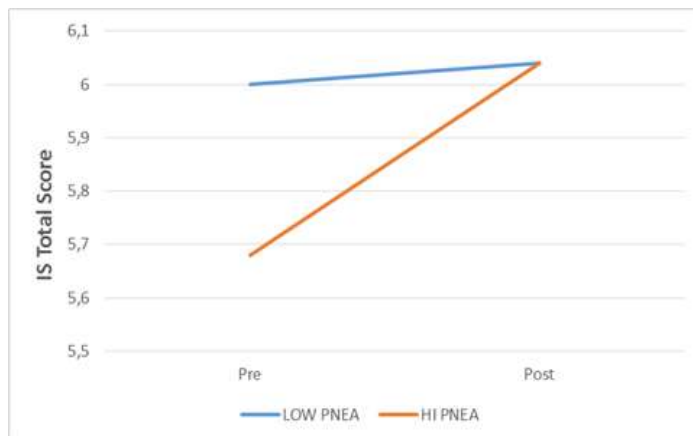


Visual
of the
the



Figure 2. Pre versus Post Resilience scores at the Different Levels of Emotional Salience

Figure 3. Pre versus Post Ideal Self (IS) total scores at the Different Levels of Emotional Salience



As shown in *Figure 1*⁶, participants reported a significantly greater degree of personal vision comprehensiveness and strength as a result of their coaching process, which was reflected in the increases in their overall Ideal Self (IS) scores. This increase was evident in four of the five dimensions related to the operationalization of the IS (i.e., *hope, sense of purpose, holistic vision, and fun*). In addition to the main effects on *IS, cognitive pathways* (i.e., one of the two dimensions analyzed within *goal-directed energy*) and *resilience*, a series of moderation effects were identified (*Figures 2 & 3*): the quality of the coaching connection with regard to its emotional salience raises as a crucial factor, as it has a moderating effect on resilience and personal vision, with a stronger increase when high emotional saliency was reported. This evidences the critical role of creating a safe atmosphere through a high-quality connection in terms of shared vision, shared compassion, and overall positive mood (*relational energy deployed through the interaction*), competence that coaches should be able to master in any coaching dynamic.

Moreover, it is important to note that the significant changes evidenced in both resilience and personal vision were also moderated by the coachees' general self-efficacy levels⁷. Higher levels of general self-efficacy were evident for those who reported higher levels of resilience and overall ideal self as a result of the coaching session, which brings a novel insight and highlights the need for future research regarding these specific moderating effects⁸.

The practical implications of this research are vast: firstly, the results indicate that (a) coaching individuals with predominant regard to their positive emotional attractors necessarily involves building a specific emotionally salient space as this has a significant positive effect on the coachees' perception of the quality of the coaching; (b) significant salience of the relational space contributes to higher levels of cognitive, perceptual, and emotional performances in the coachee (i.e., *increased pathways as cognitive routes in goal orientation; higher comprehensiveness and strength on vision*), as well as achieving open and healthier states in preparation for present and future challenges (i.e., *resilience*), ingredients that strongly support behavior change in leadership development processes. Additionally, this evidence will help shape how coaches frame coaching conversations and develop coaching relationships by better understanding and managing the

⁶ Prior to using Cronbach's alpha for each construct measured in this paper, we checked the application conditions, as each item must be tau-equivalent (Bollen, 1989), which generally means having unidimensional factorial structures and equal-item variances. When these conditions were not fulfilled, we applied Heise and Bohrnstedt's (1970) coefficient, which only requires the factor structure.

⁷ A series of 2 x 2 split-plot ANOVA were conducted using a validated resilience scale as the dependent variable and including the factors of time point (*pre* versus *post*), group (*low* versus *high self-efficacy*) and group (*low* versus *high emotional saliency*). The main effect of time point was insignificant, $t(37) = -1.375$, $p = .177$; the main effect of group was significant, $t(36) = -3.521$, $p = .001$. This analysis reveals that the high self-efficacy group scored higher on resilience than the low self-efficacy group. According to this, overall (*pre + post*) resilience scores were significantly higher post-coaching for the high self-efficacy group compared to the low self-efficacy group.

⁸ For further details on the analysis and results, please check: Mosteo, L.P., Batista Foguet, J.M., McKeever, J.D., & Serlavós, R. (2016). Understanding Cognitive-Emotional Processing through a Coaching Process: The Influence of Coaching on Vision, Goal Directed Energy and Resilience. *Journal of Applied Behavioral Sciences*, 51, 64-96.

“embodied” coaching experience, and subsequently provide a clear picture on how to train them on building emotional salient spaces through meaningful, engaging dialogue with clients.

Paper III

Finally, inspired by our concern on better understanding the coaching connection generated between coach-coachee, and the central role of the coach on creating a fostering coaching space and leading those high quality engaging dialogues, the third study attempt to answer our third main research question, by tapping directly into the “who” dimension (*coaches’ competencies*). Concretely, we analyze how culture biases might be embedded in the most widely-used set of coaching competencies (the ones proposed as core by the *International Coach Federation –ICF–* competency model), motivated by: (1) our understanding of each human interaction as a cultural depiction that comprises blended social, cognitive and emotional elements; (2) the realization of that current coaching competency models do not present a clear research-based architecture. Indeed, gaps are evident since competency models employed by professional associations: (a) have their origins in the Western hemisphere with a number of embedded cultural assumptions (being now applied globally to prepare and certify professional coaches, accredit training and education providers), and (b) do not explicitly address the cross-cultural applicability of their models.

Concretely, this study enables us to explore the cultural structure rooted in the competency model chosen, in particular to evaluate its six core coaching competencies (*Trust and Intimacy; Presence; Active Listening; Powerful Questioning; Direct Communication; Creating awareness*) building upon the multi-year systematic literature review done by Maltbia and colleagues (2014) by which 10 of the 11 ICF’s competencies have been critically reviewed and theoretically grounded. Specifically, we provide a first step in conceptually clarifying cultural competence in coaching education and training through an evidence-base composite cultural profile, as a premise on understanding cultural dynamics as foundations for developing coaches’ intercultural intelligence.

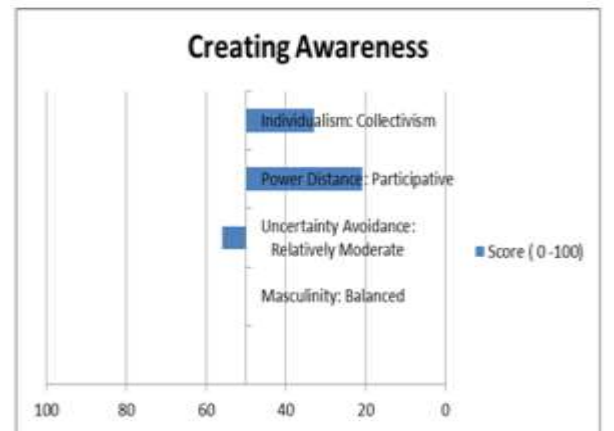
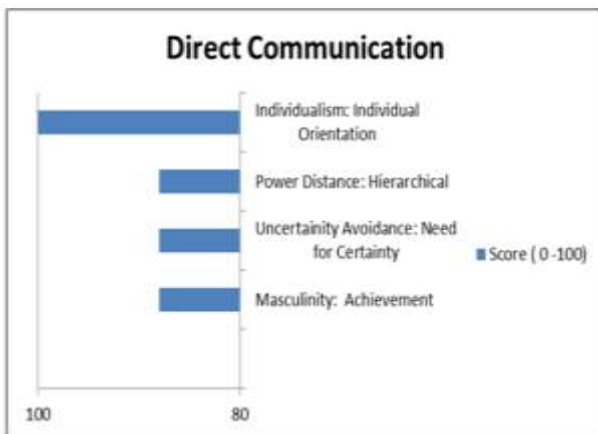
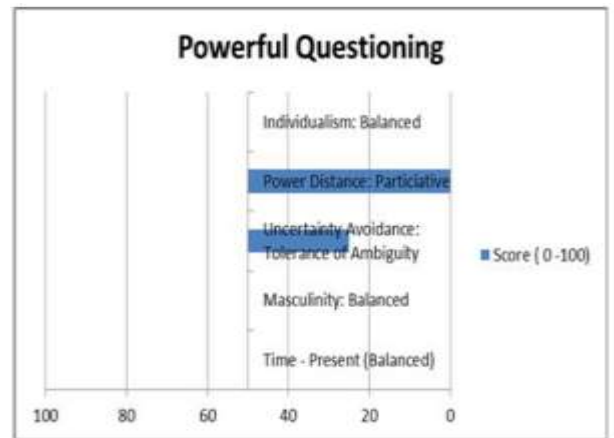
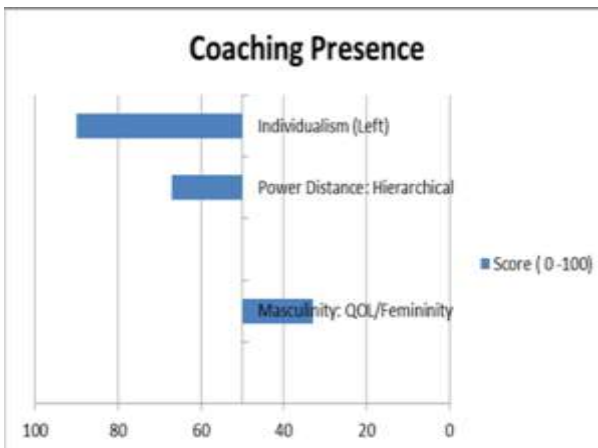
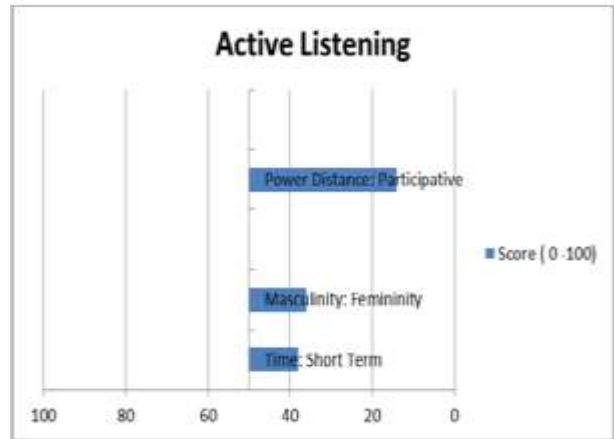
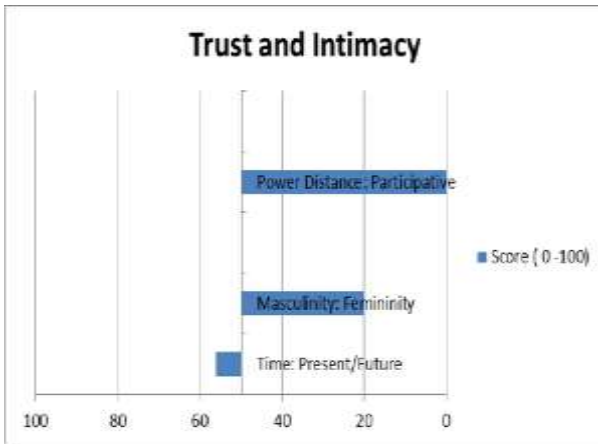
From this paper insights, we contend that increasing cultural sensitivity in any coaching competency model requires meeting rigorous psychometric properties of validity and reliability in its constitution –both contributing to conceptual clarity and utility (i.e., *credibility*), as a preliminary step on building coaching competency models upon a cultural sensitive research-based architecture. We concretely displayed that diverse cultural dimensions are activated when analyzing the selected 6 core coaching competencies⁹. Indeed, through a moderate to high inter-rater agreement among the independent coders, the analysis done reveals that the directionality of the 5 cultural orientations used (Hofstede’s model) shift depending on behavioral indicators associated with each competence. Observing the cultural profiles composite linked to each of the 6 competencies (*Figure 4* shows the interactions among each competence and the activated cultural dimensions), we have been able to exhibit that when coaches: co-creating the relationship through (1) *trust and intimacy* and (2) *coaching presence*; striving to communicate effectively through the enactment of competencies as (3) *active listening*,

⁹ The findings presented in this paper are based on a rigorous content analysis applying Hofstede’s cultural dimensions research framework. The analysis was conducted at two levels, amongst three independent coders through the four different rounds that comprised the design.

(4) *powerful questioning*, and (5) *direct communication*; and facilitating learning and results by endorsing the competence of (6) *creating awareness*, they are adhering to a specific cultural depiction of those competencies, and thus, we contend that: (a) coaches should maintain a self-aware stance to their competencies deployment when adhering to the precise behavioral indicators defined by the model; (b) they should complete the *Culture in the Workplace Questionnaire (CWQ)* or related measures to increase awareness of their particular cultural programming to explicitly attend to cultural dynamics in their coaching engagements; (c) these competencies definition and indicators must be critically revisited by its initiators in order to consider a more culturally sensitive architecture of its core structure; (d) and overall, coaching training curricula still need to address cross-cultural aspects intensively.

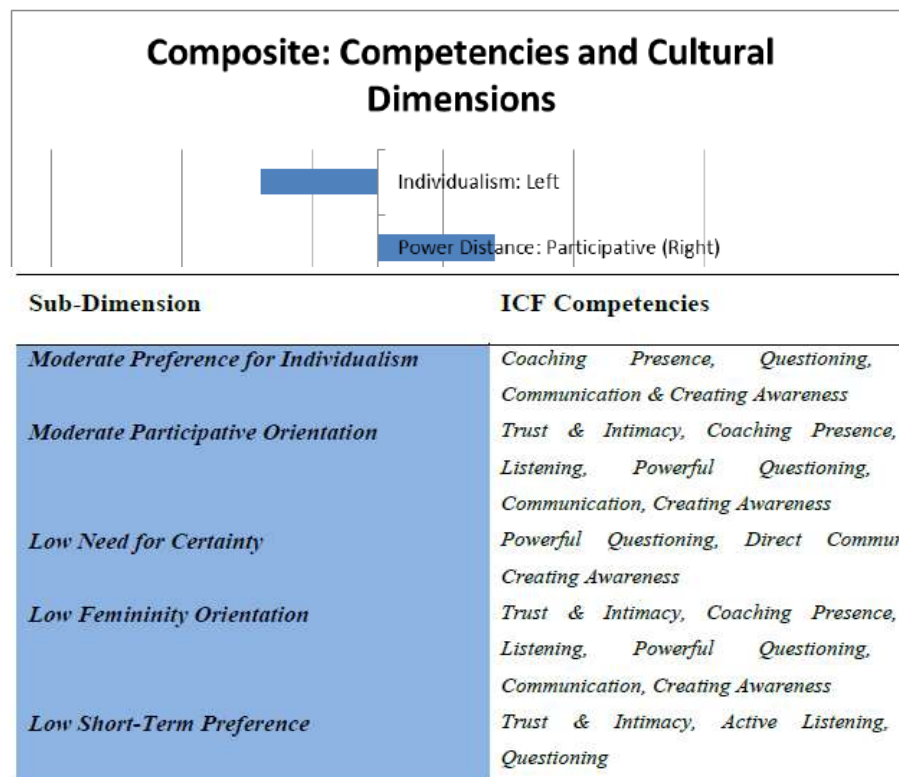
This study reached to establish preliminary robust ground for further research on understanding interplay between modes of cultural programming and core coaching competencies.

Figure 4. *Core Coaching Competencies and Activated Cultural Dimensions*



The composite cultural profile of the six ICF competencies included in this analysis (see *Figure 5* below) is an artifact of the collective cultural assumptions embedded in the ICF competency model. The table below lists the specific competencies that influenced the overall directionality of each cultural sub-dimension. Our analysis shows that directionality shifts depending on behavioral indicators associated with each competency —suggesting the application of cultural competence in coaching is both dynamic and complex.

Figure 5. *Composite Profile: Intersection between ICF competencies and Hofstede’s cultural dimensions*



Finally, while this study's cultural profiles could be further replicated, Hofstede's cultural dimensions are likely to be highly embedded in both definitions and indicators of the six competencies analyzed—which raises questions about whether cultural competence should be separately added or embedded into existing competencies models. We explicitly recommend:

- Embedding cultural competence in existing competencies given: (a) cultural assumptions already appear in existing models; (b) doing so could enhance cultural sensitivity by making existing competencies less ethnocentrically grounded and more ethno-relatively oriented; (c) this approach requires reexamining competencies and ensuring related indicators reflect the full range of each cultural dimension;
- Identifying clear foundational capabilities needed to develop cultural competence and disseminating guidelines to coach training providers to: (a) assess cultural self-awareness and capability; (b) establish cultural knowledge base; (c) build skills to communicate, listen and coach cross-culturally.

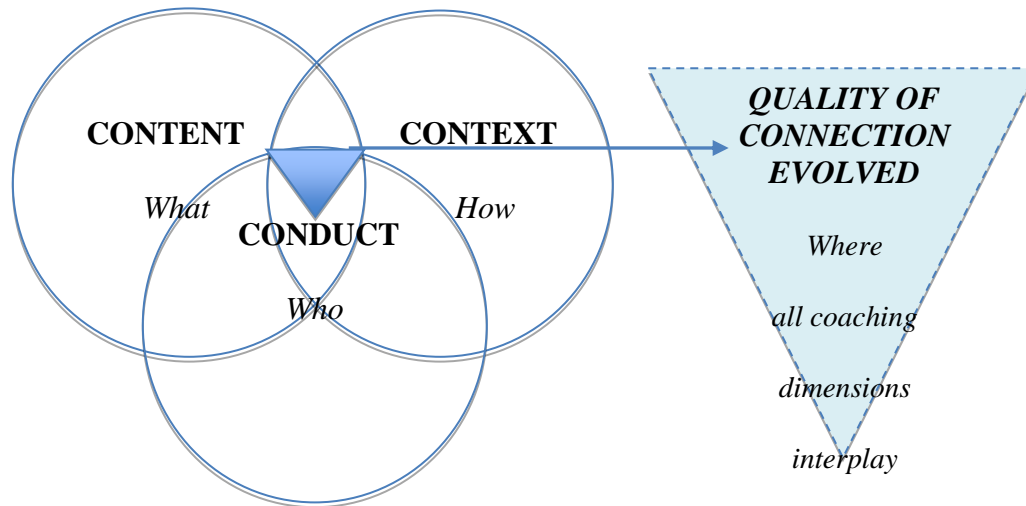
We are aware of that intercultural competency development is a nonlinear process that involves triggering within individuals cognitive elements (i.e., intellectual awareness and knowledge); affective elements (i.e., emotional awareness and affective growth); and last, behavioral components (i.e., skill building and behavior change). Thus, in order to develop intercultural competency when coaching, changes at the cognitive, affective, and behavioral levels must be consciously experienced. We know that this requires cultural courage, since doing so activates “*cultural guards*,” who have created, and/or benefit from, existing competency model and credentialing systems. Yet, given the relevance of developing coach cultural competence for today's global diversity, we contend it is less a question of “*if*,” but rather “*when and how*.”

Conclusions

Helping is a fundamental human activity that exists in different forms across all human cultures (Egan, 2009). ‘*Executive coaching*’ has emerged as a new type of formalized helping relationship in which skilled professionals assist clients in making desired changes. We contend that slight yet important modifications in the way we shape coaching conversations can yield dramatically improved results in terms of both specific impact and sustainability of behavior change. Our overall research holds that it is only within the context of a high-quality relationship that meaningful, sustainable competencies development may occur.

Through this dissertation we not only contribute to shed light on the major gap evidenced in the field, the coaching impact – the *how*, concurrently affected by coaches' competencies (the *who*) and the space co-created in between coach-coachee (*where all dimensions interplay*), we are adding robust evidence by exploring moderators allocated

in both coach's and coachee's side, which have been barely considered up to now. A visual depiction of the strategy built:



Our intellectual integrity rests on our willingness to put our methods, practices, and theories to a test. In this sense, research should focus on what produces effective coaching, not merely normative or descriptive approaches to what some do. Indeed, we believe that coaching is still a practice in search of a backbone, two backbones actually: a scientific, evidence-based backbone and a theoretical backbone. Yet, the effort of this dissertation studies taps into those directions.

Finally, the next table presents a visual overview of the main research questions and main theoretical, empirical and practical contributions resulted from each of the studies that the dissertation comprises. We consider that these are relevant findings that may indeed guide an empirical evidence-based development of the profession as well as the choices that are made in the definition of competency models, as in the recruitment, development, deployment, and matching of executive coaches.

Study	Main research question	Main theoretical and empirical contributions	Main practical contributions
<p>Study 1 – <i>An Integrative Framework on Executive Coaching Perceived Value from the Coachee's Side</i> - The What -</p>	<p>What are the crucial factors that might be moderating executive's value perception of an executive coaching process? To what extend those moderators might depend on coach's or coachee's side?</p>	<p>This study revisits the paucity of studies on executives' perception of coaching value and provides an empirical evidence based model-framework of constructs which work as moderators when the overall value of a coaching process is assessed by its direct recipients –<i>Bank Branches Executives</i>, regardless of the coaching approached used by the coaches (all vision, strength-based). Coaching value perception is contingent on a set of at least 4 moderators which not only lies in the coach's but also in the coachee's characteristics. By providing this model we contribute to determining predictive value of the active ingredients on coaching effectiveness and help to better understand and shape how to foster coachee's adherence to the process.</p>	<p>The identification of those 4 moderator factors connect to pioneering insights with regard to the space created by the coach as well as the coachee's readiness to be coached, as leveraging possibilities on the coachee must be coupled with nuanced coaching wisdom and abilities such as knowing when and what change a client is ready for (<i>coach's meaningful guidance</i>), plus the responsibility deployed through the process by coachee (<i>self-awareness of strengths and limitations and adherence to reflect within and among sessions</i>). As part of the first construct moderator (<i>reliableness</i>), four main dimensions emerged as boosters of the coaching relationship from the perspective of the coaching recipient: <i>trust, transparency, presence, and availability</i>, primarily enabled by the coach.</p>
<p>Study 2 – <i>Understanding Cognitive-Emotional Processing through a Coaching Process: the Influence of Coaching on Vision, Goal-directed Energy and Resilience</i> - The How -</p>	<p>To what extend an ICT-based coaching process might affect coachee's cognitive and motivational resources? Are there moderators on the ICT-based coaching impact?</p>	<p>This study enriches the evidence-based theorizing on coaching process and outcomes with a focus on a specific theoretical developmental umbrella, Intentional Change Theory-Coaching based. Insights on coaching impact regarding coachee's emotional-cognitive processing and key moderators on the process are rigorously analyzed. We contribute to theorizing on high quality coaching relationships creation through the exploration of significant factors (<i>shared vision, shared compassion, overall positive mood</i>) by which those are shaped. Also, the growth-oriented role that the quality of the connection (perceived as <i>emotionally salient</i> by the coachee) plays in preparing individuals emotionally and cognitively for development and change is specifically explored.</p>	<p>The evidence reported through this study helps enlighten how coaches should frame coaching processes by shaping spaces and conversations which increase cognitive and motivational resources in the coachee. While helping coaches understand and manage the embodied coaching experience through the primarily stimulation of <i>positive emotional attractors</i> and <i>ideal-self</i> evocation, this research contributes to inform of best practices to be incorporated in coaches training with regard to coaching engagement, where a meaningful salient space through emotional attunement emerges as both booster and moderator.</p>
<p>Study 3 – <i>Coaching for Cultural Sensitivity: Content Analysis applying Hofstede's Framework to a Select Set of the International Coach Federation (ICF) Core Competencies</i> - The Who -</p>	<p>Which is the level of cultural sensitivity embedded in ICF's competency model? How could be improved the cultural sensitivity of both competencies definition/indicators, and practice?</p>	<p>This study identifies certain degree of cultural bias embedded in the 6 core coaching competencies encompassed by the most widely-used coaching competency model (ICF's). The identification done and the formulation of subsequent implications connect to a double theoretical need: (1) To build conceptual clarity in both competencies definition and indicators with regard to cultural competence in coaches education, training, and credentialing, and (2) to open up an evidence based inquiry road on coaching competency modeling built on a research-based competencies architecture.</p>	<p>The critical content analysis done through this study provides an evidence-based detailed cultural composite profile of the 6 core coaching competencies. By doing so, we help to acknowledge cultural biases in the model construction, while also facilitating to increase conceptual clarity regarding cultural coaching competence as a first step on building self-aware executive coaches who might need to operate across cultural boundaries -a key requirement in current global educational and workspaces. This study also constitutes a preliminary step on developing metacognition on cultural intelligence.</p>

References

- Baron, L., & Morin, L. (2009). The Coach-Coachee relationship in Executive Coaching: A field study. *Human Resource Development Quarterly*, 20, 1, 85-105.
- Batista-Foguet, J. M., Boyatzis, R. E., Guillen, L., & Serlavos, R. S. (2008). Assessing Emotional Intelligence Competencies in Two Global Context. In R. J. Emmerling, V. K. Shanwal, & M. K. Mandal (Eds.), *Emotional Intelligence: Theoretical and Cultural Perspectives* (pp. 89–114). Nova Publishers.
- Boyatzis, R. E (1998). *Transforming Qualitative Information. Thematic Analysis and Code Development*. Thousand Oaks, CA, US: Sage Publications.

- Boyatzis, R.E. (2006). An overview of intentional change theory from a complexity perspective. *Journal of Management Development*, 25, 607–623.
- Egan, G. (2009). *The skilled helper: A problem management and opportunity development approach to helping*. (9th Ed). Belmont, CA: Cengage Learning.
- Emmerling, R. J., Batista-Fogueat, J. M., Boyatzis, R. E., Guillen Ramo, L., & Serlavos, R. (2008). *Emotional intelligence: theoretical and cultural perspectives* (p. 233). New York: Nova Science Publishers.
- Grant, A. M., Passmore, J. Cavanagh, M. J., & Parker, H. (2010). The state of play in coaching today: A comprehensive review of the field. *International Review of Industrial and Organizational Psychology*, 25, 125-167.
- Hooijberg, R., & Lane, N. (2009). Using multisource feedback coaching effectively in executive education. *Academy of Management Learning & Education*, 8, 483–493.
- Maltbia, T. E., Marsick, V. J., & Ghosh, R. (2014). Executive and organizational coaching: A review of insights drawn from literature to inform HRD practice. *Advances in Developing Human Resources*, 16, 161-183.
- Mirvis, P. (2008). Executive development through consciousness-raising experiences. *Academy of Management Learning & Education*, 7, 177-188.
- Mosteo, L., Maltbia, T.E., & Marsick, V.J. (2014). *Coaching for Cultural Sensitivity: Content Analysis applying Hofstede's Framework*. Presented at 1st Columbia Coaching Conference, September 2014, Teachers College, New York.
- Parker, P., Hall, D. T., & Kram, K. E. 2008. Peer coaching: A relational process for accelerating career learning. *Academy of Management Learning & Education*, 7, 487–503.
- Plaister-Ten, J. (2009). Towards greater cultural understanding in coaching. *International Journal of Evidence Based Coaching and Mentoring*, 3, 64-81.
- Sadler-Smith, E., & Shefy, E. 2007. Developing intuitive awareness in management education. *Academy of Management Learning & Education*, 6, 186–205.
- Segers, J., Vloeberghs, D., Henderickx, E., & Inceoglu, I. (2011). Structuring and understanding the coaching industry: The coaching cube. *Academy of Management Learning & Education*, 10, 204-221.
- Smither, J.W., London, M., Flautt, R., Vargas, Y., & Kucine, I. (2003). Can working with an executive coach improve multisource feedback ratings over time? A quasi-experimental field study. *Personnel Psychology*, 56, 23–44.

Unveiling the Catalyzing Power of Emotional Intelligence over General Intelligence and Learning Performance

Truninger De Albuquerque Margarida
ESADE Business School

Abstract

Prior research on emotional intelligence (EI) has emphasized using additive models that assume EI and general intelligence (g) make independent contributions to performance. Questioning this assumption, we study the joint contributions of EI and g to learning performance, designing and testing a task-dependent interaction model. Reconciling divergent findings in previous studies, we propose that whenever social tasks are at stake, EI becomes more important to learning performance as g increases. In analytic tasks, a negative interaction between EI and g is expected. Using a behavioral approach to EI, our results reveal EI moderates the relationship of g and learning performance.

INTRODUCTION

The last 25 years have witnessed the rise of emotional intelligence (EI) – defined as a set of abilities ranging from the perception to the regulation of emotions in the self and in others (Mayer & Salovey, 1997; Salovey & Mayer, 1990) - propelled by claims that it is superior to IQ in predicting performance (Goleman, 1995). However, if some research shows that EI has an incremental impact on job performance, above and beyond g (Boyatzis, Good & Massa, 2012; Lam & Kirby, 2002), there is also an increasing number of studies and meta-analyses attesting to mixed results, particularly in academic settings (Austin, 2004; Day & Carroll, 2004; Christiansen, Janovics & Siers, 2010; Newsome, Day & Catano, 2000; Van Rooy & Viswesvaran, 2004; Zeidner, Matthews & Roberts, 2004; O'Boyle et al., 2011; Brackett, Rivers & Salovey, 2011; Joseph & Newman, 2010). It is our contention that the aforementioned lack of consistency across findings in the field may be due, in part, to a dominance of additive models in the study of EI's contribution to performance. Researchers have built the case for EI by arguing it explains variance in performance that is not yet accounted by extant constructs, such as cognitive intelligence (Mayer, Caruso, & Salovey, 1999). However, this argument presumes that emotional and cognitive intelligences make independent contributions to performance, an assumption that overlooks the integration of emotion into cognitive processes (Damasio, 1994). Likewise, at the core of EI's concept lies the idea of interdependence between emotion and reason by which “emotion makes thinking more intelligent and that one thinks intelligently about emotions.” (Mayer & Salovey, 1997: 5). Moreover, while it is clear that those who score high (low) in both EI and g achieve top (bottom) performances, little is known about the performance of individuals with high (low) g but

low (high) EI. Thus, the present study's main research question focuses on the nature of the interaction effects of EI and *g* on learning performance.

Furthermore, in the attempt to reconcile prior conflictive finding among the few interaction studies done in academic and organizational settings, we contend that whether EI and cognitive ability interact in the way of complementing or compensating each another, ultimately depends on the *type* of task being performed. Thus, we design a task-dependent interaction model of EI and *g* on learning performance, and test it on a population of managers and professional executives enrolled in an international MBA program at a leading European business school.

Overall, this study offers three main contributions to the EI-performance literature: First, it unveils the moderating role of EI on the relationship between *g* and learning performance. Second, it uses a multidimensional behavioral measure of EI that features 12 specific emotional and social competencies. Third, it internalizes task-dependence in the analysis, by considering two types of tasks - *social* and *analytic* - within the same sample. In so doing, we are first, to our knowledge, to examine the interaction effects of a behavioral measure of EI.

A TASK-DEPENDENT INTERACTION MODEL OF EI, *g* AND LEARNING PERFORMANCE

We propose that the interaction between EI and *g* on learning performance depends on the type of task. We use a taxonomy of tasks that takes into account the *content* of the information processed. According to Jack et al. (2012) the content can be based on two opposing cognitive domains: The *social* and *analytic* cognitive domains. Whereas the former relates to tasks that require social information processing, i.e., reasoning about the minds of others and/or involving interpersonal interaction, the latter pertains to tasks that require reasoning about the physical or mechanical properties of inanimate objects (Jack et al., 2012).

To study these two types of tasks within the same sample of individuals, we chose to conduct this study within the academic setting of an MBA, where we could assess the course performance of professionals and executive managers according to both social and analytic tasks.

Social Tasks

When individuals engage in social tasks, what is the interactive nature of the relationship between EI and *g* on learning performance? We hypothesize that among individuals with low levels of EI – those who may be less apt at getting along or influencing others - *g* may contribute relatively little to performance. Similarly, among those characterized with lower levels of cognitive ability, who are short of knowledgeable contributions for the task at hand, EI may be of little consequence to performance. This positive interaction between EI and *g* can be explained by the fact that even if individuals were highly competent in the mastery of EI skills, as much as they could empathize with or influence others, their inability to identify and implement effective solutions would undermine their overall performance. In fact, in a study of the interaction of social skill and *g* on job performance and salary, Ferris et al. (2001) notes how the emphasis put on interpersonal interactions by those employees who lack the intellectual resources to perform a task may be negatively perceived by employers, and lead to lower evaluations and salaries.

Interestingly, the authors find evidence of this phenomenon, by which increases in social skills when combined with low *g*, actually lead to lower salary levels.

Therefore, we propose the following:

Hypothesis 1. In social tasks, EI positively moderates the relationship between g and learning performance.

Analytic Tasks

When engaging in analytic tasks, including those requiring logical or mechanical reasoning, EI skills may add little to the performance of individuals who have strong cognitive abilities that meet the intellectual demands of the task. This is because in tasks that are primarily cognitive-intensive, those individuals characterized with a high *g* are able to achieve top performances, regardless of their level of EI abilities. In fact, when task performance is high, the room for further improvement is so small that EI abilities may only play a minimal role. Therefore, we suggest that in analytic tasks, wherein little or no interpersonal interaction is required, there is a negative interaction between EI and *g* on performance, such that the higher the level of one's cognitive abilities, the smaller the effect of EI skills on performance. In the presence of a negative interaction between EI and *g*, individuals may therefore perceive these two abilities as *substitutes*, whereby one may reap more benefits of investing in one ability if one is short on the other.

Thus, we suggest the following hypothesis:

Hypothesis 2. In analytic tasks, EI negatively moderates the relationship between g and learning performance.

Gender Differences

In this study we control for gender to consider the potential differences between females and males in their learning performance of social and analytic tasks. Gender stereotypes are shaped by social and cultural norms since early childhood, instilling women to take on nurturing roles, being in charge of childcare and eldercare in their families, while men are typically given mechanical and physical chores (Fagan, 2010). Petrides, Furnham & Martin (2004) show evidence of gender-based stereotypes by which women self-assessed higher in EI but lower at IQ than men. Likewise, whilst developing a new Personal and Motive-based competencies instrument, Batista-Foguet et al. (2016) found that amongst 19 competencies women's self-ratings were only higher than men's on empathy and service orientation. Similarly, Syzmanowicz & Furnham (2011) found that men self-rated themselves higher in mathematical/logical and spatial intelligences except for verbal intelligence in which women self-ratings were higher.

In agreement with these findings, we establish the following hypotheses regarding gender differences in social and analytic tasks:

Hypothesis 3a. In social tasks, women have a higher learning performance than men

Hypothesis 3b. In analytic tasks, women have a lower learning performance than men

Figure 1 below shows the overall path diagram of the task-dependent interaction model of EI competencies and cognitive ability for enhancing learning performance, including both structural and measurement relationships.

Insert Figure 1 about here

DATA AND METHODS

Participants

Data were collected on 864 part-time and full-time MBA candidates, from a top European business school, between 2006 and 2013. There were 30% females, and the average age of candidates was 29 years ($SD=2.8$). As part of the MBA, the candidates took the compulsory course of Leadership Assessment and Development, which is based on the Intentional Change Theory (Boyatzis, 2006). In this course, the candidates were asked to complete a self and multisource assessment of EI competencies. All data were collected under the informed consent and ethical guidelines of ESADE Business School.

Measures

Behavioral EI. We used the Emotional and Social Competency Inventory – University Edition (ESCI-U; Boyatzis & Goleman, 2007), a 70-item survey instrument which measures 14 competencies of two types: cognitive and emotional. The ESCI-U is a well-established behavioral EI measure, showing evidence of construct and discriminant validity (Byrne et al., 2007; Cherniss, 2010). In fact, it is empirically supported by 40 years of research identifying competencies that predict work success (Boyatzis, 1982; McClelland, 1973; Spencer & Spencer, 1993). In this paper, however we focused on the 12 emotional competencies: emotional self-awareness, emotional self control, adaptability, achievement orientation, positive outlook, empathy, organizational awareness, influence, inspirational leadership, conflict management, coach and mentor, and teamwork. Because the behavioral manifestations of these competencies are frequently observed in a variety of different situations, each competency is operationalized with as many as five behavioral indicators.

For purposes of exploring our research question, we distinguished three types of rating sources or assessments in this study: self, personal, or professional. The first type consists of the self-assessments provided by the student. Then, personal sources are those from a spouse/partner, friends, and family members. Professional sources are bosses, peers, subordinates or clients from work or classmates in the MBA program. MBA participants and their raters were asked to indicate the frequency of the behavior on each item on an eleven point-scale ranging from (0) ‘the behavior is never shown’ to (10) ‘the behavior is consistently shown.’¹⁰

General cognitive ability (g). We used the Graduate Management Admission Test (GMAT) as a measure of *g*. The GMAT is a standardized test that assesses analytical, mathematical, writing and reading skills for admission into graduate management programs. Several studies have used GMAT as a measure of *g* (e.g., O’Reilly III & Chatman, 1994; Hedlund et al., 2006; Boyatzis et al., 2015), including a study published in *Intelligence* (Piffer et al., 2014). To be sure, Hedlund et al. (2006: 102) concludes that “like the SAT, the GMAT can be characterized as a traditional measure of intelligence, or a test of general cognitive ability (*g*).”

Learning performance. We measured learning performance by computing scores for the MBA candidates’ grading performance at social and analytic courses, based on a total of

¹⁰ This frequency response set provides higher quality data than the usual 5-point scale (Batista-Foguet et al., 2009). The final ESCI-U scores have been mean-centered to ease the interpretation of the parameters in the model. To compute the 360° assessments on the 70 items that constitute the ESCI-U survey, we first obtained for each item, its average score across all professional and personal raters separately, and then averaged across the five items per each competency.

45 course gradings collected at the university registrar after the end of each term. In order to classify the courses as social or analytic, we created a set of 16 binary indicators to code each course syllabus for the presence of social content, e.g. words pertaining to social content were used, such as “human” or “society”, the presence of social interactions (i.e., degree of teamwork, use of debates in class), etc. Two raters coded the 45 courses’ syllabi and achieved an inter-rater reliability of 88%, well above the generally accepted threshold of 70% (Stemler, 2004). Next, we used an item-response theory model to estimate a single latent dimension, upon which only the courses with loadings higher than 1 in absolute value were kept for the analysis. Therefore, courses such as Entrepreneurship, Managing People or Global Marketing, with loadings higher than 1 were labeled “Social”, while Accounting I, Finance or Business Analysis to Valuation, with loadings below -1, were labeled “Analytic”. The learning performance scores for each type of course were then obtained by computing simple averages across individual grades. Each individual grade was a standardized score of the position of the individual in the group/year for a given course.¹¹

Procedures

In agreement with Anderson & Gerbing (1988), the data analysis process is divided into two different models: the measurement model, aforementioned, and the explanatory or structural model.

The explanatory model is a non-nested hierarchical robust linear model between learning performance and the covariates (gender, GMAT, ESCI, and the interaction between the last two). Equation (1) below describes the explanatory model of the linear association between performance (for two different types of task t) and the covariates (X), when ESCI competencies (c) are measured by different groups of raters (r) and organized in clusters (cl) and higher-level clusters (CL), for each of the individuals (i).

$$\begin{aligned}
 Performance_{i,t} &\sim t(m_{i,t}, S_{i,t}, U) \\
 m_{i,t} &= a_{t,c,r} + (Female_i, GMAT_i, ESCI_i, GMAT * ESCI_{i,c,r})q_{t,c,r} \\
 q_{t,c,r} &\sim N(Q_{t,cl,r}, S_{q,t,r}) \\
 Q_{t,cl,r} &\sim N(m_{q,t,CL,r}, S_{q,t,r}) \\
 m_{q,t,CL,r} &\sim N(0,100) \\
 S_{q,t,r} &= \exp(Intercept, Female_i, GMAT_i, ESCI_{i,c,r})W \\
 W &\sim N(0,10) \\
 U &\sim U(0,1)
 \end{aligned} \tag{1}$$

Inference was performed by means of a Bayesian approach¹², specifically using the Gibbs sampler and MCMC methods included in the ggcmc R package (Fernández-i-Marín,

¹¹ Standardizing by group/year is an efficient way of eliminating Professor effects, or the differences in ratings regarding the idiosyncrasies of certain topics. This way, our operationalization of learning performance measures how well students perform as compared to other students in the same class, but not the raw grade performance.

¹² Instead of a frequentist approach, which requires the use of random samples, in the Bayesian approach the data can be the entire population (as is the case in this study). In this approach a parameter is assigned a prior distribution (based on previous research in the field), which is then updated with the actual data by means of a specified likelihood function, so as to produce a posterior distribution of the parameter (Wagner

2016). The main advantages of the Bayesian approach are threefold: (1) it is more appropriate for settings where the data is not a random sample, but the entire population as is the case; (2) it enables highly flexible model specifications (as the one needed to account for the hierarchical structure of our data); and (3) it offers a clear and intuitive way to present results, by generating probability statements about the findings (for further reading on the advantages of Bayesian inference, check the introductory chapters of Jackman, 2009).

RESULTS

Figure 2 shows the coefficient estimates obtained through robust regression, of the direct effects of gender, GMAT, ESCI, and the interaction effect between ESCI and GMAT on learning performance in social (red line) and analytic (blue line) types of tasks/courses. Analogous to a measure of effect size, the Bayesian approach to regression modeling produces estimates of the percentage decrease in the residuals' standard deviation, an approximate measure of $(1-R^2)$. As such, considering the professional raters only, which previous research finds to be the most reliable raters on average (Boyatzis et al., 2015), the regression on social tasks resulted on an average decrease in the residual standard deviation of 2,34%, whereas the one on analytic tasks produced a decrease of 8,88%. Reading the panels in Figure 2 corresponding to the professional raters, there are four main findings: (1) Females tend to score lower than males (-0.1 on average) on analytic courses, supporting hypothesis 3b, whilst there is practically no gender difference on social courses; (2) GMAT has a positive effect of 0.9 grade points on the learning performance of analytic courses, which is significantly higher than in social courses, since GMAT has a substantial amount of mathematical and logical reasoning exercises; (3) The direct effect of emotional and social competencies on learning performance is positive at approximately 0.4 grade points with no significant distinction between social and analytic courses; and (4) the interaction effect of ESCI and GMAT on the learning performance of both analytic and social courses is negative. This last finding informs the central research question in the present study. While it supports hypothesis 2 of a negative interaction between EI competencies and general intelligence on the learning performance of analytic tasks, it shows however little support to hypothesis 1. Yet, there is a positive second order interaction, by which the interaction effect increases from analytic to social courses, i.e., analytic tasks have a stronger negative interaction effect as compared to social courses. This finding may thus be viewed as offering a hint of support to hypothesis 1.

Insert Figure 2 about here

Figure 3 provides a visual summary of the interaction effects between each EI competency and GMAT on the learning performance of social and analytic courses.

Insert Figure 3 about here

& Gill, 2005). In fact, in this approach we are not entitled to use a p-value (as in frequentist statistics) as the probability of obtaining the observed sample results under the null hypothesis.

Effects accounting for unequal variances of performance using Ω are quite different by type of task. For social courses women have less variability in their performance, as well as individuals with higher GMAT. However, ESCI is not associated with higher or lower variability of performance on the social courses. For analytic courses, the picture is quite the opposite. Females have more variability in their performance, GMAT does not play any role in the variability and individuals with higher ESCI are more volatile in their performance (more difficult to predict).

DISCUSSION

Earlier research has proposed that EI and g contribute to performance in independent and incremental ways (Mayer, Caruso, & Salovey, 1999). The present study shows, however, that the contribution of EI to the classroom performance of 864 professional business executives and managers is dependent on their level of cognitive abilities.

As predicted in hypothesis 2, we find evidence that in analytic tasks, those that primarily involve mathematical thinking and logical reasoning about abstract concepts (e.g. course assignments in Accounting or Finance topics), the lower cognitive ability the stronger the effect of EI competencies on performance. In agreement with Côté & Miners (2006), Agnoli et al. (2012) and Petrides, Frederickson, & Furnham (2004), we find that those individuals who face bigger cognitive challenges have in compensation the opportunity to reap more benefits from deploying EI competencies. Facing a cognitive challenge, i.e. when a task's intellectual demands outweighs one's cognitive abilities, can be emotionally taxing, as sentiments of fear and frustration emerge, sabotaging one's focus, and approach motivation. In these situations, being trained to effectively use EI competencies such as emotional self-control, achievement orientation or positive outlook may help individuals keep their eye on the prize and their head in the game, with the confidence that, regardless of the cognitive difficulties they face, they can choose not to give up, but give in to keep a clear and focused mind until the task is finished. This way, EI competencies have in these cognitive struggles an opportunity to make a significant difference in learning performance. Otherwise, when individuals' cognitive resources outweigh task demands, the absence of a cognitive challenge or emotional threat, enables them to reach high performances in analytic tasks, regardless of their emotional competence.

However, regarding social tasks, although our data did show a positive second order interaction, by which there was a relatively higher interaction between EI and g on the performance of courses within the social type as compared to the analytic, this increase was not sufficient to support hypothesis 1.

Furthermore, by controlling results for gender, we observed that females were at a disadvantage in analytic tasks, in support of hypothesis 3b, whereas there was no significant gender difference in social tasks, an unexpected finding as per hypothesis 3a. These results are thus in partial agreement with prior research showing that roles and intellectual abilities are gender typed, such that mathematics, science and technology are seen as masculine while reading and language are generally perceived as feminine (Reilly, Neumann, & Andrews, 2016).

Limitations

We suspect the lack of support to our first hypothesis was due to a few limitations related to this study and the academic context in general. First, by conducting an ex-post focus

group with 15 MBA students (3 teams) to understand the nature of their teamwork, we were able to detect an unfortunate limitation in the measurement of social vs. analytic types of tasks. In a revealing discussion, the MBA candidates admitted how they had learned to work individually in all team projects. Specifically, they discovered the most efficient system to produce a large number of group projects across all MBA courses, was to assign different group projects to individual team members¹³. In the end, all team members would review each other's "team" projects, but they would never meet to discuss different perspectives or exchange feedback. Therefore, even if the social type of courses had a higher percentage of teamwork, and should normally require more discussion and interaction within teams, the fact that students forged an individual work system to get through all team projects without interpersonal interaction may have blurred the distinction between social and analytic tasks within our learning performance measures.

A second limitation in this study concerns the range restriction in the GMAT, our measure of general cognitive ability. This is due to an MBA admission criterion that requires candidates to score above a certain threshold in their GMAT (usually above 600 points). Our attempt to correct for range restriction, by using the students' GMAT scores collected from the first time they took the test, as opposed to the scores with which they were admitted in the MBA (scores that may have been obtained after attempting the test several times), was effective insofar as it increased the variation in GMATs, but was limited to solve the selection bias within our sample.

Moreover, by focusing on MBA candidates, even if our sample included business professionals with diverse nationalities and career backgrounds, we may have threatened the external validity of our findings. Also, the fact that the data came from a single school where, as we observed ex-post, there was a considerable absence of interpersonal interaction or actual teamwork among MBA teams, (regardless of the school's emphasis in group projects, particularly in social topics), may have threatened the construct validity of our measure of task performance in social tasks.

Implications for Future EI Research and Practice

To our knowledge, so far only 6 studies have examined the interaction between EI and cognitive ability on academic and job performance; all have found statistically significant interactions (Verbeke et al., 2008; Kidwell et al., 2011; Côté & Miners, 2006; Petrides et al., 2004; Agnoli et al., 2012; Fiori, 2015). We thus hereby join their shared call for further research in EI that moves beyond incremental effects and pays attention to the interaction of EI with interdependent intelligences or abilities that have been thoroughly studied for their impacts on performance, particularly cognitive ability. This involves recognizing the false myth in our scholarship by which EI, or any other construct for that matter, may only be valuable for organizational research and practice, if it makes an incremental or additive contribution to performance (Landy, 2005; Zeidner, Matthews, & Roberts, 2004). EI, as a predictor of human performance, can be particularly more important and consequential in ways other than their incremental linear effects (Murphy, 1996; Hough, 2003). Exploring the indirect paths, such as the multiplicative effects of interaction, enables researchers to discover EI is valuable for ultimate performance, in

¹³ For example, the team member with a HR management position, would be in charge of the Human Resources group project, whereas the one who held a sales job would take care of the Marketing team assignment, and so forth.

part because it determines other variables' capacity to influence performance more effectively.

The most helpful contribution this paper offers to future research lies in the theoretical framework we develop for studying the interaction of EI and *g* on performance: the task-dependent interaction model of EI. By internalizing distinct types of tasks within the same sample, this model provides a potential way to reconcile the divergent findings among previous interaction studies conducted in organizational roles that require interpersonal interaction, and those conducted in academic settings where such interaction is sadly oftentimes absent. In agreement with Rode et al. (2007) EI may be distinctively helpful whenever tasks require a high degree of interpersonal interaction, an observation that has been thoroughly explored in preliminary research studying the impact EI has on group processes (Jordan & Troth, 2004; Druskat & Wolff, 2001) and the quality of social interactions (Lopes et al., 2004). Therefore we invite researchers to explore task-dependent models, such as the one found here, for considering both multiplicative and additive effects of EI on human performance.

Finally, we join researchers working on different EI approaches (e.g., Berrocal & Extremera, 2006; Boyatzis et al., 2015; Petrides & Furnham, 2000) in a shared call for research that promotes a comprehensive vision for EI, one that acknowledges the unassailable contribution each existing measure, be they ability, self-report or behavioral EI, makes to the advancement of our understanding of what an emotional intelligent person thinks like, feels like and acts like.

References

- Agnoli, S., Mancini, G., Pozzoli, T., Baldaro, B., Russo, P. M., & Surcinelli, P. (2012). The interaction between EI and cognitive ability in predicting scholastic performance in school-aged children. *Personality and Individual Differences*, *53*(5), 660-665.
- Anderson, J. C. & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411.
- Austin, E. J. (2004). An investigation of the relationship between trait EI and emotional task performance. *Personality and Individual Differences*, *36*(8), 1855-1864.
- Batista-Foguet, J. M., Saris, W., Boyatzis, R., Guillén, L., & Serlavós, R. (2009). Effect of response scale on assessment of EI competencies. *Personality and Individual Differences*, *46*(5-6), 575-580.
- Batista-Foguet, J. M., Sipahi-Dantas, A., Guillén, L., Martínez Arias, R., & Serlavós, R. (2016). Design and evaluation process of a personal and motive-based competencies questionnaire in spanish-speaking contexts. *The Spanish Journal of Psychology*, *19*, 1-12.
- Berrocal, P. F. & Extremera, N. (2006). EI: A theoretical and empirical review of its first 15 years of history. *Psicothema*, *18*(1), 7-12.
- Boyatzis, R. E. (1982). *The competent manager: A model for effective performance*. New York: John Wiley & Sons.
- Boyatzis, R. E. & Goleman, D. (2007). *Emotional and social competency inventory - university edition workbook*. Hay Group Transforming Learning.
- Boyatzis, R. E., Batista-Foguet, J. M., Fernández-i-Marín, X., & Truninger, M. (2015). EI competencies as a related but different characteristic than intelligence. *Frontiers in Psychology*, *6*(72), 1-14.
- Boyatzis, R. E., Good, D., & Massa, R. (2012). Emotional, social, and cognitive intelligence and personality as predictors of sales leadership performance. *Journal of Leadership & Organizational Studies*, *19*(2), 191-201.
- Brackett, M. A., Rivers, S. E., & Salovey, P. (2011). EI: Implications for personal, social, academic, and workplace success. *Social and Personality Psychology Compass*, *5*(1), 88-103.
- Byrne, J. C., Dominick, P. G., Smither, J. W., & Reilly, R. R. (2007). Examination of the discriminant, convergent, and criterion-related validity of self-ratings on the emotional competence inventory. *International Journal of Selection and Assessment*, *15*(3), 341-353.
- Cherniss, C. (2010). EI: Toward clarification of a concept. *Industrial and Organizational Psychology*, *3*(2), 110-126.
- Christiansen, N. D., Janovics, J. E., & Siers, B. P. (2010). EI in selection contexts: Measurement method, criterion-related validity, and vulnerability to response distortion. *International Journal of Selection and Assessment*, *18*(1), 87-101.
- Côté, S. & Miners, C. T. H. (2006). EI, cognitive intelligence, and job performance. *Administrative Science Quarterly*, *51*(1), 1-28.
- Damasio, A. R. (1994). *Descartes' error*. New York: Putnam.
- Day, A. L. & Carroll, S. A. (2004). Using an ability-based measure of EI to predict individual performance, group performance, and group citizenship behaviours. *Personality and Individual Differences*, *36*(6), 1443-1458.
- Druskat, V. U. & Wolff, S. B. (2001). Building the EI of groups. *Harvard Business Review*, *79*(3), 80-91.
- Fagan, C. (2010). *Men and gender equality: Tackling gender segregated family roles and social care jobs*. European Commission.
- Fernández-i-Marín, X. (2016). Ggmcmc: Analysis of MCMC samples and bayesian inference. *Journal of Statistical Software*, *70*(9).

- Ferris, G. L., Wit, A., & Hochwarter, W. A. (2001). Interaction of social skill and general mental ability on job performance and salary. *Journal of Applied Psychology*, 86(6), 1075-1082.
- Fiori, M. (2015). EI compensates for low IQ and boosts low emotionality individuals in a self-presentation task. *Personality and Individual Differences*, 81, 169-173.
- Goleman, D. (1995). *EI*. New York: Bantam.
- Hedlund, J., Wilt, J. M., Nebel, K. L., Ashford, S. J., & Sternberg, R. J. (2006). Assessing practical intelligence in business school admissions: A supplement to the graduate management admissions test. *Learning and Individual Differences*, 16(2), 101-127.
- Hough, L. M. (2003). Emerging trends and needs in personality research and practice: Beyond main effects. *Personality and Work: Reconsidering the Role of Personality in Organizations*, 289-325.
- Jack, A. I., Dawson, A., Begany, K., Leckie, R. L., Barry, K., Ciccio, A., et al. (2012). fMRI reveals reciprocal inhibition between social and physical cognitive domains. *NeuroImage*, 66C, 385-401.
- Jackman, S. (2009). *Bayesian analysis for the social sciences*. New Jersey: John Wiley & Sons.
- Jordan, P. J. & Troth, A. C. (2004). Managing emotions during team problem solving: EI and conflict resolution. *Human Performance*, 17(2), 195-218.
- Joseph, D. L. & Newman, D. A. (2010). EI: An integrative meta-analysis and cascading model. *Journal of Applied Psychology*, 95(1), 54-78.
- Kidwell, B., Hardesty, D. M., Murtha, B. R., & Sheng, S. (2011). EI in marketing exchanges. *Journal of Marketing*, 75(1), 78-95.
- Lam, L. T. & Kirby, S. L. (2002). Is EI an advantage? An exploration of the impact of emotional and general intelligence on individual performance. *The Journal of Social Psychology*, 142(1), 133-143.
- Landy, F. J. (2005). Some historical and scientific issues related to research on EI. *Journal of Organizational Behavior*, 26(4), 411-424.
- Lopes, P. N., Brackett, M. A., Nezlek, J. B., Schütz, A., Sellin, I., & Salovey, P. (2004). EI and social interaction. *Personality & Social Psychology Bulletin*, 30(8), 1018-34.
- Mayer, J. D. & Salovey, P. (1997). What is EI? In *Emotional development and EI* (P. Salovey and D. J. Sluyter ed.). (pp. 3-31). New York: Basic Books.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). EI meets traditional standards for an intelligence. *Intelligence*, 27(4), 267-298.
- McClelland, D. C. (1973). Testing for competence rather than for "intelligence". *American Psychologist*, 28(1), 1-14.
- Murphy, K. R. (1996). *Individual differences and behavior in organizations*. Jossey-Bass Publishers.
- Newsome, S., Day, A. L., & Catano, V. M. (2000). Assessing the predictive validity of EI. *Personality and Individual Differences*, 29(6), 1005-1016.
- O'Boyle, E. H., Humphrey, R. H., Pollack, J. M., Hawver, T. H., & Story, P. A. (2011). The relation between EI and job performance: A meta-analysis. *Journal of Organizational Behavior*, 32(5), 788-818.
- O'Reilly III, C. A. & Chatman, J. A. (1994). Working smarter and harder: A longitudinal study of managerial success. *Administrative Science Quarterly*, 603-627.
- Petrides, K. V. & Furnham, A. (2000). On the dimensional structure of EI. *Personality and Individual Differences*, 29(2), 313-320.
- Petrides, K. V., Frederickson, N., & Furnham, A. (2004). The role of trait EI in academic performance and deviant behavior at school. *Personality and Individual Differences*, 36(2), 277-293.
- Petrides, K. V., Furnham, A., & Martin, G. N. (2004). Estimates of emotional and psychometric intelligence: Evidence for gender-based stereotypes. *The Journal of Social Psychology*, 144(2), 149-162.

- Piffer, D., Ponzi, D., Sapienza, P., Zingales, L., & Maestripieri, D. (2014). Morningness–eveningness and intelligence among high-achieving US students: Night owls have higher GMAT scores than early morning types in a top-ranked MBA program. *Intelligence*, 47, 107-112.
- Reilly, D., Neumann, D. L., & Andrews, G. (2016). Sex and sex-role differences in specific cognitive abilities. *Intelligence*, 54, 147-158.
- Rode, J. C., Mooney, C. H., Arthaud-Day, M. L., Near, J. P., Baldwin, T. T., Rubin, R. S., et al. (2007). EI and individual performance: Evidence of direct and moderated effects. *Journal of Organizational Behavior*, 28(4), 399-421.
- Salovey, P. & Mayer, J. D. (1990). EI. *Imagination, Cognition and Personality*, 9(3), 185-211.
- Spencer, L. M. & Spencer, S. M. (1993). *Competence at work: Models for superior performance*. New York: John Wiley & Sons.
- Stemler, S. E. (2004). A comparison of consensus, consistency, and measurement approaches to estimating interrater reliability. *Practical Assessment, Research & Evaluation*, 9(4), 1-19.
- Syzmanowicz, A. & Furnham, A. (2011). Gender differences in self-estimates of general, mathematical, spatial and verbal intelligence: Four meta analyses. *Learning and Individual Differences*, 21(5), 493-504.
- Van Rooy, D. L. & Viswesvaran, C. (2004). EI: A meta-analytic investigation of predictive validity and nomological net. *Journal of Vocational Behavior*, 65(1), 71-95.
- Verbeke, W., Belschak, F., Bakker, A., & Dietz, B. (2008). When intelligence is (dys) functional for achieving sales performance. *Journal of Marketing*, 72, 44-57.
- Wagner, K. & Gill, J. (2005). Bayesian inference in public administration research: Substantive differences from somewhat different assumptions. *International Journal of Public Administration*, 28(1-2), 5-35.
- Zeidner, M., Matthews, G., & Roberts, R. D. (2004). EI in the workplace: A critical review. *Applied Psychology: An International Journal*, 53(3), 371-399.

FIGURES

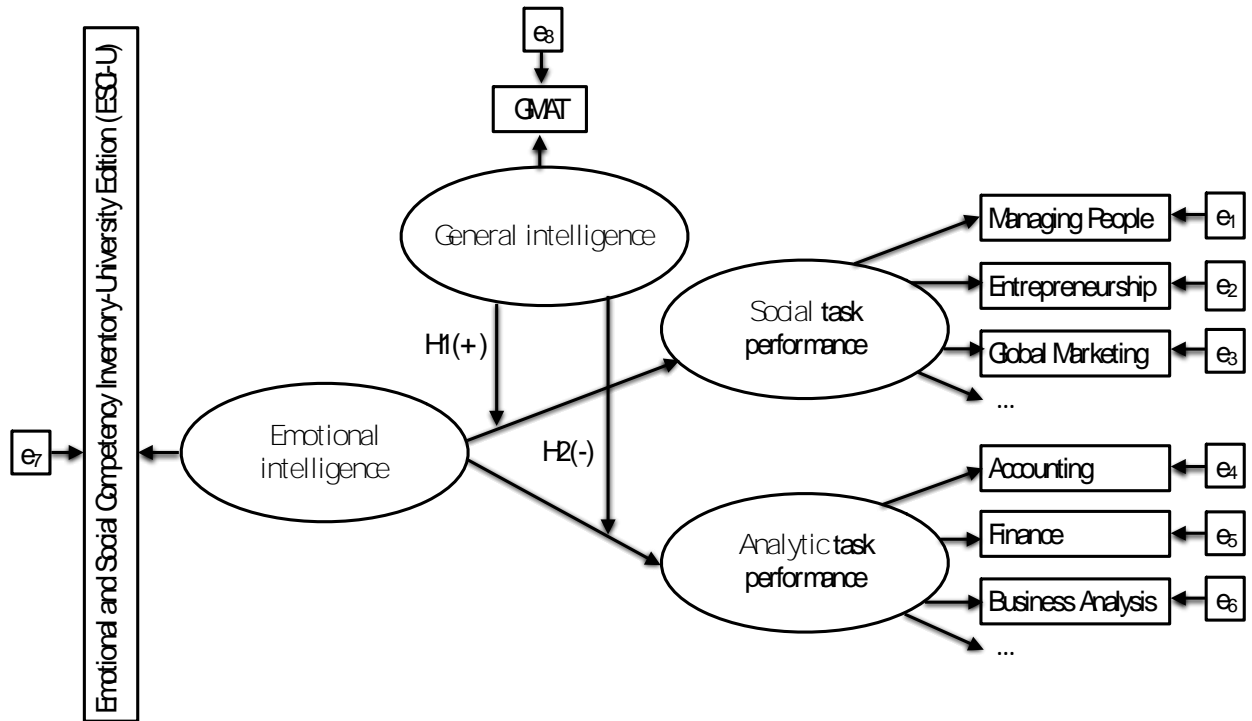


Figure 1. Path diagram of the task-dependent interaction model of EI and general intelligence on the learning performance of social vs. analytic tasks.

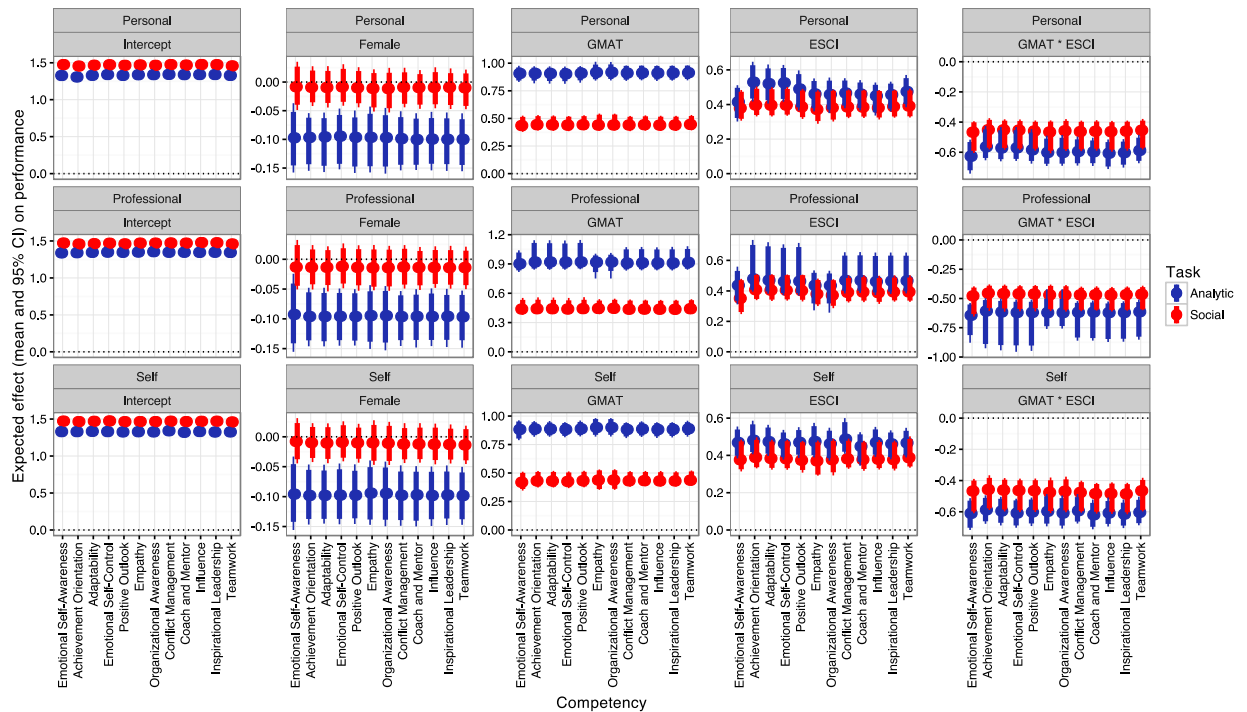


Figure 2. Coefficient estimates of the direct effects of ESCI, GMAT and gender and the interaction effect of ESCI*GMAT on learning performance.

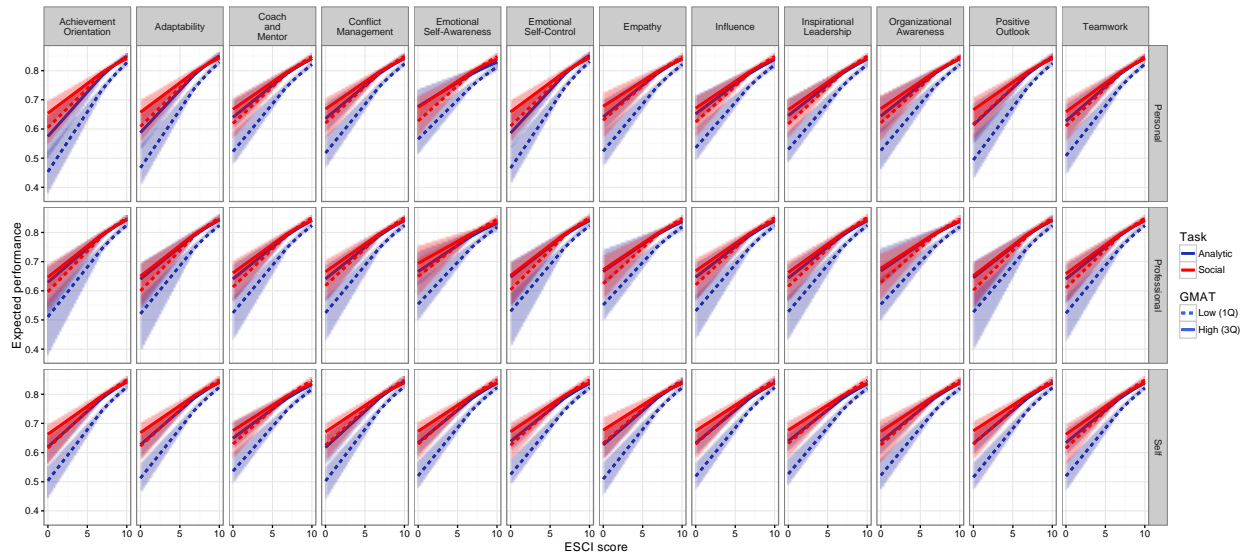


Figure 3. Interaction effect between ESCI and GMAT on the learning performance of social and analytic tasks.

Annex

Table A.1. Correlation matrix between learning performance in social and analytic tasks, GMAT and EI competencies as scored by professional raters ($n = 864$)

Constructs	Social	Analytic	GMAT	AO	A	CM	CFM	ESA	ESC	E	I	IL	OA	PO
[Social] Performance Social Tasks														
[Analytic] Performance Analytic Tasks	0.170													
[GMAT] GMAT	0.064	-0.036												
[AO] Achievement Orientation	0.110	-0.016	-0.014											
[A] Adaptability	0.093	-0.060	0.043	0.790										
[CM] Coach and Mentor	0.073	0.006	0.048	0.670	0.680									
[CFM] Conflict Management	0.035	-0.029	0.120	0.710	0.750	0.690								
[ESA] Emotional Self-Awareness	-0.064	-0.050	-0.024	0.600	0.690	0.670	0.690							
[ESC] Emotional Self-Control	0.140	0.012	0.120	0.510	0.640	0.550	0.680	0.490						
[E] Empathy	0.059	0.000	0.076	0.620	0.720	0.760	0.750	0.710	0.740					
[I] Influence	0.008	-0.031	0.081	0.670	0.770	0.660	0.750	0.720	0.550	0.740				
[IL] Inspirational Leadership	0.094	-0.039	0.033	0.660	0.670	0.720	0.690	0.570	0.550	0.610	0.710			
[OA] Organizational Awareness	-0.013	-0.045	0.110	0.610	0.760	0.620	0.690	0.650	0.610	0.720	0.770	0.620		
[PO] Positive Outlook	0.060	-0.088	0.028	0.710	0.700	0.570	0.700	0.530	0.570	0.640	0.620	0.720	0.600	
[T] Teamwork	0.076	0.011	0.080	0.640	0.700	0.810	0.750	0.610	0.670	0.820	0.680	0.680	0.690	0.620

Table A.2. Correlation matrix between learning performance in social and analytic tasks, GMAT and EI competencies as scored by personal raters ($n = 864$)

Constructs	Social	Analytic	GMAT	AO	A	CM	CFM	ESA	ESC	E	I	IL	OA	PO
[Social] Performance Social Tasks														
[Analytic] Performance Analytic Tasks	0.200													
[GMAT] GMAT	0.008	-0.044												
[AO] Achievement Orientation	0.094	0.078	0.096											
[A] Adaptability	0.110	0.047	0.170	0.640										
[CM] Coach and Mentor	0.027	-0.044	0.059	0.540	0.590									
[CFM] Conflict Management	0.060	0.000	0.110	0.540	0.670	0.700								
[ESA] Emotional Self-Awareness	0.012	-0.110	0.070	0.460	0.560	0.650	0.740							
[ESC] Emotional Self-Control	0.150	0.160	0.074	0.450	0.600	0.500	0.590	0.420						
[E] Empathy	-0.045	-0.084	0.067	0.470	0.550	0.720	0.630	0.650	0.560					
[I] Influence	0.024	-0.054	0.092	0.440	0.660	0.540	0.660	0.550	0.450	0.420				
[IL] Inspirational Leadership	0.085	-0.062	0.077	0.620	0.650	0.710	0.690	0.630	0.430	0.520	0.720			
[OA] Organizational Awareness	0.042	-0.065	0.170	0.490	0.740	0.590	0.610	0.570	0.490	0.620	0.630	0.650		
[PO] Positive Outlook	0.028	-0.056	0.110	0.570	0.620	0.510	0.580	0.480	0.490	0.430	0.520	0.640	0.560	
[T] Teamwork	0.086	-0.020	0.077	0.530	0.650	0.740	0.670	0.530	0.600	0.670	0.500	0.630	0.630	0.600

Table A.3. Correlation matrix between learning performance in social and analytic tasks, GMAT and EI competencies as scored by self-evaluations ($n = 864$)

Constructs	Social	Analytic	GMAT	AO	A	CM	CFM	ESA	ESC	E	I	IL	OA	PO
[Social] Performance Social Tasks														
[Analytic] Performance Analytic Tasks	0.200													
[GMAT] GMAT	0.024	-0.055												
[AO] Achievement Orientation	0.110	0.061	-0.044											
[A] Adaptability	0.068	0.057	0.004	0.600										
[CM] Coach and Mentor	-0.050	-0.120	-0.043	0.370	0.410									
[CFM] Conflict Management	0.032	-0.001	0.023	0.490	0.430	0.480								
[ESA] Emotional Self-Awareness	0.046	0.039	-0.022	0.350	0.300	0.330	0.390							
[ESC] Emotional Self-Control	0.096	0.110	0.076	0.350	0.420	0.170	0.310	0.120						
[E] Empathy	-0.027	0.099	0.005	0.400	0.540	0.470	0.480	0.470	0.350					
[I] Influence	-0.012	0.027	0.041	0.450	0.520	0.420	0.520	0.270	0.200	0.300				
[IL] Inspirational Leadership	-0.005	0.012	0.008	0.490	0.510	0.610	0.540	0.300	0.270	0.370	0.630			
[OA] Organizational Awareness	0.034	0.000	-0.060	0.440	0.540	0.420	0.470	0.410	0.360	0.370	0.500	0.490		
[PO] Positive Outlook	-0.007	-0.035	-0.027	0.480	0.450	0.320	0.380	0.190	0.280	0.330	0.270	0.480	0.320	
[T] Teamwork	0.120	0.036	0.066	0.410	0.550	0.590	0.520	0.250	0.370	0.470	0.400	0.560	0.470	0.440