Examining the Effects of Marketing Performance Measurement Systems on Firm Performance through the Lens of Marketing Capabilities: A Mixed Methods Study of Irish Firms

Xiaoning Liang, M.A., B.A.

A thesis submitted to Dublin City University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Dublin City University Business School

March 2017

Research Supervisor: Dr Yuhui Gao

DECLARATION

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

Signed:_____ ID No.: 13211991 Date: _____

(Xiaoning Liang)

Dedicated to

My parents Mrs Shuqing Li & Mr Baofang Liang, and my sister, Ms Xiaomei Liang

For all their love, support and encouragement

ACKNOWLEDGEMENTS

I would like to take this opportunity to thank everyone who has helped me during my PhD journey. It is a privilege for me to work with my supervisor, Dr Yuhui Gao. I would like to thank her for the insightful advice she has consistently offered, the support she has always shown to me, and the skilled guidance not only about my PhD project but also about my personal and professional development. And many thanks for all the freedom she has given to me that allows me to explore potential options and learn how to make decisions. I would also like to thank my PhD panel member, Dr Michael Gannon, for his insightful feedback and comments throughout the PhD journey, without which it would have been impossible for me to complete this thesis.

I would like to send my gratitude to Professor Patrick Flood, who introduced me to Dublin City University (DCU) in the first place, and has always been so kind and generous in offering invaluable advice and suggestions, and sharing his knowledge, expertise and networks with me. I very much cherish the opportunity to learn from him and appreciate our friendship built since we were in China. I would also like to take this opportunity to thank Professor Theo Lynn, for his help with the data collection and his financial support for 2016 European Marketing Academy Conference. A big thank you goes to Dr Na Fu, Dr Zhengwei Qiu, and their two lovely daughters-Anna and Ava. I am so lucky to have Na and her family by my side during this journey. She is so experienced, kind-hearted and generous. Thank you for offering the practical advice and organising parties and gatherings that unite us together.

I have also received a lot of help from professors and lecturers at DCU Business School with my PhD project. They are Professor Bernard Peirce, Professor Brian Leavy, Professor Darach Turley, Dr Claire Gubbins, Ms Joanne Lynch, Mr Robert Kielty, Ms Sinead Foy and Ms Catherine McManus. I am truly grateful for their feedback on the survey and interview guide. I would also like to give my special thanks to my colleagues and friends who have given me support in my research and provided valuable feedback on this thesis. They are Dr Na Fu, Dr Artemisa Jaramillo, Jiafeng Jin, Dr Grace Kenny, Szu-Hsin Wu, Dr Simon Thomas and Mr Yuyang Wang. Of course, this PhD project would have been impossible without the contributions of all the Irish marketing/senior managers who have kindly participated in this study.

I would also like to extend my gratitude to my fellow DCU colleagues who I have had a lovely experience working with. They are Dr Anushree Priyadarshini, Bettina Wuerdinger, Dr Brian Harman, Catherine Faherty, Colette Real, Fabian Gogolin, Gary Power, Huong Tran, Martina Brophy, Otman Elafi, Philip O'Connell, Peter Deeney, Sergej Svorobej, Vanessa Diaz and Dr Steven Kilroy. A special thank you to Dr Grace Kenny for sharing our PhD journeys together. She might have no idea how lucky I am to have a friend like her to start and finish this PhD journey with. A big thank you to her for sharing the up-and-downs, being so supportive, and pushing me forward all the time. Having her by my side during the PhD journey means a lot to me.

For my best friends that I have made during the past three years at DCU, Meiyi Yang, Shuo Han and Huanhuan Xiong, I am grateful for your companionship and great support. They made

Dublin like a second hometown to me. For my best friends in China, your support and encouragement make me who I am today. Thank you so much, my “foodie buddies” – Zhongwen Hu, Chengtao Liu, Jiaxu Wei, Ping Zhang and Jiatao Zheng, my old friends from college-Qian Cao, Ji’e Zou, Zhongsheng Zhang, Dewei Ran, Weilin Liu (who is also on her PhD journey) and many others, and my dearest best friend-Shanshan Han.

I reserve my very special thanks to my father, Mr Baofang Liang, my mother, Mrs Shuqing Li, and my little sister, Ms Xiaomei Liang. Sending me overseas is a tough decision for them to make. I am truly grateful for what they have sacrificed to make this happen. Thanks for their great support and the endless love that they have given to me.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AMC	Adaptive marketing capability
ARC	Architectural marketing capability
ASV	Average shared variance
AVE	Average variance extracted
CEO	Chief Executive Officer
CFA	Confirmatory factor analysis
CFI	Comparative fit index
CLV	Customer lifetime value
CMIN	Minimum discrepancy
CMO	Chief Marketing Officer
CMP	Comprehensiveness of MPMSs
CR	Composite reliability
CRM	Customer relationship management
DC	Dynamic capabilities
DCU	Dublin City University
DU	The diagnostic use of MPMSs
DV	Dependent variable
EFA	Exploratory factor analysis
FL	Factor loading
FP	Firm performance
IT	Information Technology
IU	The interactive use of MPMSs
IV	Independent variable
KPIs	Key performance indicators
M	Mean
Me	Mediator
MLC	Market-linking capability
Mo	Moderator

MPMSs	Marketing performance measurement systems
MSI	Marketing Science Institute
MSV	Maximum shared variance
NA	Not applicable
OLC	Externally-focused organisational learning capability
QUA	Measurement quality
RBV	Resource-based view
ROI	Return on investment
RMSEA	Root mean square error of approximation
SD	Standard deviation
SEM	Structural equation modelling
SMEs	Small and medium enterprises
SPSS	Statistical Package for the Social Sciences
SRMR	Standardised root mean square residual

ABSTRACT

Xiaoning Liang

Examining the Effects of Marketing Performance Measurement Systems on Firm Performance through the Lens of Marketing Capabilities: A Mixed Methods Study of Irish Firms

Driven by the increasing complexity of modern marketing and the growing pressure to justify the contributions of marketing activities to firm performance, marketers have shown considerable interest in implementing and improving marketing performance measurement systems (MPMSs). However, there is an ongoing debate about the usefulness of adopting MPMSs. As limited empirical research has been conducted in this area, scholars call for more studies to advance the understanding of the effects of MPMSs on firm performance (Homburg, Artz & Wieseke, 2012; O'Sullivan & Abela, 2007).

Drawing on the marketing performance measurement literature, dynamic capabilities (DC) theory and contingency theory, this study aims to develop an integrated framework to explain how and under what circumstances MPMSs influence firm performance. Using survey data collected from 209 Irish-based companies and interview data collected from 13 managers, this study finds that 1) the comprehensiveness of MPMSs influences firm performance through the impact on the use of MPMSs and marketing capabilities; 2) the interactive use of MPMSs improves firm performance by enhancing crucial marketing capabilities, while their diagnostic use leads to inferior firm performance potentially due to the negative impact on such capabilities; and 3) technological turbulence and competitive intensity strengthen the positive impact of MPMSs on firm performance.

This study contributes to the literature and practice in several ways: 1) a novel practices-uses-capabilities-performance approach is developed to explain the effects of MPMSs on firm performance, 2) this study empirically confirms that contingencies influence the effectiveness of MPMSs, 3) it extends DC theory by empirically supporting the critical role of management practices in building marketing capabilities, and 4) it provides insights into how companies can use their MPMSs to develop marketing capabilities and improve firm performance in different contexts.

Chapter 1 Introduction

1.1 Research Background

Marketing accountability and marketing performance measurement have attracted considerable attention over the past two decades. Both marketing academics and practitioners have considered the measurement of marketing performance to be a significant challenge for management (Homburg et al., 2012; Pierce & Gao, 2013; Rust, Lemon & Zeithaml, 2004). A large-scale study conducted with more than 650 marketers found that 80% of the Chief Marketing Officers (CMOs) surveyed were dissatisfied with their ability to measure marketing performance (CMO Council, 2009). Moreover, another report published in 2012 revealed that 80% of the Chief Executive Officers (CEOs) had lost their trust in CMOs, partly because CMOs fail to justify the contributions of marketing activities (Fournaise Marketing Group, 2012). These findings all point to a need to improve marketers' abilities to measure marketing performance and communicate the value of marketing investments to relevant stakeholders. The Marketing Science Institute (MSI) has continuously advocated research on marketing metrics, marketing performance measurement and marketing accountability (MSI, 2002, 2004, 2006, 2008, 2012). The measurement and communication of the value of marketing activities and investments have been one of the top MSI research priorities for 2014 to 2016 (MSI, 2014).

Marketing performance measurement has become more challenging due to growing global competition, more complex modern marketing and an increasingly dynamic business environment (Pierce & Gao, 2013). It is evident that the pressure to justify marketing spending and the demand for marketing accountability have been rising (Schwartz, Kim & Patterson,

2014). Driven by the increasing demands for greater accountability in the marketing function, companies have invested considerable resources in improving their marketing performance measurement practices (Rust et al., 2004), for example, introducing marketing dashboards (Pauwels et al., 2009) or balanced scorecards (Kaplan & Norton, 1996). However, such practices may not be sufficient to provide a holistic view of marketing performance, leading to a growing interest in developing more comprehensive marketing performance measurement systems (MPMSs).

Since the impact of MPMSs on firm performance remains unclear (Ittner et al., 2003), there is an ongoing debate about the usefulness of adopting MPMSs. For instance, advocates suggest that companies adopting comprehensive MPMSs outperform others with regard to profitability, revenue growth and market share (CMO Council, 2009), whereas critics assert that comprehensive MPMSs are merely a management fashion without any practical implications (Voelpel, Leibold & Eckhoff, 2006) and that desirable outcomes of MPMSs are subject to contingent circumstances (Ittner & Larcker, 2001). Little empirical research has been conducted to contribute to this debate, leading to a limited understanding of the impact of MPMSs on firm performance (Homburg et al., 2012; Ittner, Larcker & Randall, 2003; O'Sullivan & Abela, 2007). Consequently, researchers in the field of marketing performance measurement have called for more research to examine the association between MPMSs and firm performance (O'Sullivan & Abela, 2007; O'Sullivan, Abela & Hutchinson, 2009), especially into establishing and testing research models "that take into account indirect effects [of MPMSs] on firm performance and contingent factors" (Homburg et al., 2012, p. 57).

Existing studies in the marketing performance measurement literature demonstrate that MPMSs improve firm performance through the creation of market knowledge, enhanced strategic alignment, superior internally-focused organisational learning, closer cross-functional collaboration and market orientation (Clark, Abela & Ambler, 2006; Homburg et al., 2012; Verhoef & Leeflang, 2009). Despite the research progress, no previous study has applied a systematic approach to explain how and under what circumstances MPMSs drive firm performance, leaving a significant research gap to be filled in (Homburg et al., 2012; O'Sullivan et al., 2009). Furthermore, from a practical point of view, more studies are warranted to investigate whether and why companies need to develop their MPMSs (MSI, 2012; O'Sullivan & Abela, 2007). Echoing the call from both marketing academia (Homburg et al., 2012; MSI, 2012; O'Sullivan & Abela, 2007) and practice (CMO Council, 2009), this study aims to examine how and under what conditions MPMSs influence firm performance. The research objectives, research design and contributions of this study are outlined in the following sections.

1.2 Research Aims

The aim of the study is to explore how and under what circumstances MPMSs improve firm performance by integrating the marketing performance measurement literature, dynamic capabilities (DC) theory and contingency theory. Drawing on DC theory, this study posits that MPMSs can positively influence firm performance by developing marketing capabilities through different ways that companies utilise their MPMSs. This study examines the mediating effects of the uses of MPMSs on the MPMSs-performance link and the mediating effects of marketing capabilities on the uses-performance relationship. Integrating contingency theory, this study further argues that the effectiveness of MPMSs on firm performance can be influenced by

contingent factors. By doing so, this study aims to develop a new practices-uses-capabilities-performance approach to explain the chain of effects of MPMSs on firm performance. Specifically, the framework is developed and empirically tested in order to answer the following questions:

1) How do MPMSs affect firm performance?

2) How can firms utilise MPMSs to develop marketing capabilities and achieve superior firm performance?

3) What contingent factors influence the effectiveness of MPMSs in improving firm performance, and how?

Based on a comprehensive review of the marketing performance measurement, dynamic capabilities and contingency literature, an integrated research framework is developed. This study presupposes that MPMSs drive firm performance through their impact on the development of marketing capabilities, namely, architectural marketing capability, market-linking capability, externally-focused organisational learning capability and adaptive marketing capability. This study also posits that MPMSs influence marketing capabilities through the different ways companies utilise MPMSs. In addition, four contingent factors, namely, market turbulence, technological turbulence, marketing complexity and competitive intensity, are included and believed to moderate the impact of MPMSs on firm performance.

1.3 Research Design

This study applied a mixed methods approach, namely, an explanatory sequential mixed

methods approach (Creswell & Plano Clark, 2011), to test the proposed research framework. A questionnaire survey was developed based on the literature review and was modified based on the feedback from academics and practitioners. The Irish Times Top 1000 Companies database, which consists of 969 Irish firms, was used as the primary data source. Three hundred and nine companies were ruled out either because they refused to participate due to organisational policies or because there was no functional marketing department based in Ireland. Following Dillman's (2011) Tailored Design Method[1], the survey was sent to marketing or senior managers in the remaining 660 companies. One hundred and twelve completed responses were received in total, yielding a completion rate of 16.97%. The same survey was also sent to marketing or senior managers who worked for Irish small and medium enterprises (SMEs)[2]. Another 97 usable responses were received, yielding a total of 209 usable responses. The sample represented a wide range of industries across the country. Quantitative data were analysed with Structural Equation Modelling (SEM) techniques using SPSS[3] 21 and AMOS 21.

After analysing the quantitative data, semi-structured interviews were conducted in order to better understand and further explain the quantitative research results. A small proportion of survey participants were recruited for these interviews. At the end of the questionnaire, participants were asked to indicate their willingness of taking part in a follow-up interview. Only those expressed their interest were further contacted to arrange interviews. Thirteen interviews were carried out with marketing or senior managers, all of whom had sufficient

[1] Tailored Design Method: see https://sesrc.wsu.edu/about/total-design-method/.

[2] SMEs: An enterprise that has less than 250 staff and has an annual turnover less than 50 million euros (European Commission, 2016).

[3] SPSS: Statistical Package for the Social Sciences

knowledge about marketing performance measurement practices and marketing capabilities in their companies. The qualitative data were analysed using the template analysis method. The results provided additional insights into how companies could use their MPMSs to develop marketing capabilities and improve firm performance. The detailed research design process is given in Chapter Five.

1.4 Significance of the Study

This research synthesises marketing performance measurement, DC and contingency theories in an attempt to provide an integrated framework to explain how and under what conditions MPMSs influence firm performance. This study contributes to the literature and practice in several ways.

First, it develops a novel practices-uses-capabilities-performance framework to explain the mechanisms through which MPMSs influence firm performance. The research findings provide insights into why MPMSs are beneficial to companies through a capabilities development lens. The results show that companies adopting more comprehensive MPMSs outperform those adopting less comprehensive ones, with regard to their marketing capabilities and business performance. This study also endorses the importance of developing and properly utilising MPMSs. It highlights that the adoption of MPMSs is important, but the use of MPMSs is also critical. If companies use MPMSs for diagnostic purposes only, e.g., to benchmark performance against objectives, the use of MPMSs has a negative impact on the development of marketing capabilities. However, if companies use marketing metrics more interactively to highlight critical issues, assist in decision-making, legitimise marketing campaigns and explore new

opportunities, they are more capable of learning from external partners, making sense of market changes, linking with customers and channel members, and more efficiently adapting to changes. These results also support the view in the DC literature that resources can lead to superior performance outcomes only if they are properly deployed (Teece, Pisano & Shuen, 1997). Hence, this study suggests that companies should use MPMSs more interactively than diagnostically. To do so, it further recommends that companies enhance their data mining capacity by recruiting employees with sufficient data analysis skills or providing necessary career development opportunities to staff.

Second, this study confirms the argument in the DC literature that the compatibility between management practices and the environment is vital in determining firm performance (Teece et al., 1997). Moreover, it empirically supports the contextuality of MPMSs: the effectiveness of MPMSs can be affected by the conditions under which MPMSs are utilised (Frösén, Tikkanen, Jaakkola & Vassinen, 2013; Morgan, Clark & Gooner, 2002). The results indicate that technological turbulence and competitive intensity can enhance the positive impact of MPMSs on firm performance. These results underscore that companies should develop, utilise and adjust their MPMSs according to different contexts. For instance, companies facing intense competitions or turbulent technological changes should adopt a more comprehensive marketing performance measurement practice in order to survive and flourish. Hence, senior management can apply these research findings to adjust their marketing performance measurement practices accordingly.

Third, previous studies have paid attention to organisational level capabilities, but there is little

empirical research on specific marketing capabilities (Morgan, 2012), particularly in the areas of where marketing capabilities originate from or what companies should invest in to improve marketing capabilities (Vorhies, Orr & Bush, 2011). By revealing the critical role of marketing capabilities in the relationship between MPMSs and firm performance, this study contributes to the DC literature by empirically 1) reinforcing the role of marketing capabilities in boosting firm performance (Day, 1994 & 2011; Slotegraaf & Dickson, 2004; Ulrich & Smallwood, 2004), and 2) validating the argument that marketing capabilities can be developed from management processes and practices (Ethiraj, Kale, Krishnan & Singh, 2005; Vorhies et al., 2011). Thereby, this study highly recommends that companies invest resources in developing necessary marketing capabilities such as market-linking capability, externally-focused organisational learning capability and adaptive marketing capability. To do so, companies can develop comprehensive MPMSs, interactively deploy their MPMSs, frequently conduct marketing performance analyses, advance their IT infrastructures, recruit qualified employees with sufficient data mining capacity, offer more career development opportunities to their staff and encourage the exchange of information within the organisation. These research findings are particularly useful for companies with limited resources. This study suggests that such companies should invest in developing their market-linking capability, a capability that has a relatively larger impact on firm performance, and externally-focused organisational learning capability, a capability that is fundamental in the development of other capacities.

Fourth, this study also contributes to the literature by adding empirical evidence in the Irish context. As most previous studies were conducted in advanced industrial countries (Ambler, Kokkinaki, Puntoni & Riley, 2001; Barwise & Farley, 2004; Frösén et al., 2013), the evidence

from a small open economy, e.g., Ireland, can provide additional insights into how firms in small open economies should use MPMSs to enhance marketing capabilities and improve firm performance.

Finally, this study is the first of its kind to adopt a mixed methods approach to examine the MPMSs-performance relationship in the marketing performance measurement literature. It provides a useful template for how to interpret and integrate quantitative and qualitative research results in a mixed methods design.

1.5 Thesis Structure and Outline

The dissertation consists of eight chapters. Chapter One briefly outlines the research background, research objectives, the research design, research contributions and the structure of the thesis.

Chapter Two provides a comprehensive review of the marketing performance measurement literature and identifies five major themes in this literature. Studies of the relationships between marketing activities and firm performance, the characteristics of MPMSs, the interrelationships between marketing metrics, the antecedents of MPMSs and the consequences of MPMSs are all reviewed and discussed in detail. The research gaps identified in the marketing performance measurement literature are outlined at the end of the chapter.

Chapter Three reviews DC and contingency theories that are used in this study. The reasons for applying DC theory are explained. The inclusion of a key concept – the use of MPMSs – is also discussed. Drawing on DC and contingency theories, a practices-uses-capabilities-performance framework is developed to explore how and under what circumstances MPMSs drive firm

performance.

Chapter Four presents the hypothesis development. The research framework concerning the indirect and contingent effects of MPMSs on firm performance is explained in detail. The pathways between focal constructs are established, and hypotheses are proposed.

Chapter Five details the philosophical basis of the research methodology used in this study. It compares the pros and cons of both quantitative and qualitative research methods and provides justifications for applying a mixed methods approach. It then outlines the research process and describes in detail the questionnaire design, the sampling frame, the interview guide design, the distribution method and the interview process.

Chapter Six presents the results of the quantitative data analysis. It includes a detailed description of the sample representativeness, tests for non-response bias and common method bias and the reliability and validity tests of the measures, followed by a detailed description of path analysis results and post hoc analysis results.

Chapter Seven reviews quantitative data analysis results and incorporates qualitative data analysis and results to provide additional insights into the research questions.

Chapter Eight is the concluding chapter. It addresses the contributions of this study to the literature and its implications for practice. In addition, the limitations of this study are provided, and future research directions are discussed in detail.

Chapter 2 Literature Review on Marketing Performance Measurement

2.1 Introduction

This chapter provides a comprehensive review of the marketing performance measurement literature. The chapter starts with a brief introduction to the method used for conducting the literature review, followed by clarifications of key concepts related to marketing performance measurement. Next, this study classifies research in the marketing performance measurement literature into five major themes and provides a detailed review of the current status of research and the general trends. The final section of this chapter outlines several potential areas for future research and a need to investigate the consequences of MPMSs.

2.2 Literature Review Method

An evidence-based literature review is a useful means to provide insights into the definitions, research themes or evolution of a research topic over time (Tranfield, Denyer & Smart, 2003). Given the fact that most studies in the marketing performance measurement area focus on marketing metrics (O'Sullivan & Abela, 2007), there are fewer updated literature reviews on MPMS studies. Thus, this study notes a need to conduct a literature review to include a broader range of the marketing performance measurement studies, e.g., studies on MPMSs. Following the literature review procedure proposed by Tranfield et al. (2003) and Laplume, Sonpar & Litz (2008), this study aims to provide a comprehensive review of the marketing performance measurement literature.

At the planning stage, this study defined the objectives of the literature review and identified the key data source. The objectives of this literature review were to broaden the literature review on marketing performance measurement to include MPMS studies and to explore the current status of marketing performance measurement research. Main steps of this literature review involved the identification and selection of high-quality publications, categorisation of the selected publications and compilation of the selected articles using a formalised codebook. Table 2.1 illustrates the literature selection process. This is further explained below.

Table 2.1 The literature selection process adopted from Tranfield et al. (2003)

Steps	Description
Stage 1. Search process using electronic databases	Several keywords were used to search for the articles in the marketing performance measurement literature.
Stage 2. Article selection process based on journal ranking	The author searched for peer-reviewed articles with the keywords (Stage 1) appearing in the title, abstract or keywords using the EBSCO search engine. Only papers published in top-tier journals were selected to be further evaluated. This process resulted in a total of 136 articles selected for the full-text review. The second round of screening was conducted to assess the eligibility against the inclusion and exclusion criteria based on the full-text review. The paper was included if its focus was generally on the topic of marketing performance measurement, or if there was an identifiable section pertaining to the topic (Bracken-Roche, Bell, Karpowicz & Racine, 2014). As a result, twenty-four articles were excluded from the initial 136 articles. A total of 112 articles were left for further review.
Stage 3. Search process based on references and key authors	A search of the reference lists of the 112 articles selected (Stage 2) was conducted in order to supplement the paper selection process. Some working papers and conference proceedings of key authors were also identified. An additional 23 papers were included in the literature review. Thus, a total of 135 articles were selected for the literature review.

In the paper searching process, several keywords were used to search for the literature. The keywords included *marketing performance measurement (evaluation/assessment), marketing performance measures, marketing metrics, marketing performance measurement (assessment/evaluation) system, marketing productivity, marketing dashboard, marketing balanced scorecard, marketing success measures, marketing success measurement and marketing controls.* These keywords were used to give a holistic review of the marketing performance measurement literature. EBSCO host search engine was mainly used to search for related articles that were published during the past two decades. Only limited studies in the marketing performance measurement literature were conducted before 1995 (Gao, 2010). Thus, this study decided to use 1995 as a cutoff year. This decision was in line with Yadav (2010), who suggested reviewing papers published within "a reasonably long but recent time frame" (p.

7). In line with Laplume et al. (2008) and Peloza & Shang (2011), EBSCO was used because it is one of the most comprehensive databases of peer-reviewed journals in business and management and is most commonly used in social science. Only EBSCO was used at stage one because all the top-tier journals of interest (listed below) were included in this database.

In the paper selection process, the author read the title and abstract of the articles identified in the keyword search and selected articles that were published in top marketing journals. The purpose was to include papers unless they were clearly irrelevant (Kitchenham & Brereton, 2013). Following the suggestions from Laplume et al. (2008) and Katsikeas, Morgan, Leonidou & Hult (2016), this study confined the sampling to leading marketing journal publications. The Association of Business Schools Journal Quality Guide (Harvey, Kelly, Morris & Rowlinson, 2010) was chosen because it is "widely viewed as providing a reliable measure to research rigour and quality" (Miemczyk, Johnsen & Macquet, 2012, p. 481). Therefore, the top-ranking journals (3-star and 4-star) were deemed to provide "the best-quality evidence" (Tranfield et al., 2003, p. 215) and have "the highest impact in the field" (Crossan & Apaydin, 2010, p. 1157). The top-tier marketing journals included *Journal of Marketing, Journal of Marketing Research, Journal of Consumer Research, Marketing Science, Journal of Retailing, Journal of International Marketing, International Journal of Research in Marketing, Industrial Marketing Management, Journal of the Academy of Marketing Science, International Marketing Review, Journal of Advertising, Journal of Business Research, European Journal of Marketing, Marketing Letters, Journal of Advertising Research* and *Journal of Marketing Management*. This process resulted in a total of 136 articles selected for the full-text review.

A second round of screening was conducted to assess the eligibility against the inclusion and exclusion criteria based on the full-text review. The final inclusion/exclusion decision was made when full papers were read and evaluated. Following Bracken-Roche et al. (2014) and Parris & Peachey (2013), an article was selected if 1) it was published in English, 2) it was published in the top marketing journals listed above, 3) its focus was generally pm the topic of marketing performance measurement, and 4) if there was an identifiable section pertaining to the topic. Publications with a narrow focus (e.g., marketing metrics, marketing performance measures)

were included if the discussion was applicable to answer the questions raised in the literature (Bracken-Roche et al., 2014), or excluded if the article discussed variables related to marketing metrics, but the topic was not primarily associated with the measurement of marketing performance. For instance, if an article examined how customer co-creation activities were positively related to customer satisfaction at the individual level, though it was related to a specific marketing metric, namely, customer satisfaction, it was excluded because the topic was not directly related to marketing performance measurement. A total of 112 articles remained after this process.

Additionally, the author conducted a secondary search with the intent of capturing publications that were not retrieved in the initial searching process (Bracken-Roche et al., 2014). In line with Peloza & Shang (2011), the paper selection process was supplemented by another search of the reference lists of the articles selected at stage 2 (Table 2.1). The author went through the reference lists of the 112 articles selected in the keyword searching process. The papers on the reference lists were evaluated by the title and the abstract if they were in the marketing performance measurement area and were published in top-tier journals. Then a full-text review was conducted to assess their eligibility against the inclusion and exclusion criteria. This process produced an additional 14 papers. These 14 articles, all published in top management journals, e.g., *Harvard Business Review*, *California Management Review*, were also included.

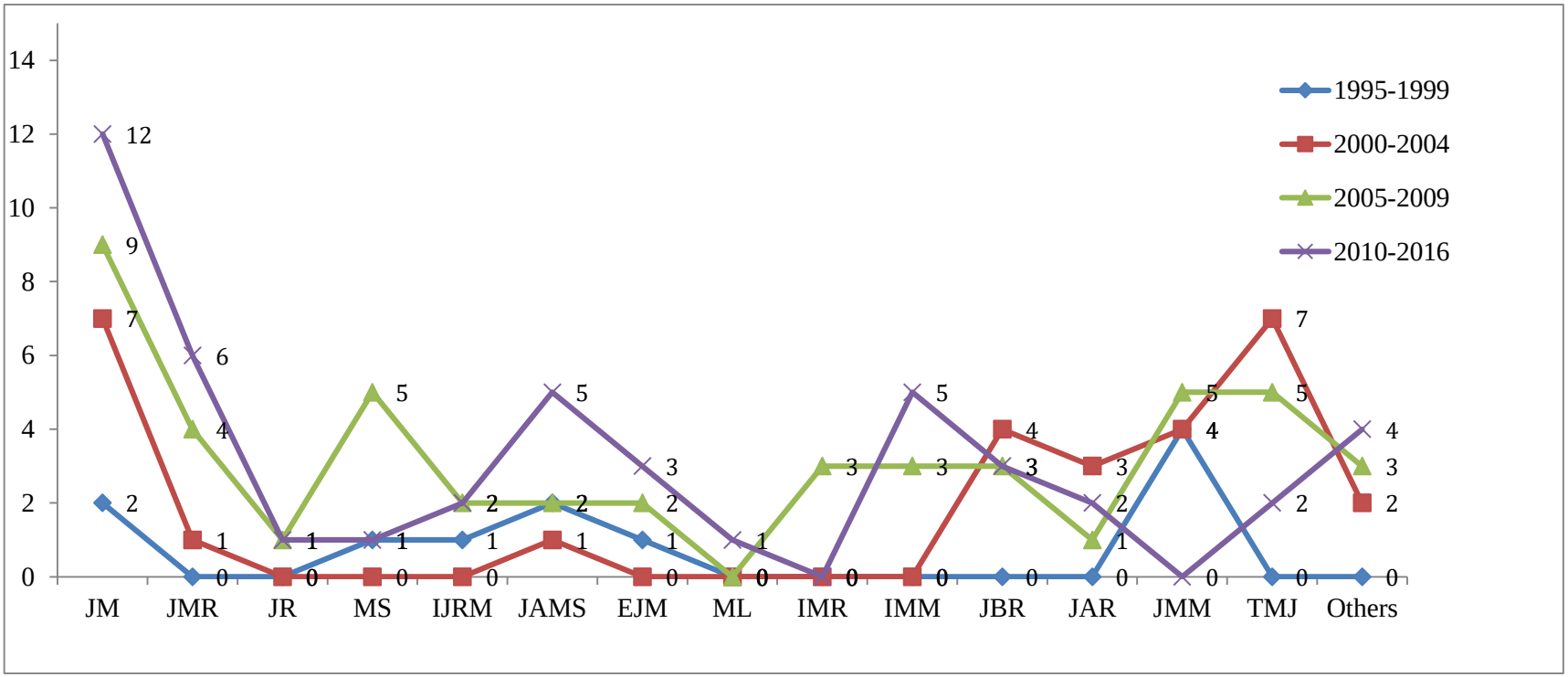
Finally, in line with Laplume et al. (2008), considering the pioneering role of influential researchers, this study also reviewed working papers written by them using Google Scholar. For example, Ambler and Clark have had a huge impact in this field. They were among the first scholars to investigate marketing performance measurement issues. Their top five cited articles were cited by more than 1700 and 900 peer-reviewed articles, respectively. Therefore, an additional 9 journal or working papers that were written by these pioneer researchers, but were not published in top-tier marketing journals were also included in the literature review. As a result, a total of 135 articles were selected for the literature review.

Following Laplume et al. (2008), the chosen articles were coded using a formalised codebook.

The codebook included the following information: the year of publication, a list of authors, the title of the paper, the journal in which the article was published, the article type (theoretical, empirical, review, etc.), theories used in the article, research questions answered, data source, the research context, key variables of interest, data analysis method (if applicable), key findings and future research directions. The coding progress was discussed with an academic expert in this area at weekly meetings to ensure the plausibility and reliability. Random checks conducted by this expert on the coding of these articles indicated high coding consistency and accuracy (Laplume et al., 2008).

The frequency of the articles selected for the literature review is displayed in Figure 2.1. As shown in Figure 2.1, marketing performance measurement issues have raised more attention recently as the number of publications rises each five-year period. The following sections present the status of the marketing performance measurement research in detail.

Figure 2.1 The number of articles by periods and by journals



JM: Journal of Marketing
JMR: Journal of Marketing Research
JR: Journal of Retailing
MS: Marketing Science
IJRM: International Journal of Research in Marketing
JAMS: Journal of the Academy of Marketing Science
EJM: European Journal of Marketing
ML: Marketing Letters
IMR: International Marketing Review
IMM: Industrial Marketing Management
JBR: Journal of Business Research
JAR: Journal of Advertising Research
JMM: Journal of Marketing Management
TMJ: Top-tier management journals
Others: Working papers

2.3 Conceptual Foundation

A review of the literature suggests that there is a lack of both consensus definition and a holistic understanding of marketing performance measurement. Key concepts, such as marketing productivity, marketing performance, marketing metrics and MPMSs, can be identified in the literature. However, the interchangeable or even conflicting use of these concepts has led to some confusions (Gao, 2010). Therefore, the differences of each concept are clarified and explained in this section. A summary of these key concepts is provided at the end of this section.

2.3.1 Measuring Marketing Performance

2.3.1.1 Marketing Effectiveness and Marketing Efficiency

Drucker (1974) considers effectiveness as "doing the right thing" (p. 45). From the effective marketing perspective, the more desirable outcomes marketing activities acheive, the more effective the marketing function is. Firms tend to use effectiveness as an indicator of the extent to which marketing functions achieve business objectives (Ambler et al., 2001; Clark, 2000). The literature has noted a switch from considering "effective marketing" to considering "efficient marketing". Instead of measuring the pure financial outcomes of marketing functions, firms begin to focus on the output of marketing in relation to its input. In other words, rather than considering "doing the right thing", firms concentrate more on "doing things right" (Drucker, 1974, p. 45). Both input measures (e.g., expenses, man-hours and skills) and output measures (e.g., sales, revenue and profit) are used as referents of marketing performance. Firms that seek marketing efficiency tend to maximise marketing outputs relative to its inputs (Bonoma & Clark, 1988).

2.3.1.2 Marketing Productivity

Later, researchers start using the concept of marketing productivity to represent marketing performance. Marketing productivity was once considered to be under the domain of accounting during the 1950s and 1960s (Bush, Smart & Nichols, 2002; Sheth & Sisodia, 2002). Sevin is one of the pioneering scholars that introduced the concept to the marketing discipline. From a marketing perspective, Sevin (1965) defined marketing productivity as "the ratio of sales or net

profits (effect produced) to marketing costs (energy expended) for a specific segment of the business" (p. 9). A similar definition provided by other researchers points to the common perception of marketing productivity as a ratio of outputs to the inputs during a specific period of time (Beckman, Davidson & Talarzyx, 1973).

However, limitations of early productivity studies lead to critiques regarding its implementation problems and measurement capacity. For example, there are two assumptions in the marketing productivity theory. One assumption is that marketing inputs and outputs can be "economically and accurately assessed", whereas the other one is that the causal relationship between marketing inputs and outputs remains stable and clear over time (Morgan et al., 2002, p. 365). However, some critics note that some marketing inputs or outputs are intangible, thus difficult to measure accurately (Morgan et al., 2002). Others are against marketing productivity theory because it neglects the time lags between marketing inputs and the resulting outputs (Gao, 2010). Another limitation of the productivity approach lies in its mere focus on marketing efficiency, which overlooks other dimensions, such as "effectiveness" and "adaptability[4]". Therefore, calls for using non-financial measures and adaptability measures as external referents have emerged and broadened the marketing productivity concept to "effective efficiency" (Sheth & Sisodia, 2002, p. 349), leading to the use of a well-recognised terminology: marketing performance.

2.3.1.3 Marketing Performance and Marketing Metrics

Researchers tend to use the notion of "marketing performance" as the indicator on measuring whether the marketing units "do the right thing right". The notion of marketing performance is applied in the current study for two reasons: 1) "marketing performance" covers a broader conceptual meaning, and has been widely used in marketing studies (Homburg et al., 2012; Lamberti & Noci, 2010), and 2) given that common consensus has been reached that marketing efficiency and effectiveness are two subcategories of the broader notion of marketing performance (Gao, 2010), marketing performance may be a better concept to capture the outcomes of marketing. However, due to the "stubborn resistance to conceptualisation,

[4] Adaptability: the extent to which the marketing activity adapts to the external environment / the favourability of the environment (Clark, 2000, 2001)

definition and application" of marketing performance (Bonoma & Clark, 1998, p. 1), a clear, explicit and unequivocal definition of "marketing performance" is still missing (Gao, 2010). This study uses the widely recognised definition provided by Homburg, Grozdanovic & Klarmann (2007), which defines marketing performance as "the effectiveness and efficiency of marketing activities of an organisation with respect to the objectives related to the market, such as revenue growth and market share" (p. 21).

The marketing literature suggests that marketing performance is a multidimensional construct: a superior performance on one aspect cannot be easily traded off by an inferior performance on another aspect (Keh, Chu & Xu, 2006). Recognising the need for multidimensional measures, firms use a bundle of indicators to measure marketing performance. These indicators are called marketing performance measures. To avoid the information overload caused by a large number of marketing performance measures, Ambler (2000) proposed a similar concept – marketing metrics – to better capture the concept of marketing performance measures. A marketing metric is "a necessary, accurate, consistent and sufficient financial or nonfinancial measure for senior management to evaluate marketing performance regularly" (Ambler, 2000, p. 5). This is in line with the definition provided by MSI (2008), which states that marketing metrics are "performance indicators that senior management use (or should use) to monitor and evaluate the progress – specially marketing performance – of a business or business unit" (p. 3). This study also defines "marketing metrics" as a set of standard marketing performance measures that senior management use to review the performance of marketing on a regular basis.

2.3.2 Marketing Performance Measurement Systems

Control in a management context is defined as "all the devices managers use to ensure that the behaviours and decisions of people in the organisation are consistent with the organisation's objectives and strategies" (Merchant, 1998, p. 2). Control theory holds that there is a need for organisations to establish objectives or plans to monitor and compare their performance. Drawing on management control theory, marketing controls can be defined as a set of activities or processes that are designed to monitor whether marketing plans are carried out and whether

pre-defined goals are achieved properly (Jaworski, 1988).

There are two types of marketing controls: informal controls and formal controls. Informal controls refer to unwritten, employee-initiated controls that aim at influencing employee behaviours (Jaworski, Stathakopoulos & Krishnan, 1993; Ouchi, 1980; Ramaswami, 1996). Self-controls and professional controls are two types of informal controls. Self-controls involve the establishment of personal objectives and adjustment of individual behaviours, whereas professional controls represent the influence from or control through peers (Ramaswami, 1996). However, companies rely mainly on formal controls to achieve organisational objectives. Formal controls refer to written or explicitly stated management-initiated controls that aim to refine the employee behaviours according to pre-set goals (Jaworski et al., 1993; Ouchi, 1980; Ramaswami, 1996). To help employees achieve desired outcomes, companies have to specify their organisational processes (e.g., standard operating procedures or regulations) and outputs (e.g., financial goals). Thus, process controls and output controls are used as formal controls to direct the behaviours and outcomes of employees (Jaworski, 1988; Jaworski & MaCinnis, 1989).

Marketing performance measurement has been regarded as a formal mechanism of marketing controls (Ambler, Kokkinaki & Puntoni, 2004). Given the fact that marketing dashboards are now commercially available (e.g., Dundas Software, see http://dashboardspy.wordpress.com; Unisys Marketing Dashboard, see Miller & Cioffi, 2004), it seems that marketers are aware of the necessity to develop an MPMS. However, the definition of MPMSs is not very well developed in the literature. Feder (1965) proposed an information management system to measure marketing performance, a system that has "a list prepared (by the financial, market research, data processing and product management functions) which shows optimum past marketing expenditures by marketing area" (p.133). This may be a very early effort to define an MPMS as a system to identify and allocate marketing spending in marketing areas. Pauwels et al. (2009) regarded a marketing dashboard as a comprehensive MPMS, and defined it as "a relatively small collection of interconnected key performance metrics and underlying performance drivers that reflect both short- and long-term interests to be viewed in common

throughout the organisation" (p. 177). According to Pauwels et al. (2009), a dashboard is simply a collection of key metrics rather than a control system. From a control system perspective, a marketing dashboard that focuses mainly on the selection and combination of marketing metrics is a part of a control system rather than a control system per se.

Other definitions of MPMSs are illustrated in Table 2.2. From Table 2.2, it is evident that, though there is no clear consensus on the definition of MPMSs in the marketing literature, MPMSs are generally regarded as an important type of organisational control systems (Anthony, 1988; Morgan et al., 2002; Otley, 1999). Therefore, drawing on marketing control theory and the prior work of Morgan et al. (2002) and Lamberti & Noci (2010), this thesis defines a marketing performance measurement system as *an important organisational control system that senior management use to measure marketing performance through a small bundle of interrelated key marketing metrics, in order to monitor, control and ensure that marketing resources are allocated, and marketing strategies are implemented to achieve the desired goals of an organisation*. To avoid the confusion caused by the use of various terminologies in the marketing performance measurement literature, a summary of the definitions of the key concepts is provided in Table 2.3.

An MPMS is not merely a set of metrics that measure the inputs and outputs of marketing activities, but also a set of procedures and processes that transform strategies into deliverable actions and monitor the implementation of marketing plans. As a control system, an MPMS plays a major role in 1) informing strategy implementation (Morgan et al., 2002), 2) communicating marketing strategies to employees (Lamberti & Noci, 2010), 3) supporting planning and decision-making by providing early warnings to managers (Morgan et al., 2002), and 4) facilitating organisational learning and individual improvement (Lamberti & Noci, 2010). Control theory addresses the importance of control variables (e.g., control over results, control over personnel and control over the processes) in tracking specific plans and achieving expected goals (Jaworski, 1988). Therefore, "what to measure" and "how to measure" become vital questions in the MPMS literature.

Table 2.2 A summary of definitions of MPMSs

References	Definitions
(Clark et al., 2006)	"Marketing performance measurement is a business process that provides performance feedback to the organisation regarding the results of marketing efforts". (p. 191)
(Frösén et al., 2013)	Marketing performance assessment systems are "a form of organisational control that incorporates formalised routines and procedures that use information to maintain or alter goal-oriented patterns in organisational activity." (p. 715)
(Krush, Agnihotri, Trainor & Nowlin, 2013)	Marketing dashboards refer to "managers' use of automated or real-time reporting that allows them to gain marketing performance and program-level details". They "1) provide a means for acquiring and disseminating data, 2) enable learning opportunities and 3) aid in decision-making and ensure strategic alignment." (p. 826)
(Lamberti & Noci, 2010)	MPMSs "check whether the intended strategy is being implemented, communicate to their employees what are the goals they are expected to achieve and whether they are achieving those expected goals, validate whether the intended strategy is still valid, and facilitate individual and organisational learning and improvement." (p. 141)
(Morgan et al., 2002)	MPMSs are "an important type of organisational control system". "Control systems are formalised routines and procedures that use information to maintain or alter patterns in organisational activity to ensure desired outcomes." (p. 364)
(Pauwels et al., 2009)	A dashboard is defined as "a relatively small collection of interconnected key performance metrics and underlying performance drivers that reflect both short- and long-term interests to be viewed in common throughout the organisation." (p. 177)
The current study	An MPMS is an important organisational control system that senior management use to measure marketing performance through a small bundle of interrelated key marketing metrics, in order to monitor, control and ensure that marketing resources are allocated, and marketing strategies are implemented to achieve the desired goals of an organisation.

Table 2.3 A summary of definitions of key concepts

Concepts	Definitions	Literature
Marketing Performance Measurement System	An organisational control system that senior management use to measure marketing performance through a small bundle of interrelated key marketing metrics, in order to monitor, control and ensure that marketing resources are allocated and marketing strategies are implemented to achieve the desired goals of an organisation*.	(Feder, 1965; Lamberti & Noci, 2010; McGovern, Court, Quelch & Crawford, 2004; Morgan et al., 2002; Pauswels et al., 2009)
Marketing Effectiveness	Doing the right thing. Comparisons of performance to the goals formulated from market strategy.	(Clark, 2000; Drucker, 1974; Morgan et al., 2002)
Marketing Efficiency	Doing things right. Comparisons of output from marketing to the input of marketing.	(Bonoma & Clark, 1988; Clark, 2000; Drucker, 1974)
Marketing Productivity	The ratio of sales or net profits to marketing costs for a specific segment of the business*. Doing the right thing right. Effective efficiency.	(Feder, 1965; Sevin, 1965; Sheth & Sisodia, 2002)
Marketing Performance	The effectiveness and efficiency of an organisation's marketing activities with regard to market-related goals, such as revenues, growth and market share*.	(Clark, 1999; Homburg et al., 2007; Morgan et al., 2002)
Marketing Metrics	The performance indicators that top management use to track and assess marketing performance. A necessary, accurate, consistent and sufficient financial or nonfinancial measure for senior management to evaluate marketing performance regularly*	(Ambler, 2000; MSI, 2004)

*: Definitions used in the current study

Source: Gao (2010, p. 30)

2.4 Main Themes

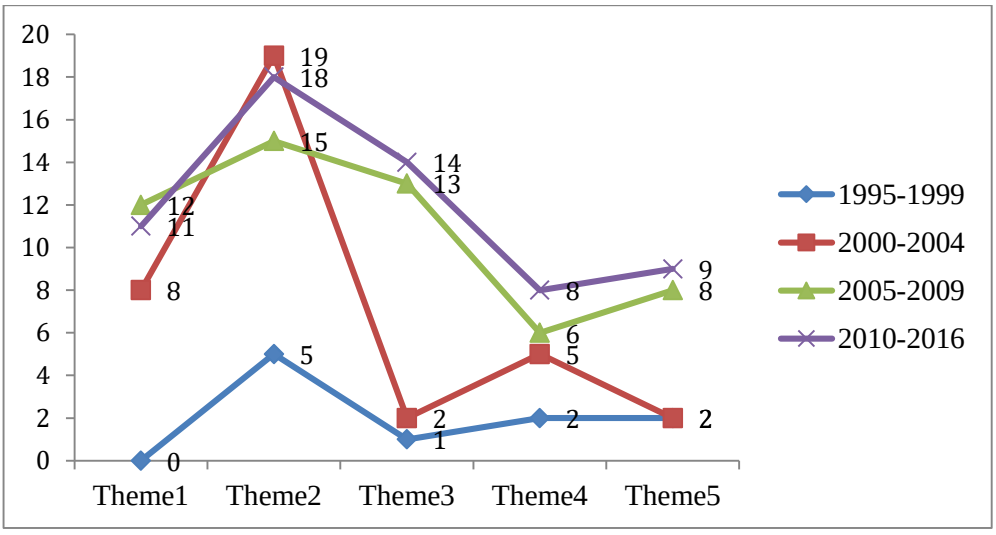
Frösén et al. (2013) argued that a majority of the studies in the MPMS literature have been devoted to the development of individual metrics, such as brand equity, customer equity and return on investment (ROI), or the identification of the most commonly used metrics in practice. This argument was in line with O'Sullivan & Abela (2007), who demonstrated that marketing performance measurement studies could be clustered around three major research streams. These research streams included the examination of the chain of marketing productivity, identification of key marketing metrics in use and measurement of brand equity. The first stream centred around the measurement of marketing productivity, which aimed to understand how marketing activities contribute to firm performance. The second stream sought to identify commonly used marketing metrics in practice. The third stream echoed the increasing focus on brand equity and aimed to develop more appropriate approaches to measuring brand equity. They noted that one underlying assumption in the interest in marketing performance measurement issues was that marketing performance measurement practices could improve firm performance and were beneficial to firms. However, fewer empirical studies have investigated this assumption. Hence, O'Sullivan & Abela (2007) suggested that studies on the consequences of marketing performance measurement practices should be considered to be another research stream in the marketing performance measurement literature.

Following O'Sullivan & Abela's (2007) categorisation of the marketing performance measurement literature, the 135 selected articles were categorised into five research themes: the marketing-firm performance linkage, the characteristics of MPMSs, the interrelationships between marketing metrics, the antecedents of MPMSs and the consequences of MPMSs. Studies in "the marketing-firm performance linkage" theme reveal the contributions of marketing activities to financial outcomes, which is in line with the first stream identified in O'Sullivan & Abela (2007). Studies regarding "the characteristics of MPMSs" are related to the identification of marketing metrics and the attributes of MPMSs as a control system. This research theme covers the two research streams – the identification of key metrics and the measurement of brand equity – identified in O'Sullivan & Abela (2007). Studies in "the

interrelationships between marketing metrics" theme explore the relationships between commonly used marketing and accounting metrics, whereas studies grouped in "the antecedents of MPMSs" theme mainly investigate the factors that influence the selection, design and use of marketing metrics in practice. Consistent with the last research stream suggested by O'Sullivan & Abela (2007), studies in "the consequences of MPMSs" theme investigate the relationships between marketing performance measurement practices and firm performance.

Figure 2.2 shows the number of articles published by periods for each research theme stated above. As shown in Figure 2.2, generally, the number of studies on marketing performance measurement issues has been rising.

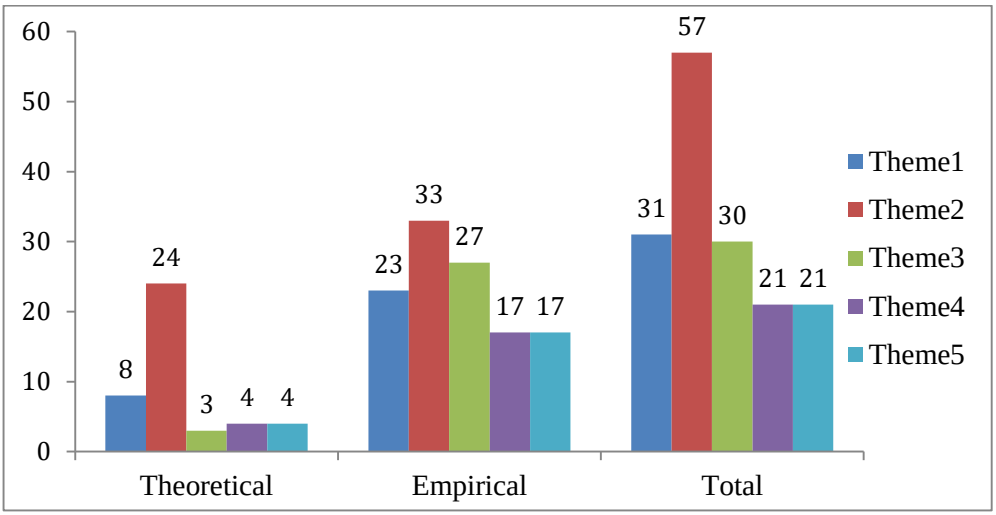
Figure 2.2 The number of articles by research themes and by periods



Note: Theme 1: the marketing-firm performance linkage, Theme 2: the characteristics of MPMSs, Theme 3: the interrelationships among marketing metrics, Theme 4: the antecedents of MPMSs, Theme 5: the consequences of MPMSs

Figure 2.3 shows the number of articles published by paper types for each theme. The analysis of all articles in the "the characteristics of MPMS" category indicates a balance between theoretical (n=24) and empirical studies (n=33), whereas articles in the "the interrelationships among marketing metrics", "the antecedents of MPMSs" and "the consequences of MPMSs" categories focus more on empirical studies. "The characteristics of MPMSs" research theme is the most frequently studied theme, whereas studies on the antecedents and consequences of MPMSs are less numerous. The following section discusses each theme in detail.

Figure 2.3 The number of articles by research themes and by paper types



Note: Theme 1: the marketing- firm performance linkage, Theme 2: the characteristics of MPMSs, Theme 3: the interrelationships among marketing metrics, Theme 4: the antecedents of MPMSs, Theme 5: the consequences of MPMSs

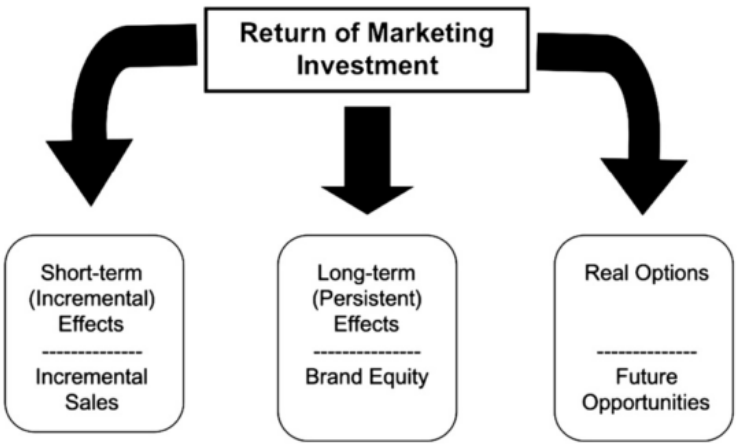
2.4.1 Theme One: Linking Marketing to Firm Performance

The first theme in the marketing performance measurement literature focuses on building connections between marketing activities and firm performance. The marketing function is struggling to justify its contribution to the bottom line. Marketing performance measurement studies have emerged largely due to this increasing concerns about marketing accountability. It is challenging for management to measure the outcomes of marketing activities as it takes time for marketing activities to implement and turn into measurable results. This challenge has been noted in the literature by Bonoma & Clark (1998) that marketing outputs are "lagged, multi-vocal and subject to so many influences that establishing cause-and-effect linkages is difficult" (p. 2). In addition, the lagging effect of turning marketing expenses to financial outcomes makes it difficult to gather valid data to formulate useful models (Stewart, 2008). The difficulty in establishing the linkages between marketing activities and financial performance emphasises the importance of standardised marketing measures. For instance, a key method is to develop a causal linkage among marketing initiatives, intermediate marketing outcomes (e.g., mindset metrics, behavioural metrics and marketing metrics) and financial performance (Stewart, 2008).

2.4.1.1 Three Types of Marketing Outcomes

As shown in Figure 2.4, when considering the outcomes of marketing, there are at least three types of outcomes: short-term outcomes, long-term outcomes and opportunities in relation to marketing's short-term, long-term and real options effects, respectively (Stewart, 2009, p. 641).

Figure 2.4 Three types of return on marketing investment



Source: Stewart (2009, p. 641)

Marketing activities may have an incremental effect on firm performance. For example, a promotion campaign may have an immediate impact on sales. Marketing activities also produce long-lasting or persistent effects, which occur in the present but will ultimately change the market in the long run. For instance, companies invest in resources to build strong and appealing brands. These brands create a long-lasting effect on sales because they can raise brand awareness and brand knowledge among customers, thus increasing their willingness to purchase in the future. Marketing activities may also create optional opportunities to companies. These opportunities are called real options, which "represent opportunities that the firm may or may not pursue in the future (optionality)" (Stewart, 2009, p. 641).

Of the three types of effects, the short-term effects are the easiest to measure. Many scholars have examined the short-term contributions of marketing to firm performance, e.g., sales, leads generated, brand awareness and web visits. McGovern et al. (2004) pointed out that companies needed to review their business drivers (e.g., net new business and share of wallet) regularly to get a prompt feedback on whether their marketing's efforts were effective. In a review article,

Srinivasan & Hanssens (2009) summarised key findings of the impact of marketing-mix activities on firm value. This paper revealed the critical role of brand equity and customer equity in explaining the relationship between marketing and business performance. In Kimbrough & Mcalister's (2009) commentary article, they evaluated the study of Srinivasan & Hanssens (2009) and recommended that marketing and accounting researchers should cooperate in order to deepen investors' understandings of the contributions of marketing activities. These two review papers both discussed the short- and long-term effects of marketing initiatives.

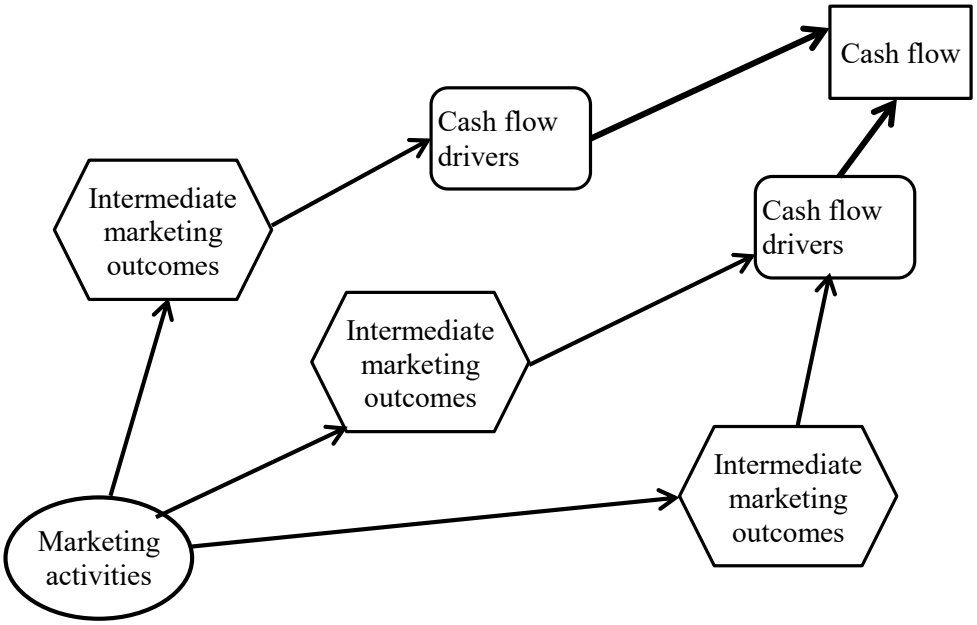
Marketers have difficulty in measuring and assessing the long-term impact of marketing activities. The reasons, as stated by Stewart (2009), are that they have difficulty in identifying the baseline marketing performance and in separating marketing's influence from other potential factors that may affect the increase in business performance. To solve the puzzle, scholars have adopted a longitudinal research design to better track the long-term effects of marketing activities. For example, Luo & Jong (2012) examined the linkage between advertising spending and firm value using longitudinal data from 1052 firms across 48 industries between 1987 and 2006. The yearly regression analysis indicated that advertising positively affected firm return and negatively affected firm risk. They demonstrated that the time lag between advertising spending and firm value should be considered in order to reduce the concern of a reserved causality. Other longitudinal studies include Kimbrough & Mcalister (2009), Pauwels, Silva-Risso, Srinivasan & Hanssens (2004) and Kumar, Bezawada, Rishika, Janakiraman & Kannan (2016).

Real options are even harder to measure because, on the one hand, they only create future opportunities for companies; but, on the other hand, they are optional because firms may or may not seize these opportunities in the future. According to Stewart (2009), even though firms may skip some options that seem valueless, those options may also contribute to firm value. As difficult as it is to measure real options, firms need to identify the contribution of marketing to the creation of opportunities because they also derive value from the potential opportunities (Stewart, 2009).

2.4.1.2 The Marketing-Firm Performance Process

According to Stewart (2008, 2009), for both marketers and business managers, cash flow is the ultimate goal. Hence, every marketing action should "link to a source of cash flow and a business model[5] (e.g., margin, velocity and leverage)" (Stewart, 2009, p. 639). Many proponents have tested the effectiveness of marketing strategies and activities using models that are similar to that of Stewart (2009)'s (see Figure 2.5). Moreover, customer metrics are widely gauged in such empirical research. For example, Verhoef (2003) found a positive effect of affective commitment and loyalty programs on customer retention and customer share development. The results support the value of customer equity metrics in linking marketing activities to firm performance.

Figure 2.5 A framework for linking marketing to firm performance



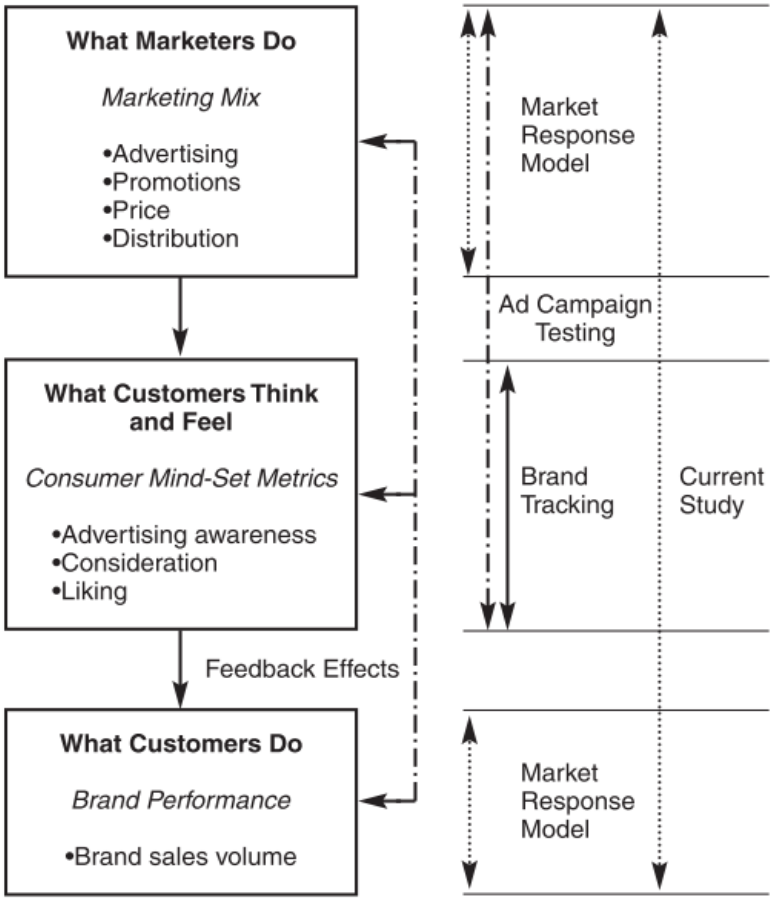
Source: Stewart (2009, p. 640)

Venkatesan & Kumar (2004) investigated the performance of resource allocation and CLV-based (customer lifetime value) customer selection by testing the relationships between communication and customers' purchase frequency. The results indicated that firms could improve their profit through maximising CLV. Srinivasan, Vanhuele & Pauwels (2010)

[5] Business Model: how the firms generate the cash, e.g., margins, velocity, and leverage (Stewart, 2009)

combined marketing mix, mindset metrics and overall financial performance together and explored the intermediating effects of mindset metrics on monitoring and predicting the outcomes of marketing (see Figure 2.6). The analysis of 60 brands explicitly showed that three mindset metrics, namely, consideration, liking and brand awareness, could explain one-third of the total variance in sales. Therefore, they concluded that marketing campaigns contributed to the bottom line through positively influencing customers' feelings.

Figure 2.6 The roles of customer metrics in marketing-firm performance linkage

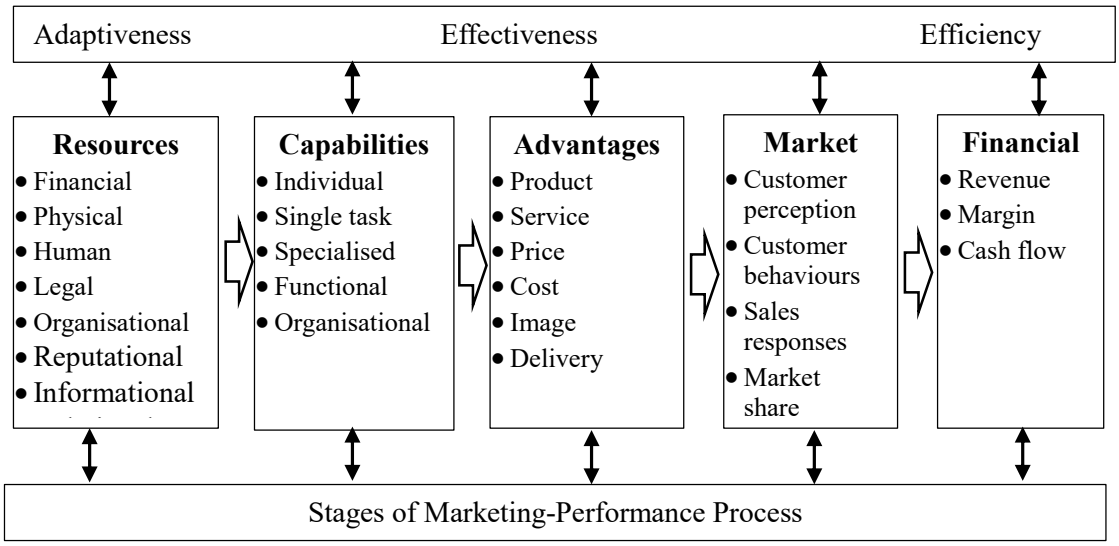


Source: Srinivasan et al. (2010, p. 674)

From a Resource-Based View (RBV), Morgan et al. (2002) proposed a novel model to explain the relationship between marketing investment and firm performance. Their model illustrated different stages of the impact that marketing resources may have on firm performance (see Figure 2.7). They argued that the investment in marketing resources could enable companies to build their organisational capabilities, thus creating positional advantages and leading to better firm performance. In their model, they were also in favour of the intermediating roles of

customer-based metrics as a part of the explanation of the contribution of marketing to financial performance. Their interpretations of the marketing-performance process are comprehensive, which capture the different parameters in a business context.

Figure 2.7 The marketing-firm performance process

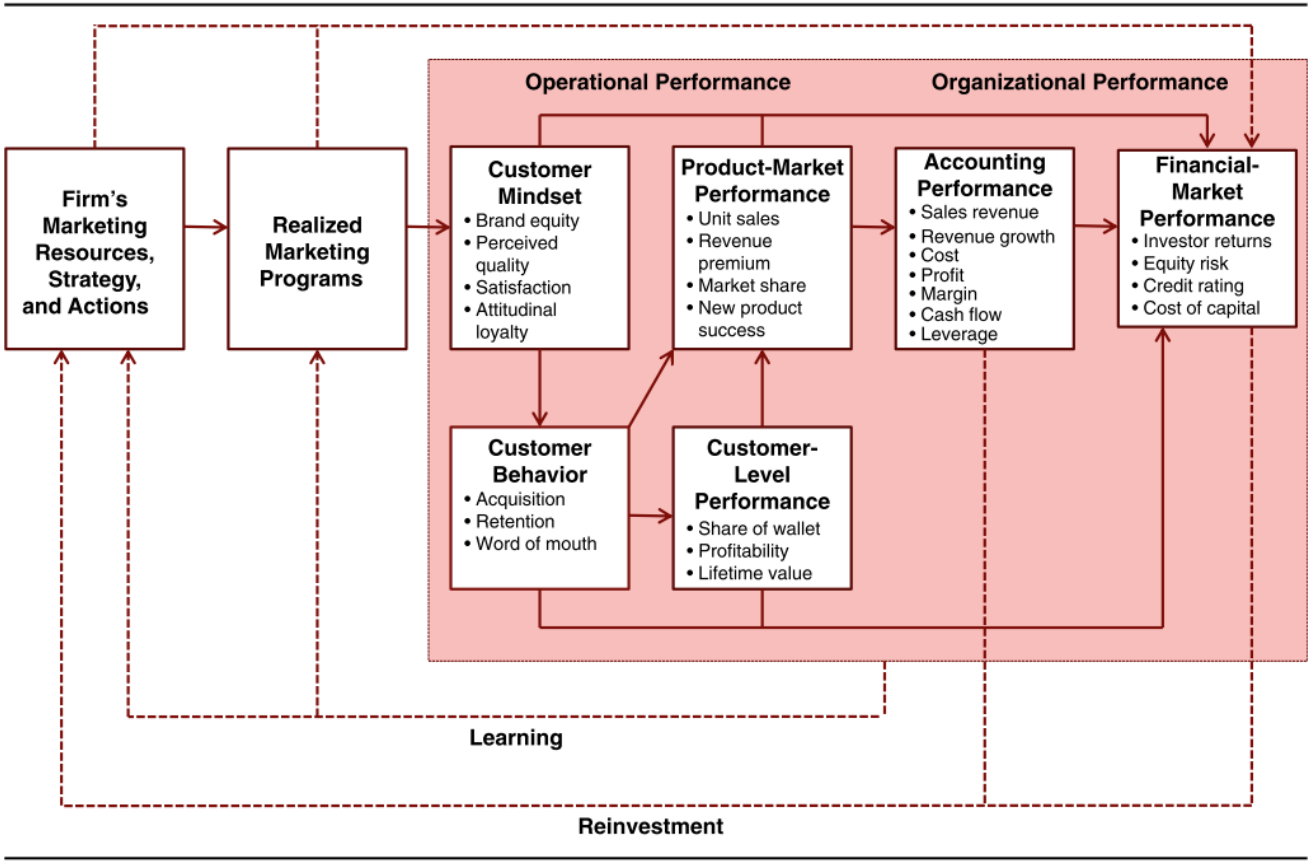


Source: Morgan et al. (2002, p. 367)

Rao & Bharadwaj (2008) proposed a different model to explain the marketing-performance process in response to Stewart's "ultimate cash flow goal" theory and Srinivasan et al.'s intermediating effects of mindset metrics. They pointed out that marketers focused on how marketing could affect a customer's cognition, attitude and behaviour but ignored its duty to shareholders, resulting in the failure to "trace the effects of a marketing action to firm value (stock price)" (p. 17). They asserted that the rationale behind this marketing-firm performance linkage is that marketing actions generate sales and revenues, which in turn increase cash flow, thus increasing stock price and shareholder value. This method is less straightforward than Srinivasan et al.'s method, but it allows managers to assess marketing regarding its impact on the primary goal of firms.

In a very recent study, Katsikeas et al. (2016) re-examined the marketing performance measures based on 998 empirical studies published in top marketing journals from 1981 to 2014. They developed a new research model that could explain the value-creation chain of marketing functions. As shown in Figure 2.8, marketing resources contribute to firm performance through

Figure 2.8 The marketing-performance outcome chain proposed by Katsikeas et al. (2016)



Source: Katsikeas et al. (2016, p. 3)

influencing customer mindset (e.g., satisfaction and loyalty), product-market performance (e.g., revenue and market share) and accounting performance (e.g., cost, profit and margin). Moreover, they posited that the ultimate goal of firm performance was financial-market performance, which was represented by equity risk, cost of capital, credit rating and investor returns. Table 2.4 summarises the key studies that explore the marketing-performance relationships. Despite the various approaches used to explain the marketing-firm performance value chain, there is a need for a better understanding of the chain of effects of marketing actions on firm performance (Rust, Ambler, Carpenter, Kumar & Srivastava, 2004). Longitudinal studies are warranted to capture the persistent effects of marketing on firm performance and to provide robust evidence on the causal relationships between marketing and firm performance (Morgan et al., 2002; Rao & Bharadwaj, 2008).

Table 2.4 A summary of studies on theme one: the marketing-firm performance linkage

Key questions	Summary
1. What effects does marketing have on firm performance?	Marketing may have three types of effects on firm performance: short-term, long-term and real options effects (Stewart, 2009). a) Short-term contributions of marketing are easy to measure and model (Srinivasan & Hanssens, 2009; Stewart, 2008, 2009). b) Long-term outcomes of marketing should not be ignored, and longitudinal research methods are needed (Kimbrough & Mcalister, 2009; Lovett & MacDonald, 2005; Luo & Jong, 2010; Mizik, 2014; Pauwels et al., 2004; Stewart, 2009). c) Real option effects are hard to manage but should not be ignored due to their creation of future opportunities and their contribution to firm value (Stewart, 2008, 2009).
2. How do marketing activities contribute to the bottom line?	To reveal how marketing contributes to the bottom line, firms need to link marketing activities, intermediate marketing outcomes and financial performance. a) Marketing should be linked to cash flow through intermediate marketing outcomes or cash flow drivers (Kumar & Shah, 2009; Stewart, 2009). b) Marketing contributes to the bottom line through its impacts on customer mindsets and behaviours (Becker, Spann & Schulze, 2015; Brady, Voorhees & Brusco, 2012; Rust et al., 2004; Srinivasan et al., 2010; Venkatesan & Kumar, 2004; Verhoef, 2003). c) Marketing influences shareholders' value through the stock price effect and released working capital effect (Rao & Bharadwaj, 2008). d) Marketing resources and actions contribute to financial-market performance through their impacts on customer performance, product-market performance and accounting performance (Katsikeas et al., 2016; Luo & Jong, 2010; Rust & Huang, 2012; Rust et al., 2004; Tuli, Mukherjee & Dekimpe, 2012).

2.4.2 Theme Two: The Characteristics of MPMSs

The second main theme in the marketing performance measurement literature is centred around the characteristics of MPMSs. Although several recent studies have explored some characteristics of MPMSs, this study systematically explores the characteristics of MPMSs by applying the typology proposed by Lamberti & Noci (2010), who were among the first researchers to focus on both marketing metrics and the measurement system. According to Lamberti & Noci (2010), MPMSs can be characterised by three main aspects: various dimensions of marketing performance assessed in practice (labelled by them as "the typology of performances assessed", p. 141), key metrics in use (labelled by them as "the typology of measures adopted", p. 142) and the attributes of MPMSs (labelled by them as "the control system", p. 143). A summary of studies on the characteristics of MPMSs is shown in Table 2.5.

As demonstrated in Table 2.5, it appears that studies on marketing performance measurement issues mainly focus on marketing metrics. For example, most of the studies in theme two are in the field of marketing performance measurement: marketing performance measures, and the selection and use of key marketing metrics. Limited research has regarded MPMSs as a control system and focused on revealing the attributes of the measurement system. Therefore, a better understanding of the attributes of MPMSs is required.

Table 2.5 A summary of studies on theme two: the characteristics of MPMSs

Key questions	Summary
1. What to measure?	• Non-financial, financial, output and input measures (Clark, 1999) • The external market, internal market and process metrics (Ambler, 2000) • Consumer behaviour, intermediate, trading customer, competitor, accounting and innovativeness metrics (Ambler et al., 2004) • Sales and profitability, health of marketing assets, health of customer base and quality of marketing inputs (Clark, 2001) • Brand value, customer value, word of mouth and referral value, retention and acquisition, cross-buying and up-buying, multi-channel shopping and product return metrics (Petersen et al., 2009) • Customer vision, financial vision, product vision, market and innovation vision (Sampaio et al., 2011)
2. Key metrics in use	• Market share, perceived quality, customer loyalty (retention), customer profitability, relative price and CLV (Barwise & Farley, 2004) • Profitability, sales, value and/or volume, gross margin, awareness, market share, number of new products and relative price (Ambler et al., 2004) • Brand knowledge, commitment/purchase intent, customer satisfaction, market share, number of complaints, perceived quality, profitability, ROI, sales volume and service/product availability (Sampaio et al., 2011) • Sales, profitability, gross margins, perceived quality/esteem, total number of consumers, consumer satisfaction, market share, awareness, marketing spending and number of consumer complaints (Frösén et al., 2013)
3. What are the attributes of MPMSs?	• **Comprehensiveness** (Homburg et al., 2012; Miller & Cioff, 2004) • **Contextuality** (Frösén et al., 2013; Morgan et al., 2002) • ***Measurement Quality*** (Burney, Henle & Widener, 2009; Homburg et al., 2012)

2.4.2.1 What to Measure

The first question to answer in the MPMS literature is "what to measure". Regarding the marketing metrics that senior management should use to evaluate marketing performance, firms need to have a clear vision of the types of outcomes that their marketing activities can result in. Though no consensus has been reached on what firms should focus on when measuring marketing performance, scholars indicate that several types of marketing outcomes should be included, and a bundle of marketing metrics should be used together to comprehensively assess marketing performance (Ambler et al., 2004; Clark, 1999; Seggie, Cavusgil & Phelan, 2007).

Marketing Metrics: Trends in the Selection of Marketing Metrics

From financial measures to nonfinancial measures. Previous studies on marketing performance measurement used to focus mainly on economic measures such as cash flow, sales and revenue (Seggie et al., 2007). Later, companies adopt nonfinancial metrics to justify marketing investments (Clark, 1999) and expand the notion of output beyond financial outcomes. This shift in focus has seen the inclusion of nonfinancial measures, such as market share (Jacobson, 1988), customer satisfaction (Anderson & Sullivan, 1993; Peterson & Wilson, 1992), customer loyalty (Reichheld, 1994) and brand equity (Keller, 1993), to assess marketing outcomes. Clark (1999) recommended that both financial and nonfinancial measures should be included to justify marketing investments and to evaluate the intangible value of marketing.

From backward-looking measures to forward-looking measures. Another change is the focus on forward-looking measures. It is suggested that the contributions of marketing activities to firm performance can be more accurately assessed if marketing metrics "are based on more than

just projecting past results inflated by an uplift factor" (Seggie et al., 2007, p. 836). In other words, to understand the time effect of marketing actions, marketing metrics should measure both "what has happened (lagging, backward-looking metrics)" and "what will happen (leading, forward-looking metrics)".

From output measures to input measures. As there is an increasing emphasis on the efficiency of marketing in maximising desired outputs from given inputs, the notion of marketing performance has expanded beyond the outcome perspective. The traditional output-focused control systems have transformed to input, behavioural and process control (Jaworski, 1988). Therefore, both practitioners and theorists have paid considerable attention to the intermediate outcomes of marketing activities, such as customer attitude, brand awareness and brand knowledge (Brownlie, 1993). Practitioners have started to use both output and input measures (e.g., marketing spending) to evaluate marketing performance.

From absolute measures to relative measures. Absolute measures, such as customer satisfaction, profit and sales, do not allow companies to compare with their competitors. To overcome this limitation, companies use relative measures to benchmark their performance with their competitors'. As a result, more "relative X" metrics, such as relative price, relative perceived quality and relative customer satisfaction (Ambler et al., 2004; Clark, 2001; Luoma, Frösén, Tikkanen & Aspara, 2011), have emerged in both theoretical and empirical research.

From independent measures to causal chains. A recent development in the area of marketing performance measures has seen the emergence of causal metrics. Seggie et al. (2007) maintained that this evolution yielded major breakthroughs in the area of marketing

performance measurement. Academia and practitioners tend to use bundles of interrelated metrics to comprehensively understand marketing performance. For instance, Stahl, Heitmann, Lehmann & Neslin (2012) suggested that brand equity and CLV should be used together, as brand equity could influence and help predict the key components of CLV. If marketing metrics cannot reveal how marketing activities contribute to firm performance, the metric information is not helpful (McGovern et al., 2004).

From product-centred measures to customer-centred measures. There is evidence that companies have shifted their focus from product-centred metrics to customer-centred metrics. In earlier product-centred marketing research, researchers and practitioners focused on the tangible and intangible value of brands (Gupta & Zeithaml, 2006). Therefore, brand equity is extensively used as a key indicator of marketing performance. As marketing evolves to aligning organisation and marketing activities around customers (Clark, 2001), an increasing emphasis on customer-centred metrics has been addressed. A set of perceptual, cognitive and behavioural metrics have been developed, among which customer satisfaction is the most widely used and universally gauged metric in different industries (Gupta & Zeithaml, 2006). Other customer relationship management (CRM) based measures, such as customer acquisition costs, conversion rates and retention rates, are also widely used to monitor marketing performance at the customer level (Winer, 2001).

The emergence of new metrics. There has been an expansion in the utilisation of digital marketing and social media metrics. Digital marketing metrics are widely adopted in order to track interactions between companies and customers and measure the performance of digital

marketing activities (Järvinen & Karjaluoto, 2015). Social media metrics are generating more attention because of the increasing impact of social media activities on brands (Hoffman & Fodor, 2010). When measuring social media performance, it is suggested that companies consider consumers' motivations to use social media and then measure their devotions to the social media (Hoffman & Fodor, 2010). Social media metrics, such as visits, bounce rates, impressions, click through rates and cost per click, are commonly used by companies (Davis, 2012).

Various Marketing Metric Categories

Clark (1999), exploring the marketing performance measurement trend, recommended that both financial and nonfinancial, input and output metrics should be included as key indicators of marketing performance. Later, he suggested that firms should not only measure the overall business performance but also assess the health of brands, markets, channels and customer relationships (Clark, 2001). He noted that companies should assess four potential aspects of marketing performance: sales and profitability (e.g., unit sales, profit/contribution and value sales), the health of brand or company reputation (e.g., brand awareness, strength of image and favourability of image), health of the customer base (e.g., retention rate, relative consumer satisfaction and recency) and quality of marketing inputs (e.g., strategic activities unique to firm and employee surveys regarding market orientation).

Another pioneer in this field is Ambler and his research team (e.g., Ambler, 2000; Ambler et al., 2004). He suggested that other departments, e.g., the finance department, should be involved in measuring marketing performance (Ambler, 2000). Companies should align their measurement

with the internal-orientated culture (e.g., awareness of goals, relative employee satisfaction and the number of innovations launched) and the external-focused vision (e.g., loyalty/retention, relative perceived quality, market share, perceived quality and brand awareness). Based on control theory, Ambler et al. (2004) identified six types of marketing performance measures that companies should use:

- Consumer behaviour metrics (e.g., the total number of consumers, the number of new consumers and customer loyalty)
- Consumer intermediate metrics (e.g., brand awareness, brand knowledge and consumer satisfaction)
- Trade customer metrics (e.g., customer satisfaction and the number of complaints)
- Competitor metrics (e.g., relative consumer satisfaction, market share and perceived quality)
- Accounting metrics (e.g., sales, revenue, gross margins and profitability)
- Innovativeness metrics (e.g., the number of new products, revenue of new products and margin of new products)

Later studies on marketing performance measurement have begun to involve different contextual factors and identified the categories of marketing metrics in various contexts. For instance, Petersen et al. (2009) reviewed the literature and distinguished seven categories of marketing metrics that were important in the retailing industry. These metrics were necessary because they measured both strategic and tactical marketing activities and were used for both short- and long-term purposes. The categories were (Petersen et al., 2009, p. 97):

- Brand value metrics
- Customer value metrics
- Word of mouth and referral value metrics
- Retention and acquisition metrics
- Cross-buying and up-buying metrics
- Multi-channel shopping metrics
- Product return metrics

Llonch, Eusebio & Ambler (2002) found that customer metrics (customer behaviour and intermediate metrics) were relatively important among all the marketing metrics. O'Sullivan (2007) explored marketing performance measurement practices in the Irish context and noted that financial metrics dominated the marketing performance measurement practices in Irish firms. Findings from Sampiaio et al. (2011) indicated that four types of marketing metrics were vital to Brazilian companies, namely, customer behaviour and intermediate, financial, market, innovation and promotion metrics. Consistent with Llonch et al. (2002), Sampiaio et al. (2011) demonstrated that customer-related metrics were more important to Brazilian managers. In general, the literature shows that companies measure marketing performance based on customer attitude, customer behaviour, direct customer, competition, innovation and financial performance (Ambler et al., 2004; Frösén et al., 2013; Llonch et al., 2002). The following section discusses the commonly used marketing metrics.

2.4.2.2 Key Metrics in Use

Even though the marketing metrics in use may vary depending on the contexts the firm operates

in; several key metrics are commonly used in practice. In a British study, Ambler et al. (2004) found that more than 70% of the 231 respondents surveyed claimed that they regularly used the following marketing metrics: profit/profitability, sales, value and/or volume, gross margin, awareness, market share, number of new products and relative price. Later studies support these findings. For example, in a cross-cultural study, Barwise & Farley (2004) collected the regularly reported marketing metrics used in the US, Japan, Germany, the UK and France. The results indicated that market share, perceived product/service quality, customer loyalty/ retention, profitability and relative price were the most commonly used. In a Brazilian study, Sampaio et al. (2011) found that the number of customers, the number of complaints and customer satisfaction were the most commonly used metrics by more than 90% of the 234 managers surveyed. Frösén et al. (2013) found that after ten years' development of marketing performance measurement practices, the frequently used metrics in Finland were the same as the top 15 metrics in the UK (see Ambler et al. (2004) for review). Drawing on these studies, it is evident that key marketing metrics, e.g., profitability, market share, relative price and customer satisfaction, are commonly used in various contexts.

Despite the common practice in the selection of key marketing metrics, there are some debates over the selection of these key metrics. These debates involve the reliability of key metrics, the utilisation of interchangeable metrics and the optimal number of metrics to use.

The reliability of key metrics. One debate involves the reliability of key metrics. Scholars hold different opinions about the reliability of certain metrics, e.g., discounted cash flow and ROI. Gupta, Lehmann & Stuart (2004) were in favour of discounted cash flow as a reasonable

marketing performance indicator, whereas Ambler & Roberts (2008) argued that discounted cash flow was not a proper metric. Ambler & Roberts (2008) further noted that discounted cash flow was biased due to its lack of "independence between forecasters and managers" and its lack of certainty (p. 738). A similar disagreement arises between Ambler & Roberts (2008) and Lenskold (2007) on the reliability of ROI. Ambler & Roberts (2008) held that ROI was flawed due to issues such as its calculation, misalignment with optimal profits and misuse in practice. Lenskold (2007), however, argued in favour of ROI, that it was just a matter of "how to get ROI measurements and analyses under way" (p. 27). Lenskold's (2007) argument is echoed by Ukko, Tenhunen & Rantanen (2007), who argued that "the performance measurement system [was] not only about what [was] measured but also how it [was] measured" (p. 41).

The utilisation of interchangeable metrics. The usage of some interchangeable metrics, such as customer commitment, satisfaction and loyalty, has also raised considerable attention. Customer satisfaction, loyalty and commitment are the most widely used nonfinancial metrics in the literature and practice. Many hold that these metrics can be used interchangeably, but others claim that this is not the case because customer commitment may lead to customer loyalty while customer satisfaction is not a reliable indicator of customer loyalty or commitment (Gupta et al., 2004). Therefore, questions regarding whether the seemingly interchangeable metrics could replace each other or whether they should be used separately or combined, remain unsettled. This debate also leads to another argument on the usefulness of customer-based metrics. Some maintain that customer value can provide a good proxy for firm value (Gupta et al., 2004), whereas others hold that customer value or even customer-based metrics cannot be used to indicate or predict marketing performance (e.g., Morgan & Rego, 2006).

The optimal number of key metrics. Another problem regarding the selection of marketing metrics relates to the optimal number of marketing metrics a firm should use. For example, Barwise & Farley (2004) indicated that an average of 3.9 metrics was used in five industrial countries (the US, Japan, France, Germany and the UK). They stated that firms, especially large and medium-sized firms, adopted one or more marketing metrics. This statement is in line with Clark & Ambler (2011), who suggested that there is no lack of marketing metrics that companies can use to measure marketing performance. However, the problem is that, as many researchers agree, the number of marketing metrics employed by firms is not "the more, the better" (Clark & Ambler, 2011; Clark et al., 2006). Managers might be systematically biased toward financial measures (Banker, Chang & Pizzini, 2004) and suffer from information overload as the number of marketing metrics used increases (Clark et al., 2006; Schick, Gordon & Haka, 1990). In order to reduce the number of marketing metrics in use, Hugh & Davidson (1999) recommended considering four criteria: the importance of the metric to analysts, practical ability to report, importance of the metric to management and economic importance to most companies (p. 767-768). Based on the analysis of 25 leading enterprises in the UK and US, they further recommended 10 most valuable marketing metrics, namely, market trend, unit volume trend, market share, research and development trend, major brand sales trends, capital expenditure, customer retention, total marketing investment, new product performance and distribution trend (p. 757).

The above arguments raise questions for further investigation. As Clark & Ambler (2011) indicated, what is lacking now is "solid advice on how to select, assemble and manage best portfolio of metrics" (p. 16). No such marketing metric is both forward- and backward-looking,

long- and short-term, subjective and objective altogether. So rather than focusing on the criticisms of individual marketing metrics, instead, academia should endeavour to use a bundle of marketing metrics which, when combined, can measure, monitor, control and even predict current and future marketing performance. So far, research questions regarding the optimal numbers of metrics that companies should apply, the frequency of measurement and the selection of key marketing metrics still need further exploration.

2.4.2.3 The Attributes of MPMSs

Last but not the least, another vital issue of MPMSs is the attributes of the measurement system (see Table 2.5, p. 36). This study defines an MPMS as *an organisational control system that senior management use to measure marketing performance through a small bundle of key marketing metrics in order to ensure that the resources are allocated properly, and strategies are implemented to achieve the desired goals of an organisation*. As a management control system, three attributes of MPMSs have been identified in the literature.

Comprehensiveness. From a management control system perspective, MPMSs must be comprehensive, a concept borrowed from the accounting literature (Homburg et al., 2012). The comprehensiveness of MPMSs denotes the diversity of marketing performance measures used to align with marketing strategy and to reflect the cause-and-effect relationships between marketing activities and firm performance (Chenhall, 2005; Hall, 2008; Homburg et al., 2012). Thus, the comprehensiveness of MPMSs consists of three dimensions, namely, breadth, strategic fit and the cause-and-effect relationships.

Measurement breadth is conceptualised as “the extent to which the MPMS provides a diverse

picture of marketing function through a variety of financial and nonfinancial as well as leading and lagging measures of marketing performance" (Homburg et al., 2012, p. 59). It is similar to the definition of "measurement diversity" in the accounting literature, which refers to the extent to which the performance is measured using a broad set of input and output measures, financial and non-financial measures, subjective and objective measures (Henri, 2006b; Ittner & Larcker, 2001). The strategic fit refers to the extent to which MPMSs reflect strategic marketing targets (Banker et al., 2004). According to strategy-focused organisation theory, one of the purposes of introducing comprehensive MPMSs is to communicate marketing strategies effectively across the organisation (Kaplan & Norton, 2001, 2004) and promote strategic alignment within the firm (Kaplan & Norton, 2004). The cause-and-effect relationships describe the extent to which MPMSs provide information about the causes and effects within marketing-relevant parts of the value chain (Pauwels et al., 2009). Strategic performance measurement systems are featured to present explicit causal relationships between goals and measures (Bisbe & Malagueño, 2012). The clear presentation of cause-and-effect relationships makes the attributes of performance changes explicit so that firms can reallocate their resources or re-deploy their marketing mix (Wyner, 2004).

Studies indicate that comprehensive MPMSs provide various sets of feedback and environmental information to firms. Measuring marketing performance is valuable because it increases firms' market knowledge and facilitates decision-making, thus ultimately influencing firm performance (Clark, Abela & Ambler, 2005; Homburg et al., 2012; Krush et al., 2013; Morgan et al., 2002; Tung, Baird & Schoch, 2011). Therefore, comprehensive MPMSs are believed to outperform partial MPMSs. However, prior studies are concerned that

comprehensive MPMSs are just a management fashion without any practical implications (Norreklit, 2000), and that managers may be overwhelmed by the integrated marketing performance measures, thus clouding their judgment (Malina & Selto, 2004; Van Der Stede, Chow & Lin, 2006). This inclusive relationship between the comprehensiveness of MPMSs and firm performance merits further exploration (Homburg et al., 2012; O'Sullivan & Abela, 2007; O'Sullivan et al., 2009).

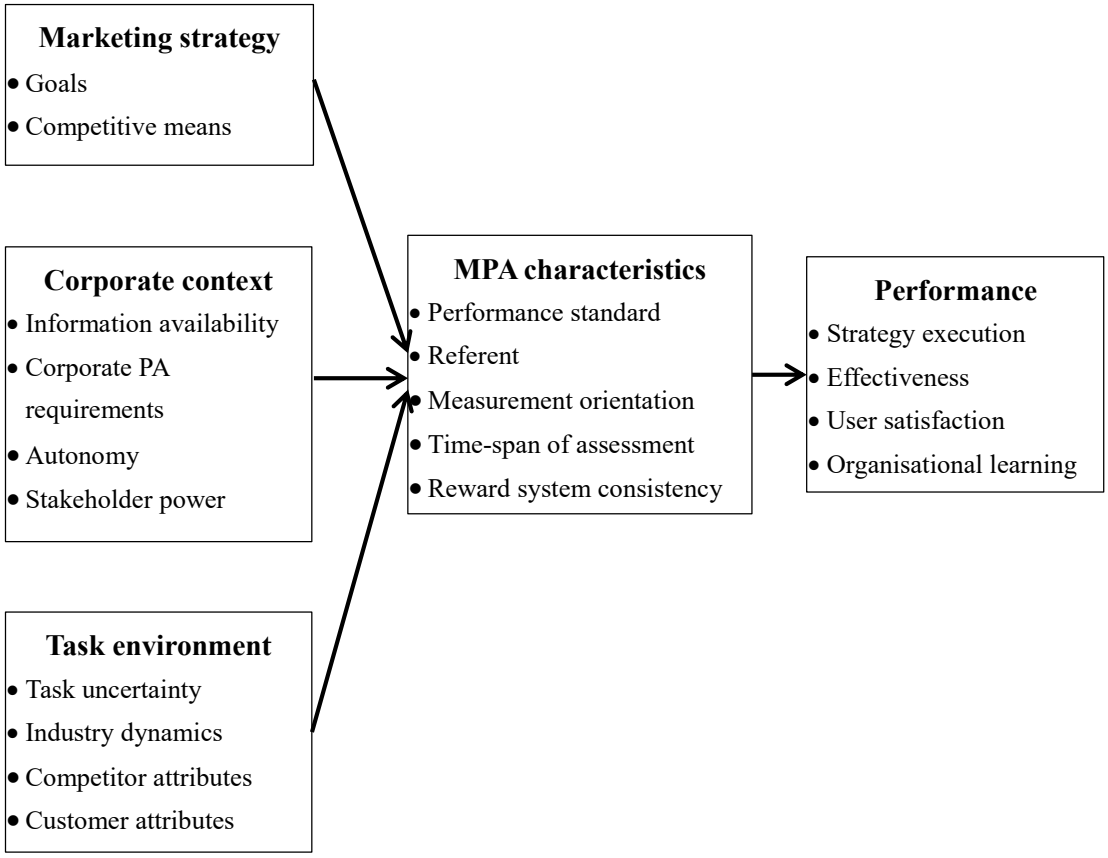
Measurement Quality. Scholars indicate that existing studies have overlooked the quality of information (e.g., accessibility, reliability and timeliness) in management control systems (Homburg et al., 2012; Ittner & Larcker, 2001). Measurement quality refers to the quality of the information provided by MPMSs. A similar concept, technical validity, has been utilised by Burney et al. (2009), to refer to the accuracy, accessibility, understandability, reliability and timeliness of performance measures. However, due to the possible confusion caused by "reliability" and "validity", this study uses the term "*measurement quality*" to refer to marketing metric quality. Research indicates that reliable, timely, accurate and accessible information is more likely to be used in practice (Chenhall & Morris, 1986; Christensen & Demski, 2003; Nelson, Todd & Wixom, 2005; O'Reilly, 1982; Zheng, Zhao & Stylianou, 2013).

Managers value reliable, accurate and timely information due to their pressure from the increasingly turbulent and dynamic environment that they operate in. MPMSs provide valuable strategic feedback to organisations and provide necessary information for periodic benchmarking inside and outside of organisations. However, during the feedback process, MPMSs also present risks because the information provided by key measures may be biased

and unreliable to decision makers. Therefore, the quality of the information embedded in the measurement systems is fundamental to the effectiveness of MPMSs. For example, Artz, Homburg & Rajab (2012) found that the use of performance measures could positively or negatively impact marketing's influence on strategic decision-making. But the use of performance measures can only have a positive impact on the decision-making process if marketing metrics provide reliable information. A recent study in the information system literature also supported the argument that the accurate, complete and timely information gathered from customer service process could significantly improve firm's competency to respond to the market and customers (Setia, Venkatesh & Joglekar, 2013).

Contextuality. The changing external environment and intense competitive pressures have led to the criticism of traditional MPMSs and the advocacy of contextual MPMSs (Morgan et al., 2002). On the contextual issue, advocates claim that there is no best metric for all companies. All marketing performance measures should be used in a certain context, because "without adequate context, measures may be meaningless" (Clark & Powell, 2007, p. 319). Morgan et al. (2002) maintained that companies needed to develop a type of MPMSs that could reflect the industry and firm specific contingencies rather than a "one-size-fits-all" type of organisational control system (p. 368). As shown in Figure 2.9, such significant contingencies include marketing strategy, corporate context and external environmental variables. These contingencies are believed to influence the characteristics of MPMSs.

Figure 2.9 Contextual marketing performance measurement systems



Source: Morgan et al. (2002, p. 368)

Regarding the research on the contextuality of MPMSs, there are two alternative streams: one regards the contextuality of MPMSs as an antecedent, while the other considers possible contextual factors that can influence the adoption, design and effectiveness of MPMSs. One representative example of the former stream is the work of Pondeville, Swaen & De Rongé (2013). Drawing on management control theory (Simons, 1995), they proposed an environmental management control system to reflect the environmental aspects of organisational performance. Their study found that environmental and strategic factors had a significant impact on the environmental management control systems. In the latter stream, many studies have investigated how internal and external factors can influence the design and use of MPMSs (Bennett, 2007; Frösén et al., 2013; Lamberti & Noci, 2010; Mintz & Currim, 2013).

These contextual factors can be categorised into three groups: national factors, such as country difference and the economic climate (Ambler & Wang, 2003; Barwise & Farley, 2004; Frösén et al., 2013; Llonch et al., 2002; Luoma et al., 2011; O'Sullivan, 2007; Sampaio et al., 2011); industry factors, such as business sectors, a firm's market position and the market life cycle stage (Frösén et al., 2013; Loning & Besson, 2002; Luoma et al., 2011; Mintz & Currim, 2013); and firm-specific factors, such as firm size, the product life cycle stage and a firm's strategic type (Grewal, Iyer, Kamakura, Mehrotra & Sharma, 2009; Lamberti & Noci, 2010; Mintz & Currim, 2013). It is suggested that these factors should be taken into account when firms endeavour to develop their MPMSs. This study draws on the above arguments and suggests that the design, use and effectiveness of MPMSs may be influenced by the contexts in which companies operate. Despite the investigation into the contextuality of MPMSs, limited research has examined how these contingent factors affect the effectiveness of MPMSs. This study reviews the contingent factors that may influence the use and effectiveness of MPMSs in Section 3.5.

2.4.3 Theme Three: The Interrelationships among Marketing Metrics

The third research theme lies in the examinations of the interrelationship among marketing metrics. An MPMS is not simply a presentation of marketing metrics, but a management control and decision support system (Pauwels et al., 2009). Marketing metrics are not only used for measuring previous marketing performance but also used as indicators of future performance. Marketing metrics do not have any predictive or diagnosable ability unless the cause-and-effect relationships between marketing activities and firm performance are understood (Homburg et al., 2012). In this section, the different forms of relationships between marketing metrics (e.g.,

nonfinancial metrics, such as customer satisfaction, market share and brand equity) and financial metrics (e.g., stock returns, Tobin's Q and shareholder value) are illustrated.

Marketing metrics can be positively, negatively or reversely related to each other (e.g., Luo & Homburg, 2007; Mizik, 2014; Morgan, Anderson & Mittal, 2005; Rego, Morgan & Fornell, 2013). For example, in a study on the relationship between marketing assets and financial performance, Chabowski & Hult (2013) reported a reverse causality between marketing assets and financial performance, indicating that financial performance could exert a reverse impact on customer satisfaction. In addition, the relationships are not always simply linear. Sometimes they can be nonlinear and asymmetric. For example, Gupta & Zeithaml (2006) revealed a non-linear relationship between customer metrics (e.g., customer satisfaction, customer retention and CLV) and financial metrics (e.g., firm profitability). Luo & Donthu (2006) also found a curvilinear relationship between marketing communication productivity and financial performance metrics (Tobin's Q and stock return). In the marketing performance measurement literature, the interrelationships between marketing metrics can be divided into three types: predictor, trade-offs and leverage effects.

Predictive Effects. Marketing metrics should help broaden the understandings of the black-box at the heart of marketing inputs-outputs relationships (Morgan et al., 2002). For example, mindset metrics (e.g., advertising awareness, consideration and liking) and attitudinal metrics can be used as early warning signals to predict future brand and business performance (Hanssens, Pauwels, Srinivasan, Vanhuele & Yildirim, 2014; Srinivasan et al., 2010). Similarly, the predictive effects of brand equity on CLV and current/future business performance lead to

the advocate for the use of brand equity as a reliable predictor of firm performance (Mizik, 2014; Stahl et al., 2012).

Customer satisfaction is not only the most widely used metric in practice but also one of the most frequently examined metrics in the literature. For instance, Luo & Homburg (2007) found a positive relationship between customer satisfaction, advertising and promotion efficiency, and advocated the cooperation among HR, marketing and finance departments. O'Sullivan & McCallig (2012) examined the impact of customer satisfaction on firm value and earning expectation using data from American companies. Their study indicated that customer satisfaction positively affected firm value (as measured by Tobin's Q) and that "the impact was over and above the impact of earnings" (p. 838). Other studies on different performance outcomes included valuation ratios, revenue growth, gross margins, cash flow, profitability and market share (Aksoy, Cooil, Groening, Keiningham & Yalcin, 2008; Chabowski & Hult, 2013; Gupta & Zeithaml, 2006; Morgan et al., 2005; Morgan & Rego, 2006; Van Doorn, Leeflang, Tijs & Doorn, 2013). Using data from 151 companies in the US from 1996 to 2006, Aksoy et al. (2008) explored the relationships among customer satisfaction, shareholder value, future cash flows and valuation ratios (Tobin's Q and market-to-book ratio). The findings showed a positive relationship between customer satisfaction and investment. Van Doorn et al. (2013) also indicated that customer metrics had similar value on the prediction of current gross margins and sale revenue growth, but they performed equally bad in predicting present and future net cash flows or future sales growth and gross margins.

Even different measures under the same marketing metrics category may have different

predictive value. Some metrics may be a good referent for financial performance; others may have no predictive ability or even be misleading. For instance, using data from 80 firms over the period of 1994-2000, Morgan & Rego (2006) suggested that not all customer feedback metrics had the capacity to predict future business performance. They found that customer satisfaction metrics had a greater predictive value than "intention-to-repurchase" loyalty scores. Hence, they concluded that "recent prescriptions to focus on customer feedback systems and metrics solely on customers' recommendation intentions and behaviours might be misguided" (p. 426). They further noted that even in the same customer satisfaction category, each score differed significantly in predicting future business performance. For instance, average satisfaction scores were found to have the greatest value, followed by Top 2 Box Satisfaction Score[6], while the proportion of consumers complaining had the smallest significant positive effect.

Trade-off Effects. Some metrics may have trade-off effects on others, especially when taking into account long-term outcomes (Rego et al., 2013), as "good performance on one dimension means sacrificing performance on another" (Donaldson, 1984; see Walker & Ruekert, 1987, p. 19). Therefore, sometimes firms need to monitor the trade-off metrics together to better capture marketing performance. Customer satisfaction and market share are two of the most widely used marketing metrics when measuring the performance of customers. They are often regarded as interrelated metrics because researchers posit that improving customer satisfaction can necessarily lead to an increase in market share (Morgan et al., 2005). However, recent empirical studies on the relationship between customer satisfaction and market share indicate different

[6] Top 2 Box Satisfaction Score: the two highest-scoring points on the customer satisfaction scores (Morgan & Rego, 2006)

results. Rego et al. (2013) re-examined the relationship between customer satisfaction and market share, using longitudinal data from American consumer markets. The results indicated that customer satisfaction could not generally predict future market share. Instead, market share was a strong negative predictor of future customer satisfaction. When firms benchmark current marketing performance or predict future performance, the metrics may be misleading if they look at customer satisfaction and market share separately.

Leverage Effects. Marketing metrics may have leverage effects on others (Gupta et al., 2004; Schulze, Skiera & Wiesel, 2012). Based on quarterly data from one traditional firm and four Internet companies from 1996 to March 2002, Gupta et al. (2004) found that changes in acquisition costs, margins and retention rates had different impacts on customer value of a firm. The results indicated that a 1% improvement in acquisition cost, margin or retention could improve customer value by 0.1%, 1% and 5%, respectively. Retention was found to have almost five times greater effect on customer value than the discount rate[7] did. This study is one example that explores the leverage effects of intangible marketing assets on business performance and firm value. Another example linked customer metrics (e.g., customer equity) to shareholder value. Using data from 2000 companies across ten years, Schulze et al. (2012) revealed that future customers, customer profit contribution and the discount rate were the drivers of shareholder value. The average leverage effect of customer equity on shareholder value was 1.55, indicating that a 1% change in customer equity could be translated into 1.55% change in shareholder value. This type of leverage effects among marketing metrics helps firms capture the performance differences with currently available data. A summary of these key

[7] The discount rate: cost of capital (Brealey & Myers, 1996)

studies on the interrelationships between marketing metrics is provided in Table 2.6.

Table 2.6 A summary of studies on theme three: the interrelationships among metrics

Key questions	Summary
What are the forms of interrelationships between different metrics?	Marketing metrics can be positively and negatively (e.g., Luo & Homburg, 2007; Morgan et al., 2005; Rego et al., 2013) as well as reversely related to each other (Chabowski & Hult, 2013). **Predictors:** customer satisfaction-financial performance (Aksoy et al., 2008; Chabowski & Hult 2013; Gupta & Zeithaml, 2006; Mizik, 2014; Morgan et al., 2005; Morgan & Rego, 2006; O'Sullivan & McCallig 2012); customer equity-market capitalisation (Kumar & Shah, 2009); customer assets-firm performance (Hanssens et al., 2014; Wiesel, Skiera & Villanueva, 2008). **Trade-offs:** Customer satisfaction-future market share (+) & market share-future customer satisfaction (-) (Rego et al., 2013); customer satisfaction/ brand equity-financial performance (+) and financial performance-customer satisfaction/ brand equity (-) (Chabowski & Hult, 2013). **Leverage effects:** customer value-firm value (Gupta et al., 2004) and customer value-shareholder value (Schulze et al., 2012).

(+): A positive relationship; (-): A negative relationship

Though researchers have widely explored the interrelationships between individual marketing metrics and made some progress, they have mainly focused on customer equity and brand equity metrics but failed to include other metrics. Studies on a new metric – relational equity – have been ignored. In fact, relational equity is important in defining marketing performance because marketing activities boost financial outcomes through the creation of different types of

relational equity, e.g., supplier partnership, lateral partnership, internal partnership and buyer partnership. For example, Ryals (2008) found that relational benefits from customer relationships could positively affect financial performance. Thus, he suggested that three relational equities, namely, channel partners (e.g., channel partners satisfaction, complaint and words of mouth), employees (e.g., satisfaction, complaints and cooperation) and suppliers (e.g., satisfaction, recommendation and loyalty), should also be considered to fully understand marketing outcomes.

In addition, there are challenges in establishing the interrelationships among marketing metrics, e.g., the difficulty in identifying the directions and forms of the causal relationships, in establishing the strength of the relationships in practical terms and in understanding the temporal relationships among metrics (Clark, 1999). Hence, longitudinal studies are needed to address these challenges.

2.4.4 Theme Four: The Antecedents of MPMSs

The fourth major research theme in the marketing performance measurement literature investigates the antecedents of MPMSs. As shown in Figure 2.3 (p. 26), a relatively small proportion of studies are devoted to the research on the drivers of the adoption of MPMSs within firms. Recent studies have tried to identify key factors that affect the design of MPMSs, e.g., how internal and external factor can influence the development and adoption of MPMSs (Clark et al., 2005; Mintz & Currim, 2013).

***Internal perspectives*.** The first study involving empirical research in relation to this theme can be traced to Clark et al. (2005). They applied motivation-opportunity-ability theory to explain

how motivations, opportunities and abilities could influence their marketing performance measurement practices. A survey of senior managers at 66 large corporations indicated that the opportunities and abilities of firms to process marketing performance information were positively related to their intentions to utilise measurement systems. Their study further concluded that motivation had both direct and indirect effects on future measurement spending plans. Unfortunately, the study did not indicate which internal factors could be considered as a motivation and how the external environment could provide opportunities to the firm. Later, Pauwels et al. (2009) proposed another framework to explain how other organisational factors could affect the use of marketing metrics from a demand-supply perspective. They posited that the adoption of MPMSs could be determined by the demands of the users, the organisational decision style, interdepartmental relations and industry and drill-down capabilities[8].

Other internal factors have also been investigated in different contexts. For example, Bennett (2007) examined internal factors, e.g., companies' financial performance status and prior investment in marketing, and their impacts on the development of MPMSs in British fundraising companies. The empirical evidence indicated that the level of prior investment in marketing, top management demands for accountability, and resource availability significantly influenced the usage of marketing metrics. Multiple case studies of seven Italian firms also demonstrated that firms with different marketing strategies could adopt MPMSs differently: the more important the marketing department was regarded, the more comprehensive marketing metrics companies tended to use (Lamberti & Noci, 2010). These findings echoed Clark et al.

[8] Drill-down capabilities: an ability to go down from a more general to a more detailed level of the information (Pauwels et al., 2009)

(2005), who viewed marketing performance measurement as “an ongoing process” in which “the consequences of one round of evaluation [could] become the antecedents for the next round” (p. 244). Other researchers focus on the impact of marketing resources and capabilities on marketing accountability. Shaw & White (1999) proposed that marketing research capacity could positively influence the production of marketing metrics through data collection, analysis and presentation processes. Recent empirical studies respond to this proposition by showing that marketing capabilities, such as data collection capacity, analytics skills and knowledge of marketing performance measurement, are necessary to the design of MPMSs (Clark et al., 2006; Järvinen & Karjaluoto, 2015).

External perspective. In addition to the internal factors, scholars are also interested in identifying external factors that might influence the design of MPMSs. Mintz & Currim (2013) examined six groups of factors that might affect marketing performance measurement practices: firm strategy, metric orientation, managerial characteristics (e.g., managerial experience), firm characteristics (e.g., firm size, CMO presence), environmental characteristics (e.g., market growth) and marketing-mix activities. Their study demonstrated that the use of metrics was mainly determined by the features of the environment in which companies operate rather than the managerial characteristics. It highlights the importance of external factors in influencing the adoption of MPMSs.

A summary of these studies is provided in Table 2.7.

Table 2.7 A summary of studies on theme four: the antecedents of MPMSs

Key questions	Summary
What factors drive the development of MPMSs?	**Internal Perspectives:** **a. Resources and Capabilities:** Interdepartmental relations, the ability to process information, the level of prior investment in marketing, employees and resources availability, autonomy and stakeholder power, support from the top management, data availability and market research (Clark et al., 2005; Järvinen & Karjaluoto, 2015; Morgan et al., 2002; Shaw & White, 1999; Zahay, Peltier, Schultz & Griffin, 2004) **b. Firm Strategy and Orientation:** Marketing strategy, organisational culture, organisational decision style, top management demands for accountability (Bennett, 2007; Järvinen & Karjaluoto, 2015; Lamberti & Noci, 2010; Ling-yee, 2011; Mintz & Currim, 2013; Morgan et al., 2002; Pauwels et al., 2009; Phillips & Halliday, 2008) **External Perspectives:** Environmental characteristics, task environment, industrial characteristics (Frösén et al., 2013; Lamberti & Noci, 2010; Mintz & Currim, 2013; Morgan et al., 2002; Pauwels et al., 2009)

2.4.5 Theme Five: The Consequences of MPMSs

The fifth major research theme in the marketing performance measurement area is the examinations of outcomes of MPMSs. Researchers have focused on different levels of analysis, but more research is required to explore how MPMSs lead to different firm performance. Studies on the contributions of MPMSs to firm performance are explained below.

Individual performance. Previous studies have investigated the impact of marketing controls on individual performance, especially the negative impact of tight marketing controls on employee

performance. A meta-analysis of studies on the impact of marketing controls on employee performance showed that process and output controls generally produced negative outcomes (Crosno & Brown, 2015). For example, Ramaswami (1996) found that both output and process controls were positively associated with employees' dysfunctional behaviours, e.g., unreliable reporting. These negative impact of marketing controls on individual performance has also been empirically supported by other studies (Grewal, Kumar, Mallapragada & Saini, 2013; Schepers, Falk, Ruyter, Jong & Hammerschmidt, 2012).

Departmental performance. One reason for measuring marketing performance is to enhance marketing accountability and to improve the stature of the marketing department within the firm. Hence, many studies have addressed the departmental outcomes of using marketing performance measures. For instance, Rust et al. (2004) and Park, Auh, Maher & Singhapakdi (2012) noted that marketing accountability raised the credibility of the marketing function within the firm. This was also reflected in the work of Verhoef & Leeflang (2009), which provided empirical evidence on the positive impact of marketing accountability on the internal legitimacy of the marketing department. The study concluded that the ability of marketing departments to measure marketing performance was directly and positively related to their influence within firms.

Another commonly examined outcome of the utilisation of marketing metrics is CEO's satisfaction with the marketing department. CEO satisfaction is regarded as a proxy of marketing's influence within the firm. O'Sullivan and his colleagues conducted two studies in America and Europe to examine how the ability to measure marketing performance could

influence CEO's satisfaction with the marketing department. The empirical results indicated that the capacity to measure marketing performance enabled the marketing department to improve its accountability, thus improving senior managers' satisfaction with the marketing department (O'Sullivan et al., 2009; O'Sullivan & Abela, 2007). These studies echoed the study by Clark et al. (2006), in which the ability to measure marketing performance, especially the ability to disseminate and interpret marketing metric information, was found to positively influence CEO's satisfaction with performance measurement.

In addition, marketing performance measurement can also facilitate the decision-making process. The Unisys Marketing Dashboard, for instance, is an example of a robust MPMS, which tracks and reports results to support organisational decisions (Miller & Cioffi, 2004). In the literature, it is argued that the ability to process marketing performance information may influence organisational learning, sensing-making and decision-making, specifically decisions regarding future spending plans and budget controls (Clark et al., 2005; Krush et al., 2013; Miller & Cioffi, 2004; Phillips & Halliday, 2008; Ryals & Knox, 2007). However, more empirical evidence is needed to support these arguments.

Firm performance. Marketing performance measurement improves marketing functions' legitimacy and facilitates decision-making, which in turn improves firm performance (Park et al., 2012; Rust et al., 2004). For instance, using data from a large multinational computer hardware and software manufacturer, Venkatesan & Kumar (2004) investigated the performance of customer selection strategy based on CLV. The empirical results indicated that firms that adopted a CLV-based customer selection strategy performed better than others regarding profit

generation. In a case study with IBM, Kumar, Venkatesan, Bohling & Beckmann (2008) also revealed that without changing the level of marketing investment, a firm that allocated its resources based on CLV might expect an increase in sales and revenues. These two studies give some evidence on the positive impact of the use of marketing metrics on financial performance via the marketing strategy implementation process.

A wide range of financial performance indicators has been used in studies on the relationship between marketing performance measurement and firm performance. For instance, sales, perceived performance relative to competitors, profitability and Tobin's Q have been used as proxies of financial performance in studies on the relationship between metric use and firm performance (Luoma et al., 2011; Mintz & Currim, 2013), between marketing performance measurement ability and firm performance (O'Sullivan & Abela, 2007; O'Sullivan et al., 2009) and between the marketing department's influence and business performance (Verhoef & Leeflang, 2009). Other non-financial performance, such as customer satisfaction, customer loyalty and market share, have also been used in studies linking marketing performance measurement ability to customer performance (Ling-yee, 2011; Ryals & Knox, 2007; Verhoef & Leeflang, 2009; Zahay et al., 2004).

***Mediators and Moderators*.** In addition to the examination of the direct outcomes of MPMSs, scholars have also been interested in addressing the mechanisms through which MPMSs affect business performance and the condition under which MPMSs can function better. Some find that the frequency of reporting and budgeting can mediate the relationship between MPMSs and firm performance (O'Sullivan et al., 2009). Others hold that the firm's ability to measure

marketing performance affect its motivation, thus leadings to superior performance outcomes (Clark et al., 2005). Other researchers utilised institutional theory to explain the mechanism through which MPMSs could influence firm performance. Empirical findings from 213 Dutch firms indicated that the marketing department's influence within the firm and market orientation might mediate the relationships between marketing accountability and business performance (Verhoef & Leeflang, 2009). MPMSs were also found to influence firm performance (e.g., ROI and market success) through their impact on strategic alignment and market knowledge (Homburg et al., 2012). A recent article demonstrated that the tacit knowledge exchange between sales and marketing could play a mediating role in connecting organisational initiatives and marketing success (Arnett & Wittmann, 2014). Variables, such as market learning (Krush et al., 2013; Morgan, 2012), individual and organisational learning (Kelly, 2007; O'Sullivan & Abela, 2007), opportunity exploitation and recognition (Webb, Ireland, Hitt, Kistruck & Tihanyi, 2011) and sense-making (Krush et al., 2013), have been recommended for future research on revealing the mechanisms through which MPMSs influence firm performance.

With regard to moderators, many scholars have called for research on the moderating effects of external factors (e.g., environmental turbulence and market dynamics) and firm-specific factors (e.g., firm size, strategy type and industry) on the MPMSs-performance relationships (Clark et al., 2006; Homburg et al., 2012; Park et al., 2012; Verhoef & Leeflang, 2009). The association between the accountability of the marketing department and firm performance is believed to be influenced by environmental turbulence (Park et al., 2012) and firm-specific factors, such as firm size, the business sector the firm belongs to, market orientation and strategic types (Homburg et al., 2012; Luoma et al., 2011; Mintz & Currim, 2015; O'Sullivan & Abela, 2007;

O'Sullivan et al., 2009; Verhoef & Leeflang, 2009). For example, the empirical study conducted by Homburg et al. (2012) showed that the positive relationship between the comprehensiveness of MPMSs and organisational performance was stronger if the company had a higher focus on the differentiation strategy or if it operated in a more dynamic environment.

A summary of the studies in theme five is displayed in Table 2.8. As shown in Table 2.8, previous key articles include Clark et al. (2006), Homburg et al. (2012), Krush et al. (2013), Mintz & Currim (2015), O'Sullivan & Abela (2007), O'Sullivan et al. (2009) and Park et al. (2012). Though these studies have revealed that marketing performance measurement practices have a positive effect on marketing department's stature within the firm, CEO's satisfaction with the marketing department (e.g., O'Sullivan & Abela, 2007) and business performance (e.g., Mintz & Currim, 2013; O'Sullivan & Abela, 2007), there is a dearth of research on the mechanism through which MPMSs influence firm performance.

Table 2.8 A summary of studies on theme five: the consequences of MPMSs

Key questions	Summary
Consequences	**Individual Performance:** Dysfunctional behaviours, employee performance (Crosno & Brown, 2015; Grewal et al., 2013; Ramaswami, 1996) **Departmental Performance:** Legitimacy of marketing within the firm (Park et al., 2012) Satisfaction with performance measures (Clark et al., 2005 & 2006; Hugh & Davidson, 1999; O'Sullivan & Abela, 2007; O'Sullivan et al., 2009) Decision-making performance, e.g., cost control, budget allocation, spending plans and alignment with corporate goals (Clark et al., 2005 & 2006; Krush et al., 2013; Ryals & Knox, 2007) **Firm Performance:** Customer satisfaction, customer loyalty, return on sales/assets, stock returns, turnover, profitability, revenue, cost level, market success and market share (Homburg et al., 2012; Krush et al., 2013; Kumar et al., 2008; Ling-yee, 2011; Luoma et al., 2011; O'Sullivan & Abela, 2007; O'Sullivan et al., 2009; Phillips & Halliday, 2008; Ryals & Knox, 2007; Verhoef & Leeflang, 2009; Zahay et al., 2004)
Mediators	Strategic alignment and market knowledge (Homburg et al., 2012) Sense-making (Krush et al., 2013) and learning (Clark et al., 2006) Frequency of reporting and budgeting (O'Sullivan et al., 2009) Willingness to collaborate with the marketing department (Park et al., 2012) Market orientation and marketing's influence within the firm (Verhoef & Leeflang, 2009)
Moderators	Task/marketing complexity, environmental turbulence and market dynamics (Clark et al., 2006; Homburg et al., 2012; Verhoef & Leeflang, 2009) Firm characteristics, e.g., market orientation, business sector and strategic type (Homburg et al., 2012; Mintz & Currim, 2015; O'Sullivan & Abela, 2007; O'Sullivan et al., 2009; Park et al., 2012; Verhoef & Leeflang, 2009)

As shown in Figure 2.3 (p. 26), studies in the marketing performance measurement literature

have mainly focused on the identification of key metrics in use and the measurement of brand equity and marketing performance. There are a relatively small number of studies on the consequences of MPMSs. In particular, no previous study has applied a systematic approach to explain how MPMSs drive firm performance, leaving a research gap to be filled in (Homburg et al., 2012; O'Sullivan & Abela, 2007; O'Sullivan et al., 2009). The Marketing Science Institute has called for more research on marketing performance measurement practices due to their contributions to marketing resource allocations and the effectiveness of marketing functions (MSI, 2014). Furthermore, from a practical point of view, more studies are warranted to explain why marketing performance measurement practices are beneficial to companies and why companies need to invest in resources to improve their marketing performance measurement practices (Bonoma & Clark, 1988; O'Sullivan & Abela, 2007). Research models that take into account the indirect and contingent effects of MPMSs on firm performance are advocated (Homburg et al., 2012; O'Sullivan et al., 2009).

2.4.6 Key Research Gaps

A review of studies in the marketing performance measurement literature shows several avenues for future research.

First, despite the extensive studies on the characteristics of MPMSs, most studies still centre around marketing metrics, rather than the measurement system per se. More research is needed to reveal the attributes of MPMSs in order to improve the understanding of MPMSs beyond simple marketing metrics (Loning & Besson, 2002). For example, the comprehensiveness and measurement quality of MPMSs have been overlooked and need further investigation (Chenhall

& Morris, 1986; Homburg et al., 2012; Ittner & Larcker, 2001).

Second, given the increasing pressure on marketers to justify their marketing spending, scholars have called for more research on the relationships between marketing and firm performance. Longitudinal research designs are advocated in order to provide a better understanding of how marketing activities, resources and assets contribute to firm performance (Rust et al., 2004; Stewart, 2009). For example, the role of customer metrics in explaining the chain of effects of marketing actions on firm performance needs in-depth investigation (Srinivasan et al., 2010; Srinivasan & Hansses, 2009; Stewart, 2009). In addition, the incorporation of moderators into the marketing-firm performance model is also a promising area for future research (Rust & Huang, 2012; Venkatesan & Kumar, 2004; Verhoef, 2003).

Third, there are opportunities for researchers to examine potential mediators and moderators that can help explain the rationale behind the MPMSs-firm performance linkage (O'Sullivan & Abela, 2007; Pauwels et al., 2009). More comprehensive models that "take into account indirect effects (of MPMSs) on firm performance and contingent factors" are needed in empirical studies (Homburg et al., 2012, p. 57). For instance, it may be worthwhile to investigate the possible mediating role of organisational learning, tacit knowledge exchange, knowledge creation and other marketing capabilities in explaining the MPMSs-performance linkage (Arnett & Wittmann, 2014). Further, the contingent effects of environmental factors have rarely been explored in the MPMSs-performance linkage, leaving a void to be filled in.

Fourth, in the marketing performance measurement literature, most research has been conducted in advanced industrial countries, such as the UK (Ambler et al., 2001), the US (Homburg et al.,

2012) and Germany (Barwise & Farley, 2004). Research in other contexts, such as small open economies (e.g., Ireland), is also needed (Bradley, Gao & Sousa, 2013; O'Sullivan, 2007). Therefore, an investigation into how firms can benefit from using MPMSs to improve firm performance in various settings is warranted.

2.5 Chapter Summary

This chapter started with a detailed description of the literature review methodology and the literature review process. Based on the 135 key articles published in top journals, this study investigated major terms and constructs in the marketing performance measurement literature. Five main research themes were identified and analysed in detail. These major research themes included studies on the contribution of marketing activities to the bottom line, on the characteristics of MPMSs, on the interrelationships between marketing metrics and on the antecedents and consequences of MPMSs. The chapter ended with a description of four research gaps identified in the marketing performance measurement literature.

Consistent with O'Sullivan & Abela (2007) and Frösén et al. (2013), this literature review finds that most studies in the marketing performance measurement literature have focused on the identification and selection of marketing metrics. Little research has been conducted to understand the outcomes of MPMSs. Especially, there is a dearth of research on the indirect and contingent effects of MPMSs on firm performance (Homburg et al., 2012). The literature review suggests that the effects of MPMSs on firm performance merit more consideration. This study seeks to fill this research gap. The next chapter reviews DC and contingency theories to explore the indirect and contingent effects of MPMSs on firm performance.

Chapter 3 Theoretical Foundation and Conceptual Framework

3.1 Introduction

This chapter aims to identify and evaluate relevant theories that can help explain the effects of MPMSs on firm performance. This study holds that DC theory is particularly suitable to explain how and under what conditions MPMSs drive firm performance. The reasons for applying DC theory in this study are illustrated in this chapter. Drawing on DC theory, another key concept – the use of MPMSs – is also introduced and reviewed. Since DC theory emphasises the interaction between management practices and the environment, contingency theory is also reviewed in order to explore the potentially moderating effects of contingent factors on the effectiveness of MPMSs. The chapter concludes with a presentation of key constructs and the research framework.

3.2 Dynamic Capabilities Theory

To answer the question of how management practices lead to different organisational outcomes, DC theory is believed to provide promising explanations. For instance, a number of studies has theoretically or empirically investigated the effect of management practices on firm performance through their impact on organisational capabilities, such as innovation capability (Hooley, Greenley, Cadogan & Fahy, 2005; Merrilees, Rundle-Thiele & Lye, 2011), marketing capabilities (Morgan, Slotegraaf & Vorhies, 2009; Morgan, Zou, Vorhies & Katsikeas, 2003; Ngo & O'Cass, 2012; O'Cass & Weerawardena, 2010; Song, Benedetto & Nason, 2007; Vorhies et al., 2011), implementation capability (White, Conant & Echambadi, 2003) and adaptive capability (Zhou & Li, 2010). The following sections review the development of DC theory, explain the reasons for applying DC theory in the current study and identify several marketing capabilities that are closely related to MPMSs.

3.2.1 The Development of Dynamic Capabilities Theory

3.2.1.1 The Competitive Forces and Strategic Conflict Theory

In answering the question of how superior firm performance is achieved, the competitive forces approach (Porter, 1980) and the related strategic conflict approach (Shapiro, 1989) were the dominant paradigms in the literature prior to the wide adoption of the RBV and DC theory (Day, 1994; Teece et al., 1997). The competitive forces and strategic conflict theories share the view that strategic advantages come from privileged market positions.

Competitive forces theory is rooted in the structure-conduct-performance approach, which emphasises the importance of firms' ability to find or create defensible positions to reduce competitive rivalries (Porter, 1991). The extent of competition from the five industry-level forces, namely, entry barriers, threats of substitution, bargaining power of buyers, bargaining power of suppliers and existing rivalries in the marketplace where the firm chooses to compete, is believed to be a determinant of firm performance. Therefore, according to Porter (1980, 1985), superior performance can be achieved by entering a marketplace where the competition and potential threats are relatively low. It is also recommended that companies conduct industry analysis and market selection in order to survive in the marketplace (Porter, 1980, 1985).

Contrary to the reactive mechanism proposed by the competitive forces theory, strategic conflict theory addresses a relatively proactive mechanism. This theory claims that the interaction between competitors can influence behaviours and actions of rival firms through signalling (Shapiro, 1988). Hence, it advocates the use of game theory to analyse the competitive interaction between rival companies (Teece et al., 1997). This perspective is more dynamic and proactive in the sense that it takes the reactions of rival companies into consideration. However, critics also argue that this approach is only useful when the competitors can be closely and accurately matched (Teece et al., 1997).

3.2.1.2 The Resource-Based View

The competitive forces theory has been criticised for emphasising only competitive intensity and market segmentation but ignoring how company-specific characteristics can influence firm

performance (Day, 1994). This criticism has led to an advocacy of the resource-based view, which is used to explain how firm-level factors influence firm performance. This view conceptualises firms as bundles of valuable, scarce, inimitable and non-substitutable resources (Barney, 1991). It posits that superior firm performance is achieved when companies possess certain resources that can enable them to create sustained competitive advantages. The sustained competitive advantages in the RBV literature are featured as the inability of other firms to substitute or imitate the resources on which the firm has based its strategies.

Two fundamental assumptions exist in the RBV literature to explain how organisational resources generate competitive advantages and why some firms outperform others. First, the resource heterogeneity assumption argues that resources or capabilities are not evenly distributed across firms. Some firms outperform others because they possess unique resources that can help them accomplish tasks more effectively (Peteraf & Barney, 2003). The second assumption, referred to as the resource immobility assumption, further argues that resources are not easy to transfer across firms (Peteraf & Barney, 2003). Thus, competitive advantages resulting from heterogeneous resources may persist over time (Kozlenkova, Samaha & Palmatier, 2014). Combining these two assumptions, the RBV advocates that some companies perform better because they possess valuable resources, which can create long-lasting competitive advantages.

Based on the above two assumptions, the RBV strongly recommends that companies acquire valuable resources that can create sustained advantages. Barney (1991) developed a framework to evaluate whether a resource had the potential to generate competitive advantages. Barney and Hesterly (2012) further refined this framework and argued that only resources that were valuable, rare, imperfectly imitable and exploitable by the organisation could create competitive advantages. A resource is deemed to be valuable if it enables companies to exploit opportunities or mitigate external threats (Barney, 1991; Barney & Hesterly, 2012). However, possessing a valuable resource is not sufficient to develop competitive advantages if other competing companies can also possess this resource. Thus, the second condition in the framework suggests that a resource should be rare in order to create competitive advantages (Barney, 1991; Barney

& Hesterly, 2012). A resource is rare if it is only possessed by a relatively small amount of companies. This rare resource can thereby generate superior outcomes for companies (Bowman & Ambrosini, 2003). However, if a resource is valuable and rare, but relatively easy to duplicate, it then only creates short-term competitive advantages for companies. Therefore, the third condition in the framework argues that a resource has to be inimitable or imperfectly imitable to create sustained competitive advantages. The resource is imperfectly imitable if it is costly to acquire or develop for competing companies (Barney, 1991; Barney & Hesterly, 2012). An inimitable resource can create long-lasting competitive advantages because without it, other companies are less likely to obtain it through duplication or substitution (Kozlenkova et al., 2014). In addition, the framework indicates that the valuable, rare and inimitable resource can create competitive advantages only if an organisation can exploit the full potential of its capacity (Barney & Hesterly, 2012). Thus, the organisation per se can be a key factor that influences the effectiveness of its valuable, rare and imperfectly imitable resources.

To conclude, the RBV emphasises the identification of key resources that can create sustained competitive advantages. However, the RBV has been criticised for its inability to explain how resources are deployed to achieve competitive advantages and create value in different contexts (Newbert, 2007; Priem & Butler, 2001; Srivastava, Fahey & Christensen, 2001). This criticism leads to the development of DC theory.

3.2.1.3 Dynamic Capabilities Theory

The DC framework was proposed by Teece et al. (1997) to address the interaction between marketing resources or capabilities and the changing environment. Dynamic capabilities are defined as "the firm's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments" (Teece et al., 1997, p. 516). The term "dynamic" refers to "the capacity to renew competencies so as to achieve congruence with the changing business environment" (Teece et al., 1997, p. 515), while "capabilities" refer to the role of management process in "appropriately adapting, integrating and reconfiguring internal and external organisational skills, resources and functional competencies to match the requirements of a changing environment" (Teece et al., 1997, p. 515). Helfat et al. (2007) also

defined dynamic capabilities as “the capacity of an organisation to purposefully create, extend, or modify its resource base” (Helfat et al., 2007, p. 4). Generally, scholars consider the nature of dynamic capabilities to involve an ability to coordinate, build and reconfigure both internal and external competences (Barreto, 2010; Teece et al., 1997).

As indicated in a review paper by Kozlenkova et al. (2014), some researchers view DC theory and the RBV as two separate and distinctive theories, while others regard DC theory as an extension of the RBV. In line with Peteraf & Barney (2003) and Kozlenkova et al. (2014), this study also argues that DC theory is consistent with the RBV and should not be considered as a stand-alone theory. First, in line with the RBV, DC theory also argues that some companies outperform others because they possess and deploy their unique resources advantageously. It is argued that both resources and capabilities should be used to explain firm performance variance, and that resources and capabilities may interact with each other in determining firm performance (Helfat, 1997; Morgan, 2012; Teece et al., 1997). Second, while the RBV places an emphasis on exploitation-based capabilities, DC theory extends the RBV framework by addressing the balance between exploitation- and exploration-based capabilities (Weerawardena, Mort, Salunke, Knight & Leisch, 2015). Exploitation-based capabilities refer to capabilities that focus on the improvement of existing processes, routines and marketing capabilities, while exploration-based capabilities represent capabilities that are associated with the development of new skills, processes and competences (Kyriakopoulos & Moorman, 2004). DC theory maintains that competitive advantages come not only from the exploitation of existing firm-specific resources or capabilities, but also from the exploration of new capabilities that enable companies to respond to changes in their business environment (Day, 2011; Teece et al., 1997). Third, as explained in the previous section, the RBV has been criticised for being static given that this view fails to address how companies perform differently in different contexts (Maklan & Knox, 2009; Wang & Ahmed, 2007). DC theory extends the RBV by addressing the interaction between capabilities and the dynamic environment. DC proponents assert that companies require complementary capabilities in order to deploy these resources in a way that addresses and matches the dynamic environment (Helfat & Raubitschek, 2000;

Newbert, 2007; Teece et al., 1997). In particular, DC theory addresses the impact of the changing external environment (Barreto, 2010).

It is assumed in DC theory that dynamic capabilities are typically built within the organisation rather than bought in from other organisations (Barreto, 2010). DC theory asserts that there are two possible ways in which managerial processes[9] are associated with marketing capabilities. Processes are mechanisms by which capabilities are embedded within the organisation, or by which organisations develop or deploy capabilities (Day, 1994; Helfast et al., 2007). Just as Day (1994) has commented that "[c]apabilities are the glue that brings these assets [market-based resources] together and enables them to be deployed advantageously… and are so deeply embedded in the organisational routines and practices that they cannot be traded or imitated", DC theory emphasises the role of management processes in developing, deploying and integrating resources within the firm (Day, 1994, p. 38). Theoretical studies posit that the product development process, performance measurement systems and knowledge creation routines are foundations of the development of dynamic capabilities (Eisenhardt & Martin, 2000; Helfat et al., 2007; Teece, 2007). However, this growing body of research on conceptual frameworks describing the antecedents of marketing capabilities is not mirrored in previous empirical studies. Only limited empirical studies have been conducted to investigate how the investment in organisational systems influences the enhancement of marketing capabilities (Chang, Park & Chaiy, 2010; Zollo & Winter, 2002). Hence, there is a dearth of empirical research on where marketing capabilities originate from, or what organisations should invest in to improve these capabilities (Ethiraj et al., 2005; Vorhies et al., 2011).

In addition, DC theory maintains that, in order to achieve better firm performance, organisational resources must be deployed, adapted, integrated and properly configured , e.g., in a way that aligns resources with the changing environment (Teece et al., 1997; Zahra, Sapienza & Davidsson, 2006). Recent DC studies argue that these organisational systems are beneficial to

[9] "Process" refers to a logic that explains a causal relationship, or a category of concepts regarding actions, or a sequence of events in relation to change over time (Van de Ven & Poole, 1995, p. 512).
As Helfast et al. (2007) indicate, regardless of the different definitions of process, a common aspect is that process addresses "how" questions. For instance, the uses of MPMSs can be considered as processes that address how to use measurement information for different purposes.

companies and that the way companies utilise these systems is also significant for the improvement of firm performance (Chang et al., 2010; Grafton, Lillis & Widener, 2010; Henri, 2006a). For example, Chang et al. (2010) investigated how customer-centric management systems (e.g., CRM systems) might influence firm performance. They found that these systems positively influenced CRM technology use, thus improving marketing capability and firm performance. Their research findings indicated that only if the CRM system was used to support sales, service and data analysis, could it positively influence marketing capabilities and firm performance. Their results are in line with the emphasis in the DC literature on how companies utilise organisational processes (Teece et al., 1997). Drawing on this argument in the DC literature, it is argued that MPMSs positively influence firm performance and that the way companies utilise MPMSs also matters. Therefore, the concept – the use of MPMSs – is also included in this study, details of which are provided in Section 3.3.

3.2.1.4 Justifications for Applying Dynamic Capabilities Theory

This study holds that DC theory is suitable to explain why and how companies adopting MPMSs perform better than others. The reasons are threefold.

First, as argued earlier, DC theory is usually applied to explain variations in firm performance since it maintains that some firms outperform others because they are more capable of developing, deploying and integrating resources to cope with the external environment (Day, 1994, 2011). It also argues that management practices serve as the mechanism through which firms develop or deploy capabilities (Helfat et al., 2007). Previous studies on the mediating effects of capabilities on the practices-performance relationships support such arguments in different contexts (e.g., Chang et al., 2010; Grafton et al., 2010; Henri, 2006a). Therefore, this study posits that companies that employ comprehensive MPMSs with good information quality perform better because these companies are more capable of developing marketing capabilities.

Second, previous studies have revealed associations between MPMSs and the antecedents of marketing capabilities, e.g., market knowledge, organisational learning and market orientation (Clark et al., 2006; Homburg et al., 2012; Verhoef & Leeflang, 2009). In taking from these

empirical studies, it is worthwhile to integrate marketing capabilities in the MPMS-performance model to explore how MPMSs contribute to firm performance through the lens of capabilities development. For example, knowledge creation routines are believed to be essential in the development of marketing capabilities (Bruni & Verona, 2009; Eisenhardt & Martin, 2000). Studies in the MPMS literature show that MPMSs increase organisations' market knowledge (Homburg et al., 2012), which can be significantly related to the development of customer-focused capabilities and architectural marketing capability (Vorhies et al., 2011; White et al., 2003). Therefore, this study posits that the use of MPMSs can be linked to the development and enhancement of certain marketing capabilities.

Third, DC theory takes into account the effect of contingencies and emphasises the joint effect of resources and the environment on firm performance. This echoes the call for the inclusion of contingent effects in empirical studies on the impact of MPMSs on firm performance (e.g., Homburg et al., 2012; Ittner & Larcker, 2001). In the marketing performance measurement literature, it has been argued that the design and effectiveness of MPMSs rely on contingent factors and that future empirical studies should consider the contextuality of MPMSs (Frösén et al., 2013; Morgan et al., 2002). However, most such studies have focused on examining how contingent factors (e.g., industry and environmental turbulence) influence the design or use of MPMSs. More studies are needed to explore how contingencies may influence the effectiveness of MPMSs in improving firm performance. Therefore, the application of DC theory in the current study can help explain how marketing performance measurement practices can interact with the changing environment to influence firm performance.

Based on the above arguments, this study uses DC theory as the fundamental theoretical framework for structuring the analysis of the mechanism through which MPMSs drive firm performance. It posits that MPMSs indirectly influence firm performance via their impacts on the development of marketing capabilities. Companies that employ more comprehensive MPMSs with better information quality perform better because they are more capable of developing marketing capabilities. In an MPMS context, this study identifies a set of marketing capabilities that can provide a promising explanation of firm performance variations and is

highly related to the use of MPMSs. In addition, DC theory also argues that management practices are effective only if they are properly deployed or utilised (Teece et al., 1997). Following this argument, this study assumes that it is worthwhile to examine the impact of the use of MPMSs on their effectiveness. This assumption is consistent with the management control literature, which claims that management control systems "do not automatically improve firm performance" and that "it is the way these systems are designed, developed, and, more importantly, used that brings about performance improvement" (Franco-Santos, Lucianetti & Bourne, 2012, p. 96). Therefore, the current study further posits that MPMSs may have a different impact on the development of marketing capabilities when they are used differently.

3.2.2 Marketing Capabilities and their Typologies

From a DC perspective, capabilities are bundles of skills or knowledge that are accumulated through various organisational processes, such as training, databases, management systems and organisational value and norms (Day, 1994). The marketing literature identifies various conceptualisations and taxonomies of marketing capabilities. To clarify different types of marketing capabilities in the DC literature, several well-recognised taxonomies by Day (1994), Song et al. (2007), Vorhies & Morgan (2003), Vorhies, Morgan & Autry (2009), Day (2011) and Morgan (2012) are introduced. This section compares and seeks to somewhat clarify these typologies of marketing capabilities. Based on the typologies of Day (1994, 2011) and Morgan (2012), five marketing capabilities are selected to explain how MPMSs drive firm performance. The reasons for selecting these marketing capabilities are also provided at the end of this section.

Day (1994) proposed a market-based capabilities model. He explicated the importance of marketing capabilities in attaining competitive advantages and classified the well-recognised marketing capabilities into three categories, namely, inside-out capabilities, spanning capabilities and outside-in capabilities. The inside-out capabilities refer to capabilities embedded within the company that serve functional purposes, e.g., cost control, financial management and human resources management. Such capabilities are easier to identify because of their visibility and prevalence within the company (Day, 1994). The outside-in capabilities

reflect capabilities that enable companies to compete by anticipating market changes, e.g., market-sensing, customer-linking and technology monitoring. Spanning capabilities, such as customer order fulfilment, purchasing and strategy development, are needed to integrate the inside-out and outside-in processes. Companies possessing outside-in capabilities are thought to be market-driven companies and perform better in the dynamic market (Day, 1994).

Another widely recognised typology was provided by Song et al. (2007). According to their typology, marketing capabilities and market-linking capabilities are regarded as two of the important company-level capabilities that help firms sustain competitive advantages and achieve superior firm performance, with the former denoting the knowledge, skills and resources in the marketing mix and the latter addressing the competences and skills needed to deal with stakeholders and the external environment. A similar category was addressed by the work of Chen, Li & Arnold (2013), in which the marketing capability and market-linking capability were regarded as market-relating capabilities.

At a more focused and narrowed level, there are several different taxonomies of marketing capabilities. For example, Vorhies & Morgan (2003) and Vorhies et al. (2009) divided marketing capabilities into specialised marketing and architectural marketing capabilities. Specialised marketing capabilities are associated with specific marketing mix-related routines, while architectural marketing capabilities involve the marketing strategy formulation- and implementation-related routines (Vorhies & Morgan, 2003). In their framework, specialised marketing capabilities are consistent with Song et al.'s (2007) "marketing capabilities". However, a parallel cannot be drawn here between architectural marketing capabilities and "market-linking capabilities".

Day (2011) addressed the issues of the widening gap between complex markets and firms' abilities to cope with this market complexity. He pointed out that the inside-out perspective of capabilities had hampered DC theory and argued that firms should balance exploitation- and exploration-based capabilities. He proposed a capability matrix to combine both the inside-out and outside-in capabilities and exploitation- and exploration-based capabilities, arguing that, in

order to deal with the massive data explosion and to adapt to dynamic environments, firms also need to use outside-in capabilities to explore new opportunities.

Morgan (2012) subsequently noted that most studies in the marketing literature had focused on firm-level capabilities and overlooked specific marketing capabilities. As a result, he identified lower-level knowledge-based marketing capabilities and extended Vorhies et al.'s (2009) framework by identifying another two groups of marketing capabilities, namely, dynamic marketing capabilities and cross-functional marketing capabilities. In Morgan's (2012) classification, dynamic marketing capabilities denote a firm's ability to "engage in market-based learning and use the resulting insight to reconfigure the firm's resources and enhance its capabilities in ways that reflect the firm's dynamic market environment" (p. 108), whereas cross-functional marketing capabilities refer to the integrative use of several different specialised capabilities (e.g., product management, selling and market research). This classification is consistent with both Day's (1994) market-based capabilities and his capability matrix framework.

As Day (1994) himself comments, "[i]t is not possible to enumerate all possible capabilities because every business develops its own configuration of capabilities that is rooted in the realities of its competitive market, past commitments and anticipated requirements" (p. 40). It is beyond the scope of this study to include every possible marketing capability that could be used to explain the relationship between MPMSs and firm performance. However, based on the work of Day (1994, 2011) and Morgan (2012), this study identifies several distinct marketing capabilities that are rooted in the outside-in and inside-out processes to exploit or explore opportunities (Figure 3.1). Such capabilities are viewed as contributing to business performance. These marketing capabilities are architectural marketing capability, market- and relationally-focused organisational learning capability, market-linking capability and adaptive marketing capability, and are of special interest for the following reasons.

Figure 3.1 Day (2011)'s marketing capability framework

Function / Orientation	**Exploitation**	**Exploration**
Inside-out Capabilities	**Resource-Based View** • Architectural marketing capability	**Dynamic Capabilities** • Market-focused learning capability • Relationally-focused learning capability
Outside-in Capabilities	**Market-Based Capabilities** • Market-linking capability	**Adaptive Capabilities** • Adaptive marketing capability

* Template and categories adopted from Day (2011, p. 187), Day (1994) and Morgan (2012).

First, only specific marketing capabilities are selected in the current study. As Morgan (2012) has argued, "[w]hile marketing capabilities have received greater attention recently, most work in this area focuses on a firm's overall marketing capabilities and fails to identify the specific capabilities that make up the overall capability" (p. 114). As such, there is a dearth of research on specific marketing capabilities, especially on how these marketing capabilities originate and how they lead to different firm performance (Ethiraj et al., 2005; Morgan, 2012). Therefore, to echo the call for studies on specific marketing capabilities, this work investigates the role of five specific marketing capabilities in the link between MPMSs and firm performance and posits that these marketing capabilities bridge the association between the use of MPMSs and firm performance. In addition, DC theory argues that firms need to balance their exploration- and exploitation-based capabilities to survive in an ever-changing business environment (Day, 2011; Teece et al., 1997; Weerawardena et al., 2015). Therefore, both exploitation- and exploration-based capabilities are included in this study.

Second, architectural marketing capability is highlighted because of its vital role in the improvement of firm performance. Evidence has shown that firms with better architectural marketing capability are more likely to outperform others due to their strong skills in anticipating (planning capability) and responding (implementation capability) to environmental changes (Chang et al., 2010; Morgan et al., 2003; Slotegraaf & Dickson, 2004). Chang et al.

(2010) have indicated that architectural capability is one of the most prominent capabilities, as it might have a stronger impact on firm performance than other specialised capabilities. MPMSs are commonly used in the strategy process, e.g., to reflect marketing strategies and communicate marketing strategies to the lower level of the organisation (Lamberti & Noci, 2010; Morgan et al., 2002). Thus, it is reasonable to connect MPMSs with architectural marketing capabilities.

Third, this study also focuses on market-based capabilities. Recent studies have shown an increase in the emphasis on the creation and enhancement of market-based capabilities, which are believed to contribute to firm performance (Day, 1994; Gupta et al., 2004; Merrilees et al., 2011; Song et al., 2007). A shift from the traditional make-and-sell strategies to sense-and-respond strategies also addresses the importance of market-sensing capabilities in the performance of an organisation (Day, 1994; Jayachandran, Hewett & Kaufman, 2004). This is accompanied by a corresponding emphasis on market-based assets and capabilities, e.g., market-sensing and customer-linking (Ramaswami, Srivastava & Bhargava, 2009). Therefore, this study also investigates the impact of MPMSs on market-linking capability.

Fourth, as globalisation, new technologies and greater information transparency are reshaping the business environment, there is an urgent need for firms to develop their exploration-based capabilities (e.g., organisational learning capability and adaptive marketing capability) to adapt to an increasingly dynamic environment (Day, 2011; Reeves & Deimler, 2011). Thus, management practices have shifted from a purely economic to an information- and knowledge-based focus (Hayes, Pisano, Upton & Wheelwright, 2005; Kaplan & Norton, 2001). Organisational learning capability and adaptive marketing capability have been cited as necessary capabilities of well-managed and high-performing companies (Ulrich & Smallwood, 2004). Performance measurement and benchmarking help companies build their knowledge capacity, thus positively influencing organisational learning capability (Zairi & Ahmed, 1999). Adaptive marketing capability relies on frequent experiments and continuous learning from the market, as well as the development of a warning system (Day, 2011). Therefore, an exploration of the relationship between MPMSs, organisational learning and adaptive marketing capability

is warranted. A summary of the definitions of the above five marketing capabilities is provided in Table 3.1.

3.2.3 Summary

This section reviewed different theories that have been used to explain the variations in firm performance in the marketing literature, in which DC theory, in particular, was evaluated. The reasons for applying DC theory in this study were explicated. Based on the existing literature (e.g., Day, 1994, 2011; Morgan, 2012), five types of marketing capabilities were identified as key mediators that could be used to explain how the uses of MPMSs were transformed into different firm performance. As argued earlier, DC theory holds that the way companies utilise their practices or systems also influences the effectiveness of these practices or systems. The following section reviews the use of MPMSs in detail.

Table 3.1 Definitions of different types of marketing capabilities

Variables	Definition
Dynamic capabilities	"The firm's ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 1997, p. 516)* "The capacity of an organisation to purposefully create, extend or modify its resource base" (Helfat et al., 2007, p. 4)
Marketing capabilities	Skills or knowledge that are accumulated through organisational processes, such as training, databases, management systems and organisational value and norms (Day, 1994)*
Architectural marketing capability	Planning-related capabilities that are involved in selecting strategic marketing objectives, and implementing-related capabilities that are associated with the achievement of marketing strategies (Slotegraaf & Dickson, 2004; Vorhies & Morgan, 2005)*
Market-linking capability	A firm's ability to "create and retain durable relationships with customers and suppliers and establish strong bands with channel members" (Chen et al., 2013, p. 1183) A firm's ability to sense, detect and anticipate market changes, create and maintain durable relationships with customers and create and retain strong connections with channel members (Day, 1994; Song et al., 2007)*
Market-focused learning capability	"The capability of the firm to acquire, disseminate, unlearn and use market information for organisational change" (Weerawardena, O'Cass & Julian, 2006, p. 39)*
Relationally-focused learning capability	"The capacity and extent an organisation acquires knowledge through external linkages or networks, and disseminates, unlearns and uses such knowledge for organisational change" (Weerawardena et al., 2006, p. 39)*
Adaptive marketing capability	A firm's ability to "reconfigure resources and coordinate processes promptly and effectively to meet rapid environmental changes" (Zhou & Li, 2010, p. 225)*

*: Definitions used in the current study

3.3 The Use of MPMSs

Based on DC theory, researchers note that an enhanced understanding of how MPMSs improve firm performance may be obtained by investigating the use of MPMSs, rather than their design or mere existence (Arjaliès & Mundy, 2013; Henri, 2006a; Simons, 1995). However, less previous research has investigated the use of MPMSs. As Henri (2006a, p. 538) has commented,

> "*No specific hypotheses supporting a direct relationship between performance measurement system use and performance have been formulated. Despite the fact that prior research has examined the relationship between management control systems and performance using a notion of fit to the context of the organisation, and despite the fact that another line of research has supported a positive relationship between the design of performance measurement systems [comprehensive systems] and performance, the exact nature of the relationship between the use of performance measurement systems and performance remains ambiguous.*"

DC theory posits that management practices influence firm performance through the way that firms utilise these practices. Some studies support the view that such uses should be considered as vital mediators in the relationship between practices and firm performance, e.g., the "practices-resources-uses-outcomes" framework developed by Fu (2013) and the "sources-uses-outcomes" framework of Soo, Devinney, Midgley, France & Deering (2002). Even though no previous studies have investigated how the use of MPMSs mediates the relationship between MPMSs and marketing capability, previous studies do support a positive relationship between the use of performance measurement systems and innovation (Bisbe & Otley, 2004) and the development of organisational capabilities (Henri, 2006a). Therefore, this study argues that MPMSs influence the development of marketing capabilities and improvement of firm performance through the intervening role of the use of MPMSs.

This section reviews the concept of the use of MPMSs borrowed from the management control literature and compares various classifications of the use of MPMSs to address their similarities and differences. In particular, two types of uses of MPMSs, i.e., the diagnostic use of MPMSs and the interactive use of MPMSs, are identified and explored in detail.

3.3.1 Typologies of the Use of MPMSs

Only effectively implemented MPMSs can lead to significant performance improvement (Bititci, Mendibil, Nudurupati, Garengo & Turner, 2006). If managed in a way that fosters organisational dialogue, increases the marketing department's influence, facilitates strategic decision-making and enhances problem-solving, MPMSs can be effective in improving firm performance.

Different taxonomies of the ways that firms use control systems are identified in the management control literature. Important classifications include those by Simon, Guetzkow, Kozmetsky & Tyndall (1954), Burchell, Clubb, Hopwood, Hughes & Nahapiet (1980), Simons (1995) and Henri (2006b). Simon et al. (1954) classified the use of accounting information systems into three categories: score card, problem solving and attention directing. This classification mainly focused on the internal uses of management systems. A similar taxonomy was addressed by Burchell et al. (1980), who grouped the use of control systems into four categories: answer machine, learning machine, ammunition machine and rationalisation machine. Burchell's framework focused on how accounting systems were deployed in management practices, and especially their roles in the decision-making process.

Another widely recognised classification is Simons' (1995) four levers of management control framework, which categorised the use of control systems into four groups: diagnostic use, interactive use, boundary systems and belief systems. He argued that the traditional diagnostic use of marketing control systems was not adequate to ensure effective management controls and that firms needed belief systems to empower and encourage employees, boundary systems to establish rules and constrain undesired behaviours and interactive control systems to focus attentions and respond properly. In Simons' framework, the diagnostic and interactive uses of marketing control systems were associated with formal controls, e.g., MPMSs; whereas the boundary systems and belief systems were more related to informal controls, e.g., peer influence and organisational culture.

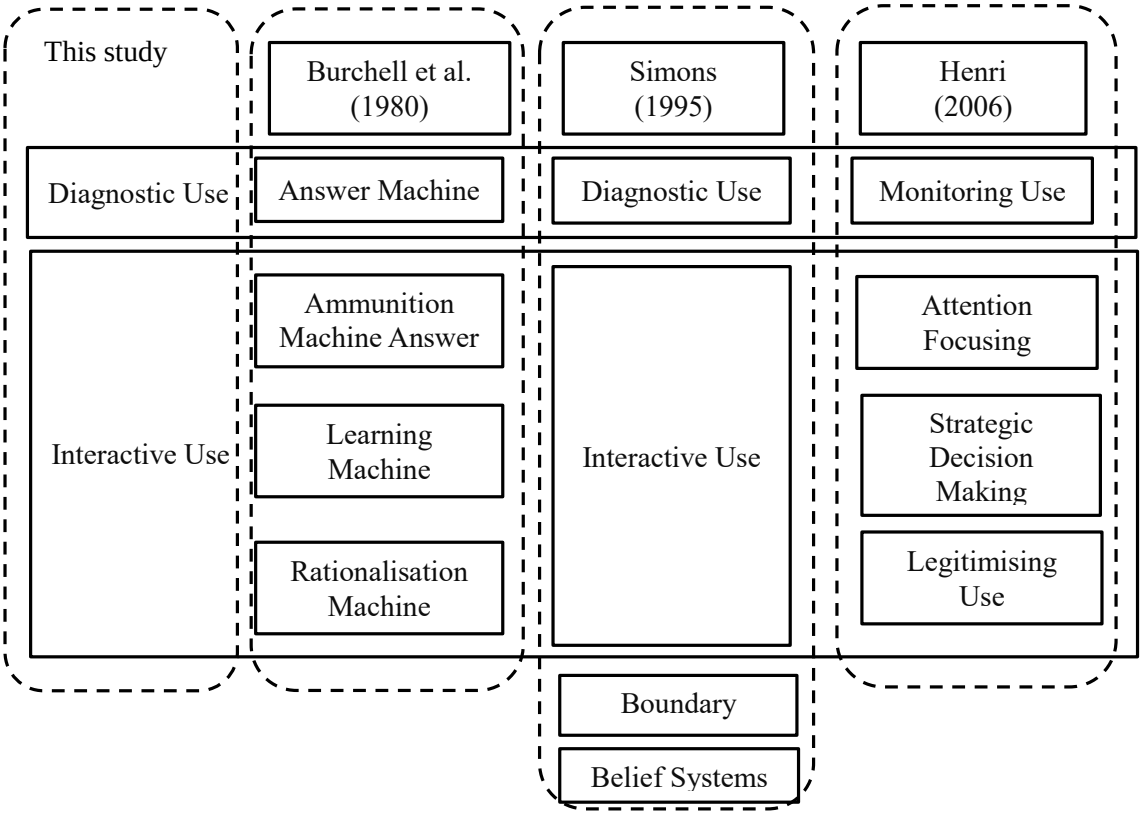
Henri (2006b) further extended Simons' (1995) model and identified four categories of use: monitoring, attention focusing, strategic decision-making and legitimising. Monitoring use refers to the way firms use control systems to benchmark and monitor marketing performance, while the attention-focusing use, strategic decision-making use and legitimising use of control systems are mainly associated with the decision-making process of organisations. Henri's (2006b) framework placed emphasis on the use of formal controls, i.e., performance measurement systems. Following Henri (2006a, 2006b) and Simons (1995), the diagnostic and interactive uses of MPMSs are investigated in the current study. These two types of use have been identified by Simons (1995) and widely recognised by other studies. Table 3.2 illustrates some key classifications in the literature and their applications in other studies.

As shown in Table 3.2, many studies in the management control literature have employed Simons' (1995) levers of control model to address and analyse the effects of performance measurement systems on firm performance (e.g., Arjalies & Mundy, 2013; Bisbe & Otley, 2004; Henri, 2006a). As noted in a recent paper by Spekle & Verbeeten (2014), the major differences between different taxonomies of the use of performance measurement systems rely on the number of roles identified and the boundaries between these roles. Despite the various terminologies used by different authors, these widely embraced classifications are all associated with each other. Figure 3.2 summarises the taxonomy that the current study uses and demonstrates its relation to the other classifications discussed in the section.

Table 3.2 Various classifications of the use of MPMSs and their applications

Studies	Classification	Application
Burchell et al., 1980, p.14-15	***Answer machines:*** "…the simple investment appraisal methods, stock control systems and credit control routines which grace many management accounting texts." ***Learning machines:*** "…access facilities, ad hoc analyses, what-if models and sensitivity analyses." ***Ammunition machines:*** "…interested parties seek to promote their own particular positions." ***Rationalisation machines:*** "…legitimise and justify actions that already have been decided upon, in such circumstances and accounting for the past can have a rather particular organisational significance and value."	(Henri, 2006b; Vandenbosch, 1999)
Simons, 1995 p.24-39	***Diagnostic use:*** "help[s] managers track the progress of individuals, departments or production facilities toward strategically important goals." ***Beliefs systems:*** "…the explicit set of organisational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose and direction for the organisation." ***Boundary systems:*** "…delineate the acceptable domain of strategic activity for organisational participants." ***Interactive use:*** "use to involve themselves regularly and personally in the decision activities of subordinates."	(Arjaliès & Mundy, 2013; Bisbe & Otley, 2004; Marginson, 2002; Mundy, 2010)
Henri, 2006b p.80-81	***Monitoring:*** " a feedback system relying on a cybernetic logic whereby goals are set in advance, [the] output is measured, goals and output are compared, feedback is provided, and corrections are made if necessary." ***Attention Focusing:*** "an interactive control to foster organisational dialogue and an ammunition machine that promotes specific positions and reflects one particular conception of the organisational mission." ***Strategic decision-making:*** "a learning machine and a problem-solving tool [in strategic decision-making]." ***Legitimising:*** "the justification and validation of current and future actions as well as the assertion of self-interest and the exercise of power."	(Dossi & Patelli, 2010; Eker & Eker, 2009; Grafton et al., 2010)

Figure 3.2 Different classifications of the uses of MPMSs



The diagnostic use of MPMSs denotes their use in providing feedback on marketing performance, comparing the performance against pre-set goals and making corrections if necessary (Simons, 1995). The term "diagnostic use" is similar to "monitoring use" (Henri, 2006b) and "answer machine" (Burchell et al., 1980). Simons (1995) indicated that the diagnostic use of control systems could enable firms to compare performance against targets and ensure that important goals were achieved properly. When marketing performance is below expectations, firms can adjust their actions accordingly. Firms also need to use their MPMSs interactively to foster organisational dialogue and expand opportunity-seeking throughout the organisation (Simons, 1995). This function is defined by Simons as the interactive use of MPMSs, which consists of three detailed purposes summarised by Henri (2006b). First, it involves the use of MPMSs as interactive control systems to direct organisational attention to crucial performance issues (Henri, 2006b), or as ammunition machines for different stakeholders to promote special positions, circulate particular organisational missions and distribute the information within the organisation (Burchell et al., 1980). The second type of the

interactive use of MPMSs is conceptualised by Henri (2006b) as the use of MPMSs for "strategic decision-making", and expressed by Burchell et al. (1980) as learning machines which provide assistance, such as data analysis and model testing, in the decision-making process. The third type is defined by Henri (2006b) as "legitimisation" and is described by Burchell et al. (1980) as a "rationalisation machine" that can help legitimise and justify pre-decided marketing actions.

The management control literature suggests that the use of performance measurement systems can positively influence internally-focused organisational learning (Ahn, 2001; Chenhall, 2005; Ditillo, 2004, 2012; Godener & Soderquist, 2004; Henri, 2006a; Johnston, Brignall & Fitzgerald, 2002), innovativeness (Bisbe & Otley, 2004; Cruz, Scapens & Major, 2011; Henri, 2006a; Marginson, 2002), marketing exploration and exploitation (Grafton et al., 2010) and market orientation (Henri, 2006a). However, the lack of empirical validation of the underlying argument hinders the applications of performance measurement systems in building up organisational capabilities to boost firm performance. The following section reviews studies of the use of control systems and aims to provide a general view of the effects of different uses of control systems on firm performance.

3.3.2 Studies on the Use of Performance Measurement Systems

The research on the use of MPMSs is a relatively new area in the marketing literature. No previous marketing study, to the knowledge of the author, has investigated the impact of the use of MPMSs on firm performance. However, in the management control literature, there are several studies examining the relative effects of various uses of performance measurement systems on the management process.

The management control literature reports a positive role for the interactive use of performance measurement systems in the implementation of organisational strategies, the development of organisational capabilities and the improvement of firm performance (e.g., Henri, 2006a; Spekle & Verbeeten, 2014). For example, Henri (2006a) empirically investigated how the diagnostic and interactive uses of performance measurement systems could contribute to firm performance.

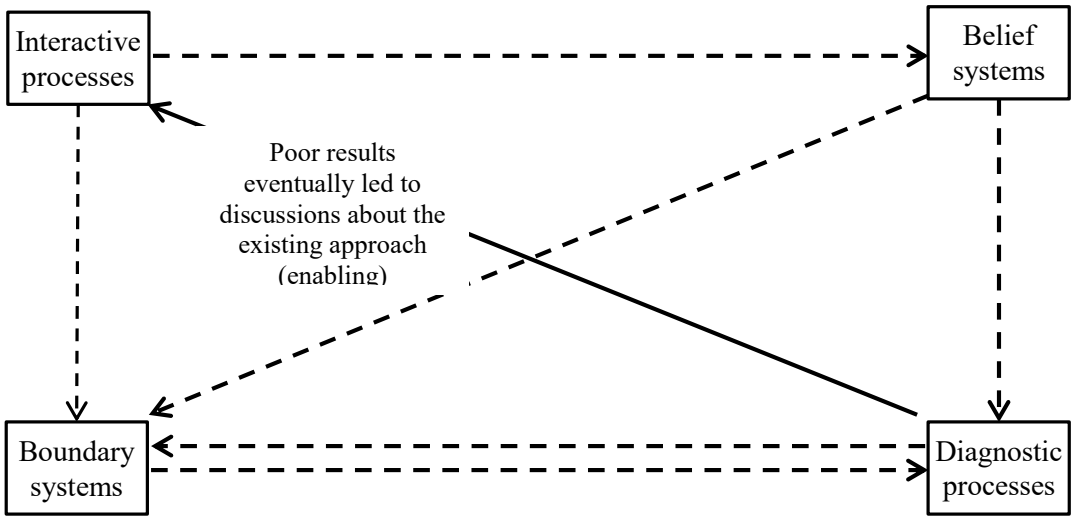
He found that only the interactive use of performance measurement systems was positively related to the development of four types of capabilities, namely, market orientation, entrepreneurship, organisational learning and innovativeness. He thus concluded that the interactive use of performance measurement systems enhanced organisational capabilities by directing attention to strategic priorities and fostering organisational dialogues.

However, studies show mixed results on the effect of the diagnostic use of performance measurement systems on firm performance. Some studies show that the diagnostic use of performance measurement systems has a negative impact on firm performance (Henri, 2006a; Simons, 1995). However, Arijalies & Mundy (2013), Mundy (2010) and Ylinen & Gullkvist (2014) are among those who favour the positive role of the diagnostic use of control systems in the organisational management process. Arijalies & Mundy (2013) examined the ways in which firms utilise control systems to achieve better strategic performance (e.g., corporate social responsibility strategy). Their study concluded that the diagnostic use of control systems could support the strategy process by providing firm performance information through competitive benchmarking. Ylinen & Sullkvist (2014) investigated the roles of the mechanistic use (e.g., diagnostic use) and the organic use (e.g., interactive use) of control systems in improving firm performance through their impacts on innovativeness. They found that the diagnostic use had a positive influence on firm performance, but only in an exploratory innovation context.

The mixed empirical results on the diagnostic use of MPMSs have attracted the further attention of researchers. In order to explore the reasons for the mixed results, the two types of uses have been examined separately and interactively, whereby it has been argued that the divergent results are probably due to conflicts (or "tension") arising from different uses of control systems (Mundy, 2010; Simons, 1995). One major conflict is the tension between the diagnostic use and the interactive use of MPMSs. As stated by Mundy (2010), this conflict lies in "the distinction between the use of management control systems for the control over individuals versus their use for identifying problems and reducing uncertainty" (p. 502). Even though the diagnostic use of control systems may have somewhat significant positive effects on firm performance, it works interactively with other types of uses and contributes to firm performance. Figure 3.3 illustrates

the role of the diagnostic use of control systems in other uses of control systems in Mundy (2010).

Figure 3.3 The interrelationships between uses of control systems in Mundy's (2010) study



Source: Adapted from Mundy (2010, p. 512)

Note: The solid line indicates the impact of the diagnostic use on the interactive use of MPMSs; broken lines indicate the relationship among other uses.

As shown in Figure 3.3, the diagnostic use of performance measurement systems enables firms to effectively utilise performance measurement systems for other purposes. Mundy (2010) argued that the diagnostic use of control systems could enable the interactive use of control systems ("interactive systems") and encourage managers to establish necessary boundaries ("boundary systems"). From a statistical perspective, Henri (2006a) has argued that the negative impact of the diagnostic use of these systems on firm performance is due to the suppression effects of the interactive use of performance measurement systems on the diagnostic use of these systems.

As indicated above, the effects of the diagnostic and interactive uses of MPMSs on firm performance are inclusive and deserve more attention in the marketing literature. Drawing on DC theory, this study also includes the use of MPMSs in order to explain how MPMSs influence firm performance. This is further discussed in Section 3.5 and Chapter Four.

3.4 Contingency Theory

This section reviews contingency theory and its applications in the marketing performance measurement literature. It presents the theoretical base for choosing the contingent factors that may have an impact on the effectiveness of MPMSs and explains why four contingencies, i.e., market turbulence, competitive intensity, marketing complexity and technological turbulence, are included in this study.

3.4.1 Contingencies in the Marketing Performance Measurement Literature

Contingency theory has been widely applied in the management control context. In line with DC theory, it is used to explain the interaction between the environment and management control systems. Ittner & Larcker (2001) indicated that "[c]ontingency theories expanded the management planning and control framework by articulating some of the contextual or 'contingent' factors influencing the entire organisational control 'package' of accounting and non-accounting information systems, organisational design and other control mechanisms" (p. 352).

In the marketing performance measurement and management control literature, most research has focused on the impact of contingent factors on the design and adoption of control systems rather than their impact on the outcomes of adopting MPMSs. At the organisational level, a firm's strategy focus has been found to have a significant influence on control systems. Van Der Stede (2000) found that product differentiation strategy was related to less budgetary control and higher budgetary slack. Lamberti & Noci (2010) investigated the relationship between strategies and the characteristics of MPMSs. They found that companies pursuing different strategies differed significantly in the design of their MPMSs. For instance, transactional marketing companies mainly focused on input and output financial controls, whereas relational marketing companies emphasised more comprehensive controls and transactional/relational marketing companies made a balanced use of various control systems. Frösén et al. (2013) investigated other contingencies such as firm size, sector, market life cycle stages, competitive position and market orientation, and their impact on the development of MPMSs. Their study

provided empirical evidence of the contextuality of MPMSs and supported the view that organisations should adopt normative MPMSs accordingly.

Regarding the moderating effects of contingencies on the relationship between MPMSs and firm performance, recent studies by Homburg et al. (2012) and Lee & Yang (2011) are good examples. Homburg et al. (2012) examined the moderating effects of three contingencies, namely, differentiation strategy, marketing complexity and market dynamism. Their study showed that the comprehensiveness of MPMSs can positively influence strategic alignment and market knowledge only if the levels of differentiation, marketing complexity and market dynamism were higher, indicating that MPMSs worked better for companies operating in a more dynamic environment. Lee & Yang (2011) investigated the joint effects of organisation structure, competition and control systems on firm performance. The positive relationship between the control system development and firm performance was found to be of higher significance when the competition was more intense, while the positive relationship between the use of integrated performance measures and firm performance was also moderated by the organisational structure: the relationship was stronger for mechanistic organisations than for organic ones.

According to contingency theory, control systems result in superior organisational performance only if they have a better match with contingent variables (Fisher, 1998). As indicated in the review papers by Chenhall (2003), Fisher (1998) and Ittner & Larcker (2001), several prominent contingent factors in the management control literature have been identified and tested empirically. These factors include external environment, e.g., environmental uncertainty (Clark et al., 2006; Jaworski & Kohli, 1993; Murray, Gao & Kotabe, 2011); technology, e.g., technological uncertainty, task uncertainty and production interdependencies (Clark et al., 2006; Jaworski & Kohli, 1993); competitive environment, e.g., competitive intensity (Homburg et al., 2012; Jaworski & Kohli, 1993; Murray et al., 2011); industry characteristics, e.g., sector and market life cycle stages (Homburg et al., 2012; Verhoef & Leeflang, 2009); and firm characteristics, e.g., firm size, firm age, firm strategy, marketing complexity and organisational

culture (Frösén et al., 2013; Homburg et al., 2012; Lamberti & Noci, 2010; Van Der Stede, 2000).

Following these literature reviews, four contingencies, i.e., market turbulence, competitive intensity, marketing complexity and technological turbulence, are incorporated in the study. Other variables, i.e., firm size, firm age, business focus, industry, organisational strategy focus and trade status, are also included as control variables. The definitions of the above variables are displayed in Table 3.3.

Table 3.3 Definitions of contingencies and control variables

Variables	Definitions
Market turbulence	"The speed of change in customer needs and preferences and competitor actions." (Luca & Atuahene-Gima, 2007, p. 102) "The rate of change in the composition of customers and their preferences." (Jaworski & Kohli, 1993, p. 57)
Technological turbulence	"The speed of change and instability of the technology environment." (Luca & Atuahene-Gima, 2007, p. 102) "The rate of technological change." (Jaworski & Kohli, 1993, p. 57)
Competitive intensity	The extent of promotion wars, similarity in competitors' product offerings, extent of price-based competition (Jaworski & Kohli, 1993) "The extent of competition due to the number of competitors in the market and the lack of potential opportunities for further growth." (Auh & Menguc, 2005, p. 1182)
Marketing complexity	The complexity of marketing processes caused by the diversity of the product portfolio (Homburg et al., 2012)
Firm size	Size of the firm which is based on the approximate number of full-time employees in the firm (Artz et al., 2012; Homburg et al., 2012)
Firm age	Years since establishment (Sorensen & Stuart, 2000)
Business focus	The percentages of turnover that arises from business-to-business or business-to-consumer markets (Frösén et al., 2013; Verhoef & Leeflang, 2009)
Industry	Industry type (Frösén et al., 2013)
Organisational strategy	The extent to which firms compete in their markets through a differentiation approach or a cost leadership approach in their marketing strategy (Homburg et al. 2012)
Trade status	Publicly traded or private company (Verhoef & Leeflang, 2009)

3.5 The Proposed Research Framework

A research framework is developed to explain how and under what circumstances MPMSs improve firm performance. The aim of the framework is to provide a context-based, capabilities-orientated explanation of the pathways along which MPMSs influence firm performance. Figure 3.4 illustrates the conceptual framework. The model reveals the focal constructs and their relationships. This section presents and briefly explains the research framework proposed in the current study.

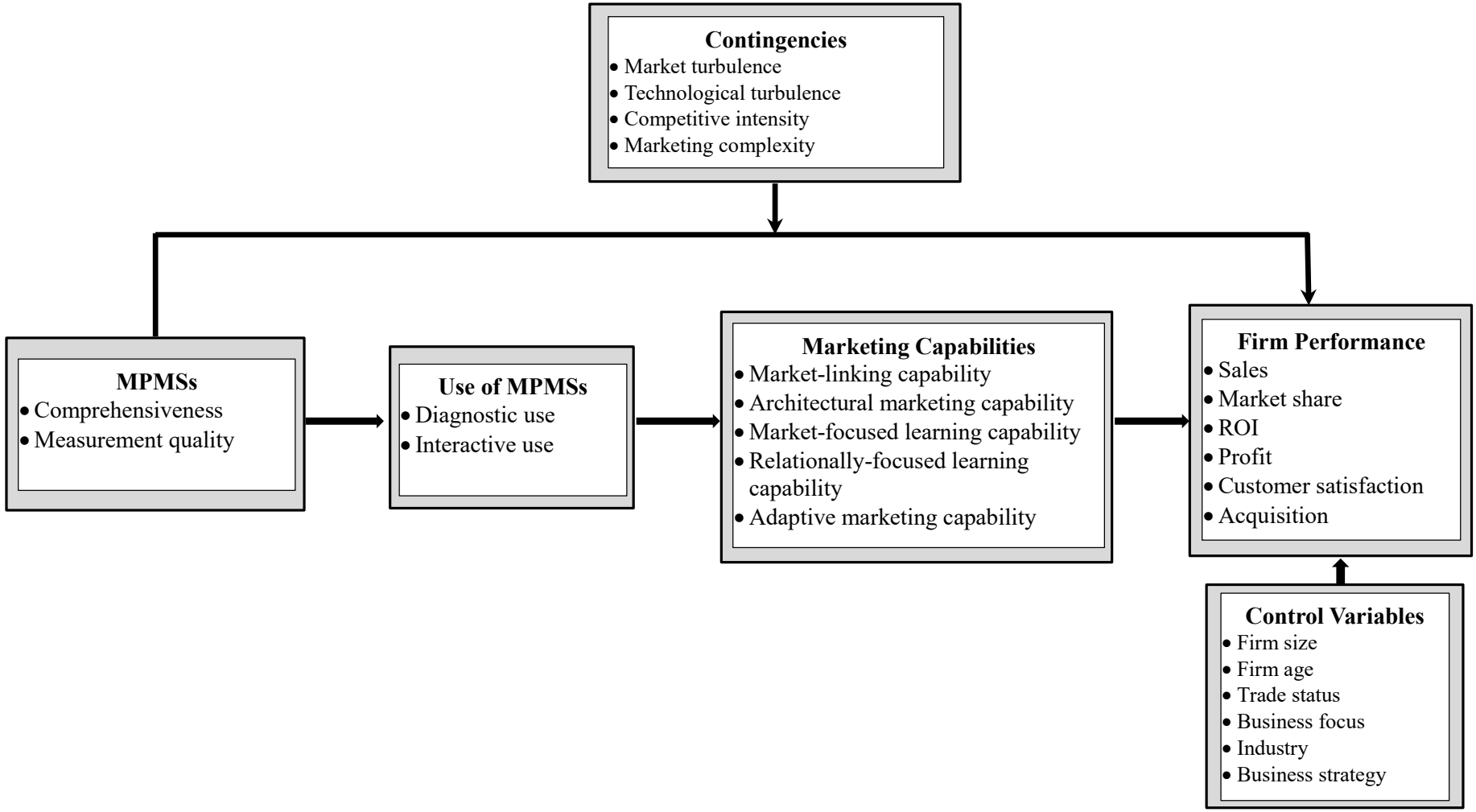
Based on the work of Homburg et al. (2012), Morgan et al.(2002) and Lamberti & Noci (2010), three attributes of MPMSs are examined to establish their impact on firm performance. These attributes include the comprehensiveness, measurement quality and contextuality of MPMSs. The comprehensiveness of MPMSs is conceptualised as the diversity of marketing performance measures used to align with marketing strategy and to reflect the cause-and-effect relationships between marketing activities and firm performance (Chenhall, 2005; Hall, 2008; Homburg et al., 2012). Measurement quality is defined as the quality of the information provided by MPMSs (Burney et al., 2009; Homburg et al., 2012). It refers to the accuracy, accessibility, understandability, reliability and timeliness of marketing performance measures. Regarding the contextuality of MPMSs, as explained in section 2.4.2.3 (p. 46), this study examines the contextuality of MPMSs by testing the impact of contingencies on the effectiveness of MPMSs. Following Chenhall (2003), Fisher (1998) and Ittner & Larcker (2001), four prominent contingent factors, namely, competitive intensity (Homburg et al., 2012; Lee & Yang, 2011; Murray et al., 2011), marketing complexity (Homburg et al., 2012; Verhoef & Leeflang, 2009), market turbulence (Jaworski & Kohli, 1993; Luca & Atuahene-Gima, 2007) and technological turbulence (Jaworski & Kohli, 1993; Luca & Atuahene-Gima, 2007), and their moderating effects on the outcomes of MPMSs are investigated in this study.

In addition, following DC theory, this study presumes that the uses of MPMSs are potential mediators that intervene in the relationship between MPMSs and firm performance. Drawing on Simons' (1995) and Henri's (2006a) frameworks, this study examines two types of uses: the interactive use of MPMSs and the diagnostic use of MPMSs. The diagnostic use of MPMSs

reflects the way firms use MPMSs to benchmark against pre-set goals and monitor the progress of marketing activities, while the interactive use of MPMSs refers to the way firms use MPMSs to direct organisational focus on important issues and justify decision-making (Henri, 2006a).

Drawing on Day (1994, 2011) and Morgan (2012), this study mainly focuses on five marketing capabilities that are exploitation- or exploration-orientated and are embedded in the inside-out or outside-in process. These are market-linking capability, architectural marketing capability, relationally- and market-focused organisational learning capability and adaptive marketing capability. From a DC perspective, this study assumes that companies that employ MPMSs can use them effectively to develop the aforementioned five capabilities, thus improving firm performance. Firm performance is represented by both financial and non-financial performance, such as sales, ROI, customer satisfaction, profit and market share.

Figure 3.4 A conceptual framework linking MPMSs and firm performance



3.6 Chapter Summary

Echoing the increasing call for more empirical research on the indirect and contingent effects of MPMSs on firm performance, this study proposes that the use of MPMSs and marketing capabilities can be potential mediators that explain the positive impact of MPMSs on firm performance. This section reviewed DC theory, which has been widely used to explain the differences in firm performance. Subsequently, the applications of DC theory in the marketing performance measurement context were detailed and the reasons for choosing certain marketing capabilities were explicated.

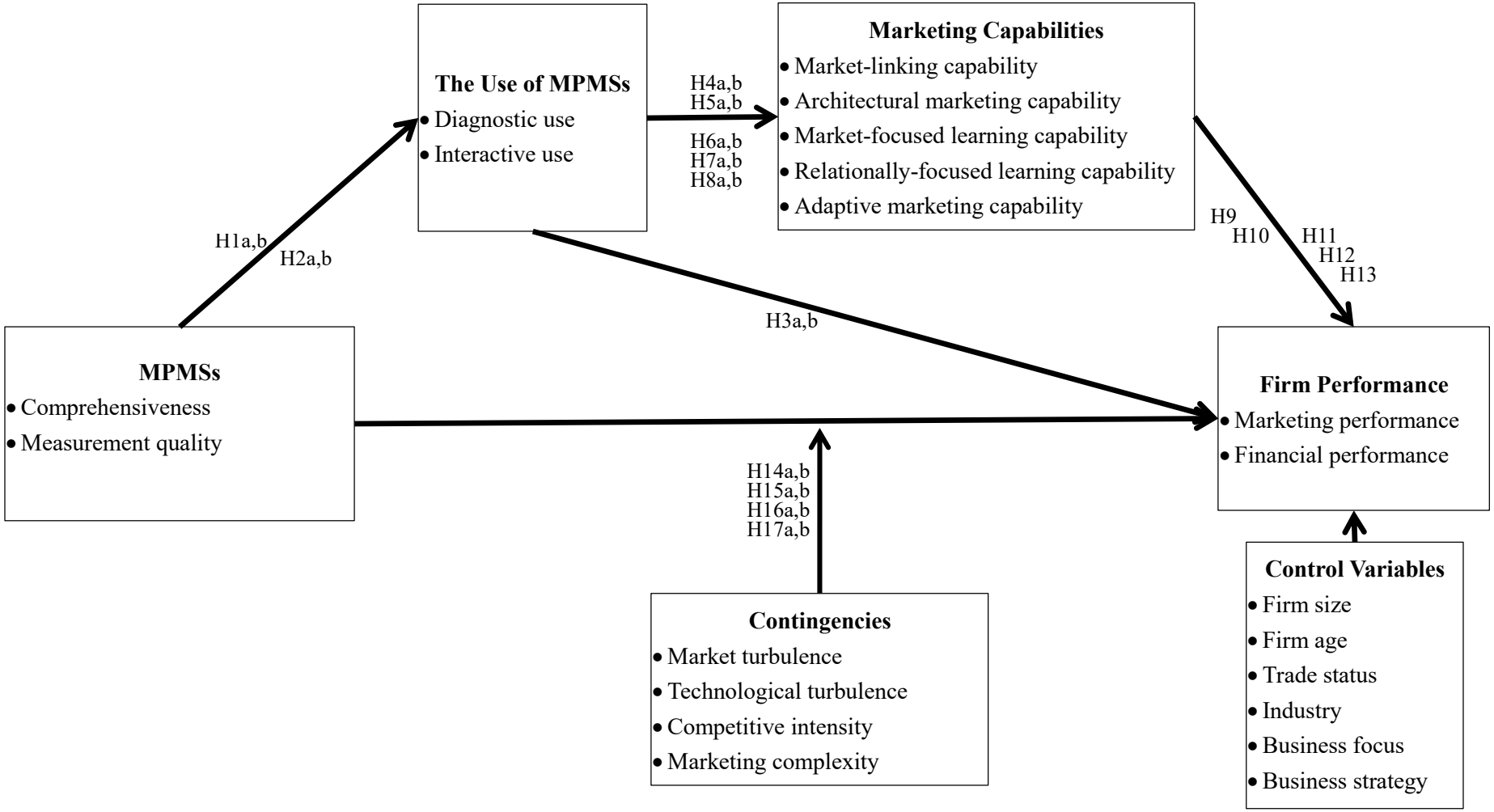
Drawing on DC theory and other studies in the management control literature, another major concept – the use of MPMSs – was also reviewed. It is suggested that the marketing performance measurement literature should include the use of MPMSs in order to explain how MPMSs lead to different firm performance. This section also reviewed contingency theory and identified four prominent contingent factors that were believed to influence the effectiveness of MPMSs. A research framework was presented and introduced briefly at the end of this chapter. The next chapter explains the research model in detail and proposes the hypotheses in relation to each path.

Chapter 4 Hypothesis Development

4.1 Introduction

This chapter presents the effects of MPMSs on firm performance through different processes. Figure 4.1 illustrates the research model with the hypothesised paths displayed. The relationship between MPMSs and the use of MPMSs, the impact of the use of MPMSs on firm performance, the association between the use of MPMSs and marketing capabilities, and the connection between marketing capabilities and firm performance are all addressed. In so doing, this study proposes a novel practices-uses-capabilities-performance approach to explain the indirect effects of MPMSs on firm performance. In addition, the moderating effects of contingent factors on the relationship between MPMSs and firm performance are presented.

Figure 4.1 The research model



4.2 MPMSs and the Use of MPMSs

4.2.1 MPMSs and the Diagnostic Use of MPMSs

Comprehensive MPMSs can provide valuable marketing performance information and feedback on the status of strategy implementation to companies. When MPMSs are used for diagnostic purposes, the feedback gathered by MPMSs is used for internal reporting and external disclosure to stakeholders (Henri, 2006b). This study posits that the comprehensiveness and measurement quality of MPMSs are positively related to the diagnostic use of MPMSs for several reasons.

First, the integrated performance measures used in MPMSs lead to managerial satisfaction with the measurement system (Clark et al., 2005, 2006; O'Sullivan & Abela, 2007; O'Sullivan et al., 2009), which results in the continual use of MPMSs for the purpose of monitoring. Similarly, when MPMSs are perceived as qualified information systems, senior management are more likely to trust and use the measurement system to monitor marketing performance and to benchmark with competitors. Studies show that information quality highly influences users' trust in such information (Nicolaou, Ibrahim & Van Heck, 2013; Nicolaou & McKnight, 2006; Yi, Yoon, Davis & Lee, 2013). If the marketing performance measurement information provided by MPMSs is perceived as more reliable, accurate, understandable, accessible and up to date, managers are more likely to trust and use this information subsequently. Therefore, the comprehensiveness and measurement quality of MPMSs are positively related to the diagnostic use of MPMSs, e.g., in reporting to senior management.

Second, control systems are used to eliminate the burden of managers in constantly monitoring marketing performance (Simons, 1995). In using MPMSs for diagnostic purposes, management teams need to assess actual marketing outcomes and benchmark against pre-set objectives, previous performance and competitors' performance. Thus, integrated marketing metrics are required for these purposes. For example, it is argued that the diagnostic use of MPMSs is positively associated with the use of financial metrics, such as sales, profitability and ROI (O'Sullivan, 2007). Financial metrics are more frequently used to compare with pre-defined marketing outcomes. However, in order to benchmark against competitors, competition metrics, such as relative price, market share and relative quality, are also required. Multiple categories of marketing metrics are likely to be requisites for marketing performance benchmarking.

Third, when using MPMSs for the purpose of feedback, management teams need to investigate variations between actual and expected outcomes and to understand the causes of these variances (Grafton et al., 2010). Thus the causal relationships of marketing metrics are required in order to show how marketing activities lead to firm performance variances. MPMSs, which show explicitly the cause-and-effect relationships between marketing activities and firm performance (Homburg et al., 2012), can lead to the diagnostic use of MPMSs. In addition, when reporting to internal and external stakeholders, reliable, updated, understandable and accurate information is required because it makes the marketing performance data more persuasive (Artz et al., 2012). Thus, the measurement quality of MPMSs is positively related to the diagnostic use of MPMSs.

To conclude, if managers perceive MPMSs as a comprehensive control system that provides reliable, accurate, timely and accessible information, they have the motivation to use MPMSs for diagnostic purposes. Therefore, the study formulates the following hypotheses:

H1a: The comprehensiveness of MPMSs is positively related to the diagnostic use of MPMSs.

H1b: The measurement quality of MPMSs is positively related to the diagnostic use of MPMSs.

4.2.2 MPMSs and the Interactive Use of MPMSs

As Simons (1995) indicates, the diagnostic use of MPMSs is not sufficient to ensure an effective control system. The mere diagnostic use of MPMSs cannot guarantee that companies make appropriate strategic changes and adjustments. For instance, even if companies discover any unsatisfactory performance, when they are not capable of realising the importance of those issues, they are less likely to take proper action. Thus, it is recommended that companies use MPMSs interactively, e.g., to communicate marketing strategies within the firm to allow employees to focus their attention, to facilitate strategic decision-making or to increase the legitimacy of marketing activities (Henri, 2006b).

Similarly to the diagnostic use of MPMSs, the interactive use of MPMSs is expected to be significantly associated with the two key attributes of MPMSs. As previously discussed, the integrated performance measures used in MPMSs lead to managerial satisfaction with the measurement system (Clark et al., 2005, 2006; O'Sullivan & Abela, 2007; O'Sullivan et al., 2009), which results in the continuous use of MPMSs for the interactive purpose. Applying motivation-opportunity-ability theory, Clark et al. (2005) also concluded that companies with

easier access to comprehensive marketing performance measurement data were more likely to use such data for sophisticated purposes, e.g., strategic decision-making. In other words, if companies have the opportunity to get access to multiple marketing performance measures, they are more likely to use these measures in a way that helps improve decision-making and organisational learning. Thus, the comprehensiveness and measurement quality of MPMSs are positively related to their interactive use.

Additionally, the increasing pressure on marketing departments to legitimise their marketing activities also leads to the interactive use of MPMSs, e.g., to justify their marketing decisions and reveal the contributions of marketing activities to other departments (Park et al., 2012). In the decision-making process, diversified measures in MPMSs and the cause-and-effect models of MPMSs are needed to provide sufficient support for the legitimisation of marketing activities. For instance, financial metrics allow stakeholders to develop a better understanding of marketing outputs, while non-financial metrics can better reflect marketing processes (Henri, 2006b). By revealing the cause-and-effect relationships between marketing activities and firm performance (Atkinson et al., 1997) and signalling the crucial strategic issues (Henri, 2006a), firms can use MPMSs interactively. Thus, this study posits that the comprehensiveness of MPMSs can positively influence the interactive use of MPMSs due to companies' increasing need for a clear cause-and-effect relationship between marketing strategies and firm performance. The comprehensiveness of MPMSs is presumed to be positively related to the interactive use of MPMSs.

The measurement quality of MPMSs also positively influences the interactive use of MPMSs. Artz et al. (2012) found that the use of performance measurement systems could positively influence the decision-making process only when the measures were reliable. They concluded that the reliability of the information was necessary for the decision-making process. Their conclusion is in line with the previous literature, which argues that "making good decisions requires information" (Malone, 1987, p. 28). As indicated in Section 4.2.1, reliable, accurate and timely information builds trusting beliefs among users and mitigates perceived information exchange risk, which ultimately increases the usage of the information (Nicolaou et al., 2013; Nicolaou & McKnight, 2006). If managers consider their MPMSs as reliable feedback channels that provide timely and accurate marketing performance information, they are more likely to trust MPMSs and be more willing to use the information in their decision-making. Therefore, the hypotheses are proposed as follows:

H2a: The comprehensiveness of MPMSs is positively related to the interactive use of MPMSs.

H2b: The measurement quality of MPMSs is positively related to the interactive use of MPMSs.

4.3 The Use of MPMSs and Firm Performance

4.3.1 The Diagnostic Use of MPMSs and Firm Performance

The diagnostic use of MPMSs enables firms to monitor pre-established marketing objectives and ensure that these objectives are achieved. In the management control literature, the diagnostic use of control systems is believed to have a negative impact on management practices and firm performance for various reasons.

First, it is argued that the diagnostic use of MPMSs constrains innovation and new idea exploration (Simons, 1995), because companies might neglect the exploration of potential alternatives if they place too much emphasis on achieving predictable goals. This argument is empirically supported by Henri (2006a), in which the diagnostic use of control systems is found to negatively influence innovation, market orientation and entrepreneurship. In addition, if companies focus mainly on achieving their pre-defined objectives, the marketing function may sacrifice long-term goals to meet short-term needs. This, in the long run, will ultimately lead to inferior firm performance.

Second, if MPMSs are mainly used to monitor marketing performance and benchmark performance against previous performance, the diagnostic use of MPMSs leads to tight control of operations, marketing strategies and marketing outcomes (Henri, 2006a). These tight controls resulting from the diagnostic use of MPMSs may in turn negatively influence the empowerment and commitment of employees (Hall, 2008; Webb, 2004). As a result, more dysfunctional behaviours may manifest among employees, leading to inferior firm performance.

Third, the diagnostic use of MPMSs (e.g., internal reporting and external disclosure to stakeholders) is believed to only be beneficial to one-way communication (Henri, 2006a, 2006b; Malina & Selto, 2001). The hierarchical communication resulting from the diagnostic use of control systems may restrict information flow and hinder organisational learning, thus resulting in inferior firm performance (Henri, 2006a).

Therefore, the following hypothesis is proposed:

H3a: The diagnostic use of MPMSs is negatively related to firm performance.

4.3.2 The Interactive Use of MPMSs and Firm Performance

When MPMSs are used interactively, firms apply MPMSs to assist in decision-making, justify decisions to be made, and direct organisational attention to strategic priorities. It is plausible that the impact of the interactive use of MPMSs on firm performance can be observed through different mechanisms.

First, MPMSs help translate strategies into measurable objectives so that values stated in the mission statement can be communicated throughout the organisation (Arjalies & Mundy, 2013). As a result, personal goals may be connected to organisational objectives, thus bridging the gaps between the organisational vision and operational activities and creating a shared vision among all departments within the organisation (Eker & Eker, 2009; Kaplan & Norton, 2001). This improved strategic alignment is believed to drive firm performance (Ahn, 2001; Chenhall, 2005; Homburg et al., 2012).

Second, studies suggest that, if companies use their MPMSs interactively, MPMSs can facilitate the strategic decision-making process, enhance managers' commitment and influence organisational activities (Malina & Selto, 2004; Webb, 2004), thus improving firm performance. Third, the interactive use of MPMSs increases the influence of the marketing department, which is found to be directly and positively related to business performance (Verhoef & Leeflang, 2009). For instance, institutional theory posits that a department with a greater level of legitimacy will easily gain support from other departments (Artz et al., 2012;

Pfeffer, 1981). The interactive use of MPMSs raises the status of the marketing department, which is believed to positively influence the relationships between the marketing department and other departments (Park et al., 2012). The improved relationships between the marketing department and other departments may result in the latter's increasing willingness to collaborate with the former, which in turn may improve firm performance (Srivastava, Shervani & Fahey, 1998). Based on the above analysis, this study proposes that:

H3b: The interactive use of MPMSs is positively related to firm performance.

4.4 The Use of MPMSs and Marketing Capabilities

Marketing capabilities are regarded as important mechanisms through which market knowledge may be used to generate positional advantages and lead to superior firm performance (Madhavan & Grover, 1998). This study posits that there is a mismatch between the requirements of the five marketing capabilities and the diagnostic use of MPMSs. Thus, the diagnostic use of MPMSs negatively influences the development of these marketing capabilities. On the contrary, the interactive use of MPMSs is believed to foster these five marketing capabilities. The following section presents the links between the use of MPMSs and these marketing capabilities in more detail.

4.4.1 The Use of MPMSs and Market-Linking Capability

Market-linking capability is defined by Day (1994) and Song et al. (2007) as firms' ability to sense, detect and anticipate market changes (market-sensing capability), create and maintain durable relationships with customers (customer-linking capability), and create and retain strong

connections with channel members (channel-bonding capability). This study contends that the diagnostic and interactive uses of MPMSs influence the development of market-linking capability in different ways and posits that the diagnostic use of MPMSs negatively influences customer-linking and channel-bonding capability.

Diagnostic control systems "constrain innovation and opportunity-seeking to ensure predictable goal achievement needed for intended strategies" (Simons, 1995, p. 91). When companies use MPMSs to monitor their pre-established marketing objectives and assess the implementation of marketing strategies, they are more likely to be output-orientated and ignore other critical issues. In this case, marketing departments may use MPMSs less effectively in monitoring customer changes, competitor movement and market changes, which in turn leads to inferior market-linking capability. In addition, the diagnostic use of MPMSs is found to constrain market orientation (Henri, 2006a). Less market-orientated companies are less likely to be alert to competitive activities or changes in customer preferences. As a result, these companies may possess inferior market-linking capacity (Hooley et al., 2005). Therefore, this study proposes that the diagnostic use of MPMSs can negatively influence market-linking capability.

However, the interactive use of MPMSs is argued to positively influence market-linking capability for several reasons. First, market-sensing requires companies to take initiatives to learn about customers, competitors, channel members and the broader market environment (Morgan et al., 2009). The market-sensing process is believed to follow the common sequence of information processing activities: information acquisition, distribution, interpretation and utilisation (Day, 1994). MPMSs provide firms with useful data needed for market-sensing

activities (e.g., timely and accessible feedback on customer and competitor performance) (Luca & Atuahene-Gima, 2007). In addition, the interactive use of MPMSs facilitates the information sharing process within the organisation (Henri, 2006a), thus increasing market information distribution and utilisation. Hence, this study posits that the interactive use of MPMSs leads to the development of market-sensing capability. Second, regarding channel-bonding capability, previous studies in the management control literature indicate that the interactive use of performance measurement systems leads to improved channel-bonding capability through the creation of mutual dialogue, information sharing, problem solving and interaction with channel members (Cousins, Lawson & Squire, 2008; Mahama, 2006). Thus, the interactive use of MPMSs is positively related to channel-bonding capability. Moreover, recent studies also indicate that the interactive use of MPMSs allows companies to develop market knowledge (Homburg et al., 2012) and increase market orientation (Henri, 2006a), both of which are found to be positively associated with customer-focused marketing capabilities such as CRM capability (Hooley et al., 2005; Vorhies et al., 2011). Thus, this study assumes that the interactive use of MPMSs is positively related to market-linking capability.

Combining the arguments above, this study proposes the following hypotheses:

H4a: The diagnostic use of MPMSs is negatively related to firms' market-linking capability.

H4b: The interactive use of MPMSs is positively related to firms' market-linking capability.

4.4.2 The Use of MPMSs and Architectural Marketing Capability

Architectural marketing capability is conceptualised as a planning-related capability that is involved in selecting strategic marketing objectives (Morgan, 2012; Slotegraaf & Dickson, 2004) and implementing-related capability that is associated with the achievement of marketing strategies (Morgan, 2012; Vorhies & Morgan, 2005; White et al., 2003). It enables firms to gather valuable information from the environment to facilitate the development and implementation of marketing plans (Morgan et al., 2003).

This study proposes that the diagnostic use of MPMSs is negatively related to the development of architectural marketing capability. Marketing planning and strategy implementation are believed to be a cross-functional practice (Morgan, 2012; Morgan et al., 2003). As indicated earlier, the diagnostic use of MPMSs may jeopardise two-way communications within the organisation (Malina & Selto, 2001). As a result, it constrains the cross-functional collaboration needed for the development of architectural marketing capability, thus resulting in poor marketing planning and implementation. In addition, using MPMSs for one-way reporting purposes may generate distrust, demotivation and dysfunctional behaviours (Ittner et al., 2003; Malina & Selto, 2001). Consequently, conflicts between management teams and employees may arise and potentially hinder the involvement of employees in the planning and strategy implementation process. The lack of input from multiple stakeholders will ultimately lead to poor marketing planning and implementation. Moreover, when MPMSs are used for benchmarking purposes, managers may fail to pay constant attention to the marketing planning or strategy implementation process, as these diagnostic control systems “do not require very

much attention from senior management other than the time spent on setting annual goals and monitoring exceptions to see that events unfold according to the plan" (Simons, 1995, p. 88). Thus, the diagnostic use of MPMSs fails to facilitate a continuous strategy process (Kaplan & Norton, 2001), resulting in inferior architectural marketing capability.

However, studies show that the interactive use of MPMSs leads to superior strategy formulation and implementation (e.g., Micheli, Mura & Agliati, 2011). For instance, the interactive use of MPMSs is found to facilitate the generation of new approaches for strategy and risk management, which provide guidelines for marketing planning and implementation (Arjaliès & Mundy, 2013; Henri, 2006a). Drawing on strategy-focused organisation theory (Kaplan & Norton, 2001), this study argues that the interactive use of MPMSs enables the successful implementation of marketing strategies as it facilitates the translation and communication of marketing strategies into operational outcomes (Lillis, 2002). When companies use MPMSs to legitimise marketing activities and justify decision-making, marketing strategy is translated and communicated through the hierarchy of the organisation. As a result, the interactive use of MPMSs enhances strategic communication and improves strategic alignment, allowing companies to implement marketing plans more effectively (Dossi & Patelli, 2010; Homburg et al., 2012).

From an informational knowledge perspective, market knowledge generated by the interactive use of MPMSs is also found to be positively related to both marketing planning and implementation capabilities (Homburg et al., 2012; Morgan et al., 2003). Morgan, Katsikeas & Vorhies (2012) pointed out that market knowledge could be translated or transformed into

marketing planning and implementation capabilities through accumulated external learning and the development of organisational routines. White et al. (2003) have also indicated that, in order to gain superior implementation capability, a firm needs to be able to combine diverse organisational routines, such as market analysis and experiments. The use of MPMSs as attention-directing, legitimising and decision-influencing tools enables firms to fully explore, analyse and compare possible options and make decisions, thus ultimately influencing marketing implementation capability. Studies show that companies performing more comprehensive decision-making yield better firm performance (Mintz & Currim, 2015; O'Sullivan et al., 2009). Additionally, scholars indicate that the interactive use of performance measurement systems helps companies identify flawed or obsolete strategies or campaigns (Kaplan & Norton, 2008) and challenge underlying assumptions, which ultimately leads to problem identification and strategy revision (Bourne, Mills, Wilcox, Neely & Platts, 2000). When MPMSs are used interactively, they provide better pictures of performance and lead to a better understanding of cause-and-effect relationships, thus enabling effective strategy processes, e.g., communication and implementation (Kaplan & Norton, 1996; Malina & Selto, 2001). Therefore, this study proposes that:

H5a: The diagnostic use of MPMSs is negatively related to architectural marketing capability.

H5b: The interactive use of MPMSs is positively related to architectural marketing capability.

4.4.3 The Use of MPMSs and Market-Focused Learning Capability

Market-focused organisational learning capability is defined as "the capability of the firm to acquire, disseminate, unlearn and use market information for organisational change" (Weerawardena et al., 2006, p. 39). Firms with better market-focused organisational learning capability are expected to have a strategic advantage regarding their response speed to environmental opportunities and threats (Weerawardena et al., 2006).

The diagnostic use of MPMSs is believed to constrain the market-focused organisational learning process mainly because of its negative impact on information flow within the organisation. To be specific, in the internal reporting process, the diagnostic use of MPMSs leads to single-loop information sharing but not to double-loop organisational learning (Henri, 2006a, 2006b). Single-loop information sharing hampers the effectiveness of MPMSs in improving market-focused organisational learning. Additionally, as indicated earlier, when firms use MPMSs for diagnostic purposes, this leads to hierarchical communication rather than open dialogue within the firm (Henri, 2006a). Since market-focused learning capability relies on free information flow, the diagnostic use of MPMSs is negatively associated with a firm's market-focused organisational learning capability.

However, the interactive use of MPMSs satisfies the need for the development of market-focused organisational learning capability and will ultimately lead to a higher level of this capability. The interactive use of MPMSs is a formal mechanism used to collect market information to expand the organisation's information processing capacity (Henri, 2006a) and to develop market-focused organisational learning capability (Chenhall, 2005). When MPMSs are

used interactively, continuous two-way and open-channel communications and discussions are generated within the firm (Henri, 2006a; Mundy, 2010). As a result, the interactive use of MPMSs leads to more frequent information exchange, information sharing and information transmission within the firm (Arjalies & Mundy, 2013; Azofra, Prietro & Santidrian, 2003; Henri, 2006b). The interactive use of MPMSs also enables firms to carry out strategic analysis and environmental scanning, which are part of market-focused organisational learning capability (Mcewen, 2008; Morgan & Turnell, 2003). Moreover, the marketing department's increased stature within the organisation leads to a higher level of cross-functional cooperation (Park et al., 2012; Srivastava et al., 1998), which in turn leads to higher level of market learning and knowledge sharing (Luo & Donthu, 2006). Therefore, this study proposes:

H6a: The diagnostic use of MPMSs is negatively related to market-focused organisational learning capability.

H6b: *The interactive use of MPMSs is positively related to market-focused organisational learning capability.*

4.4.4 The Use of MPMSs and Relationally-Focused Learning Capability

Relationally-focused organisational learning capability is defined as the capacity of a firm to "acquire knowledge through external linkages or networks, and disseminate, unlearn and use such knowledge for organisational change" (Weerawardena et al., 2006, p. 39). Relationally-focused organisational learning capability is highly associated with the networking activities of firms, which are recognised as vital to the quick response to the external

environment, the discovery of new opportunities, the testing of novel ideas and the sharing of knowledge (Aldrich & Zimmer, 1986; Lee, Lee & Pennings, 2001). Several factors are found to enhance the relationally-focused organisational learning capability, such as a collaborative culture in the organisation, free information sharing and relationships with external partners (Lee et al., 2001; Selnes & Sallis, 2003). This study maintains that the diagnostic and interactive uses of MPMSs have different impacts on relationally-focused organisational learning capability, the reasons for which are provided below.

Similarly to its impact on market-focused organisational learning, the diagnostic use of MPMSs constrains the relationally-focused organisational learning capability of the firm. First, the diagnostic use of MPMSs leads to tighter controls of the marketing department (Henri, 2006a; Simons, 1995). As a result, a less participatory culture is cultivated within the firm (Bititci et al., 2006). This less collaborative culture is not beneficial to the development of relationally-focused organisational learning capability. Second, since the diagnostic use of MPMSs hinders information sharing and open communication within the organisation (Henri, 2006a), it is reasonable to assume that it may also constrain companies' information sharing with their external partners. In particular, if the marketing performance is below expectation, companies are less likely to share this marketing performance information with their external partners. This, in turn, impedes information sharing in the external disclosure process. Third, as argued in Section 4.4.1, the diagnostic use of MPMSs hinders the development of a better relationship with channel members and customers. Thus, this study posits that the diagnostic use of MPMSs jeopardises the relational trust between companies and their external partners,

e.g., channel members (Selnes & Sallis, 2003). As a result, the diagnostic use of MPMSs is less effective in facilitating superior relationally-focused organisational learning capability.

On the other hand, there is a good match between the requirements of the relationally-focused organisational learning capability and the interactive use of MPMSs. First, the interactive use of MPMSs leads to an improved status of the marketing department in the organisation, thus resulting in a more collaborative culture (Park et al., 2012; Verhoef & Leeflang, 2009) and more frequent information sharing with external partners (Cousins et al., 2008). Second, the interactive use of MPMSs ensures that marketing performance information can be distributed among various relevant parties, thus facilitating relationally-focused organisational learning and problem solving (Mahama, 2006). In addition, the interactive use of control systems is found to enhance the communication between companies and their channel members, which in turn positively influences the relationship between both parties (Cousins et al., 2008). These cooperative, bilateral and partner-based relationships are seen to be vital in the development of relationally-focused organisational learning capability (Lee et al., 2001). Therefore, this study proposes:

H7a: The diagnostic use of MPMSs is negatively related to relationally-focused organisational learning capability.

H7b: *The interactive use of MPMSs is positively related to relationally-focused organisational learning capability.*

4.4.5 The Use of MPMSs and Adaptive Marketing Capability

Various definitions have been used in the management and marketing literature to define the notion of adaptive marketing capability. Three leading streams of the marketing literature define adaptive marketing capability as 1) a firm's ability to identify market opportunities (Biedenbach & Müller, 2012; Oktemgil & Greenley, 1997; Wang & Ahmed, 2007), 2) a firm's ability to sense and respond to environmental changes swiftly (Gibson & Birkinshaw, 2004; Ma, Yao & Xi, 2009; Wei & Lau, 2010; Zhou & Li, 2010), and 3) a continuous learning process which allows firms to innovate and compete (Akgün, Keskin & Byrne, 2012). These definitions are in line with Day's (2011) argument that adaptive marketing capability is embedded in outside-in management processes and allows firms to respond to changes quickly and explore new opportunities. It has been noted that adaptive marketing capability can be "best achieved by a mechanism that enables and motivates people to make efforts to identify and solve problems collectively and effectively" (Wei & Lau, 2010, p. 1491). Therefore, this study expects that companies with looser controls are more likely to develop a higher level of adaptive marketing capability and vice-versa (Akgün et al., 2012; Gibson & Birkinshaw, 2004).

The diagnostic use of MPMSs hinders the free flow of information within the company, which is believed to negatively influence the adaptability of companies (Henri, 2006a, 2006b; Malina & Selto, 2001). It is also argued that the diagnostic use of MPMSs leads to tighter controls of marketing processes and strategies (Henri, 2006a). These tight controls may limit the ability of companies to swiftly shift their business focus to address the environment (Henri, 2006a), thus negatively influencing the development of adaptive marketing capability. Due to the negative

impact of the diagnostic use of MPMSs on information sharing and business focus-shifting, this study hypothesises a negative relationship between the diagnostic use of MPMSs and adaptive marketing capability.

On the other hand, this study posits that adaptive marketing capability can be enhanced by using MPMSs interactively. As indicated earlier, the interactive use of MPMSs leads to effective strategy communication, which connects individual objectives with organisational vision (Arjalies & Mundy, 2013; Kaplan & Norton, 2000). As a result, a shared vision is created within the organisation (Eker & Eker, 2009), leading to the development of adaptive marketing capability (Wei & Lau, 2010). In addition, companies that use MPMSs more interactively are more likely to share knowledge for adaptive activities. When companies use MPMSs interactively, different sets of marketing performance measurement information are brought together to signal organisational priorities (Henri, 2006a; Mundy, 2010). As a result, the interactive use of MPMSs can "stimulate opportunity-seeking and encourage the emergence of new initiatives" (Simons, 1995, p. 93), which can be related to improved adaptability. Empirical studies show that the interactive use of MPMSs enhances new idea development, thus increasing the adaptability of firms (Marginson, 2002). The interactive use of MPMSs also encourages employees to adjust to changes and facilitates the adopting of comprehensive decision-making styles by management teams, which are found to be positively associated with adaptive marketing capability (Oktemgil & Greenley, 1997). Therefore, this study proposes that:

H8a: The diagnostic use of MPMSs is negatively related to adaptive marketing capability.

H8b: The interactive use of MPMSs is positively related to adaptive marketing capability.

4.5 Marketing Capabilities and Firm Performance

4.5.1 Market-Linking Capability and Firm Performance

Regarding the relationship between market-linking capability and firm performance, previous studies support the positive impact of market-linking capability on firm performance. For example, empirical studies demonstrate that companies with superior customer-linking capability are more effective in satisfying customers and increasing customer loyalty, which is found to be highly and positively related to firm performance (Hooley et al., 2005). Maintaining good relationships with customers is beneficial, because customers who have a good relationship with the company are less likely to purchase from rivals and more likely to be responsive to marketing efforts (Rapp, Trainor & Agnihotri, 2010). Thus, building good relationships with customers enables companies to shorten their sales cycles and lower service costs (Srivastava et al., 1998), which ultimately leads to advantageous competitive positions in the marketplace.

Studies also show that market-sensing capability leads to superior financial performance, because this capability allows companies to grow revenue by attracting the most beneficial customers and to reduce average costs by acquiring and deploying resources more effectively (Day, 1994; Morgan, Vorhies & Mason, 2009). In addition, it enables companies to learn more about their customers and competitors, e.g., customers' reactions to companies' marketing efforts (Morgan et al., 2009). For market-driven companies, market-sensing capability also

enables them to gain positional advantages by responding to market changes more quickly than their competitors. Thus, it has been found to positively influence firm performance, such as revenue (margin) growth rate, market share and profitability (Blesa & Ripolles, 2008; Morgan et al., 2009; Song et al., 2007).

Similar conclusions have been reached with regard to the positive impact of channel-bonding capability on firm performance. Cousins et al. (2008) and Mahama (2006) argued that, by practising the socialisation mechanism through cooperation and mutual dialogues with channel members, companies with better channel-bonding capability can attain superior business performance. For instance, companies can achieve higher product availability through well-established channel relationships, thus reducing costs and increasing sales and profitability (Ramaswami et al., 2009). Therefore, this study proposes the following hypothesis:

H9: Market-linking capability is positively related to firm performance.

4.5.2 Architectural Marketing Capability and Firm Performance

Companies with superior architectural marketing capability can better coordinate their specialised marketing capabilities, e.g., pricing capability and communication capability, and more effectively deploy their resources to implement marketing strategies (Vorhies et al., 2009). Therefore, such companies perform better than those with inferior architectural marketing capability. For instance, marketing planning capability allows companies to collect market information and develop marketing plans based on this information. This enables companies to optimise the compatibility between their marketing resources and their marketplace (Morgan et

al., 2003) and ensures that their marketing resources are effectively deployed to implement marketing strategies (Noble & Mokwa, 1999).

These arguments have been supported by empirical studies, in which the positive association between architectural marketing capability and different types of firm performance have been found in different contexts (e.g., Chang et al., 2010; Morgan et al., 2003; Vorhies et al., 2009; White et al., 2003). For example, marketing planning and implementation capabilities have been found to positively influence market effectiveness and market profitability (Chang et al., 2010; Vorhies et al., 2009), customer performance (O'Cass, Ngo & Siahtiri, 2012), adaptive performance (Morgan et al., 2003), relative performance compared to competitors (White et al., 2003) and cash flow (Vorhies et al., 2009). These studies are in line with the argument that architectural marketing capability is one of the key drivers of firm performance (Day, 1994; Morgan, 2012; Slotegraaf & Dickson, 2004; Vorhies & Morgan, 2005). Thus, this study proposes the following hypothesis:

H10: Architectural marketing capabilities are positively related to firm performance.

4.5.3 Market-Focused Learning Capability and Firm Performance

Market-focused organisational learning capability has been found to contribute to superior firm performance for several reasons. First, it results in better innovation performance (Weerawardena et al., 2006). If companies are good at collecting market information and disseminating this information from within, the new product development department is more likely to acquire this information and use it in product innovation. Information about customer

preferences and market changes helps companies increase the match between their new product development and customer preferences, which will ultimately lead to more successful product innovation (Kim & Atuahene-Gima, 2010). Second, it is argued that market-focused organisational learning capability allows companies to better use their marketing mix strategies to reach the intended market (Knight, 2000). Therefore, market-focused organisational learning capability enables the development of marketing capabilities, e.g., pricing capability and promotion capability (O'Cass & Weerawardena, 2010; Park, Lee & Morgan, 2011). Third, by focusing on gathering information from the market, companies are more market-orientated. Thus, market-focused organisational learning capability can positively influence firm performance by facilitating market orientation (Morgan & Turnell, 2003), which is found to drive firm performance (Ngo & O'Cass, 2012; O'Cass & Sok, 2012).

Empirical studies show that market-focused organisational learning capability contributes to better firm performance in different areas, such as brand performance (O'Cass & Weerawardena, 2010; Weerawardena et al., 2006), market performance (Morgan & Turnell, 2003; Sinkula, Baker & Noordewier, 1997) and CRM performance (Park et al., 2011). In line with the existing literature, this study also posits that market-focused organisational learning capability is positively related to firm performance.

H11: Market-focused organisational learning capability is positively related to firm performance.

4.5.4 Relationally-Focused Learning Capability and Firm Performance

Similar to market-focused organisational learning capability, empirical studies also indicate that relationally-focused organisational learning capability leads to better organisational innovation and the development of marketing capabilities (Powell, 1996; Weerawardena et al., 2006; Weerawardena et al., 2015). A company's external networks enable research and development collaborations between firms (Powell, 1996; Weerawardena et al., 2006). Therefore, companies' external networks provide valuable information in terms of new technological advancement and market opportunities, thus enabling them to better exploit, utilise and explore opportunities (Lee et al., 2001). These relationship-based assets, e.g., networks, also provide companies with a wider access to potential customers and channel members, thus leading to better segmentation and marketing capabilities (Weerawardena et al., 2015). For instance, companies may obtain more knowledge about their customers, channel members and the market by learning from external partners. This market knowledge gained from relational learning enables companies to perform better (Homburg et al., 2012). Thus, relationally-focused organisational learning capability is found to lead to better firm performance, such as brand performance (O'Cass & Weerawardena, 2010; Weerawardena et al., 2006), innovation performance (Chen, Lin & Chang, 2009; Weerawardena et al., 2015) and financial performance (Wang, Dou, Zhu & Zhou, 2015). Combining the above arguments, this study proposes that:

H12: Relationally-focused organisational learning capability is positively related to firm performance.

4.5.5 Adaptive Marketing Capability and Firm Performance

Adaptive marketing capability results in superior firm performance because it enables companies to leverage existing resources and capabilities to adapt to new environments and explore new opportunities (Day, 2011). Adaptive marketing capability enables companies to generate new insights into how to react quickly to market changes and the actions of competitors, thus leading to better business performance. By exploring and adapting to the changing environment, companies can strengthen their exploitation-based capabilities and facilitate organisational learning (Akgün et al., 2012). In addition, with superior adaptive marketing capability, companies are more capable of assessing competitors' products and marketing strategies and identifying their weaknesses in order to develop superior products to satisfy customers' needs (Oktemgil & Greenley, 1997).

Empirical evidence supports the positive impact of adaptive marketing capability on short-term project success and project portfolio performance (Biedenbach & Müller, 2012), marketing performance, e.g., market share, ROI and sales growth (Oktemgil & Greenley, 1997) and innovation performance (Akgün et al., 2012; Wei & Lau, 2010). Based on the above evidence, this study proposes that:

H13: Adaptive marketing capability is positively related to firm performance.

4.6 MPMSs-Firm Performance: The Moderated Effects

According to contingency theory, the effectiveness of MPMSs in improving firm performance depends on certain external and internal contingent factors (Chenhall, 2003; Fisher, 1998;

Frösén et al., 2013; Homburg et al., 2012; Ittner & Larcker, 2001). This study draws on this general argument and suggests that the usefulness of MPMSs varies according to different contexts: MPMSs have a larger impact on firm performance under turbulent conditions.

Moderator 1: Market turbulence. Market turbulence can be conceptualised as the rate of change in customers' preferences (Jaworski & Kohli, 1993). This study posits that the comprehensiveness and measurement quality of MPMSs would have a stronger impact on firm performance when market turbulence is higher. The MPMS is a means of developing a positional advantage, because it enables companies to respond to changes in customer preferences and competitive campaigns. Greater market uncertainty increases the need for more timely customer information and a wider range of customer information (Chenhall & Morris, 1986). These needs can be met by using MPMSs to provide timely information about customer and competitor performance. To be specific, when the market is more turbulent, firms sense the need for more control over marketing activities and are required to gather customer feedback in a more timely and comprehensive manner. The information is necessary to help them stay alert and focused on critical issues, and make expedient strategic changes when needed. For example, they might need to explore new ideas, concepts or marketing campaigns, in order to keep up with the changing market (Wu & Shanley, 2009). In this case, the use of MPMSs that provide good quality information is more beneficial to companies.

In contrast, when the market is less dynamic, "[i]nformation asymmetries are lower and cause-and-effect relationships between marketing constructs are more stable over time" (Homburg et al., 2012, p. 62). Thus, companies do not need to monitor competitive activities as

frequently as when the market turbulence is high. In this regard, a less comprehensive MPMS may be sufficient.

Thus, this study proposes that:

H14a: The greater the market turbulence, the stronger the relationship between the comprehensiveness of MPMSs and firm performance.

H14b: The greater the market turbulence, the stronger the relationship between the measurement quality of MPMSs and firm performance.

Moderator 2: Technological turbulence. Technological turbulence refers to the rate of technological changes (Jaworski & Kohli, 1993; Luca & Atuahene-Gima, 2007). In order to keep up with changing technology, more learning and innovation is needed (Ottum & Moore, 1997). As indicated earlier, the use of MPMSs can facilitate the innovation process, thus leading to better firm performance. Previous studies also suggest that, if companies operate in a highly turbulent technological environment, they tend to invest more resources in developing technological capability, namely, the ability to use technological resources (Day, 1994; Song, Droge, Hanvanich & Calantone, 2005). This requires a strong resource commitment, which is believed to have a negative impact on firm performance (Su, Xie, Liu & Sun, 2013). The use of MPMSs is said to mitigate the side-effects of technological turbulence on firm performance because it enables companies to effectively deploy their resources to satisfy the strong resource commitment. In addition, Jaworski & Kohli (1993) argued that, in a changing environment, companies were more likely to be market-orientated and responsive. In this case, swiftly

updated market and competition information is required to facilitate market orientation and the responsiveness of companies.

In contrast, if firms operate in a stable technological environment, it is unnecessary for them to leverage technology to gain positional advantages. Thus, it is not requisite for companies to acquire timely information to inform resource deployment and to be more responsive. Therefore, this study proposes the following hypotheses:

H15a: The greater the technological turbulence, the stronger the relationship between the comprehensiveness of MPMSs and firm performance.

H15b: The greater the technological turbulence, the stronger the relationship between the measurement quality of MPMSs and firm performance.

Moderator 3: Competitive intensity. Competitive intensity refers to the extent of promotion wars or price-based competition (Jaworski & Kohli, 1993). This study posits that competitive intensity also positively moderates the relationship between MPMSs and firm performance. MPMSs provide valuable information about customers, competitors and the market, thus enabling companies to achieve competitive advantages (Lee & Yang, 2011). When the competition is fierce in the marketplace, companies need more timely information and intelligence in order to understand competitive actions (Day & Wensley, 1988). As a result, companies have greater needs for marketing metrics (Mintz & Currim, 2013) to provide timely information concerning customers and the market. Thus, companies with comprehensive, timely, reliable and accessible MPMS are more likely to survive in competition wars and,

indeed, perform better. In addition, the monitoring of market-based causal relationships is vital, as this enables companies to understand the effectiveness of their marketing activities in the marketplace (Lee & Yang, 2011; Miles & Snow, 1978). Under high competition conditions, customers are exposed to more choices and are more likely to switch to competitors (Jaworski & Kohli, 1993). The rapid changes in customer preferences and competitive activities lead to changes in these market-related causal relationships (Homburg et al., 2012). Therefore, companies will need MPMSs to better understand market changes and enhance their competitiveness.

In addition, intense competition implies a lack of information, which makes it difficult for companies to make marketing plans and respond to competitive campaigns (Chenhall & Morris, 1986). Competitive intensity negatively influences firm performance due to companies' lack of timely information about the external environment and their inability to make right decisions with respect to competition activities (Chenhall, 2005; Chenhall & Morris, 1986). MPMSs that provide accurate, reliable and timely information allow firms to collect environmental information through scanning and monitoring, which help hinder the negative effect of competition. Therefore, the desirable outcomes created by the use of MPMSs would be more numerous when the competition is more intense (Lee & Yang, 2011). In contrast, when the competition is less intense, an investment in MPMSs may lead to less desirable outcomes relative to the investment. In this case, the investment in MPMSs is less beneficial to firm performance. Therefore, this study proposes:

H16a: The greater the competitive intensity, the stronger the relationship between the comprehensiveness of MPMSs and firm performance.

H16b: The greater the competitive intensity, the stronger the relationship between the measurement quality of MPMSs and firm performance.

Moderator 4: Marketing complexity. Marketing complexity reflects the complexity of marketing processes caused by the diversity of the product portfolio (Homburg et al., 2012). This study anticipates that companies benefit from the use of MPMSs, especially under conditions of high marketing complexity. Marketing complexity increases the need for comprehensive and reliable information as it is harder to understand complex marketing activities than simple ones (Menon & Varadarajan, 1992). In the case of high marketing complexity, managers may also face more difficulty in inferring causal relationships between marketing activities and firm performance due to the interdependencies between marketing activities. Therefore, the use of MPMSs to provide accurate, timely and reliable feedback is more valued by management teams (Clark et al., 2006). As a result, managers are more capable of using MPMSs to make decisions and foster organisational learning (Menon & Varadarajan, 1992), thus leading to superior firm performance.

In addition, a good understanding of customers' preferences becomes vital for companies when the latter have a relatively comprehensive product portfolio. The ability to link with customers and satisfy their needs becomes more challenging when marketing activities become more complex to manage. In particular, the causal relationship between marketing activities and firm performance should be explicated as this allows companies to understand the effectiveness of

single marketing campaigns. Thus, companies need to rely on MPMSs for updated customer and market information (Homburg et al., 2012).

In contrast, when the marketing complexity is low, the managerial uncertainty is quite low. Managers might be capable of dealing with these managerial issues without a comprehensive MPMS. This study posits that MPMSs are valued and needed only under conditions of high marketing complexity. Therefore, the study proposes that the marketing complexity positively moderates the effectiveness of MPMSs in improving firm performance:

H17a: The greater the marketing complexity, the stronger the relationship between the comprehensiveness of MPMSs and firm performance.

H17b: The greater the marketing complexity, the stronger the relationship between the measurement quality of MPMSs and firm performance.

4.7 Chapter Summary

This chapter presented the development of hypotheses for the research model. Based on the literature review, several hypotheses were put forward regarding the indirect and contingent effects of MPMSs on firm performance. The relationships between MPMSs and the use of MPMSs, between the use of MPMSs and marketing capabilities and between marketing capabilities and firm performance, were explained. Besides, the moderating effects of four contingencies, i.e., market turbulence, marketing complexity, technological turbulence and competitive intensity, were discussed. The forthcoming chapter presents the methodology employed to test the hypotheses proposed in this chapter.

Chapter 5 Research Methodology

5.1 Introduction

This chapter first explores the philosophical basis of the research methodology used to address the research hypotheses developed in Chapter Four. The reasons for applying a mixed methods approach in the current study are provided. This chapter also provides a detailed description of the research process, including the questionnaire design, pilot test, research design strategies used to minimise common method bias, interview guide design, sampling method and data collection method. It also discusses the steps taken to prepare the data for further data analysis.

5.2 Research Philosophy and its Applications

The current study adopts a mixed methods approach. Historically, the mixing of methods in the social science research has been given many names: multiple methods (Davis, Golicic & Boerstler, 2011), methodological triangulation (Morse, 1991), integrated research (Tashakkori & Teddlie, 2010), mixed research (Leech & Onwuegbuzie, 2009) and mixed methods research (Johnson, Onwuegbuzie & Turner, 2007; Tashakkori & Teddlie, 2003). Mixed methods research refers to a methodology, which involves "philosophical assumptions that guide the direction of the collection and analysis and the mixture of qualitative and quantitative approaches in many phases of the research process" (Creswell & Plano Clark, 2007, p. 5). Its central premise is that the combination of quantitative and qualitative methods can provide a better and deeper understanding of the research questions than either approach alone (Creswell & Plano Clark, 2007).

A major philosophy in social science studies is positivism, which holds that the knowledge of society can be analysed and verified through observation and examination (Johnson et al., 2007). Thus, the positivist approach is also labelled as empiricism given that this approach adopts a quantitative approach to reveal the causal relationships in the real world. Hence, the goal of quantitative research is to make inferences from samples and then generalise them to the whole population. However, positivism has been criticised for its ignorance of the research

background and context, and its lack of in-depth investigation. The other philosophical stream, constructionism, emerges, which endorses criticism of positivism and adopts a qualitative research approach to provide in-depth investigation of real world issues. Unlike quantitative research, qualitative research uses small samples to look at processes and meanings that can be applied to a certain context (Creswell & Plano Clark, 2007). A summary of quantitative and qualitative research methods is displayed in Table 5.1.

Table 5.1 A comparison of qualitative and quantitative research methods

	Quantitative research method	**Qualitative research method**
Philosophy	**Positivism**	**Constructionism**
Assumptions	**Empiricism:** detailed observations and measurement **Deductive:** narrowing and focusing on focal variables **Theory verification**	**Critical realism:** multiple measures and observations **Inductive:** moving from the specific to the general **Theory generation**
Pros	1. Allows the comparison between groups, contexts and times 2. Reveals the causal mechanisms that allow the prediction of other issues 3. Allows researchers to control the research process	1. Takes into consideration research background and context 2.Generates more insights
Cons	1. Ignorance of research background 2. Lack of in-depth investigations	1. Hard to generalise 2. Bias caused by researchers' interpretation and perception

Source: Creswell & Plano Clark (2011); Harrison & Reilly (2011)

Later, a mixed methods approach emerges to address the complexity of research questions, which could not be answered by a single research method alone. For instance, there is a need for quantitative research to involve qualitative data in order to understand the research question in depth and for qualitative research to increase its generalisation by involving quantitative data (Creswell & Plano Clark, 2011). Mixed methods approaches are "more flexible, integrative and holistic in their investigative techniques" (Powell, Mihalas, Onwuegbuzie, Suldo & Daley, 2008, p. 306) and are able to address complex research questions. Usually, mixed methods research is not aligned with a single philosophy (e.g., positivism or constructionism), or

restrained by paradigmatic assumptions (Johnson & Onwuegbuzie, 2004). Mixed methods research is driven by the research question rather than a philosophical standpoint. In other words, the mixed methods approach should be used when mixed methods could best address the research questions (Creswell & Plano Clark, 2011). For example, mixed methods design should be used if the research question requires different research phases or methods to understand the research objectives (Creswell & Plano Clark, 2011).

5.2.1 The Benefits and Challenges of Mixed Methods Research

Mixed methods research mitigates the weaknesses of using quantitative or qualitative research method alone. For instance, as shown in Table 5.1, quantitative research is not able to capture the context and individual interpretations, while the qualitative research is influenced by the researcher's perceptions as well as the small sample size. Therefore, quantitative research lacks the understanding of the context, whereas qualitative research is weak in generalising the research findings to a larger group. The mixed methods research is able to combine all tools of data collection and address research questions that cannot be answered by using quantitative or qualitative research methods alone. Hence, mixed methods research can provide robust research findings that "overcome the considerable risk of method bias" (Davis et al., 2011, p. 473).

However, there are certain drawbacks associated with conducting mixed methods research. One disadvantage of mixed methods research is that it requires researchers to acquire quantitative, qualitative and mixed methods research skills. This could cause difficulties for some purist researchers. Second, the time and resources required for a mixed methods research could be massive compared to qualitative or quantitative research alone. An additional challenge lies in the difficulty in positioning the mixed methods research. For instance, some purists assert that, since qualitative and quantitative research methods are related to different philosophical assumptions (e.g., empiricism or critical realism), these two research methods cannot be mixed and used together (Creswell & Plano Clark, 2011). These three drawbacks potentially explain why mixed methods research has received less coverage compared to quantitative research

(Davis et al., 2011). These benefits and challenges of using mixed methods in social science are summarised in Table 5.2.

Table 5.2 Benefits and challenges of mixed methods research

Benefits	• Provides stronger results through triangulation of findings • Answers broader research questions • Compensates for various weaknesses of single research methods • Tells a more comprehensive, complete and convincing story • Provides a holistic understanding of phenomena
Challenges	• Takes more resources to conduct • Requires understanding and training in multiple methods • Is difficult to relate to philosophical assumptions (Crewell & Plano Clark, 2007)

Source: Davis et al. (2011, p. 473)

5.2.2 Justifications for the Current Research Design

There have been limited studies investigating the implementation of mixed methods research approaches in the marketing literature (e.g., Davis et al., 2011; Hanson & Grimmer, 2007; Harrison & Reilly, 2011). It has been noted that "mixed methods research has received little coverage, despite the apparent movement in many of the social sciences toward such research design" (Harrison & Reilly, 2011, p. 7). Moreover, the mixed methods articles showed a positivist orientation and a quantitative focus. For example, Harrison & Reilly (2011) found that 43 mixed methods articles had been published in top marketing journals from 2003 to 2009, among which 79% applied a sequential design and 63% prioritised the quantitative data. It is held that even though the publication of mixed methods research may be difficult, mixed methods research provides a promising avenue for advancing marketing research by offering robust and compelling findings (Davis et al., 2011).

There are four major types of mixed methods designs: triangulation design, embedded design, explanatory design and exploratory design (Creswell & Plano Clark, 2007). Triangulation design is especially useful when the researcher wants to "directly compare and contrast quantitative statistical results with qualitative findings or to validate or to expand quantitative

results with qualitative data" (Creswell & Plano Clark, 2007, p. 62). Embedded design enables researchers to use one type of data (e.g., quantitative data) to support the other (e.g., qualitative data). Therefore, this research design is very useful when a researcher wants to embed qualitative research designs within a quantitative study (Creswell & Plano Clark, 2007). The explanatory design is applicable when the researcher tries to explain the initial quantitative results, while the exploratory design is helpful if the researcher needs to test or develop an instrument. The purpose of the current study is to understand how marketing performance measurement systems benefit firm performance through the different uses of MPMSs and the development of marketing capabilities. An explanatory mixed methods approach is considered to be suitable to test the hypotheses proposed in Chapter Four and to further explain why certain relationships exist with the integration of qualitative data.

The explanatory sequential design is an innovative mixed methods design which uses both quantitative and qualitative data to address the research questions. It consists of two phases: quantitative research followed by qualitative research. The rationale behind this mixed methods approach is that the quantitative data empirically test the hypotheses proposed in a study to provide a general understanding of the research questions, while qualitative findings further explain the quantitative results by exploring participants' opinions in greater depth (Creswell, Plano Clark & Gutmann, 2003; Tashakkori & Teddlie, 1998). The primary focus in this methodology is usually on the quantitative research design (Creswell & Plano Clark, 2007). Such approach was utilised in this study for two reasons.

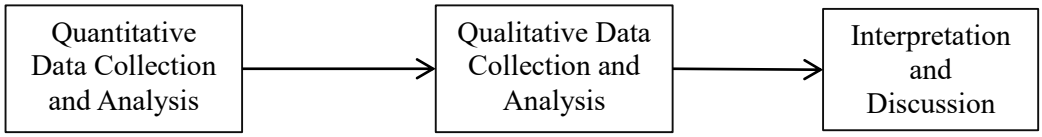
First, it was used to offset the weakness of using a single research method-quantitative research (Bryman, 2006). In this study, as quantitative data were collected from one source (namely, marketing managers or senior managers) in an organisation, it may potentially lead to bias associated with the constrained information source. The adoption of an explanatory sequential research design can increase the credibility of the research findings (Bryman, 2006). The qualitative data were gathered in this study to produce additional insights in order to address the concerns of the reliability of quantitative data (Davis et al., 2011). By adopting this research design, this study not only provides quantitative support for the proposed hypotheses but also

provides explanations on why they are supported. For instance, the qualitative data provide more insights into the processes, e.g., how the use of MPMSs helps companies develop marketing capabilities, thus ultimately improving firm performance.

The second reason for using the explanatory sequential approach, a reason much cited in the marketing literature, was because "[s]ometimes the results of a study may provide an incomplete understanding of a research problem and [thus] there is a need for further explanation" (Creswell & Plano Clark, 2011, p. 9). In this case, the follow-up qualitative research design can be used to provide additional insights into the research questions or "to address gaps that result from unique findings" (Harrison & Reilly, 2011, p. 17). As the research objectives of this study are to explore how MPMSs lead to superior firm performance, the mechanism through which MPMSs lead to superior firm performance may not be fully captured by quantitative research design. Qualitative data are thereby needed to provide complete understandings of the rationale behind the MPMSs-performance linkage.

Figure 5.1 illustrates the explanatory sequential mixed methods approach used in this study. Concerning the level of interaction between the qualitative and quantitative strands, the two strands are dependent on each other as the design and conduct of qualitative interviews depends on the results of the quantitative research.

Figure 5.1 The explanatory sequential mixed methods approach in this study



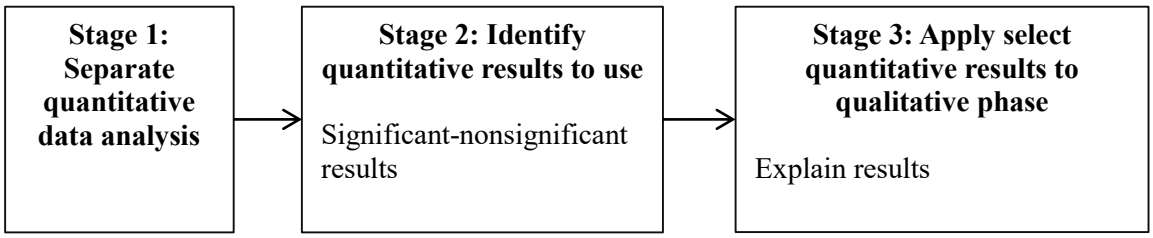
Source: This procedure is adopted from Creswell & Plano Clark (2011, p. 69)

There is a quantitative priority in the explanatory sequential mixed methods design, where the quantitative research design dominates and the qualitative research methods are in a secondary role and are used after the collection and analysis of the quantitative data. This explanatory sequential method is consistent with the suggestion in other marketing literature (e.g., Denzin, 1978, Jayachandran et al., 2004), where "between-method triangulation is advocated with one dominant method and the other method(s) acting as support method(s)" (Jayachandran et al.,

2004, p. 225). The interaction of two research methods happened during the interpretation of the research findings.

Figure 5.2 illustrates the data analysis procedures in the sequential mixed methods research design. At stage 2, where quantitative results are needed to assist the development of the qualitative research design, researchers can choose to further explore the outliers or extreme cases in the quantitative results, understand the significant/non-significant results, use the demographics information or compare the different groups. In the current mixed methods research design, following Creswell & Plano Clark (2007), the qualitative data were collected and analysed to mainly explain the significant quantitative results and provide a better understanding of the research model (Stage 3, Figure 5.2).

Figure 5.2 The explanatory sequential data analysis procedure in this study

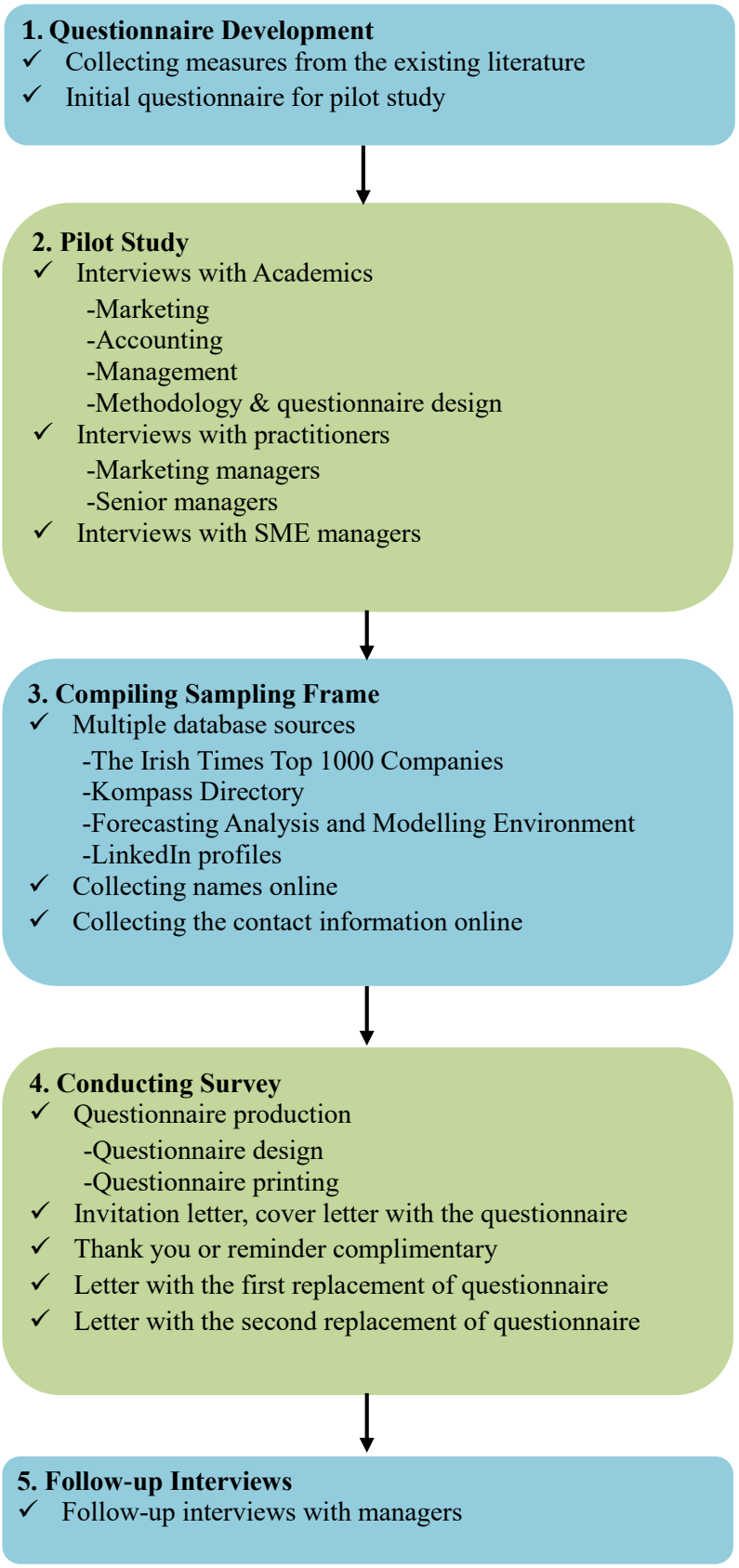


Source: Adapted from Creswell & Plano Clark (2007, p. 143)

5.2.3 Overview of the Research Process

Figure 5.3 outlines the research process. First, a survey was designed based on the literature review. During the survey design process, the author piloted the questionnaire with six academics and eleven marketing (senior) managers to improve the content validity and face validity of the survey instruments. The survey questions were then modified based on the feedback from the pilot test respondents. To recruit participants, the author compiled the contact information of marketing managers who worked for The Irish Times Top 1000 companies and marketing managers who are DCU Alumni and work for other Irish companies. Dillman's (2011) Tailored Design Method was then utilised to distribute the survey. The questionnaires were posted and/or e-mailed to the respondents. Missing data were further collected by post or via e-mail.

Figure 5.3 The research design process



Creswell & Plano Clark (2007) advise that, in the quantitative study in explanatory sequential research designs, qualitative data can be collected from a smaller group of quantitative respondents, especially when the qualitative data are used to provide a better understanding of quantitative results. In line with this advice, the interview participants were selected from the survey participants. At the end of the survey, the respondents were asked to indicate their willingness of participating in a follow-up interview. Those who expressed their interest in participating were then contacted to conduct the interviews. The quantitative data were analysed in order to provide a general guideline for the interview. After the quantitative data analysis, an interview guide was developed and modified based on feedback from academics and practitioners. Thirty survey respondents indicated that they were interested in a follow-up interview. Interviews were conducted with 13 of these respondents. An average length of the interviews was 45 minutes. The remainder of the chapter discusses the process in great detail.

5.3 Quantitative Research Process

This section provides a detailed description of the quantitative research process. It first outlines how the questionnaire was developed, pre-tested, modified and revised based on the feedback from academic experts and practitioners. The detailed measurements of key constructs are also provided. Then the section outlines the major steps taken to gather data, which include obtaining ethical approval from DCU Research Ethics Committee, getting access to the research sample and collecting quantitative data.

5.3.1 The Development of a Measurement Pool

In order to develop a reliable and valid questionnaire, the author first created a measurement pool that contained a list of survey questions that were used in previous studies to measure the focal concepts of interest. A summary of the measurement of key constructs is provided in Table 5.3. The survey questions were pilot tested with both academics and practitioners. Based on their feedback, the questionnaire was further modified and revised. The modification on the measurement of key constructs is explained in detail in Section 5.3.2.

Table 5.3 A summary of the measurement of key constructs

Constructs	Items	References
The comprehensive-ness of MPMSs	***In our firm, the marketing performance measurement system:*** • Consists of both financial and nonfinancial measures • Provides a balanced picture of the marketing function • Provides measures of different perspectives (e.g., financial, customer, innovation) • Provides output measures (e.g., customer satisfaction), input measures (e.g., budget) and process-related measures (e.g., the length of marketing processes) • Puts special weight on customer, competitor and market-related measures • Is deviated from our long-term marketing targets* • Reflects our marketing strategy • Includes measures that are chosen to track marketing strategy • Shows how marketing strategy is to be achieved • Shows how marketing activities and results are connected • Consists of measures which build upon each other • Shows cause-and-effect relationships	Burney & Widener (2013); Homburg et al. (2012)
Measurement quality	***In our firm, marketing performance measures…*** • Are not reliable* • Are reported on a systematic and regular basis • Are understandable • Provide accurate information • Are easy to get access to	Burney et al. (2009)
The diagnostic use of MPMSs	***Our top management team currently uses marketing metrics to*** • Track progress towards goals • Review key marketing performance measures • Monitor marketing results • Compare marketing outcomes and expectations	Henri (2006a)
The interactive use of MPMSs	***Our top management team currently uses marketing metrics to*** • Enable the organisation to focus on common issues • Enable the organisation to focus on critical success factors • Develop a common vocabulary in the organisation • Enable discussion in meetings of supervisors, subordinates and peers • Enable continual challenge and debate underlying results, assumptions and action plans • Develop a common view of the organisation • Tie the organisation together	Henri (2006a)

*: negative wording questions

Table 5.3 A summary of the measurement of key constructs (continued)

Constructs	Items	References
Market-linking capability	***Compared to our major competitors, our firm performs (better or worse) in…*** • Having strong relationships with key target customers • Creating durable relationships with channel members, e.g., suppliers, retailers • Discovering competitors' strategies and tactics • Gaining insights about the channel • Creating good relationships with customers • Learning about the broad market environment • Attracting and retaining channel members • Identifying and understanding market trends • Maintaining and enhancing relationships with customers • Learning about customer needs and requirements	Morgan et al. (2009); Song et al. (2007)
Adaptive marketing capability	***Compared to our major competitors, our firm performs (better or worse) in…*** • Handling potential threats from the market properly • Adapting quickly to the sudden changes in our markets • Succeeding in an intensely competitive business environment • Achieving technical complementarity in a timely manner • Reacting quickly to changes with regard to our competitors • Adjusting the management system to respond rapidly to shifts in our business priorities	Akgün et al. (2012); Ma et al. (2009)
Market-focused organisational learning capability	***Compared to our major competitors, our firm performs (better or worse) in…*** • Collecting information about markets • Searching for innovative ideas through market information • Gaining knowledge about market segments • Gaining knowledge of our competitors • Sharing market information with employees • Using market information in innovation • Reviews past unsuccessful market research programs • Learn from market changes enable it to successfully compete	O'Cass & Weerawardena (2010)
Relationally-focused organisational learning capability	***Compared to our major competitors, our firm performs (better or worse) in…*** • Using networks and links to acquire knowledge • Jointly working with other organisations to acquire knowledge • Networking to acquire knowledge • Searching for knowledge through external networks • Sharing knowledge acquired through networks within the firm • Using knowledge generated externally in innovation • Capability to acquire knowledge externally	O'Cass & Weerawardena (2010)

Table 5.3 A summary of the measurement of key constructs (continued)

Constructs	Items	References
Architectural marketing capability	***Compared to our major competitors, our firm performs (better or worse) in terms of:*** • Marketing planning skills • Setting clear marketing goals • Developing creative marketing strategies • Segmenting and targeting market effectively • A thorough marketing planning process • Allocating marketing resources effectively • Monitoring marketing programs effectively • Translating marketing strategies into effective action • Executing marketing strategies quickly	Change et al. (2010); Morgan et al. (2003); Vorhies & Morgan (2005)
Firm performance	***Relative to our major competitors, our firm performs (better or worse) in terms of*** • Customer satisfaction • Market share • Acquiring new customers • Return on investment • Sales • Profitability	Verhoef & Leeflang, (2009); Vorhies & Morgan, (2005)
Technological turbulence	***Please indicate your agreement with the following statements:*** • It is difficult to forecast technological development in our industry • Technological environment is highly uncertain in our industry • Technological changes provide big opportunities in our industry • Technologically, our industry is a very complex environment	Jaworski & Kohli (1993)
Marketing complexity	***Please indicate your agreement with the following statements:*** • Our range includes many products/services • Our products/services are very distinct • Our firm offers a broad set of products/services	Homburg et al. (2012)
Competitive intensity	***Please indicate your agreement with the following statements:*** • Intensive competitor-related activities are a hallmark of our industry • There are many promotion wars in our industry • There are many competitive rivalries in our industry • Competition in our industry is very intense	Homburg et al. (2012)
Market turbulence	***Please indicate your agreement with the following statements:*** • Customers' product demands and preferences change rapidly • Customers tend to look for new products/services all the time • It is difficult to predict changes in customer needs and preferences	Jaworski & Kohli (1993)

5.3.2 Pilot Study of the Survey

Before conducting the data collection, a number of steps were taken to improve the face validity of the survey as follows:

Step 1: First round of pilot study with academic experts. The questionnaire was reviewed by academic experts in the fields of marketing, general management and accounting. The clarity of the questions, the relevance of the survey and the logic flow of the survey were tested in particular. The questionnaire was revised based on the feedback from these parties. For example, concerning the introduction, one respondent recommended providing some incentives, such as a free report of key research findings, or charity donations. Regarding the background information, one question was used to ask the background of the CEO. However, the respondents suggested changing from six categories to seven categories, namely, "general management", "finance", "engineering", "marketing", "law", "other technical" (added) and "other".

Stage 2: First round of pilot study with practitioners. Six marketing managers were contacted to do a pilot study in an attempt to ensure the face validity of the survey. As suggested in the literature (Pole & Lampard, 2002), the author was careful to make sure that the pilot sample used was as similar as possible to the target population. The background information of the participants in the pilot study is shown in Table 5.4. The pilot study participants were well informed of the purpose of their participation. They were asked to fill out the survey and to comment on any aspects of the survey.

Table 5.4 Background information of the first-round pilot test participants

Code	Industry	Interview Date	Gender
A	Market research institute	February 25, 2015	Male
B	Computing software, telecommunications equipment, multinational company	February 26, 2015	Male
C	Food and service	February 27, 2015	Male
D	Online survey services	February 27, 2015	Female
E	Home media	March 12, 2015	Female
F	Digital agency	March 14, 2015	Male

Feedback on the length, design, clarity, structure, logic flow and relevance of the survey was received. The survey was then modified based on the feedback received. For example, items, such as "(our firm's) capability to learn allows firm to compete", "(our firm's) capability of discovering competitors' strategies and tactics", "reviewing past unsuccessful programs for external knowledge" and "MPMS is deviated from our long-term marketing targets", were perceived as vague, confusing or hard to answer. Therefore, these items were either rephrased or removed. It was recommended that additional explanations should be added in order to make the survey easier for respondents to complete. For instance, one respondent recommended adding a footnote to explain the terms "business-to-business" and "business-to-consumer".

One particular issue raised in the first round of pilot test related to the applicability of the survey to SMEs. So a second round of pilot study was conducted to mainly investigate whether the survey was relevant to SMEs.

Step 3: Second round of pilot study with SME managers. Convenience sampling was used to recruit participants for a second round of pilot testing. Five marketing managers who work for Irish SMEs participated in the pilot study. A brief introduction to the background of these respondents is provided in Table 5.5. Respondents were asked to fill out the survey and provide comments on the survey. Judging from their comments, all were satisfied with the wording, structure, logic flow and clarity of the survey. The author further asked whether the survey was relevant to their management practices and respondents confirmed that the survey was applicable to the SME context.

Table 5.5 A brief introduction to the second-round pilot test respondents

Code	Industry	Interview Date	Gender
A	Wholesale distributor	March 17, 2015	Male
B	Designing	March 19, 2015	Male
C	Heating equipment	March 20, 2015	Male
D	Consultancy	March 24, 2015	Female
E	Advertising	March 25, 2015	Female

Stage 4: Final checks. The survey was further modified based on the feedback received from SME managers. The final version of the survey was sent out to academics and practitioners involved in the pilot testing for one final check. The survey was finalised until no further suggestion for improving the survey was received. The final version of the questionnaire is attached in Appendix 1.

Only after the hard copy was finalised, was the online survey pilot-tested. The online survey was reviewed by other research scholars at the author's institute and a professional account representative in SurveyMonkey. The latter suggested including a progress bar on the top of each page in order to inform the respondents of the survey progress. Otherwise, all reviewers were satisfied with the wording, logic flow and design of the online survey. The online survey (Survey link as follows: http://www.surveymonkey.com/s/MPMSMKT1) was then launched after the pilot testing.

5.3.3 Measurement of Key Constructs

As shown in Table 5.3 (p. 142), established measures drawn from previous studies were used to measure the key constructs of interest. The key constructs include the comprehensiveness and measurement quality of MPMSs, the diagnostic and interactive uses of MPMSs, market-linking capability, architectural marketing capability, adaptive marketing capability, relationally- and market-focused organisational learning capability, firm performance, contingencies and control variables. A description of the measures is provided below.

5.3.3.1 Comprehensiveness and Measurement Quality of MPMSs

The independent variables are two attributes of MPMSs, namely, the comprehensiveness and measurement quality of MPMSs. These variables were measured on a 7-point scale with response categories ranging from 1 (strongly disagree) to 7 (strongly agree).

As show in Table 5.3, eleven items were adopted from Homburg et al. (2012) to measure the comprehensiveness of MPMSs. One item was added from Burney & Widener (2013) to fully address the strategic alignment of marketing metrics. Necessary revisions were made based on

the feedback received from the pilot testing. An example was that the participants thought the question “MPMS is deviated from our long-term marketing targets” was inappropriate. This item was rephrased to “MPMS is not aligned with our long-term marketing targets”. The Cronbach’s alpha was calculated for the three sub-dimensions separately. The Cronbach’s alpha for breadth, strategic alignment and the cause-and-effect relationships were .86, .88 and .91, respectively, indicating a good internal reliability. Five items were adapted from Burney et al. (2009) to measure measurement quality of MPMSs. In order to minimise common method bias, a negative wording question was used. The item was “in our firm, marketing performance measures are not reliable”. The Cronbach’s alpha for measurement quality was .89, indicating that they were all reliable measures.

5.3.3.2 The Diagnostic and Interactive Uses of MPMSs

The diagnostic and interactive uses of MPMSs were measured using items adopted from Henri (2006a). As shown in Table 5.3, four items were adopted from Henri (2006a) to measure the diagnostic use of MPMSs. Respondents were asked to evaluate the extent to which their top management team currently uses marketing performance measures to 1) track progress towards goals, 2) review key measures, 3) monitor results and 4) compare outcomes with expectations (Cronbach’s alpha= .95).

Seven items were initially adopted from Henri (2006a) to measure the interactive use of MPMSs. The respondents were asked to evaluate the extent to which their senior management team currently use marketing measures to 1) enable the organisation to focus on common issues, 2) enable the organisation to focus on critical success factors, 3) develop a common vocabulary in the organisation, 4) enable discussion in meetings of supervisors, subordinates and peers, 5) enable continual challenge and debate underlying results, assumptions and action plans, 6) tie the organisation together, and 7) develop a common view of the organisation. Since most respondents thought that item 7 “develop a common view of the organisation” was too vague and hard to answer, the question was removed in the final version of the survey. All variables were measured on a seven-point Likert scale with response categories varying from 1 (not at all) to 7 (to a great extent). The Cronbach’s alpha for the remaining six items was .97.

5.3.3.3 Marketing Capabilities

In line with the previous literature, respondents were asked to rate how well their organisation performs in their marketing capabilities, compared to their major competitors. All variables were measured on a seven-point scale anchored by 1 (much worse) to 7 (much better). In the pilot testing process, the author paid special attention to marketing capability questions and asked the respondents whether they were capable of answering the questions regarding firm's relative performance compared to its competitors. All the respondents indicated that their companies were alert to competitive activities. So they were confident in their ability to answer the questions.

Market-linking capability. In line with Song et al. (2007), seven widely used items were utilised to measure market-linking capability. In addition, to fully capture firms' ability to link with the broader market environment, three other items were borrowed from Morgan et al. (2009). They were "discovering competitors' strategies and tactics", "identifying and understanding market trends" and "learning about the broad market environment". The ten items were analysed together for their reliability as an indicator of market-linking capability. A Cronbach's alpha of .94 indicated a good internal reliability.

Architectural marketing capability. Architectural marketing capabilities refer to firm's ability to make strategic marketing plans and to carry out these plans effectively (Morgan et al., 2003; Vorhies &Morgan, 2005). Nine widely used items were adopted from Change et al. (2010), Morgan et al. (2003) and Vorhies & Morgan (2005) to measure marketing planning capability and implementation capability. The respondents were asked to indicate how their firm performs in terms of marketing planning skills and implementation skills, relative to their major competitors. Due to cross-loading, the item "segmenting and targeting market effectively" was deleted when testing the reliability of the measures. The Cronbach's alpha scores for marketing planning capability and marketing implementation capability were .93 and .93, respectively.

Adaptive marketing capability. To measure adaptive marketing capability, six items were adopted from Akgün et al. (2012) and Ma et al. (2009). The six items included "handling

potential threats from the market properly", "adapting quickly to the sudden changes in our markets", "succeeding in an intensely competitive business environment", "achieving technical complementarity in a timely manner", "reacting quickly to changes with regard to our competitors" and "adjusting the management system to respond rapidly to shifts in our business priorities" (Cronbach's alpha=.92).

Relationally- and market-focused organisational learning capability. Fifteen items were initially chosen from O'Cass & Weerawardena (2010) and Weerawardena (2003) to measure relationally- and market-focused organisational learning capability. During the pilot testing process, two items were dropped due to their potential to cause confusion, namely, "reviews past unsuccessful market research programs" and "learn from market changes enable it to successfully compete". This left seven items to measure relationally-focused organisational learning capability (Cronbach's alpha=.89) and six items to measure market-focused organisational learning capability (Cronbach's alpha= .86).

5.3.3.4 Firm Performance

Firm performance was measured using subjective measures (self-reported relative firm performance compared to major competitors), which were developed based on previous studies (Verhoef & Leeflang, 2009; Vorhies & Morgan, 2005). Respondents were asked to indicate how their firm performed relative to their major competitors, with respect to customer satisfaction, market share, sales, new customers acquisition, ROI and profitability. The first four items were used to measure marketing performance (Cronbach's alpha= .82), while the latter two were used to measure financial performance (Cronbach's alpha= .85).

5.3.3.5 Contingent Factors

Four items adopted from Jaworski & Kohli (1993) were used to measure technological turbulence. They were 1) "it is difficult to forecast technological development in our industry", 2) "technological environment is highly uncertain in our industry", 3) "technological changes provide big opportunities in our industry" and 4) "technologically, our industry is a very complex environment". Two of these items, namely, item 1 and item 4, were dropped in order to

increase the reliability (Cronbach's alpha increased from .53 to .62 after dropping the two items).

Marketing complexity was measured by three items adopted from Homburg et al. (2012). These items were "our firm offers a broad set of products/services", "our range includes many products/services" and "our products/services are very distinct". However, item 3 "our products/services are very distinct" was deleted from final data analysis to improve the reliability of these measures. The Cronbach's alpha increased from .58 to .83 after dropping item 3.

Competitive intensity was measured using four items adopted from Homburg et al. (2012). Respondents were asked to indicate the extent to which they agree with the following statements: 1) "intensive competitor-related activities are a hallmark of our industry", 2) "there are many promotion wars in our industry", 3) "there are many competitive rivalries in our industry" and 4) "competition in our industry is very intense" (Cronbach's alpha=. 82).

Market turbulence was measured using three items adopted from Jaworski & Kohli (1993). Respondents were asked to indicate their extent of agreement with the three statements: 1) "customers' product demands and preferences change quite rapidly", 2) "customers tend to look for new products/services all the time" and 3) "it is difficult to predict changes in customer needs and preferences" (Cronbach's alpha =. 65).

5.3.3.6 Control Variables

This study also included six control factors: firm size, firm age, industry, business strategy, business focus and firm type (public or not). In line with previous studies (e.g., Mintz & Currim, 2013), the number of full-time employees was used as the indicator of firm size. Firm age was measured by the number of years that the firm has established (O'Sullivan & Abela, 2007). Industry type was a dummy variable with 1 indicating manufacturing industry, 2 representing service/trade industry, and 3 indicating other industries (Verhoef & Leeflang, 2009). The measures of business strategy were adopted from Artz et al. (2012), with 1 indicating cost leadership strategy, 2 indicating differentiation strategy, 3 indicating others, and 4 representing

"do not know". The business focus was also a dummy variable, with 1 indicating business-to-business company and 2 representing business-to-consumer company (Frösén et al., 2013).

5.3.4 Questionnaire Design

After the pilot test, a survey was developed. It was entitled "Survey on Marketing Performance Measurement Practices". The survey covered questions that were used to measure the focal concepts of interest and was divided into six sections as follows:

Section A: Background Information (e.g., firm size, organisational focus, business strategies, year of establishment and business environment)

Section B: Marketing Performance Measurement Practices (e.g., key marketing metrics used, frequencies of tracking marketing performance, the relative importance of those marketing metrics, the comprehensiveness of marketing performance measurement systems, the use of marketing performance measurement systems and marketing controls)

Section C: Marketing Controls (e.g., how companies manage to control the output of the marketing department, the process of marketing activities and the performance of their employees)

Section D: Marketing Capabilities (e.g., market-linking capability, adaptive marketing capability, architectural marketing capability and market/relationally-focused organisational learning capability)

Section E: Firm Performance (e.g., marketing performance and financial performance)

Section F: Background Information of the Respondents (e.g., position or title, year of career experience, the competence of answering these questions and age).

5.3.5 Common Method Bias Reduction

Following Podsakoff, MacKenzie & Podsakoff (2012), the author took several measures to mitigate common method bias.

First, on the cover page of the survey, the author clearly stated the purposes of this study, which included providing guidelines regarding how to develop MPMSs in Irish companies and exploring how to use MPMSs to enhance marketing capabilities. Additionally, to incentivise respondents, they could nominate a charity of their choice to be entered in a draw of a 150-euro donation. In addition, a free report of key research findings was promised to be offered to them.

Second, to minimise the respondents' task difficulty, the author piloted the survey with marketing managers and senior managers from different organisations. The questionnaire was further modified based on their feedback in order to make it clearer and more concise (please refer to Section 5.3.2).

Third, to ensure that respondents had the capacity to answer the questions in the survey, they were asked to indicate their years of professional experience and their knowledge on the related issues at the end of the survey (Section F of the survey). Only those who answered they had sufficient knowledge on the research questions would be selected for the final data analysis. This was to ensure that the key informants were competent to answer the survey questions, thus mitigating bias and misunderstandings.

Fourth, two steps were followed to increase the difficulty of responding stylistically (Podsakoff et al., 2012). Questions consisted of both positively and negatively worded questions (e.g., in our firm, the marketing performance measurement system is not aligned with our long-term marketing targets). In addition, questions were measured using both 5-point Likert scales (e.g.,1=never, 2=rarely/ad hoc, 3=regularly/yearly, 4=quarterly, and 5=monthly or more) and 7-point Likert scales (1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neither agree nor disagree, 5=somewhat agree, 6=agree, and 7=strongly agree).

5.3.6 The Sampling for the Quantitative Study

The target population consisted of Irish-based companies that have a functional marketing department in place in Ireland. Consistent with previous studies, marketing managers or senior managers in Irish-based firms were chosen as the target informants (Clark et al., 2005; Frösén et al., 2013; Homburg et al., 2012; Song et al., 2007). There were two reasons: 1) these managers were the most knowledgeable informants on marketing-related issues, and 2) they have been widely used as key informants in strategy research (Li & Calantone, 1998). Several major business databases were compared and combined to select the final samples. These databases utilised included The Irish Times Top 1000 Companies database, Forecasting Analysis and Modelling Environment database and Kompass Directory. In addition, DCU Alumni working as marketing managers, senior managers or CEOs in Irish-based companies were also recruited through LinkedIn.

The Irish Times Top 1000 Companies: this database contains updated information on the 969 Irish-based firms, which operate in various industries, such as communications, construction, food, energy, financial services, manufacturing, media and marketing, health, professional services and retailing. It provides various types of rankings based on four ranking criteria, namely, turnover, profit, assets and the number of employees. The number of employees was used as the ranking criterion in this study. In addition, the database provides the contact information on CEOs, or senior directors (e.g., postal address, website or landline). Only half of the companies gave details of the names of their marketing managers.

Forecasting Analysis and Modelling Environment database: this database provides detailed information on 189,060 active Irish firms regarding their company accounts, identification numbers, directors, registry addresses, financial ratios, activities and ownerships. It also provides the individual postal address of directors, but their current roles are not available.

Kompass Directory: Kompass provides detailed company information on 11 million companies in 70 countries, including the Republic of Ireland. In contains information of 28,812 Irish-based firms, e.g., their contact details, company sizes, activities, brand names, executive information

and financial information. However, according to the DCU Business Librarian, Kompass database is considered less updated than The Irish Times Top 1000 Companies database.

DCU Alumni: By cross-referencing the companies on the Irish Times Top 1000 Companies and DCU Alumni that are accessible on LinkedIn (https://www.linkedin.com/), DCU alumni who worked as marketing managers, senior managers, or CEOs were also recruited through LinkedIn (Ramo & Prochaska, 2012). The author also included DCU Alumni because many DCU graduates work for SMEs, which are not fully reflected in The Irish Times Top 1000 Companies database. Irish SMEs are considered to be an important part of Irish economy, since they "account for 99.70% of active enterprises, 68.00% of persons engaged, 50.30% of turnover and 46.20% of gross value added" (Central Statistics Office, 2012). Therefore, DCU Alumni database was used to accommodate SMEs across Ireland, thus making the sample more representative of the Irish context.

In addition, the Sales Institute (www.salesinstitute.ie/), Marketing Institute of Ireland (https://mii.ie/) and company websites were used as supplementary databases in order to confirm the contact information of the key informants. The final sample was compiled as follows:

Step1: Downloaded firm information from The Irish Times Top 1000 Companies database based on their number of employees. This information included company names, the numbers of employees, revenues (for past three years), marketing manager names (if available), postal addresses and contact numbers. So the initial sample size was 969.

Step2: Checked other databases (e.g., Kompass), company websites and LinkedIn profiles for any missing information of these 969 companies.

Step 3: Called company reception for any missing information, e.g., marketing manager names and postal addresses (if the company has several locations in Ireland). After this procedure, 309 companies were excluded because they claimed that they did not do any marketing activities in

Ireland, nor participate in research according to the organisational regulation. The final sample size was 660 (969-309).

Step 4: 2014 Corporate Social Responsibility Report for top 1000 Irish companies (http://issuu.com/ashvillemedia/docs/csr_directory_2014_lores) was then used to collect the e-mail addresses of potential respondents.

Step 5: DCU Alumni were contacted through LinkedIn Mail services. The author subscribed to the Business Premium Plan on LinkedIn and sent e-mail invitations to SME managers after cross-referencing the list with The Irish Times Top 1000 Companies database. The online survey was then sent to 201 respondents who opened the E-mail invitation.

Step 6: Since this study applied an explanatory mixed methods design, the participants for the interviews were the same for the quantitative project (Creswell & Plano Clark, 2011). To recruit interview participants, the survey respondents who expressed an interest in participating in a follow-up interview were further contacted to arrange the interviews.

According to the pre-testing of the questionnaire, one respondent (a marketing manager, senior manager, or CEO) from one organisation was chosen to fill in the survey. The postal addresses of all the 660 firms were available. Among the 660 companies, only 368 marketing managers' e-mails were available. For 266 companies, the names and postal addresses of their marketing managers were available while their e-mail addresses were not available. In the case of 26 marketing managers, neither their names nor e-mail addresses was available. Table 5.6 lists the contact information of marketing managers available after cross-referring different databases.

Table 5.6 Potential respondents and contact details

	Marketing manager			Company reception	
No. of contacts	Name	E-mail	Postal	Postal	E-mail
368	✓	✓	✓	✓	✓
26	✗	✗	✓	✓	✓
266	✓	✗	✓	✓	✓

✓: Information available; ✗: Information unavailable.

For the 634 managers whose names were known, a post with their name on the envelope, enclosed a cover letter (See Appendix 2) and a self-addressed and pre-paid envelope (See Appendix 3), was sent to their working address. For the 26 marketing managers whose names were unknown, a post with "marketing manager" on the envelope was sent to their working address. So the survey was sent to all the 660 managers. Further e-mails and phone calls were made directly to the 368 managers whose e-mail addresses or phone numbers were available to boost the response rate. For the 292 (26+266) managers whose personal e-mail addresses or contact information were not available, phone calls were made through their reception to remind them of the survey.

5.3.7 Survey Distribution and Quantitative Data Collection

Before carrying out the fieldwork, an approval from DCU Research Ethics Committee was sought. In the notification form to this committee, the author highlighted the low-risk associated with participating in the research project and the measures that would be taken to respect the confidentiality and anonymity of the respondents. The application was submitted for review on the 9th of April, 2015, and was approved on the 30th of May, 2015. The notification approval letter is attached in Appendix 4.

The quantitative data collection took place at the end of May 2015. Dillman's (2011) Tailored Design Method was used to collect data from key informants across Ireland. Both online and offline surveys were made available to respondents. First, an e-mail/post was sent out to the marketing managers to invite them to participate in the research study. Within one week, a copy of the questionnaire, cover letter and self-addressed and pre-paid envelope were sent out to them. Twenty-five responses were returned to the author, of which 18 were completed responses for the first round of data collection within one month. To boost the response rate, the respondents were further contacted via e-mails or phone calls from the author. In July, a first-round reminder together with a copy of the questionnaire, a reminder letter and a self-addressed and pre-paid envelope was sent out again to all non-respondents. Follow-up reminders by telephone or e-mail were made. Eighty-three responses were returned to the

author, with 71 completed responses. Since the feedback from e-mails and phone calls indicated that a majority of the marketing managers were on holidays between late July and mid-August, a second round of reminders were postponed to the end of August. The second round of reminders led to 28 returned responses, with 23 completed responses. In total, 136 responses were received with 112 completed surveys. Table 5.7 shows the number of responses received for different periods of the data collection.

Table 5.7 The number of survey responses received at different periods

Stages	Period	Number of Responses
Sending out the invitation letter	18/05/2015	None
Sending out the survey (both online and offline)	25/05/2015	25 (18*)
Sending out the first round of reminder	22/06/2015	83 (71*)
Sending out the second round of reminder	25/08/2015	28 (23*)
Total		136 (112*)

*: Completed responses

The survey was also sent out to DCU alumni after cross-referencing The Irish Times Top 1000 Companies database and DCU alumni list available on LinkedIn. Dillman's (2011) Tailored Design Method was also applied. Table 5.8 lists the numbers of responses at different stages of the data collection process.

Table 5.8 The number of survey responses received from DCU alumni

Stages	Dates	Number of Responses
Sending out the invitation letter	08/06/2015	None
Sending out the survey (both online and offline)	15/06/2015	50 (45*)
Sending out the first round of reminder	20/07/2015	40 (36*)
Sending out the second round of reminder	04/08/2015	22 (20*)
Total		112(101*)

*: Completed responses

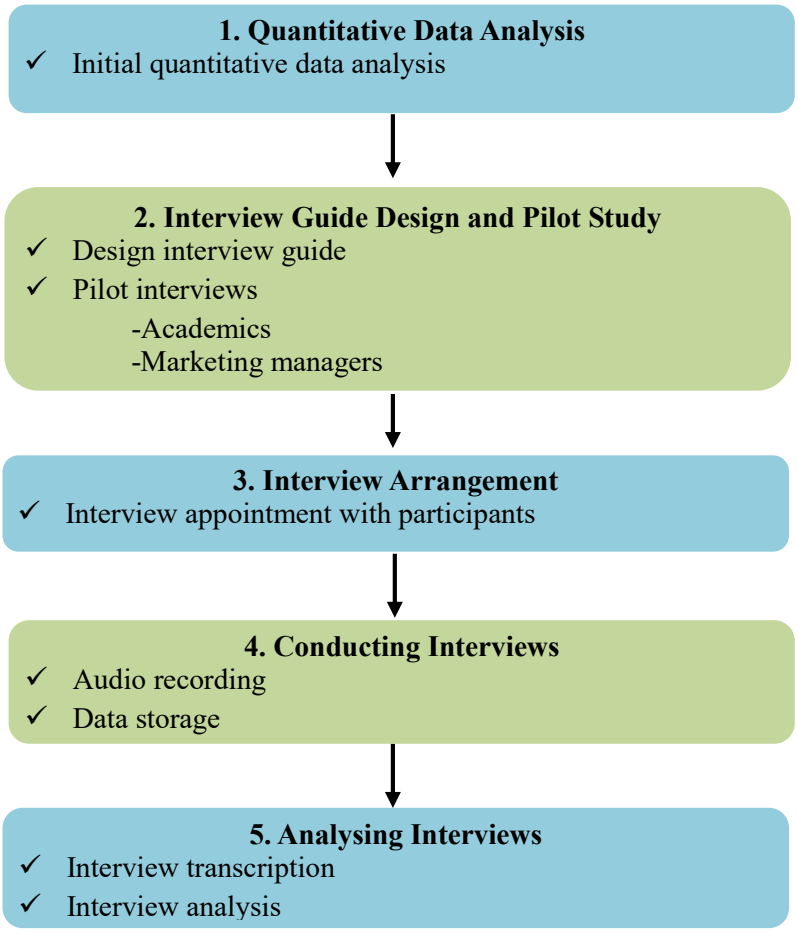
The first round of survey was sent out to 201 potential respondents in Mid-June. After more than one month, 50 responses were returned with 45 completed surveys. Then the first round of

reminder was sent to the respondents by post or e-mail, leading to 40 returned responses. The final reminder was sent in August, yielding 22 returned responses with 20 completed responses.

5.4 Qualitative Research Process

The interviews were conducted upon the completion of quantitative data analysis. In order to carry out the interviews, another Research Ethics Committee application was made at the end of September, 2015. The application explicitly explained how the information collected would be stored, used and disposed of, and how the confidentiality and anonymity of their responses would be secured. The application was submitted for review on the 18th of September, 2015, and was approved on the 15th of October, 2015. The notification approval letter is attached in Appendix 5. Figure 5.4 outlines steps taken to conduct interviews.

Figure 5.4 The interview process



An interview guide was developed based on the literature review and initial quantitative data analysis. To pilot test the interview guide, six academic scholars and three marketing managers were contacted to participate in pilot interviews. The interview questions were modified based on their suggestions and comments. When returning their survey responses, 30 marketing managers or senior managers expressed their interest in participating in a follow-up interview. All provided their detailed contact information, e.g., names, e-mail and postal addresses. E-mails were sent out to arrange interviews with the participants.

The qualitative data collection took place at the end of October, 2015. The interviewees were briefed on the purposes of the interviews and asked to sign a consent letter (See Appendix 6). The consent letter gave permissions to the author to audio-record the interviews and use the interview data subsequently. All the conversations were recorded by an audio-recorder with respondents' consents. The audio files were then stored in the author's computer. Notes were taken during the interviews in order to provide supplementary information and to help the author reflect on the interviews. The interview guide was modified based on the reflection of the previous interviews. The final interview transcription and data analysis began after all interviews were finished.

5.4.1 Interview Guide

To formulate a thorough list that covers the necessary questions for the semi-structured interview, the research objectives and quantitative results were analysed to identify critical topics. Questions related directly to these critical issues were included in the interview guide. The interview guide was designed to begin the interview with a brief introduction to the research purposes. The brief introduction gave the participants a chance to get acquainted with the project. Since the interview respondents had participated in the survey study, they all showed a good understanding of the research project. Therefore, only a brief introduction was necessary. The interview guide was structured in two sections (See Appendix 7).

The first section focused on gathering information about the marketing performance measurement practices in Irish firms, in terms of why and how firms used marketing

performance measures within their firms. For example, respondents were asked to indicate how their firms measured marketing performance and how they used the marketing performance information collected. In addition, interviewees were asked to talk about how their firms coped with the changing economic, technological, or competitive environment. This was to explore the influence of external factors on the marketing performance measurement practice. Interviewees were then asked to freely express their opinions of their company's marketing planning and implementation capabilities, market-linking capability, adaptive marketing capability and externally-focused organisational learning capability. This was to make sure that the interviewees were able to lead the conversation rather than being led by the researcher. All the key concepts were explained in Layman's term in order to help the interviewees better understand the questions. More specific questions regarding how their companies developed these capabilities or skills were also asked. In particular, this section sought to investigate whether there was any evidence of connections between the use of MPMSs and the development of marketing capabilities. It was also designed to collect information about other marketing capabilities that their organisations focused on or paid special attention to. The purpose was to identify if there were any potential marketing capabilities that respondents thought were influential in their organisational process.

5.4.2 Pilot Study of the Interview Guide

The pilot test was conducted to assess the appropriateness of the semi-structured interview guide. It was reviewed and pre-tested by academics and practitioners. Face-to-face interviews were conducted to modify the interview guide.

The pilot interviews confirmed the suitability of the interview guide for the gathering of detailed information about marketing performance measurement practices and marketing capabilities in Irish-based companies. The pilot interviewees identified the use of leading questions in the interview guide. These leading questions were then modified. For example, there was a question asking the respondents to indicate how their company developed their ability to maintain a good relationship with customers. One interviewee suggested changing the question to "how do you

feel about your firm's ability to maintain a good relationship with customers". The pilot interviews also stressed the need to probe on some questions. When the interviewees mentioned a particular issue, probe questions such as "can you explain how this happened?", "what parties are involved in the process" and "how did it work in your organisation", were asked. For example, regarding externally-focused organisational learning capability, the interviewees were asked to indicate what information they would share with partners, whom they would share the information with, how frequently they would share the information with external parties and whether they would receive information from these parties and how. The interview guide was further revised based on their feedback.

5.4.3 The Sampling for Qualitative Study

In qualitative research, researchers are interested in purposive or judgmental sampling techniques (Hesse-Biber & Leavy, 2011). In this study, the same individuals who participated in the survey study were recruited to take part in the interviews. This was consistent with the suggestions provided in Creswell & Plano Clark (2007) that, in sequential mixed methods research design, a much smaller group of participants in the quantitative research should be used to collect qualitative data in order to provide a better understanding of the quantitative results.

An e-mail invitation with formal consent letter introducing the aim and scope of the study was sent out to the participants. This was followed by a second/third round of e-mail invitations or phone call invitations. Finally, thirteen participants participated in the interview. Six interviewees were from The Irish Times Top 1000 Companies database, while the other seven were from SMEs. Each respondent was given a pseudonym in order to be used in the qualitative data analysis. The interviewees were from different industries and background, as shown in Table 5.9.

Table 5.9 Information on the qualitative research participants

No.	Pseudonym	Gender	Job Title	Industry	Interview date	Length	Database
1	Jack	Male	Marketing manager	Retailing	2015/11/02	46 min	Top 1000
2	Leo	Male	Sales and marketing manager	Construction	2015/11/16	43 min	Top 1000
3	John	Male	Business development director	High Tech	2015/11/26	64 min	Top 1000
4	Patrick	Male	Marketing manager	Rental service	2015/11/12	43 min	Top 1000
5	Sean	Male	Marketing manager	Retailing	2015/11/10	30 min	Top 1000
6	Amir	Male	Marketing manager	Food/retailing	2015/11/25	59 min	Top 1000
7	David	Male	Commercial manager	Aviation	2015/10/20	29 min	SMEs
8	Will	Male	Business director	Service	2015/10/21	43 min	SMEs
9	Anna	Female	Marketing manager	Sports	2015/10/14	25 min	SMEs
10	Ava	Female	Marketing manager	Cloud computing	2015/11/07	40 min	SMEs
11	Sinead	Female	Marketing manager	Consultancy	2015/11/24	33 min	SMEs
12	Grace	Female	Marketing manager	Software	2015/11/11	35 min	SMEs
13	Mary	Female	Marketing manager	Consultancy	2015/11/03	40 min	SMEs

5.4.4 Qualitative Data Analysis Strategy

This section outlines the qualitative data analysis process. The interview transcription process is introduced first, followed by a demonstration of the qualitative data analysis method applied in the current study: template analysis. A detailed description of the coding structure is also provided with an example of the coding process.

5.4.4.1 Interview Transcription

Twelve interviews were conducted face-to-face and one by Skype. The qualitative data analysis commenced at the qualitative data collection stage. Online transcription software "transcribe" (https://transcribe.wreally.com) was used to assist the interview transcription process. Verbal cues, such as pauses, laughter, sighs in the conversations and other non-verbal cues were included in the transcripts (Mishler, 1991). The interviews were transcribed by the author and then reviewed and edited by a professional editor to ensure the reliability of the transcripts. Interviews were transcribed one by one and were stored separately in Office Word documents. Field notes with observations and thoughts arising during interviews were also used to supplement the interview transcripts.

5.4.4.2 Template Analysis

There is a multitude of different qualitative data analysis methods. According to Smith & Firth (2011), these methods can be categorised into three groups: methods that are used to explore the use and meaning of languages, such as discourse and conversation analysis; methods that focus on developing theories, such as grounded theory methods; and methods that describe and interpret individual opinions, such as content and thematic analysis. Hesse-Biber & Leavy (2011) and Morse & Richards (2002) note that qualitative data analysis usually commences with the transcription of interviews, followed by researchers' familiarisation with the data, the development of a coding system or protocol and the identification of categories and themes. It is also widely accepted that coding is always the "fundamental analytic process", which represents a process of identifying, labelling or tagging themes or categories from the conversations (Strauss & Corbin, 1990, p. 12).

Template analysis is a thematic qualitative data analysis method. This study adopted a template analysis approach mainly because it 1) can be used from various epistemological positions (e.g., contextual constructivist or realist) (Brooks & King, 2012), 2) is highly flexible and can be modified and tailored based on the objectives of the research project (King, 2004) and 3) provides a structured and systematic manner in which to code interview data (Symon & Cassell, 2012). Template analysis involves the following steps (King, 2004):

1) Transcribing the interviews and getting familiar with the interview transcripts,
2) Developing an initial coding template based on a sub-set of interview transcripts or pre-defined themes,
3) Modifying the coding template and developing the final coding template,
4) Interpreting interview data and writing up,
5) Carrying out quality or reflexivity checks.

5.4.4.3 Coding Template and Process

Following the template analysis procedures proposed by King (2004), an initial (a priori) coding template with several key themes and codes was developed prior to the coding process. This was necessary because qualitative research commences under the assumption that certain topics of interest should be investigated or certain themes are expected to arise (King, 2004). Usually, an initial coding template can be designed by analysing a proportion of interviews or by using pre-defined research themes. In this study, an initial coding template was developed by summarising the key constructs tested in the quantitative model and by analysing four interview transcripts. The initial coding template included two major topics: the purposes of measuring marketing performance and the development of marketing capabilities. Three major themes were identified: the use of marketing performance measurement practices, the development of marketing capabilities and other key marketing capabilities. Several initial codes were then developed under each theme. For example, two codes were extracted from “the use of MPMSs”: the diagnostic use and the interactive use of MPMSs. Table 5.10 shows the initial coding template. The initial coding template was applied to all interviews and was further modified.

Table 5.10 The initial coding template

Topics	Themes	Codes
The purposes of measuring marketing performance	1. The use of MPMSs	The interactive use of MPMSs The diagnostic use of MPMSs
The development of key marketing capabilities	1. Development of marketing capabilities 2. Other key marketing capabilities	Market-linking capability Architectural marketing capability Externally-focused marketing capability Adaptive marketing capability

Based on the initial coding template, the interview transcripts were coded accordingly. Codes and sub-codes were further extracted by reading through all the transcripts one by one. An example of the coding process is shown in Table 5.11.

Table 5.11 An example of the interview transcript coding process

Example		
Excerpt-Interview Transcript	"Number one, to track our performance against specific metrics and our performance in terms of our output in terms of an organisation. So if you look at marketing as a function and its function of delivering product to kind of meet needs of consumers and developing advertising and trying to encourage consumers to buy more of our products. We have a need to assess whether the performance of our output, whether it be food, brand and communications is in line with expectations and against specific benchmarks that will be set. And prior to developing anything, as I said it could be anything from food to communication in itself. And also to track, number one, to see how [to] perform against predefined benchmarks but equally to help inform future development of new products or communications."	
Themes	**The Uses of MPMSs** "Number 1, to track our performance…products or communications."	
Codes	**The diagnostic use of MPMSs** "Number...that will be set." "And also to track…benchmarks."	**The interactive use of MPMSs** "And prior to developing …or communications."
Sub-Codes		**Strategic decision-making** "And prior to developing …or communications."

This example illustrates the respondent's answer to the question "for what purposes does your company measure marketing performance?". This question is related to the theme "the use of MPMSs". While the answers were coded into two categories, namely, the diagnostic use of MPMSs and the interactive use of MPMSs, further extractions led to the generation of a sub-category of the code "the interactive use of MPMSs". The new sub-code was labelled as "strategic decision-making".

Template analysis stresses the use of hierarchical coding. It focuses on maintaining a balance between well-structured process and the flexibility to tailor the analysis to different projects (King, 2004). Thus, the development and modification of the final coding template is key to template analysis. This study further developed the hierarchy of the coding template by extracting codes and sub-codes from all interview transcripts. For instance, analysis of interview transcripts indicated that when companies used MPMSs interactively, they would use marketing performance measures for several purposes, e.g., to make strategic decisions, justify their spending, legitimise marketing actions and explore new opportunities or ideas. Thus, under the second code "the interactive use of MPMSs" in Theme 1 "the use of MPMSs", four sub-codes were developed to better explain how companies could use MPMSs interactively. The generation of these sub-codes is in line with the suggestion from the literature that the qualitative data should be analysed in a way that connects data with theory (Eisenhardt & Graebner, 2007; Halinen & Törnroos, 2005). The initial coding template was modified and changed as the interview transcripts were read through. Table 5.12 presents the final coding template. All the interview transcripts were revisited and analysed based on this final coding template. An example of how the interviews were coded based on the final template is shown in Table 5.13.

Table 5.12 The final coding template

Topics	Themes	Codes	Sub Codes
The purposes of measuring marketing performance	1. The use of MPMSs	1. The diagnostic use of MPMSs	
		2. The interactive use of MPMSs	*1. Strategic decision-making* *2. Legitimisation* *3. New idea exploration* *4. Attention-focusing*
	2. Managerial processes involving marketing performance measurement	1. Review process 2. Planning process 3. Budgeting process 4. Reporting and documentation process	
	3. The impact of environmental factors	1. More frequent use of marketing metrics 2. Customer- and market-orientated	
The development of key marketing capabilities	1. The development of market-linking capability	*1. Continuous monitoring of marketing performance*	*1. On-going competitor analysis* *2. Strategic analysis* *3. Strategic planning* *4. Listening to customers through social media*
		2. IT support	
		3. Collaboration with other departments	
		4. Collaboration with external partners	*1. Inputs from external partners* *2. Information sharing with partners*

Table 5.12 The final coding template (continued)

Topics	Themes	Codes	Sub Codes
The development of key marketing capabilities	2. The development of architectural marketing capability	1. Knowledge sharing	
		2. Investment in the marketing department	
		3. Planning process	
		4. On-going monitoring	
		5. Continuous performance analysis	
	3. The development of externally-focused learning capability	*1. Market information acquisition*	*1. Inputs from internal departments* *2. Inputs from external partners*
		2. Information sharing	*1. Internal sharing* *2. External sharing* *3. Inter-generation sharing*
		3. Information usage	*1. Internal usage* *2. External usage*
	4. The development of adaptive marketing capability	1. IT support	
		2. Staff	
		3. Research	
		4. Organisational Factors	*1. Firm size* *2. Organisational process* *3. Organisational culture*
	5. Other marketing capabilities	1. Data analysis capability	

Table 5.13 An example of the coding process based on the final coding template

Transcript	"So if you take an idea, for example, say promotional ideas where we gave away millions of personalised spoons throughout Europe. What we would do: we would evaluate that concept with consumers and try to get an understanding, before we actually implement it and market it. And we evaluate that concept against a number of other different concepts and promotional ideas to understand the strength of that idea versus a number of different other ideas, and also against a leading idea that we may have executed in the past, which would be our benchmark. And from that piece of analysis, which would be quantitative- and regional- based, we would get an understanding of the strength of that idea relative to other ideas. And once we get feedback on that, that gives us, the marketing function and brand teams, the ammunition to go business and say to the business for a particular period of time we want to lead with this idea, because it performs extremely well in the market, drives high purchase intent and versus other concept[s]... I suppose, performance and research analysis gives people the ability, the marketing function the ability, and the business [the] confidence to invest behind your ideas, which is actually [of] critical importance."			
Themes	**The use of MPMSs**			
Codes	**The diagnostic use of MPMSs**	**The interactive use of MPMSs**		
	"And we evaluate that concept … be our benchmark."	"And from that piece of analysis… behind your ideas, which is actually [of] critical importance."		
Sub-codes		**Attention-focusing**	**Legitimisation**	**Strategic decision-making**
		"we would get an understanding … relative to other ideas."	"And once we get feedback on that,…out into the market."	"And from that piece of analysis… or other ideas."

5.4.5 Validity of the Qualitative Research

There is a collective interest in the quality of qualitative research design, in particular, the validity of qualitative research design (Lincoln & Guba, 1985). Validity is a key quality indicator in qualitative research, which describes whether the qualitative data analysis is true or trustworthy (Creswell & Plano Clark, 2007; Hesse-Biber & Leavy, 2011). Following Kvale & Brinkmann (2009) and Spencer, Ritchie, Lewis & Dillon (2003), this study has taken the following measures to improve and ensure the validity of the qualitative research.

First, to get a clear overview of the interview data, the author read the interview transcripts several times before starting the coding process. Field notes, notes taken when reading the transcripts and company documents (e.g., website information, organisational white papers and internal documents provided by the respondents at the interview site) were used to reduce the risk of systematic biases (Maxwell, 2005). These are common practices employed by the qualitative researchers to establish the validity of their research.

Second, during the qualitative data analysis process, the author also paid attention to negative cases. Negative case analysis looks at extreme cases or contradicting cases in the qualitative data. It is recommended that negative case analysis should be carried out on an ongoing basis throughout the data analysis process in order to validate the research results (Hesse-Biber & Leavy, 2011). During the interviews, negative cases were identified, and the reasons/rationale behind the cases was further explored.

Third, following suggestions from other qualitative researchers (e.g., King, 2004), this study recorded the steps taken in the qualitative research and the decisions made in terms of

transforming from the raw interview transcripts to the final interpretation of the qualitative data. A detailed description of the research process enables the author to provide a clear vision of how conclusions were reached and allows readers to judge the interpretation of the final results. For instance, the reasons for conducting qualitative research and the description of the interview processes were detailed in Section 5.1 and Section 5.4. The transcription of the interviews, the identification of the themes, the development and the modification of the coding templates and the interpretation of the qualitative data were also provided in Section 5.4.

Fourth, another way to check the quality of the qualitative research is to use independent scrutiny. Following King (2004), at the final write-up stage, an experienced expert evaluated the coding process and the coding template. The author was asked by the expert to explain the whole data analysis process and the decisions made when interpreting the results. This was to ensure that the author had considered the data analysis from different perspectives.

Finally, there is an underlying assumption that researchers may introduce biases during the collection and analysis of qualitative data. Therefore, reflexivity is required throughout the qualitative research process (King, 2004; Walsham, 1995). Researchers need to reflect on their involvements in the research process and how their role in the research process influences the way they interpret the results. Notes were taken when the author read the transcripts in order to help the author reflect on the qualitative research. These two good ways of encouraging reflexivity were introduced earlier in this Chapter.

5.5 Chapter Summary

This chapter first explained the rationale and philosophy behind the use of a mixed methods approach. The reasons for applying an exploratory sequential mixed methods approach were provided. The quantitative research process was then explained, followed by a detailed description of the questionnaire development, the sampling frame and the quantitative data collection process. In addition, the chapter also outlined the items used for measuring each key construct and explained how these items were developed or modified. Lastly, the qualitative research procedure, qualitative data analysis strategy and validity of qualitative research were illustrated. Quantitative results are presented in Chapter Six, and the integration with qualitative results is shown in Chapter Seven.

Chapter 6 Data Analysis

6.1 Introduction

This chapter presents the quantitative data analysis results and research findings. It starts with a description of the data screening and preparation process. This is followed by results of non-response bias test. The reliability and validity results of all the measures used in this study are also provided, followed by the results of common method bias test. Finally, the results of hypotheses testing via SEM are presented, followed by examinations of the mediation effects.

6.2 Data Screening and Preparation

Prior to data analysis, survey data must be screened and cleaned. In this section, the data screening and preparation processes adopted in this study are addressed. These processes include the screening of missing data, identification of outliers and multivariate test.

Addressing Missing Data. The screening of missing data followed the four steps proposed by Hair, Black, Babin & Anderson (2010). The first step was to determine whether missing data were ignorable or non-ignorable. Since all the questions in the survey were expected to be answered by respondents, missing data were deemed non-ignorable. The second step involved searching for non-ignorable missing data. The author reviewed missing data across cases and variables. As indicated in Section 5.3.7, thirty-five cases with missing values were identified and deleted. These cases were removed because respondents failed to answer most of the questions related to marketing capabilities and firm performance. In addition, one case was later deleted due to the failure to respond to the questions related to market-linking capability. The third step was to check the randomness of missing data. The missing value analysis was carried out in SPSS 21. The Little's missing value analysis showed that there were only two cases with missing data and that there was no significant difference between complete cases and cases with missing data ($p>.05$). The results suggested that cases with missing data could be deemed missing completely at random. Then following Hair et al. (2010), the missing value was replaced by the mean value of the item using the imputation method in SPSS 21.

Identifying Outliers. Outlier issues were also detected. The distributions of all the variables were reviewed and tested in order to identify univariate outliers. Two cases were identified with extreme values. One case gave a score of 6 to the question "how frequently does your organisation measure marketing performance in terms of customer attitude metrics", while the other case gave a score of 8 to the item "MPMSs consists of both financial and non-financial metrics". Since the variables were all measured either by 5-point Likert scale or 7-point Likert scale, these two cases were deleted. In addition, the negatively worded questions were also detected in order to check if respondents responded carefully. One respondent rated the item "our MPMS is not aligned with our marketing targets" and item "our MPMS reflects our marketing strategy" with the same score of 6, indicating that the respondent did not pay attention to the negative wording. So the case was also deleted. Apart from these three deleted cases, other cases were in good order with no outliers. In total, there were 209 usable responses for data analysis.

Testing Multivariate Assumptions. To prepare the data for multivariate analysis, two major tests were carried out. The first test was to check if the data deviated largely from a normal distribution. A descriptive analysis for all the variables was conducted to review the skewness and kurtosis of the items in each construct. The skewness values ranged from -1.93 to .42 and kurtosis values ranged from -1.34 to 1.89. These values did not exceed the -2.00/+2.00 threshold, posing no distribution concern (George & Mallery, 2010). In addition, the multicollinearity was also diagnosed with SPSS 21. This was tested by calculating the variable inflation factor and tolerance value for the two independent variables. As the variable inflation factor scores for both variables were within the threshold value of 10.00, and the tolerance values for both variables were larger than .10, multicollinearity was not an issue. Thus the dataset was deemed suitable for undertaking multivariate analysis.

6.3 Respondent Profile

Table 6.1 displays the profile of the respondents. Among those who indicated their gender (gender question was optional), 65.67% of the respondents were male, while 34.33% were

female. Regarding the age of the respondents, 2.46% were under 26 years old, 25.61% were 26 to 35, 36.94% were 36 to 45, 25.62% were 46 to 55 and 9.37% were over the age of 55.

Table 6.1 Profile of respondents

Variable	Category	N (sample)	Valid %
Gender	Male	132	65.67%
	Female	69	34.33%
	Missing Value	8	
	Total	209	100.00%
Age	Under 26	5	2.46%
	26-35	52	25.61%
	36-45	75	36.94%
	46-55	52	25.62%
	Above 55	19	9.37%
	Missing Value	6	
	Total	209	100.00%
Job Title	Marketing Manager	103	50.74%
	CMO	12	5.91%
	CEO	37	18.22%
	Other	51	25.13%
	Missing Value	6	
	Total	209	100.00%

Of the 203 respondents (out of 209 respondents) who indicated their job titles, 50.74% were marketing managers, 5.91% were CMOs, 18.22% were CEOs and 25.13% were other experienced professionals who had sufficient knowledge on marketing performance measurement practices and marketing capabilities (titles including business development manager, commercial director, senior marketing coordinator and director of sales and operation). In terms of their professional experience, the respondents had an average of 17.25 years of professional experience.

In addition, following O'Cass & Weerawardena (2010), respondents were asked to indicate their levels of involvement in organisational decision-making and their knowledge of MPMSs- and marketing capability-related issues on a seven-point Likert scale. The purpose of asking these questions was to ensure that respondents had sufficient knowledge on the research topics. The average scores were 5.85, 6.18 and 5.95, respectively. A score above 5 indicates the reliability

and validity of the key informant (O'Cass & Weerawardena, 2010). Thus, these respondents were deemed as competent informants.

6.3.1 Sample Representativeness

As described in Chapter Five, the survey was posted and e-mailed to 660 Irish-based companies, which are listed in The Irish Times Top 1000 Companies database. One hundred and thirty-six responses were received with 112 completed survey responses, yielding a response rate of 20.61% and a completion rate of 16.97%. To include companies that are not on The Irish Times Top 1000 Companies list, marketing managers who are DCU alumni were also invited to participate in this study. One hundred and one completed responses with 97 usable surveys were received through this method, resulting in a total of 209 responses for this study.

To examine the sample representativeness, the non-response bias was tested by comparing the demographic and organisational variables from the early respondents and the late respondents (Wilcox, Bellenger & Rigdon, 1994). Linder, Murphy & Briers (2001) recommended 1) using the respondents from the last wave of contact as the late respondents, or 2) using the later 50% of respondents if the former method only generates about or less than 30 responses. In this case, the number of the last wave responders was 43, so this study classified the later 50% of respondents as the late responders.

This study conducted several comparison analyses between early responses and late responses, between off-line responses and on-line responses and between the Irish Times Top 1000 Companies responses and the DCU alumni responses. Following previous studies (e.g., Armstrong & Overton, 1977; Guthrie, Flood, Liu & MacCurtain, 2009), two demographic variables (i.e., age and years of career experience) and two organisational variables (i.e., year of establishment and firm size) were chosen and compared across different groups through one-way ANOVA analysis. The one-way ANOVA analysis results are presented in Table 6.2.

Table 6.2 Results of the sample representativeness

	Early vs late responses		Online vs offline responses		Irish Time vs DCU alumni responses	
Sample size	107	102	105	104	112	97
	F	***Sig.***	***F***	***Sig.***	***F***	***Sig.***
Firm size	1.21	.27	.27	.61	.90	.34
Firm age	.12	.73	2.39	.12	2.00	.16
Career experience	.52	.47	.65	.42	.96	.33
Respondents' age	3.61	.06	1.18	.28	.02	.89

As shown in Table 6.2, there was no significant difference between early responses and late responses regarding their firm characteristics and respondents' characteristics. Therefore, there was no concern regarding the sample representativeness or the non-response bias. In addition, there was no difference in firm size, firm age, career experience and respondents' ages between the online responses and offline responses, and between the Irish Times Top 1000 Companies responses and DCU Alumni responses. Therefore, the full sample was then used for the data analysis.

6.4 Reliability and Validity of the Measures

This section presents the descriptive statistics and the reliability and validity results of all the measures used in this study. The reliability test was conducted using SPSS 21. The detailed reliability and validity statistics are presented separately in the following section. This study used confirmatory factor analysis (CFA) with AMOS 21 to assess the convergent validity and the discriminant validity of the focal constructs. A ten-factor confirmatory measurement model was tested initially. Since relationally- and market-focused organisational learning capability were highly correlated, the results showed a big concern of the discriminant validity. Therefore, these two capabilities were treated as two sub-dimensions of externally-focused organisational learning capability (Weerawardena et al., 2015). A nine-factor confirmatory measurement model was then tested, resulting in a satisfactory overall model fit: $\chi 2$ (2179) =3566.13, $p<.01$, RMSEA=.06 and SRMR=.06, both below the recommended threshold of .08, CFI=.90, which was acceptable, and CMIN=1.64, falling into the recommended range from 1.00 to 3.00.

The Comprehensiveness of MPMSs. Table 6.3 illustrates the results of the descriptive statistics and reliability results of the comprehensiveness of MPMSs. Respondents were asked to indicate the extent to which their MPMSs consisted of various marketing metrics, reflected the causal relationships between marketing activities and firm outcomes, and were aligned with marketing strategies.

Table 6.3 Results of CFA on the comprehensiveness of MPMSs

Items	Mean	SD	FL
Breadth	**4.51**	**1.26**	
Provides a balanced picture of the marketing function	4.25	1.54	.85
Provides measures of different perspectives (e.g., financial, customer, innovation)	4.41	1.54	.76
Provides output measures (e.g., customer satisfaction), input measures (e.g., budget) and process-related measures (e.g., the length of marketing processes)	4.26	1.59	.73
Consists of both financial and nonfinancial measures	5.19	1.62	.70
Puts special weight on customer, competitor and market-related measures	4.41	1.51	.70
Strategic alignment	**4.70**	**1.33**	
Includes measures that are chosen to track marketing strategy	4.54	1.53	.93
Reflects our marketing strategy	4.84	1.39	.81
Is not aligned with our long-term marketing targets*	2.28	1.54	.67
Causal relationships	**4.29**	**1.32**	
Shows how marketing strategy is to be achieved	4.24	1.53	.88
Shows how marketing activities and results are connected	4.45	1.48	.88
Consists of measures which build upon each other	4.37	1.43	.83
Shows cause-and-effect relationships	4.12	1.52	.71
AVE=.85, MSV=.61, ASV=.31, CR=.95			

*: Negative wording;

SD: Standard deviation; FL: Factor loading; AVE: Average variance extracted; MSV: Maximum shared variance; ASV: Average shared variance; CR: Composite reliability

On average, the scores for the breadth, strategic alignment and the causal relationships of MPMSs were 4.51, 4.70 and 4.29, respectively. The measures were all above the medium value of 4.00 on a 7-point scale, indicating that the MPMSs in Irish-based firms were perceived as comprehensive. A composite reliability score of .95 exceeded the recommended .70 level, indicating a good convergent validity. In addition, the AVE value was .85, exceeding the

recommended .50 level, but was smaller than CR, further confirming the convergent validity. Since the AVE value (AVE=.85) was larger than MSV (MSV=.61) and ASV (ASV=.31), the discriminant validity was also secured (Fornell & Larcker, 1981).

Measurement Quality. Table 6.4 presents the descriptive statistics and reliability results for measurement quality. The average score of perceived measurement quality was 4.40 on a 7-point Likert scale, indicating that respondents perceived their marketing performance information to be of good quality. The composite reliability (CR=.91) also exceeded .70 as recommended, indicating a good convergent validity. All factors loadings were above the recommended .70 level, and the AVE value was larger than .50 but smaller than CR, indicating good convergent validity. The results illustrated that the AVE value (AVE=.66) was larger than both MSV (MSV=.61) and ASV (ASV=.30). Thus the discriminant validity was secured.

Table 6.4 Results of CFA on measurement quality

Items	Mean	SD	FL
Measurement Quality	**4.40**	**1.37**	
Are understandable	4.73	1.54	.86
Are unreliable*	2.67	1.68	.85
Provide accurate information	4.51	1.64	.84
Are reported on a systematic and regular basis	4.37	1.76	.79
Are easy to get access to	4.08	1.61	.73
AVE=.66, MSV=.61, ASV=.30, CR=.91			

* Negative wording question

The Use of MPMSs. Table 6.5 demonstrates the reliability and validity results of the use of MPMSs. Respondents were asked to indicate the extent to which their senior management teams used marketing performance measurement information to benchmark against objectives, direct attentions and justify decision-making.

The average score of the interactive use was 3.85, while the average score for the diagnostic use was 4.26. The results indicated that Irish firms used MPMSs more frequently to monitor marketing performance and benchmark against marketing objectives. To secure the discriminant validity of the measures, question 2 (enable the organisation to focus on critical success factors)

was deleted due to cross-loading. Other measures all passed the validity and reliability test (CR1=.94; AVE1= .76; MSV1=.76; ASV1=.34; CR2=.97; AVE2= .90; MSV2=.76; ASV2=.31).

Table 6.5 Results of CFA on the use of MPMSs

Items	Mean	SD	FL
Interactive use of MPMSs	**3.85**	**1.49**	
Enable continual challenge and debate underlying results, assumptions and action plans	4.04	1.65	.91
Tie the organisation together	3.66	1.56	.90
Enable discussion in meetings of supervisors, subordinates and peers	3.96	1.73	.88
Enable the organisation to focus on common issues	3.78	1.67	.84
Develop a common vocabulary in the organisation	3.64	1.62	.82
Enable the organisation to focus on critical success factors*	4.02	1.69	
AVE=.76, MSV=.76, ASV=.34, CR=.94			
Diagnostic use of MPMSs	**4.26**	**1.67**	
Monitor marketing results	4.33	1.77	.98
Review key marketing performance measures	4.27	1.77	.97
Track progress towards goals	4.19	1.68	.94
Compare marketing outcomes and expectations	4.25	1.80	.91
AVE=.90, MSV=.76, ASV=.31, CR=.97			

* Item deleted due to cross-loading

Market-Linking Capability. Table 6.6 displays the reliability and validity results for market-linking capability. Respondents were asked to indicate how their firms performed regarding their ability to link with the market and maintain good relationships with customers and channel members, compared to their competitors. The average score was 5.02, indicating that, on average, Irish firms thought that they performed slightly better than their competitors on their market-linking skills. All the measures were reliable (CR=.94>.70) and valid (AVE=.63>.50, AVE>MSV, AVE>ASV).

Table 6.6 Results of CFA on market-linking capability

Items	Mean	SD	FL
Market-linking capability	**5.02**	**1.04**	
Creating good relationships with customers	5.39	1.22	.85
Learning about the broad market environment	4.93	1.20	.82
Attracting and retaining channel members	4.73	1.30	.82
Maintaining and enhancing relationships with customers	5.26	1.21	.82
Having strong relationships with key target customers	5.25	1.39	.81
Learning about customer needs and requirements	5.18	1.25	.80
Creating durable relationships with channel members, e.g., suppliers, retailers	5.15	1.33	.77
Identifying and understanding market trends	4.90	1.21	.77
Gaining insights about the channel	4.59	1.28	.75
Discovering competitors' strategies and tactics	4.40	1.31	.71
AVE=.63, MSV=.50, ASV=.28, CR=.94			

Architectural Marketing Capability. Table 6.7 illustrates the descriptive results for architectural marketing capability. Respondents were asked to indicate their relative marketing planning capability and marketing implementation capability compared to their competitors.

Table 6.7 Results of CFA on architectural marketing capability

Items	Mean	SD	FL
Marketing planning capability	**4.21**	**1.32**	
A thorough marketing planning process	4.09	1.48	.91
Marketing planning skills	4.24	1.44	.85
Developing creative marketing strategies	4.32	1.52	.85
Setting clear marketing goals	4.21	1.41	.84
Marketing implementation capability	**4.24**	**1.42**	
Translating marketing strategies into effective action	4.36	1.51	.94
Allocating marketing resources effectively	4.20	1.56	.90
Monitoring marketing programs effectively	4.09	1.52	.90
Executing marketing strategies quickly	4.30	1.64	.84
AVE=.86, MSV=.55, ASV=.34, CR=.92			

The results in Table 6.7 indicated that, on average, Irish managers thought that their companies performed similarly to their competitors on marketing planning capability (M=4.21) and marketing implementation capability (M=4.24). The CR value was .92, indicating that these

measures were all reliable. The high score of AVE also secured the discriminant validity and convergent validity (AVE=.86>.50, AVE>MSV, AVE>ASV).

Adaptive Marketing Capability. Table 6.8 shows the reliability and validity results for adaptive marketing capability. Respondents were asked to indicate how their firms performed relative to their competitors concerning their adaptive marketing capability.

Table 6.8 Results of CFA on adaptive marketing capability

Items	Mean	SD	FL
Adaptive marketing capability	**4.52**	**1.18**	
Succeeding in an intensely competitive business environment	4.65	1.36	.83
Handling potential threats from the market properly	4.30	1.33	.82
Adapting quickly to the sudden changes in our markets	4.59	1.41	.79
Reacting quickly to changes with regard to our competitors	4.59	1.41	.79
Adjusting the management system to respond rapidly to shifts in our business priorities	4.50	1.42	.79
Achieving technical complementarity in a timely manner	4.48	1.36	.75
AVE=.63, MSV=.55, ASV=.32, CR=.91			

On average, the Irish managers surveyed perceived that their firms performed equally well as their competitors concerning their adaptive marketing capability (M=4.52). The reliability and validity tests showed that the measures were reliable (CR=.91>.70) and valid (AVE=.63>.50, AVE>MSV, AVE>ASV).

Externally-Focused Organisational Learning Capability. Table 6.9 demonstrates what respondents think of their firms' ability to learn from the market and their external partners. As shown in Table 6.9, Irish managers surveyed perceived that their companies performed equally well as their competitors, concerning their relationally- (M=4.76) and market-focused learning capability (M=4.61). Since relationally- and market-focused learning capability were highly correlated, they were treated as two sub-dimensions of externally-focused organisational learning capability. The measures were reliable (CR=.91>.70) and valid (AVE=.83>.50, AVE>MSV, AVE>ASV).

Table 6.9 Results of CFA on externally-focused learning capability

Items	Mean	SD	FL
Relationally-focused learning capability	**4.76**	**1.00**	
Capability to acquire knowledge externally	4.86	1.26	.81
Using knowledge generated externally in innovation	4.80	1.21	.74
Networking to acquire knowledge	4.82	1.37	.74
Searching for knowledge through external networks	4.77	1.19	.74
Using networks and links to acquire knowledge	4.68	1.21	.70
Jointly working with other organisations to acquire knowledge	4.69	1.33	.70
Sharing knowledge acquired through networks within the firm	4.68	1.39	.68
Market-focused learning capability	**4.61**	**1.03**	
Searching for innovative ideas through market information	4.60	1.28	.77
Using market information in innovation	4.58	1.32	.76
Collecting information about markets	4.53	1.33	.68
Gaining knowledge about market segments	4.63	1.26	.65
Gaining knowledge of our competitors	4.71	1.31	.62
Sharing market information with employees	4.52	1.34	.60
AVE=.83, MSV=.45, ASV=.25, CR=.91			

Firm Performance. Table 6.10 illustrates the descriptive results for firm performance, which was measured by sales, customer satisfaction, market share, acquiring new customers, ROI and profitability. Respondents were asked to indicate how well their firms performed, compared to their major competitors. Both of the mean scores were 4.79, indicating that, on average, the Irish managers perceived their companies to have performed slightly better than their competitors. All measures were reliable (CR=.89>.70) and valid (AVE=.57>.50; AVE>MSV; AVE>ASV).

Table 6.10 Results of CFA on firm performance

Items	Mean	SD	FL
Marketing performance	**4.79**	**1.12**	
Sales	4.78	1.43	.88
Market share	4.54	1.58	.75
Acquiring new customers	4.62	1.36	.75
Customer satisfaction	5.21	1.15	.64
Financial performance	**4.79**	**1.26**	
Return on investment	4.76	1.29	.84
Profitability	4.83	1.41	.76
AVE=.57, MSV=.49, ASV=.22, CR=.89			

Table 6.11 summarises the results of the reliability and validity tests of all the focal constructs. As discussed above, the measures used in the current study were all reliable and valid.

Table 6.11 Reliability and validity of measures

	AVE	MSV	ASV	1	2	3	4	5	6	7	8	9
1.AMC	.63	.55	.32	**.80**								
2.QUA	.66	.61	.30	.41*	**.82**							
3.IU	.76[a]	.76[b]	.34	.46*	.70*	**.87**[c]						
4.DU	.90	.76	.31	.36*	.73*	.87[d]*	**.95**					
5.MLC	.63	.50	.28	.71*	.35*	.41*	.31*	**.79**				
6.ARC	.86	.55	.34	.74*	.57*	.51*	.50*	.57*	**.93**			
7.CMP	.85	.61	.31	.40*	.78*	.73*	.74*	.35*	.59*	**.92**		
8.FP	.57	.49	.22	.63*	.27*	.35*	.29*	.70*	.53*	.23*	**.75**	
9.OLC	.83	.45	.25	.67*	.33*	.40*	.30*	.66*	.59*	.36*	.51*	**.91**

Note: AMC: Adaptive marketing capability; QUA: Measurement quality; IU: The interactive use of MPMSs; DU: The diagnostic use of MPMSs; MLC: Market-linking capability; ARC: Architectural marketing capability; CMP: Comprehensiveness; FP: Firm performance; OLC: Externally-focused organisational learning capability; The square root of AVE is shown in bold on the diagonal.

a: AVE=.758; b: MSV=.757; c: .871; d: .870. *: Significant at the .01 level

Common Method Bias. As indicated in Section 5.3.5, following Podsakoff et al. (2012), several measures were taken in this study to mitigate common method bias, which may result from the use of one single informant. Statistically, to test common method bias, a discriminant analysis was conducted, which was in line with the method proposed by Merrilees et al. (2011). To do so, a single-factor data analysis was conducted (Podsakoff & Organ, 1986). The items for all the focal constructs were factor analysed together, using principal components analysis method. Eleven factors were produced with eigenvalues greater than one, resulting in 74.08% of variances explained. The first factor accounted for 35.74% of the total variance. As suggested in Podsakoff & Organ (1986), common method bias would happen if one factor accounts for the majority of the covariance in the variables. Hence, common method bias was unlikely to be an issue in the current study since the data generated more than one factor and one factor did not account for most of the variance. In addition, as discussed earlier, the values of MSV and ASV were smaller than the value of AVE thus discriminant validity was secured, further confirming that common method bias was not a concern in this study (Fornell & Larcker, 1981).

6.5 Hypotheses Testing

To test the whole model, an SEM technique was employed using the software package AMOS 21. SEM techniques are appropriate for the estimation of mediation models due to their flexibility in both model specifications and estimation options (Preacher & Hayes, 2008). Such techniques allow for the simultaneous estimation of all paths in a research model and provide goodness of fit indicators for model validation (Homburg et al., 2012). The model to be tested is shown in Figure 4.1 (p. 101).

6.5.1 Path Analysis

Table 6.12 demonstrates the results of the path analysis.

Table 6.12 SEM path analysis results

	Dependent variable: firm performance						
	DU	IU	AMC	MLC	OLC	ARC	FP
AMC							.31**
MLC							.54**
OLC							-.04
ARC							.01
DU			-.44**	-.46**	-.43**	-.15	.04
IU			.66**	.67**	.61**	.19	-.04
CMP	.46**	.51**	.07	.07	.18	.37**	
QUA	.38**	.31**	.22*	.16	.09	.27**	
Controls							
Firm size							.02
Firm age							.07
Trade status[1]							-.09*
Focus[2]							.11**
Strategy1[3]							-.04
Strategy2[4]							-.01
Industry1[5]							
Industry2[6]							
R-square	.64	.63	.29	.23	.23	.42	.62
Case No.	209	209	209	209	209	209	209
Model fit	$\chi 2/df=1.73$, CFI=.97, RMSEA=.06, SRMR=.07						

Note: 1: trade status: 0=publically traded; 1=private firm.
2: Business focus: 0=B2B; 1= B2C.
3: Cost leadership strategy; 4: differentiation strategy.
5: Manufacturing industry; 6: service industry.
**: Significant at .01 level *: Significant at .05 level.

The SEM results demonstrated a satisfactory overall model fit: $\chi 2$ (89) = 153.93 with the p-value less than .01. Other goodness of fit statistics were all favourable: RMSEA=.06 and SRMR=.07, both below the recommended threshold of .08, CFI=.97, which was favourable, CMIN=1.73, below the recommended threshold of 3.00.

H1a and H2a proposed the positive impact of the comprehensiveness of MPMSs on the diagnostic and interactive uses of MPMSs. According to the path analysis, this study found support for both hypotheses (ß=.46, p<.01 for the diagnostic use of MPMSs, and ß=.51, p<.01 for the interactive use of MPMSs). H1b and H2b hypothesised the influence of the measurement quality of MPMSs on the diagnostic and interactive uses of MPMSs. The results showed that the measurement quality was positively related to both the diagnostic use (ß=.38, p<.01) and the interactive use of MPMSs (ß=.31, p<.01). Therefore, H1b and H2b were supported. However, H3a and H3b, which addressed the impact of the use of MPMSs on firm performance, were not supported (ß=.04, p=.54>.05 for the diagnostic use of MPMSs, and ß=-.04, p=.57>.05 for the interactive use of MPMSs). Therefore, H3a and H3b were both rejected.

The relationships between the use of MPMSs and marketing capabilities were presented by H4, H5, H6, H7 and H8. H4a and H4b addressed the negative impact of the diagnostic use of MPMSs and the positive impact of the interactive use of MPMSs on market-linking capability, respectively. The hypotheses were both supported by the path analysis (ß=-.46, p<.01 for the diagnostic use of MPMSs, and ß=.67, p<.01 for the interactive use of MPMSs). H5a and H5b presented the relationship between the diagnostic use of MPMSs and architectural marketing capability (ß=-.15, p=.22>.05) and the association between the interactive use of MPMSs and architectural marketing capability (ß=.19, p=.13>.05), respectively. Thus, H5a and H5b were both rejected.

H6a, H6b, H7a and H7b hypothesised the impact of the use of MPMSs on market- and relationally-focused organisational learning capability. The path analysis results in Table 6.12 only showed that the diagnostic use of MPMSs was significantly and negatively related to externally-focused organisational learning capability (ß=-.43, p<.01), while the interactive use

of MPMSs was significantly and positively related to externally-focused organisational learning capability (ß=.61, p<.01). Hence, to test H6a, H6b, H7a and H7b, this study did further analysis to separately test the impact of the use of MPMSs on market- and relationally-focused organisational learning capability. The results showed that the diagnostic use of MPMSs had a negative impact on both market- (ß=-.28, p=.05) and relationally-focused organisational learning capability (ß=-.31, p=.03<.05). Therefore, H6a and H7a were both supported. The results also showed that the interactive use of MPMSs had a positive impact on both market- (ß=.67, p<.01) and relationally-focused learning capability (ß=.62, p<.01), thus supporting H6b and H7b.

The results in Table 6.12 supported the negative impact of the diagnostic use of MPMSs on adaptive marketing capability (ß=-.44, p<.01) and the positive impact of the interactive use of MPMSs on adaptive marketing capability (ß=.66, p<.01). Therefore, H8a and H8b were supported.

The associations between marketing capabilities and firm performance were presented by H9, H10, H11, H12 and H13. H9 was supported, as the results (in Table 6.12) demonstrated a positive relationship between market-linking capability and firm performance (ß=.54, p<.01). However, the results showed no support for the positive effect of architectural marketing capability on firm performance (ß=.01, p=.87>.05), thus rejecting H10. H11 and H12 addressed the positive association between two externally-focused organisational learning capabilities and firm performance. The results (in Table 6.12) indicated a non-significant relationship between externally-focused organisational learning capability and firm performance (ß=-.04, p=.56>.05). Further analysis indicated that only market-focused learning capability had a positive impact on firm performance (ß=.25, p<.05), while relationally-focused learning capability had no impact on firm performance (ß=.22, p=.07>.05). Hence, H11 was supported but H12 was rejected. As indicated in Table 6.12, adaptive marketing capability was also found to be positively associated with firm performance (ß=.31, p<.01), thus supporting H13.

6.5.2 Testing Moderation Effects

To test H14 to H17, which addressed the moderation effects of market turbulence (H14), technological turbulence (H15), competitive intensity (H16) and marketing complexity (H17) on the impact of MPMSs on firm performance, this study carried out moderation analysis following the four-step process proposed by Aiken & West (1991) and Gaskin (2012). The steps are as follows:

1. The independent variable (IV) and moderator (Mo) should be centred or standardised to avoid multicollinearity. An interaction term (IV*Mo) should be created by multiplying the standardised IV and standardised Mo.

2. The relationship between IV and DV (IV→DV) should be tested first without the moderator. The relationship between IV and DV is not necessary to be significant.

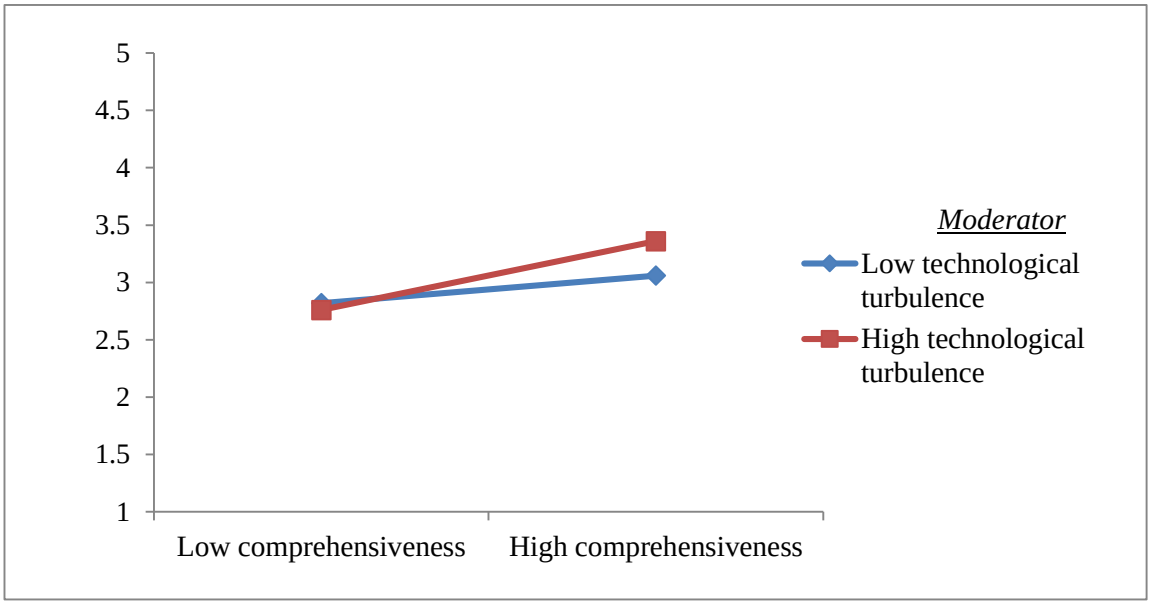
3. The relationship between IV and DV should be tested with the moderator and the interaction term added (IV+Mo+IV*Mo→ DV). The effect of IV on DV should become stronger or weaker after bringing in the moderator and the interaction term. The impact of the interaction term on DV should be significant.

4. If the interaction term has a significant impact on DV, then there is a moderating effect of Mo on IV. Then plot the interaction in Gaskin's (2012) package to see whether Mo strengthens or weakens the relationship between IV and DV.

Regarding the moderating effect of market turbulence on the relationship between MPMSs and firm performance, this study found that there was no interaction effect between market turbulence and the comprehensiveness of MPMSs (ß=.10, p=.11>.01) or between market turbulence and measurement quality (ß=.08, p=.20>.01). The findings indicated that market turbulence did not moderate the effect of comprehensiveness on firm performance or the impact of measurement quality on firm performance. Therefore, H14a and H14b were both rejected.

Regarding the moderating effect of technological turbulence on the relationship between MPMSs and firm performance, the results showed that there was an interaction effect between technological turbulence and the comprehensiveness of MPMSs on firm performance (ß=.12, p<.10), whereas there was no interaction effect between technological turbulence and measurement quality on firm performance (ß=.09, p=.16>.01). As shown in Figure 6.1, technological turbulence could strengthen the association between the comprehensiveness of MPMSs and firm performance. When the technological environment was less turbulent (the blue plot), the impact of the comprehensiveness of MPMSs on firm performance was weaker; whereas when the technological environment became more turbulent (the red plot), the positive impact of the comprehensiveness of MPMSs on firm performance became stronger and more significant. Therefore, H15a was supported, but H15b was rejected.

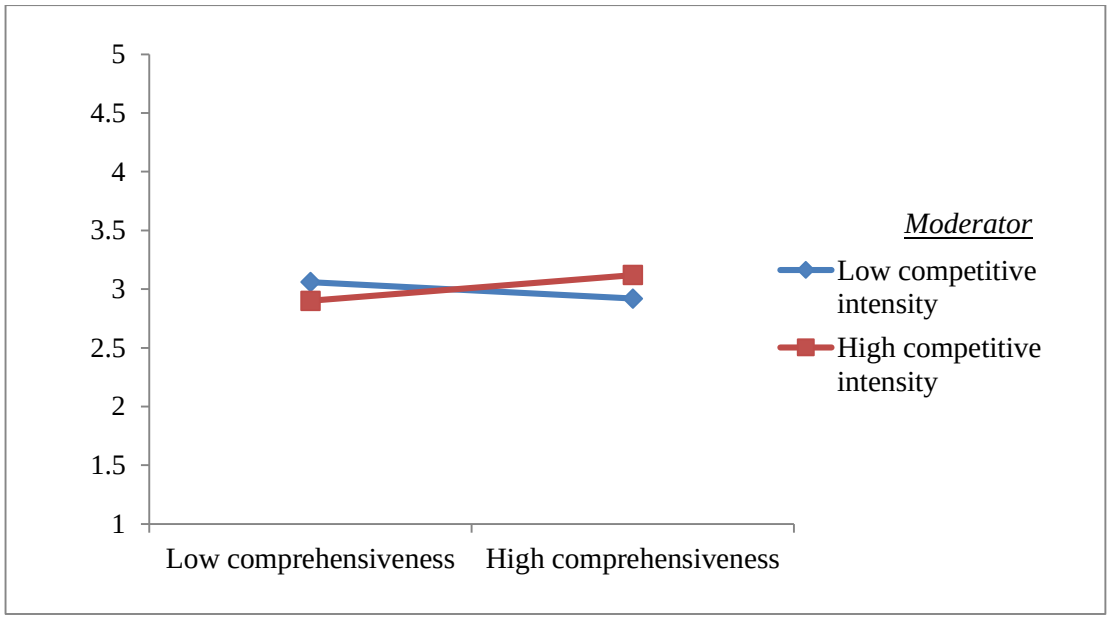
Figure 6.1 Moderating effect of technological turbulence on CMP-FP linkage



In terms of the moderating effect of competitive intensity on the MPMSs-performance linkage, the results showed that competitive intensity moderated both the relationship between the comprehensiveness of MPMSs and firm performance (ß=.12, p<.10) and the relationship between measurement quality and firm performance (ß=.14, p<.05). Thus, H16a and H16b were both supported. The moderation effects of competitive intensity on the comprehensiveness and measurement quality of MPMSs are shown in Figure 6.2 and Figure 6.3, respectively.

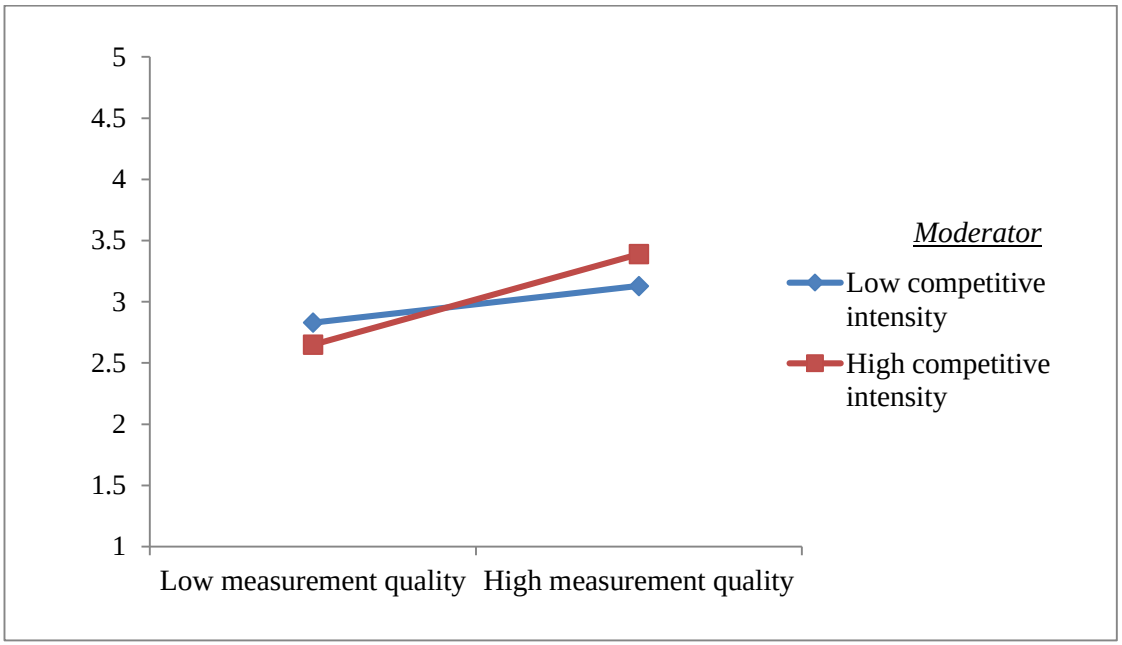
As shown in Figure 6.2, competitive intensity was found to strengthen the positive impact of the comprehensiveness of MPMSs on firm performance. When the competition was weak, the impact of the comprehensiveness of MPMSs on firm performance was weak and negative. When the competition became stronger and more intense, the impact of the comprehensiveness of MPMSs on firm performance became stronger and positive. This finding indicated that companies adopting comprehensive MPMSs could have more positive performance outcomes when the competitive intensity was higher.

Figure 6.2 Moderating effect of competitive intensity on the CMP-FP linkage



As shown in Figure 6.3, competitive intensity was found to positively moderate the relationship between measurement quality of MPMSs and firm performance. When the competitive intensity was lower, the positive impact of measurement quality on firm performance was weaker; whereas the positive impact of measurement quality on firm performance became stronger when the competitive intensity increased. This finding indicated that measurement quality of MPMSs could lead to more positive performance outcomes when the competitive intensity was higher.

Figure 6.3 Moderating effect of competitive intensity on the QUA-FP linkage



Regarding the moderating effect of marketing complexity, the result showed that marketing complexity did not influence the impact of the comprehensiveness of MPMSs on firm performance (ß=.02, p=.72>.01) or the effect of measurement quality on firm performance (ß=.04, p=.50>.01). Thus, neither H17a nor H17b was supported. This indicated that marketing complexity did not strengthen or weaken the impact of MPMSs on firm performance.

The hypothesis testing results are summarised in Table 6.13.

Table 6.13 A summary of the hypothesis testing results

Hypotheses	Supported
H1a: The comprehensiveness of MPMSs is positively related to the diagnostic use of MPMSs.	✓**
H1b: The measurement quality of MPMSs is positively related to the diagnostic use of MPMSs.	✓**
H2a: The comprehensiveness of MPMSs is positively related to the interactive use of MPMSs.	✓**
H2b: The measurement quality of MPMSs is positively related to the interactive use of MPMSs.	✓**
H3a: The diagnostic use of MPMSs is negatively related to firm performance.	×
H3b: The interactive use of MPMSs is positively related to firm performance.	×
H4a: The diagnostic use of MPMSs is negatively related to market-linking capability.	✓**
H4b: The interactive use of MPMSs is positively related to market-linking capability.	✓**
H5a: The diagnostic use of MPMSs is negatively related to architectural marketing capability.	×
H5b: The interactive use of MPMSs is positively related to architectural marketing capability.	×
H6a: The diagnostic use of MPMSs is negatively related to market-focused organisational learning capability.	✓*
H6b: The interactive use of MPMSs is positively related to market-focused organisational learning capability.	✓**
H7a: The diagnostic use of MPMSs is negatively related to relationally-focused organisational learning capability.	✓*
H7b: The interactive use of MPMSs is positively related to relationally-focused organisational learning capability.	✓**
H8a: The diagnostic use of MPMSs is negatively related to adaptive marketing capability.	✓**
H8b: The interactive use of MPMSs is positively related to adaptive marketing capability.	✓**
H9: Market-linking capability is positively related to firm performance.	✓**
H10: Architectural marketing capability is positively related to firm performance.	×

✓**: Significant at the .01 level; ✓*: Significant at the .05 level; ×: Not significant.

Table 6.13 A summary of the hypothesis testing results (continued)

Hypotheses	Supported
H11: Market-focused organisational learning capability is positively related to firm performance.	✓*
H12: Relationally-focused organisational learning capability is positively related to firm performance.	×
H13: Adaptive marketing capability is positively related to firm performance.	✓**
H14a: The greater the market turbulence, the stronger the relationship between the comprehensiveness of MPMSs and firm performance.	×
H14b: The greater the market turbulence, the stronger the relationship between measurement quality and firm performance.	×
H15a: The greater the technological turbulence, the stronger the relationship between the comprehensiveness of MPMSs and firm performance.	✓*
H15b: The greater the technological turbulence, the stronger the relationship between measurement quality and firm performance.	×
H16a: The greater the competitive intensity, the stronger the relationship between the comprehensiveness of MPMSs and firm performance.	✓*
H16a: The greater the competitive intensity, the stronger the relationship between measurement quality and firm performance.	✓*
H17a: The greater the marketing complexity, the stronger the relationship between the comprehensiveness of MPMSs and firm performance.	×
H17b: The greater the marketing complexity, the stronger the relationship between measurement quality and firm performance	×

✓**: Significant at the .01 level; ✓*: Significant at the .05 level; ×: Not significant.

6.5.3 Testing Mediation Effects

In case of multiple mediators, it is recommended that bootstrapping test should be used to determine the indirect effect and the significance of the separate mediation effect (Preacher & Hayes, 2004). This study used bootstrapping tests to test the mediating effects of the use of MPMSs and marketing capabilities. The criteria (Zhao, Lynch & Chen (2010) are shown as follows:

1. If the indirect effect (a*b) is significant but the direct effect (c) is not significant, the relationship between IV and DV is called indirect-only mediation;

2. If the indirect effect (a*b) is not significant but the direct effect (c) is significant, the relationship between IV and DV is called direct-only nonmediation;

3. If both the indirect (a*b) and direct (c) effects are significant, and a*b*c is positive, the relationship between IV and DV is called complementary mediation;

4. If both the indirect (a*b) and direct (c) effects are significant, and a*b*c is negative, the relationship between IV and DV is called competitive mediation;

5. If netiher the indirect (a*b) nor direct (c) effect is significant, the relationship between IV and DV is called no effect nonmediation.

6.5.3.1 The Mediating Effects of the Use of MPMSs

The mediating effects of the interactive and diagnostic uses of MPMSs on the MPMSs-marketing capabilities linkages were conducted using SPSS 21. The bootstrapping results showed that the indirect effects of measurement quality on market-linking capability,

architectural marketing capability, externally-focused organisational learning capability and adaptive marketing capability were .00 (p=.99>.01), .04 (p=.53>.01), .03 (p=.54>.01) and .04 (p=.45>.01), respectively. Such results indicated that there was no indirect effect of measurement quality on marketing capabilities. Therefore, the mediating effects of the interactive and diagnostic uses of MPMSs on the relationship between measurement quality and marketing capabilities were not supported. However, the mediating effects of the uses of MPMSs on the relationship between the comprehensiveness of MPMSs and marketing capabilities were supported. The results are presented in Table 6.14.

Table 6.14 Results of the mediation effects of IU and DU

Relationship	Indirect effect (a*b)	95% confidence interval	Direct effect (c)	Mediation
The interactive use of MPMSs as a mediator				
CMP→MLC	.54	(.29 to .84)	.18ns	Indirect
CMP→ARC	.23	(-.11 to .56)	.74**	Direct
CMP→OLC	.40	(.21 to .63)	.19*	Complementary
CMP→AMC	.60	(.35 to .90)	.23*	Complementary
The diagnostic use of MPMSs as a mediator				
CMP→MLC	-.34	(-.60 to -.11)	.18ns	Indirect
CMP→ARC	-.09	(-.41 to .26)	.74**	Direct
CMP→OLC	-.26	(-.45 to -.08)	.19*	Competitive
CMP→AMC	-.34	(-.61 to -.09)	.23*	Competitive

**: Significant at the .01 level; *: Significant at the .05 level; ns: Not significant

The results showed that there was an indirect effect between the comprehensiveness of MPMSs and market-linking capability. The comprehensiveness of MPMSs was found to have an indirect impact on market-linking capability through the interactive (a*b=.54, 95% confidence interval from .29 to .84) and the diagnostic (a*b=-.34, 95% confidence interval from -.60 to -.11) uses of MPMSs. However, the comprehensiveness of MPMSs was found to have a direct impact on

architectural marketing capability (c=.74, p<.01). The bootstrapping results indicated that the interactive use of MPMSs had a complementary mediation effect on the relationship between the comprehensiveness of MPMSs and externally-focused organisational learning capability (a*b=.40, 95% confidence interval from .21 to .63), while the diagnostic use of MPMSs had a competitive mediation effect on the latter relationship (a*b=-.26, 95% confidence interval from -.45 to -.08). As shown in Table 6.14, the effect of the comprehensiveness of MPMSs on adaptive marketing capability was also mediated by the diagnostic (a*b=-.34, 95% confidence interval from -.61 to -.09) and interactive (a*b=.60, 95% confidence interval from .35 to .90) uses of MPMSs.

6.5.3.2 The Mediating Effects of Marketing Capabilities

Bootstrapping tests was also conducted in SPSS 21 to explore whether marketing capabilities served as mediators in the relationship between the use of MPMSs and firm performance. Table 6.15 illustrates the results of the mediating effects of marketing capabilities.

As shown in Table 6.15, externally-focused organisational learning and architectural marketing capabilities were not found to influence the relationship between the uses of MPMSs and firm performance. The bootstrapping results showed that the interactive use of MPMSs had an indirect impact on firm performance through market-linking (a*b=.18, 95% confidence interval from .11 to .27) and adaptive marketing (a*b=.09, 95% confidence interval from .03 to .17) capabilities. The diagnostic use of MPMSs was also found to indirectly influence firm performance through market-linking (a*b=.11, 95% confidence interval from .06 to .18) and adaptive marketing (a*b=.06, 95% confidence interval from .02 to .12) capabilities.

Table 6.15 Results of the mediation effects of marketing capabilities

Relationship	Indirect effect (a*b)	95% confidence interval	Direct effect (c)	Mediation
Market-linking capability as a mediator				
IU→FP	.18	(.11 to .27)	.00ns	Indirect
DU→FP	.11	(.06 to .18)	.01ns	Indirect
Externally-focused organisational learning capability as a mediator				
IU→FP	-.02	(-.08 to .02)	.00ns	No effect
DU→FP	-.01	(-.05 to .01)	.01ns	No effect
Architectural marketing capability as a mediator				
IU→FP	.04	(-.03 to .10)	.00ns	No effect
DU→FP	.02	(-.02 to .08)	.01ns	No effect
Adaptive marketing capability as a mediator				
IU→FP	.09	(.03 to .17)	.00ns	Indirect
DU→FP	.06	(.02 to .12)	.01ns	Indirect

**: Significant at the .01 level; *: Significant at the .05 level; ns: Not significant; na: Not applicable

6.6 Chapter Summary

This chapter presented the results of the quantitative data analysis. The data preparation process, non-response bias test and sample representativeness were explained at the beginning. Then the reliability and validity of the measures used for all the focal constructs were tested. The hypotheses were tested with SEM techniques using AMOS 21. The path analysis showed sufficient support for the indirect relationship between MPMSs and firm performance. The results of the moderation effects were also provided. The research findings are further discussed in the following chapter with the integration of qualitative findings.

Chapter 7 Discussions

7.1 Introduction

As shown in Chapter Six, the quantitative results confirm that there is a series of mediators that can intervene in the relationship between MPMSs and firm performance. The moderation analysis also provides support for the moderation effect of competitive intensity and technological turbulence on the MPMSs-performance linkage. In this chapter, the research findings are discussed in detail with the integration of qualitative research findings.

7.2 Quantitative Research Findings

The major objective of this thesis is to examine the mechanisms through which MPMSs drive firm performance. Applying DC theory, this study posits that MPMSs positively influence firm performance through their impact on the use of MPMSs and the development of marketing capabilities. Drawing on contingency theory, it also investigates the moderating effects of four contingent factors on the effectiveness of MPMSs. The quantitative data analysis shows that the use of MPMSs can influence firm performance through different marketing capabilities. Both the diagnostic and interactive uses of MPMSs can mediate the relationship between the comprehensiveness of MPMSs and marketing capabilities. Thus, a novel practices-uses-capabilities-performance approach is developed to explain the indirect effects of the comprehensiveness of MPMSs on firm performance. The research findings highlight that the interactive and diagnostic uses of MPMSs have different impacts on the development of marketing capabilities: the interactive use of MPMSs is positively related to the development of marketing capabilities, whereas their diagnostic use hinders the development of marketing capabilities. In other words, companies with more comprehensive MPMSs can enhance their marketing capabilities bu using such systems interactively. In addition, the quantitative data show that technological turbulence and competitive intensity positively moderate the relationship between the comprehensiveness of MPMSs and firm performance. The results indicate that comprehensive MPMSs are more effective in driving firm performance in a more turbulent environment. These key research findings are further discussed below.

MPMSs and the Use of MPMSs (H1-H2). The quantitative results strongly suggest that the comprehensiveness of MPMSs positively influences how companies use their MPMSs. Companies adopting more comprehensive MPMSs are more likely to use their MPMSs interactively or diagnostically. Specifically, companies adopting more comprehensive MPMSs are more likely to use multiple marketing metrics to benchmark marketing outcomes against the objectives and the performance of competitors, direct organisational focus on critical issues, make strategic decisions, justify marketing spending and explore new opportunities. These findings are in line with Henri's (2006b) and Simons' (1995) frameworks, which suggest that MPMSs are used diagnostically and interactively in management processes.

With regard to the impact of measurement quality on the use of MPMSs, quantitative results reveal that the information quality of MPMSs also highly influences their subsequent usages. If marketing metric information is perceived as more reliable, accurate, updated or accessible, companies are more likely to use MPMSs in their management processes, e.g., reviewing, benchmarking and decision-making. However, results show that the measurement quality of MPMSs is not significantly related to firm performance: it is neither directly nor indirectly related to firm performance via the use of MPMSs and marketing capabilities. There are two potential explanations for the non-significant relationship between measurement quality and firm performance. The first explanation is that the measurement quality of MPMSs has no direct impact on firm performance; the second is that the relationship between measurement quality and firm performance is not mediated by the use of MPMSs or marketing capabilities, but by other mediators. Future research is needed to explain the non-significant relationship in greater depth.

The Use of MPMSs and Firm Performance (H3). Quantitative results reveal that the use of MPMSs does not influence firm performance directly but indirectly through its impact on marketing capabilities. This study confirms that market-linking capability and adaptive marketing capability mediate the relationship between the use of MPMSs and firm performance. These findings provide empirical evidence on the arguments that organisational learning and opportunity exploration are potential mediators in the relationship between the use of MPMSs

and firm performance (e.g., Krush et al., 2013; Morgan, 2012; Webb et al., 2011). These research findings are also consistent with studies in the marketing performance measurement literature, which argue that MPMSs influence firm performance through certain mediators, such as market orientation, organisational learning, the stature of the marketing department and market knowledge (e.g., Homburg et al., 2012; Verhoef & Leeflang, 2009).

The Use of MPMSs and Marketing Capabilities (H4-H8). First, this study strongly suggests that the interactive use of MPMSs fosters externally-focused organisational learning capability, adaptive marketing capability and market-linking capability. By using MPMSs to direct organisational attention to critical strategy-related issues and justify decision-making, companies can foster organisational learning, better link with customers and the market and adapt to changes swiftly. These findings provide empirical support for the argument that the use of MPMSs can increase knowledge sharing within the organisation (Kelly, 2007; Krush et al., 2013; O'Sullivan & Abela, 2007; Park et al., 2012). Such findings are also complementary to empirical studies conducted by Henri (2006a), Homburg et al. (2012) and Verhoef & Leeflang (2009), in which the positive role of interactive control systems in improving market orientation and enhancing market knowledge has been supported. However, while these previous studies have examined how the interactive use of control systems leads companies to become more market-orientated, this study takes one step further and supports the positive association between the interactive use of MPMSs and the development of market-linking and adaptive marketing capabilities.

Second, mixed results with respect to the impact of diagnostic control systems on the development of organisational capabilities were reported in previous studies (e.g., Henri, 2006a; Ylinen & Gullkvist, 2014). This study responds to this issue and indicates that the diagnostic use of MPMSs hinders the development of market-linking capability, externally-focused organisational learning capability and adaptive marketing capability. These findings are consistent with Simons (1995) and Henri (2006a), in which the diagnostic use of MPMSs was claimed to create constraints on innovation, organisational capability development and opportunity seeking. By hindering information sharing and constraining the collaboration within

the organisation, the diagnostic use of MPMSs exerts a negative impact on companies' ability to sense market changes, maintain good relationships with customers and channel members, collect and disseminate market knowledge and adapt to the dynamic environment quickly.

Third, it is argued in DC theory that management practices and processes serve as the mechanism through which firms develop their organisational capabilities (Helfat et al., 2007; Teece et al., 1997). The supported mediating effects of the use of MPMSs on the relationships between MPMSs and marketing capabilities are also congruent with this argument in the existing DC literature. In this study, the use of MPMSs is found to serve as the pathway along which externally-focused organisational learning capability, market-linking capability and adaptive marketing capability are developed or enhanced. The positive and negative impact of the interactive and diagnostic uses of MPMSs on marketing capabilities respectively also casts light on the argument in the DC literature that resources can only lead to superior firm performance when they are properly deployed (Chang et al., 2010; Teece et al., 1997). In this regard, this study endorses that companies should use MPMSs more interactively in order to cultivate marketing capabilities.

Fourth, the results do not show support for a significant relationship between the use of MPMSs and architectural marketing capability. The results indicate that the comprehensiveness and measurement quality of MPMSs directly influence architectural marketing capability. The findings indicate that, regardless of how companies use their MPMSs, companies adopting comprehensive MPMSs are more capable of effectively making and carrying out marketing plans than those adopting less comprehensive ones. These research findings echo strategy-focused organisation theory, which argues that management control systems can be used to facilitate the strategy implementation process, e.g., to inform strategic decision-making and communicate strategies throughout the organisation (Gimbert, Bisbe & Mendoza, 2010; Kaplan & Norton, 2001). These findings are also in line with some studies in the information systems literature, which argue that information quality is key to the decision-making process (Christensen & Demski, 2003; Malone, 1987; Merchant & Van Der Stede, 2012; Nicolaou & McKnight, 2006; O'Reilly, 1982).

Marketing Capabilities and Firm Performance (H9-H13). First, the results suggest that only market-linking capability and adaptive marketing capability positively influence firm performance. The finding that market-linking capability exerts a positive impact on firm performance is coherent with previous empirical studies, which all show support for a positive relationship between market-linking capability and firm performance (e.g., Blesa & Ripolles, 2008; Hooley et al., 2005; Morgan et al., 2009; Rapp et al., 2010; Song et al., 2007). The supported positive impact of adaptive marketing capability on firm performance is also complementary to the existing literature, which reveals that adaptive marketing capability positively influences project, marketing and innovation performance (Akgün et al., 2012; Biedenbach & Müller, 2012; Oktemgil & Greenley, 1997; Wei & Lau, 2010). Thus, as hypothesised, market-linking and adaptive marketing capabilities have been found to be key drivers of firm performance.

Second, previous empirical studies have supported the positive impact of architectural marketing capability on firm performance (e.g., Chang et al., 2010; Morgan et al., 2003; O'Cass et al., 2012; Vorhies et al., 2009; White et al., 2003) and the positive association between externally-focused organisational learning capability and firm performance (e.g., Morgan & Turnell, 2003; O'Cass & Weerawardena, 2010; Weerawardena et al., 2006). However, this study observes a non-significant relationship between these marketing capabilities and firm performance. These unexpected results contradict two arguments in the DC literature: 1) architectural marketing capability is the key driver of firm performance (Morgan, 2012; Slotegraaf & Dickson, 2004; Vorhies & Morgan, 2005), and 2) market- and relationally-focused learning are key sources of firm performance (Day, 1994; Kohli & Jaworski, 1990; Weerawardena, 2003; Weerawardena et al., 2006).

One possible explanation may be that the effects of architectural marketing capability and externally-focused organisational learning capability on firm performance are fully mediated by other marketing capabilities, such as market-linking capability and adaptive marketing capability. For example, Morgan et al. (2012) also found a non-significant relationship between architectural marketing capability and marketing effectiveness. A further mediation analysis

demonstrated that the non-significant impact of architectural marketing capability on firm performance was indeed due to the mediating effect of strategy implementation capability on architectural marketing capability. Thus, following Morgan et al. (2012), a post hoc analysis was conducted to examine the potential mediating effect of market-linking capability and adaptive marketing capability on architectural marketing capability and externally-focused organisational learning capability. The results indicated that adaptive marketing capability (Zsobel=2.82, p<.01) fully mediated the relationship between architectural marketing capability and firm performance, while market-linking capability (Zsobel=5.49, p<.01) and adaptive marketing capability (Zsobel=1.98, p<.05) fully mediated the relationship between externally-focused organisational learning capability and firm performance. These unexpected interrelationships between marketing capabilities are discussed in detail in Section 7.3.1.3.

Third, the DC literature also argues that marketing capabilities can be applied to explain firm performance variances, and that capabilities emerge through organisational processes (Helfat et al., 2007). These arguments are empirically supported in this study, which reveals that market-linking capability and adaptive marketing capability can mediate the path between the use of MPMSs and firm performance. These findings also echo studies in the marketing performance measurement literature, which propose that marketing accountability improves firm performance through the enhancement of market orientation, e.g., via a greater link with the market and sense-making (Krush et al., 2013; Verhoef & Leeflang, 2009).

MPMS-Firm Performance: The Moderated Effects (H14-H17). Only technological turbulence and competitive intensity were found to moderate the relationship between MPMSs and firm performance. The results show that when the competition is more intense, the impact of MPMSs on firm performance increases dramatically. These findings indicate that comprehensive MPMSs may not pay off for firms that operate in a less technologically turbulent environment or less intensely competitive marketplace and that they are more beneficial to companies that operate in a more intensely competitive industry or more technologically turbulent environment. These findings show support for the argument in the marketing performance measurement literature that marketing performance measurement practices are contextual and that the

effectiveness of MPMSs can be affected by certain contingencies (Frosen et al., 2013; Ittner & Larcker, 2001; Morgan et al., 2002).

However, the study shows no support for the moderating effect of market turbulence and marketing complexity on the effectiveness of MPMSs. This may be explained by the fact that, when the market becomes more turbulent and marketing activities are very complex, the use of multiple metrics has more disadvantages than advantages. On the one hand, the use of comprehensive MPMSs with good quality information enables companies to have a holistic view of the market and respond to the market. However, on the other hand, multiple metrics become less effective because of information overload issues. Clark et al. (2006) suggested that comprehensive marketing performance measurement practices might lead to information overloads, thus posing challenges in the decision-making process. In this case, managers may lack the cognitive capacity to process the integrated information provided by comprehensive MPMSs (Banker et al., 2004; Lipe & Salterio, 2002), thus resulting in inferior decision-making.

7.3 The Integration of Quantitative and Qualitative Results

This section integrates quantitative and qualitative findings in an attempt to provide additional insights into the research questions stated at the beginning of this thesis: 1) How do MPMSs drive firm performance? 2) How can companies utilise their MPMSs to develop marketing capabilities? and 3) How can contingent factors influence the impact of MPMSs on firm performance? These additional qualitative findings are presented below.

7.3.1 How do the Comprehensiveness of MPMSs Affect Firm Performance?

Quantitative data reveal that the comprehensiveness of MPMSs can affect firm performance through a series of mediators: the use of MPMSs and the development of certain marketing capabilities. The results indicate that, if companies use MPMSs more interactively, they are more capable of developing marketing capabilities, thus performing better. To better understand how MPMSs are used in companies to enhance their marketing capabilities and improve their firm performance, the qualitative data are integrated to explain why the comprehensiveness of MPMSs is critical.

This section first uses qualitative data to show how the comprehensiveness of MPMSs is positively related to the use of MPMSs (H1-H2). Since quantitative results suggest that the use of MPMSs indirectly influences firm performance through its impact on the development of marketing capabilities, this section thereby does not aim to explain the direct relationship between the use of MPMSs and firm performance (H3), but to provide insights into the relationship between the use of MPMSs and marketing capability (H4-H8) and the linkage between marketing capabilities and firm performance (H9-H13). In so doing, this section provides additional insights into two specific questions: 1) How can companies utilise their MPMSs to develop marketing capabilities? and 2) Why are these marketing capabilities important to companies?

7.3.1.1 Why are Comprehensive MPMSs Related to the Use of MPMSs?

Quantitative data show that both the comprehensiveness and measurement quality of MPMSs are positively associated with the use of MPMSs (H1-H2). The results indicate that companies adopting comprehensive MPMSs with better information quality use the measurement systems diagnostically and interactively to a greater extent than those adopting less comprehensive MPMSs with poorer information quality. Evidence from the in-depth interviews also supports the association between MPMSs and the use of MPMSs. Interview data indicate three main reasons why MPMSs are positively related to the diagnostic and interactive uses of MPMSs.

First, multiple marketing metrics are needed in the regular reviewing process. Companies rely on MPMSs to provide a holistic view of their marketing performance. Respondents claimed that their companies regularly monitored the progress and effectiveness of marketing activities and tracked marketing performance. To do so, MPMSs were utilised to show whether various marketing activities were effective. Specifically, multiple marketing metrics were needed to benchmark marketing outcomes against pre-defined objectives, the performance of previous years and that of competitors. For instance, one respondent mentioned that her company used multiple marketing metrics to monitor marketing performance:

> *"Our [Key Performance Indicators]KPIs would focus on new acquisitions per month, new acquisitions per year, our website traffic in terms of our unique visits, our total visits and returning visits, as well as our pages viewed per session and our time on site… We do a lot of targeting emails, so one of our main KPIs in that area would be our open rates and click-through rates. We monitor our unsubscription rates as well."*
>
> *(A marketing manager at a consultancy company)*

Another marketing manager also mentioned that his company used outputs-, inputs- and activities-related metrics in the reviewing process. These marketing metrics were also monitored and frequently reviewed to show the effectiveness of the marketing investment. He commented that:

> *"We would track performance on a monthly basis, periodically on a six-month or a twelve-month basis. We would do a performance implementation review and an over-arching assessment of what is what, what has not worked so well with the launch of new products. And that will be all encompassing to look at the key metrics, predefined metrics on the profit and loss statement in market performance results and then to assess the communication and impact of what we put out there, whether it be packaging, TV commercial, press, ads, etc."*

Respondents also highlighted that causal relationships were also revealed and evaluated in the reviewing process in order to understand if or which marketing activities worked effectively. Understanding the causal relationships in the reviewing process enabled these companies to "*check which activities or campaigns were successful and should be continued, or which activities were unsuccessful and should be discontinued in the future*". By doing so, companies can focus their attention on critical issues. Therefore, MPMSs are used diagnostically in the reviewing process to benchmark against pre-set objectives, previous performance and the performance of competitors.

Second, MPMSs are needed to facilitate the planning and decision-making process. Respondents claimed that "*[a]ccountability was key to the whole company*" and "*[t]he marketing department constantly got compared to competitors*". Therefore, "*[e]verything the marketing department needs should be measured carefully*" in order to facilitate decision-making. These all resulted in an increasing demand for comprehensive MPMSs. A respondent echoed the point by claiming, "*[i]t is absolutely essential that companies have as many metrics for digital campaigns and KPIs as possible because that allows them to have the*

most tailored approach to different segments". Most of the respondents illustrated incidence when their companies reviewed the cause-and-effect relationships in order to justify their decisions and make better marketing plans. For example, a marketing manager from a service company indicated that she frequently used Google Analytics to evaluate which social media was more effectively in bringing in customers. The analysis of marketing metrics allowed her company to justify forthcoming decisions and adjust resource allocations. She explained,

> *"We are in the middle of putting a marketing plan. We looked at our social media advertising for the last year. And we did an analysis of the impressions, click-through rates, cost per click, [and] which platform got us more engagements. So it looks like Twitter gets more engagements than the other channels, which is unusual, because, with our normal channels, Twitter would be the least effective. So that was a surprising finding, something that when we are setting the budget, we will definitely syphon off some of the money from Facebook advertisements and put it into Twitter advertisements."*

Budgeting is a key part of the organisational planning process. It was widely recognised by respondents that justifying marketing spending and applying for marketing funding in companies were challenging. Therefore, they used MPMSs to "*justify to the board why they were making certain decisions*", "*tell whether there was a particular area that needed more attention*" and "*capture the possible new opportunities*", thus "*making budgeting much easier*". In addition, interviewees reported a reliance on MPMSs to conduct frequent marketing performance analyses, which could also "*give the marketing function the ability, and the business the confidence to invest in marketing ideas*". Therefore, MPMSs are used diagnostically and interactively in the planning process.

Third, marketers need to use MPMSs in their reporting and documenting process. Companies also have formal or informal marketing reporting and documenting processes, in which comprehensive MPMSs are valued and required. Respondents demonstrated that, during the reporting process, the marketing department needed to report on the progress of its marketing activities and benchmark the outcomes with pre-set objectives. For instance, one respondent at a rental service company explained, "*[t]here was a six-month management meeting, where every department stood up and said where they were, what the target was, where they were against their target and what the plan for the last six months was*".

The documentation process also requires the use of MPMSs. Respondents indicated that their companies compiled a set of marketing performance documents in order to gain a good understanding of the relative performance of the marketing department compared to that of previous years or of their competitors. A marketing manager provided a detailed example of the reporting and documenting process in her consulting business. Here, the marketing reports compiled by the marketing manager were used by the marketing director when reporting to the board. The reports included several spreadsheets set up for the year, which contained their targets and compared the performance against those of previous years. The so-called "*master-spreadsheet*" also contained sub-reports on key marketing metrics of interest (e.g., acquisition and web performance) and other marketing summary reports on key numerical facts from the past years. By compiling and reviewing the spreadsheets, her company was then able to understand whether the department was "*on the course to hit the target*" through the reviewing process.

It was also widespread that the marketing performance measurement information collected from within and outside of the organisation was reliable and in good quality. Respondents highlighted that they used this information subsequently because they trusted it. However, one respondent did express his concern with the reliability and accuracy of social media and digital metrics. This business director from a service company pointed out that some digital metrics were manipulated by Google Analytics and were not reliable. Thus, his company did not use this information in the review process or decision-making process.

Hence, both quantitative and qualitative data highlighted the positive association between MPMSs and the use of MPMSs. These research findings highlight that companies adopting more comprehensive MPMSs with better information quality are more likely to use MPMSs to a greater extent. In addition to supporting previous studies on the use of performance control systems (e.g., Henri, 2006a, 2006b; Simons, 1995), the qualitative results further echo the existing studies on the diagnostic use of MPMSs (e.g., Clark & Ambler, 2011), in which it has been indicated that, when MPMSs are used diagnostically, they are used to benchmark against targets, previous years' performance and competitors' performance. Additionally, extending

Henri's (2006b) framework of the interactive use of control systems, interview results indicate that companies can use MPMSs interactively to 1) direct organisational focus on critical issues, 2) facilitate strategic decision-making, 3) legitimise marketing activities (Henri, 2006b) and 4) explore new opportunities.

7.3.1.2 How can Firms Use MPMSs to Enhance Marketing Capabilities?

Quantitative results indicate that the interactive use of MPMSs is positively related to adaptive marketing capability, externally-focused organisational learning capability and market-linking capability; whereas the diagnostic use of MPMSs is negatively related to these capabilities (H4-H8). The interview results further support the quantitative findings by revealing three main reasons why the interactive use of MPMSs can cultivate superior marketing capabilities.

First, the interactive use of MPMSs facilitates marketing performance analyses, enabling companies to improve marketing capabilities. Respondents highlighted that when companies used MPMSs for decision-making purposes, they conducted frequent marketing performance analyses, such as trend analysis, competitor analysis and need analysis. These analyses allowed them to track the performance of customers, competitors and the market as a whole. As a result, they could "*get a good understanding of how things worked in the market*", thus improving their market-linking capability and architectural marketing capability:

> *"We [the marketing department] are actually the eyes and ears for the organisation in terms of trend analysis, need analysis, and understanding where our category or categories are going to evolve in the future, which all then feed into the strategic planning for the business."*
>
> *(A marketing manager at a retailing company)*

> *"We have an enquiry sheet that we log all enquiries that come in. So that is how we can figure out if they are coming in online or they heard about us through a friend or from a referral organisation... So we are able to analyse that on a monthly basis to see if we can identify any trends in the marketplace."*
>
> *(A marketing manager at a consultancy company)*

Stronger emphasis was also placed on the analysis of customer and competitor performance. Respondents indicated that these analyses enabled their companies to demonstrate the

effectiveness of their marketing campaigns so that they could negotiate with their suppliers, thus leading to a closer relationship or partnership with them. The analysis of marketing performance information also contributes to the maintenance of relationships between companies and their customers. For example, respondents highlighted that they relied both on traditional quantitative and qualitative market research, as well as the analysis of social media metrics to maintain and enhance their relationships with customers. In particular, analysing social media metrics could provide them with a good opportunity "*to continually listen to customers*" and "*get instantaneous feedback on the performance of the business*", thus fostering a superior customer-linking capacity.

Moreover, interviewees also claimed that they could not give their competitors "*a free run at the segment of business*". Thus, they set up benchmarking systems to evaluate and analyse their performance against their competitors' marketing metrics. By analysing competitors, their companies were more capable of understanding the strategies of rival companies. These competitor analyses not only enabled companies to develop superior market-linking capability but also facilitated their strategic planning process. For instance, a business director at a service company explained, "*[w]e use a tool like search engine optimisation to match up words with competitors […] in order to determine what their budget is on certain ads… and then reverse it back down to decide what we are going to do.*"

Benchmarking also enables companies to understand whether their marketing activities work effectively and consequently make better marketing plans. Companies evaluate marketing performance in order to check if there is an area that needs special attention from the management team, if the marketing plans to be implemented are better than alternative plans, or if certain marketing plans should be put forward. In the implementation process, the continuous monitoring of marketing performance was also reported by the respondents. This enabled companies to adjust marketing spending and resources to marketing activities that needed more attention, thus leading to better planning and implementation capability. A business development director at a high technology company provided an example:

> "*If you are doing a big campaign, then you would expect to get results and metrics weekly so you can adjust how you spend and you can change what you wish to use. So I was able to notice quite quickly that a display campaign on mobile seemed a high bounce rate and that we should shift away from mobile and go towards desktop."*

From the interviews, it also emerged that the marketing performance analysis enabled companies to adopt an experimental method and shift their business focus effectively, thus influencing the adaptability of companies. In answering how her company quickly adapted to changes, one marketing manager in a consultancy company reported that her company used MPMSs interactively to cultivate an experimental method, which was a mechanism for the development of adaptability. She noted that, before finalising any commercial idea, her company would test the idea with customers and compare it with alternatives in order to "*understand the strength of that idea versus a number of different other ideas*". This experimental method fostered the adaptability of her company.

Second, the interactive use of MPMSs improves marketing accountability, resulting in more investment in the resources needed for the development of marketing capabilities. The view that resources were needed in order to develop marketing capabilities was widely held by interviewees. However, as indicated earlier, "*[c]ompanies were not very comfortable with spending huge amounts of money in marketing*". Respondents thus claimed that accountability was always key to the marketing department. When marketing departments used MPMSs to justify their decision-making and to show the contributions of marketing to firm performance, this could lead to their increased credibility within their firms. As a consequence, the higher stature of the marketing department could result in more resources invested in the marketing department, thus positively influencing marketing capabilities. For instance, respondents highlighted that the marketing department needed to justify their decisions in order to get more support from the senior management:

> *"In the current environment, there is [sic] shrinking budgets. There are more ideas and everyone is fighting for the same resource. I think one way for you actually getting commitment from the business to fund your idea is 'coming with tangible evidence'. That tangible evidence is usual in the form of quantitative research data for particularly the marketing department to say to the business: 'yes, this is a strong idea. It evaluates well with consumers. And we feel it is worthwhile investing it'."*

(A marketing manager at a retailing company)

Respondents also highlighted that various resources were needed to develop these marketing capabilities. Interviewees mentioned that resources, such as automated information systems that could reduce human error, were requisites for the development of planning and implementation capabilities of a company. For instance, a marketing manager at a sports company commented, "*I think it would be useful to have a more automated system, rather than entering everything into Excel manually every month because there is always a possibility of human error… and it takes a lot of time as well to do it manually*". Other Information Technology (IT) systems, e.g., CRM systems, were crucial in the creation and maintenance of customer and channel relationships. Many respondents underlined that they "*relied heavily on CRM systems to pull together market information from visible reports and customer contacts*", so that their companies could understand "*which customer/division was the most valuable or highest value*" and identify "s*ales-leads opportunities*". A centralised information system, which allowed the marketing department to gain access to the data fed from data warehouses, finance teams, insight teams or sales teams, was believed to be a key enabler of companies' ability to adapt to changes quickly. A sales and marketing manager at a construction company mentioned that his company "*made massive strides towards IT programmes*" in order to give their staff easier access to data when they were not on site. As a result of the advancement in IT infrastructures, his company was more adaptable. In addition to the investment in IT infrastructures, "*a massive shortage of qualified staff*" was reported to hinder the development of adaptive marketing capability. Respondents thus suggested that companies should increase their budget to recruit more employees who are "*enthusiastic*", "*comfortable with changes*" and "*full of fresh new ideas*".

Third, the interactive use of MPMSs leads to more frequent information sharing and cross-functional collaborations, thus improving marketing capabilities. From the interviews, it appeared that the interactive use of MPMSs led to information sharing and closer collaborations between the marketing department and other departments within the organisation. As a result, the marketing department was able to 1) adjust, modify or terminate the under-performing

campaigns at the implementation stage, 2) "*meet the customer needs faster and better than competitors*" and 3) learn from the market and external partners. Thus, the knowledge sharing resulting from the interactive use of MPMSs could improve architectural marketing capability, market-linking capability, externally-focused organisational learning capability and adaptive marketing capability.

Respondents explained that the interactive use of MPMSs started with the collection of marketing performance information from either the inside or outside of their organisations. The information collection process could increase information sharing and inter-departmental collaboration. Respondents claimed that relevant information (e.g., marketing performance information, market information, competitor information and customer information) could be collected from 1) internal departments, such as the marketing department, sales department, finance department, CRM department and product development department; 2) external agencies, such as research partners and consultancy agencies; and 3) channel members, such as distributors and suppliers. This involves two-way communication with external parties and collaborations between internal departments. One respondent explained explicitly how his company collected marketing performance information in order to better use MPMSs interactively:

> *"We work with research partners and organisations to understand what the broader trends and themes are… We work with organisations like Nielsen, where we would get information about how our products are performing, and the market [is performing] from the retail sales perspective… There is a number of different organisations that we work with to track our brand equities and our communication … We would work with suppliers to understand what kind of products are up and coming […] in order to develop a new piece of innovation… Our agency partners would work with us very closely to understand what the competitive landscape is… so information can come from absolutely anywhere to help to form ideas."*
>
> *(A marketing manager at a retailing company)*

The data collected from these sources would then be used to monitor marketing performance, justify decision-making and explore new opportunities. Through the interactive use of MPMSs, valuable insights would be disseminated to relevant stakeholders. For instance, one respondent mentioned that they had division and company meetings every month. These meetings were set

up for "*problem customers and particular things to watch out for*". During these meetings, different departments could collaborate with each other more frequently, leading to better market-focused learning capability. Respondents suggested that their companies also initiated work streams and seminars to improve information communication within the organisation under a sharing culture. Other initiatives, such as internal newsletters, joint presentations, face-to-face conversations and co-marketing, were also recommended by interviewees as a potential means of improving the dissemination of marketing performance data to external partners. One marketing manager at a retailing company commented,

> *"If you take marketing as a function and its responsibility to get information like that [market information], we as a function share it amongst ourselves to try and decide what it is telling us. Then for getting it shared beyond the marketing function that is absolutely done through strategic planning and the presentation of our future strategy, which is kind of rolled out through the organisation."*

The information sharing between different departments within the company could also improve the inputs to the planning and implementation process, thus leading to a better marketing planning and implementation capacity. For instance, respondents highlighted that carrying out marketing plans or strategies was a collaborative effort between departments and needed inputs from various stakeholders:

> *"We are improving the planning process. We are ensuring that there is a complete contribution from the suppliers, the commercial teams, the finance team and the online team as well, by a proper structure. Team alignment is very important."*
>
> *(A marketing manager at a retailing company)*

> *"It is critical that you collate all that information [marketing performance information] from internal departments and external partners, and try and syphon off the big opportunity areas and big themes, and group them together in order to help your future strategy."*
>
> *(A marketing manager at a retailing company)*

Respondents also highlighted that information sharing led to cross-functional collaboration within the company. Such collaboration could enable different departments to work more effectively in order to meet customers' needs, build closer relationships with channel members and respond to competitive campaigns. For example, the sharing of marketing performance information (e.g., customer satisfaction index) with CRM or human resources teams "*enabled*

companies to train retail staff a lot better". Better trained staff could create a better customer experience that led to customer acquisition and retention. The similar collaboration was also evident between marketing departments and new product development departments. Marketing/sales departments closely monitor the performance of customers (e.g., instant customer feedback) and feed this information back to the product group in order to facilitate better product development. For instance, one respondent mentioned that it was important that the product development department "*knew the revenue that were (sic) coming in*" and "*understood that marketing efforts were working for some but not for others*". This is usually a two-way collaboration through which the marketing department gets information about general trends from client services or CRM teams and then shares this market information with other departments. Such information sharing enables companies to develop their market-sensing capacity and architectural marketing capability.

Marketing performance information is not just collected, used and kept within the organisation. Beyond internal data dissemination, the interactive use of MPMSs can also lead to information sharing with external partners. By sharing marketing performance information with channel members, this helps create and maintain good relationships with them. The reason, as indicated by some respondents, was that *"[i]t was like a show of good faith to them [suppliers and channel members*]". Thus, respondents highlighted that knowledge sharing with channel members was a good way to build partnerships and tighten bonds with external partners. Respondents also indicated that information sharing with external partners could also influence the adaptability of a company. It was held that companies' proactivity and their ability to anticipate market changes could emerge through collaboration and knowledge sharing with their external partners. In answering how her company adapted to the changing environment quickly, one respondent commented, "*[f]oresight is a critical factor. We try to understand what future trends are. We are quite good at that, because we are working with our research and strategic partners to understand the future outlook or trends*".

However, the diagnostic use of MPMSs hinders information sharing and constrains market-sensing, thus leading to inferior marketing capabilities. Respondents also expressed

their concerns regarding the negative effect of the diagnostic use of MPMSs. First, from the interviews, it appeared that when companies used MPMS for benchmarking purposes, they tended to place more emphasis on financial metrics and were more outcome-orientated. Thus, their marketing departments were put under financial pressure. As a result, they would pay too much attention to achieving pre-set objectives and were more likely to ignore other critical issues, e.g., building strong brands, connecting with customers and monitoring competitors. Respondents implied that this might also give rise to conflict between short-term goals and long-term achievements. In this situation, companies may risk sacrificing their long-term relationships with customers or channel members in order to reach the short-term targets (e.g., sales and profitability). Consequently, the over-reliance on short-term financial metrics resulted from the diagnostic use of MPMSs may jeopardise companies' ability to link with customers:

> *"Everything was measured on short-term goals… And the most important thing was to meet your sales target for the quarter. So sometimes we would sell things that customers did not really need because all we needed was the number to reach the target… So we had this problem between short-term strategy and long-term strategy because long-term that is not a good thing to do. But short term, it had to be done because the sales people were so scared if they did not meet their targets they could lose their job."*
>
> *(A marketing manager at a software company)*

Second, the interviews suggested that, if the marketing performance was under-expectation, companies were less likely to disseminate marketing performance information to other departments or their external partners. As suggested by a marketing manager at a consultancy company, "*only topline figures and positive results*" would be shared with internal and external stakeholders. The reason was that the marketing department tried to make sure that external stakeholders maintained their faith in the marketing department. Thus, the diagnostic use of MPMSs may hinder the information sharing process, resulting in poor strategic decision-making and inferior externally-focused organisational learning capability.

To conclude, both quantitative and qualitative results confirm the positive association between the interactive use of MPMSs and the development of marketing capabilities. The results indicate that, when companies use marketing metrics to identify critical managerial problems, facilitate decision-making and explore new opportunities, they are more capable of developing

superior marketing capabilities. The qualitative results further highlight that the interactive use of MPMSs enhances the development of marketing capabilities because 1) it facilitates marketing performance analyses; 2) it improves marketing accountability, leading to more investment in the resources needed for developing marketing capabilities; and 3) it increases the level of information sharing and cross-functional collaboration.

The interview data also indicate that the analysis of market changes, customer preferences and competitor activities is key to building strong bonds with channel members and customers. This echoes Homburg et al. (2012), who found that comprehensive MPMSs could enable companies to accumulate market knowledge. The interview data further highlight that the interactive use of MPMSs enables two-way communications across departments. This is in line with the studies of Luo et al. (2006) and Park et al. (2012), which have argued that increased marketing accountability leads to more cross-functional collaboration and organisational learning. In addition, the qualitative data also indicate that companies are more able to adapt to changes if they are more capable of learning from the external environment or partners, and connecting with customers and channel members. This echoes the assumption made by Day (2011) that adaptive marketing capability can be cultivated through market-focused learning and also adds more evidence to Oktemgil & Greenley's (1997) and Day's (2011) claims that, in order to be more responsive and adaptive to market changes, companies need to learn from the market and stay alert to competitors and market changes.

Regarding the supported negative impact of the diagnostic use of MPMSs on marketing capabilities, the qualitative data further indicate that, if the marketing performance is below expectations, it is less likely that this information will be communicated or disseminated to other parties, especially external stakeholders. Moreover, if companies mainly focus on achieving short-term objectives, they may risk jeopardising their relationships with their customers and channel members in order to hit the targets. This partly explains why and how the focus on achieving pre-defined short-term goals may hamper the free flow of information within and outside an organisation (Henri, 2006a).

7.3.1.3 Why are these Marketing Capabilities Important?

Quantitative results strongly suggest that marketing capabilities are positively associated with firm performance (H9-H13). From the interview data, an overwhelming view was that the ability to link with customers and sense market changes, to learn the market knowledge from external partners, to make better marketing plans and effectively carry out these plans and to adapt to the changing business environment were very important competences of companies.

Respondents indicated that externally-focused organisational learning capability was important for two reasons. First, departments have difficulty in understanding each other within the organisation. As a consequence, there is a need for different departments to communicate and collaborate with each other. Communication and knowledge sharing become vital to internal management. A marketing manager at a rental service company claimed,

> *"It is key that other departments understand what we [the marketing department] do, and that we facilitate other projects within the company. There are quite a number of departments in this organisation. [But] the marketing department is one of the only departments that would actually have working interactions with every single other department."*

Second, externally-focused organisational learning capability was considered to be fundamental in the development of other marketing capabilities. For instance, some respondents noted that, by learning from the market and external partners, their companies could develop better market-linking capability, thus succeeding in competitive activities. Respondents mentioned that watching competitors mainly relied on the information fed from the outside of an organisation. The reason was that companies did not always know what their competitors were doing. Therefore, a firm's ability to get information from the external partners is crucial in the development of market-sensing capability. In addition, sharing valuable and relevant information with external partners, according to the respondents, was considered a very good way to "*build partnerships*", "*maintain credibility*" and "*tighten the bonds with the channels*". Thus, externally-focused organisational learning capability was vital for the development of market-sensing capability. It was also widely expressed that the failure to collect information from external partners resulted in poor decision-making and marketing planning. One respondent indicated that the learning process allowed effective implementation of marketing

plans and strategies. In addition, as discussed earlier, externally-focused organisational learning is also critical in improving adaptability. For instance, a sharing and collaborative culture in an organisation was believed to enable companies to be more adaptable.

From the interviews, as expected, the widespread view was that making good marketing plans and carrying out these plans effectively were very important. Interviewees mentioned that companies should develop their ability to make better strategic and operational plans (e.g., marketing mix strategy, market segmentation strategy and marketing spending plan) and to effectively allocate and deploy their marketing resources. Respondents noted that a good implementation capability involved the continuous monitoring of the progress of marketing activities. This implementation capability allowed companies to identify market trends and new market opportunities, leading to superior market-linking capability. For instance, a marketing manager at a consultancy company explained that, during the marketing execution process, the continuous monitoring of the progress of marketing activities allowed her company to identify potential demands for certain services. Therefore, her company was better able to link with the market and connect with customers. Another respondent highlighted that his firm's ability to re-allocate and deploy marketing resources allowed them to better respond to competitive campaigns.

Interviewees suggested that it was crucial for companies to sense market changes, build and maintain good relationships with customers and channel members, and monitor competitor performance. For example, respondents indicated that it was essential for companies "*to assess where the market is going*" and "*to understand the evolution of consumer needs and trends*". A marketing manager in a retailing company demonstrated that it was a core competence of his company "*to do the work [market-sensing] well*", "*to build trust with customers*" and "*to maintain good relationships with customers and channel members*". Another respondent highlighted that, through connecting strongly with the market and its clients, her organisation was able to adjust to the swiftly changing technological environment. These comments all underscore the need for developing market-linking capability to create competitive advantages.

It was also widely held that companies were operating in an ever-changing environment and thus it was necessary for them to adapt and to "*mitigate the impact from kinds of strong headwinds*". One respondent commented, "*[t]he market is changing and we need to get better and smarter, and realise more opportunities*". In addition, according to interviewees, adaptive marketing capability enabled companies to innovate, "*re-shape market segmentation and target audience*" and "*explore new opportunities*", thus leading to enhanced prospects.

In summary, these marketing capabilities are all considered important competences of companies. Externally-focused organisational learning capability is deemed important because 1) there is a need for different departments to understand and collaborate with each other, and 2) it facilitates the development of other marketing capabilities. The latter point further echoes the argument that organisational learning is key to the development of various dynamic capabilities (Eisenhardt & Martin, 2000; Zollo & Winter, 2002). Architectural marketing capability is also a core competence because companies need better segmentation and decision-making.

The interviewees also highlight that market-linking and adaptive marketing capabilities are essential because companies need to 1) understand customer preferences and market changes in order to maintain close relationships with them, 2) monitor and react to competitive activities in order to survive the intense competition, 3) value the information fed from suppliers in order to build strategic partnerships, 4) mitigate the effects of environment changes, and 5) explore new opportunities as the business environment evolves. In line with quantitative findings, the interview data also strongly suggest that externally-focused organisational learning capability, market-linking capability and architectural marketing capability foster the development of adaptive marketing capability. These unexpected mediating effects of adaptive marketing capability are consistent with the arguments from previous studies (e.g., Biedenbach & Müller, 2012; Day, 2011; Wei & Lau, 2010). These studies argue that adaptive marketing capability can be cultivated through various other marketing capabilities: 1) market-focused organisational learning capability that enables firms to stay alert to competitors and anticipate market changes more effectively, 2) relational capabilities (e.g., relationally learning capability) that allow

companies to gain access to resources that are beyond the firm boundaries, and 3) better-coordinated marketing activities.

7.3.2 How do Contingencies Influence the Effectiveness of MPMSs?

The interviews provided additional insights into how the external environment could influence the effectiveness of MPMSs. Respondents all highlighted that their companies operated in a changing environment, in which competition was fierce and the market was quite changeable. In this situation, being able to connect with customers and maintain a good relationship was requisite for companies to succeed. For instance, respondents indicated that technological change had a great impact on their business focus and marketing performance measurement practices. Companies needed to shift the focus of their business as the industry evolved. But, in the evolution of company focus, respondents mentioned that customers were always at the core. When technology changed quickly, respondents stressed that building trust with customers became especially vital:

> *"The industry that we are in, it moves relatively quickly. New technologies happen. The big deals that we get are often due to our being able to meet the customer needs faster and better than our bigger competitors. So, we will have some marketing spend that is about doing advertising or managing our website or setting up our tools or attending trade shows."*
>
> *(A commercial manager at an aviation company)*

Thus, in case of high environmental turbulence, companies tend to use marketing performance measures more frequently in order to monitor the performance of customers and competitors. One respondent mentioned that, when the market was more dynamic, her company would use marketing performance information more frequently in order to prioritise business focus and justify the investment in marketing activities. This was echoed by other respondents, who indicated that their companies tended to analyse marketing performance measures more frequently to get a better understanding of market trends under more turbulent conditions. This would enable their companies to better segment the market and adjust to market changes more quickly. In case of high competitive intensity, companies tend to use more marketing metrics, e.g., competition metrics, to monitor the performance of their competitors. Respondents

mentioned they would "*have a look at their reports*" or "*look at [the] competitor's quality*" in order to cope with the intense competition.

When the technological environment was more turbulent, respondents indicated that customers relied more on them to gain useful information. Thus, external disclosure became a useful means to maintain relationships with clients. As a result, companies might benefit more from sharing information with clients and external partners in a turbulent technological environment. Relative to single-product companies, multi-product companies are by nature more complex. Marketing managers in such multi-product companies may have to deal with additional layers of complexity in their marketing activities. The complexity of marketing activities forces them to use more marketing metrics and measure marketing activities more frequently. Respondents indicated that, in order to have a holistic view of their marketing activities, they had to use a multitude of different marketing metrics to measure various marketing activities in their company. A marketing manager at a cloud-computing company explained that her company had various marketing activities and used multiple metrics to monitor their marketing performance:

> *"We run webinars to attract new clients and to generate new leads. Then we use e-mail marketing very effectively to manage our existing client database… a successful webinar is measured through audience engagement and the number of new leads that we acquire. For e-mail marketing, it could be the rate of opens, the rate of deliveries, the rate of people who click the links."*
>
> *(A marketing manager at a cloud-computing company)*

In addition, the interviews also revealed that the data mining capability of firms could influence how they used marketing performance measures and thus influence the effectiveness of MPMSs. Respondents highlighted that, if their companies had the capacity to analyse marketing performance measurement data, they were more likely to use MPMSs interactively in their decision-making and strategy implementation process. However, it emerged in the interviews that many companies lacked this capacity to make good use of multiple marketing metrics and generate insights from these data. Therefore, a lack of data mining capability hindered the effectiveness of MPMSs.

In short, the interviews highlight that a changing environment stresses the importance of satisfying customer needs and connecting with customers and that the dynamic environment leads to more frequent usages of marketing metrics. Therefore, companies that use MPMSs more frequently in a turbulent environment perform better. In addition, interviewees also suggest that a lack of data mining capability negatively influences the effectiveness of MPMSs. The findings echo resource advantage theory, which argues that companies fail to optimise resources because they lack the capability and resources to do so (Hunt & Morgan, 1995; Kozlenkova et al., 2014). Therefore, in order to use marketing performance measurement information more effectively, companies need to develop their data mining capability. A summary of the qualitative and quantitative results is provided in Table 7.1.

Table 7.1 The integration of qualitative and quantitative findings

Research questions		Quantitative findings		Qualitative explanation
1. How do MPMSs influence firm performance?	*Why are comprehensive MPMSs positively related to the use of MPMSs? (MPMSs-Uses)*	H1a: CMP→DU	✓	***MPMSs are positively related to the use of MPMSs because:*** 1) multiple marketing metrics are needed in the regular reviewing process; 2) MPMSs are required to facilitate planning and decision-making; 3) marketers need MPMSs in the reporting and documenting process.
		H2a:CMP→IU	✓	
		H1b:QUA→DU	✓	
		H2b: QUA→IU	✓	
	How can companies use MPMSs to develop marketing capabilities? (Uses-Capabilities)	H4a: DU→MLC	✓	***The diagnostic use of MPMSs results in:*** 1) constrained information sharing within the organisation and with external partners; 2) companies' major focus on short-term objectives and their overlooking of long-term goals.
		H5a: DU→ARC	×	
		H6a: DU→OLC1	✓	
		H7a: DU→OLC2	✓	
		H8a: DU→AMC	✓	
		H4b: IU→MLC	✓	***The interactive use of MPMSs results in:*** 3) continuous marketing performance analyses; 4) the increased credibility of the marketing department, thus leading to more resources invested in the marketing department; 5) a higher level of information sharing and inter-departmental collaboration.
		H5b: IU→ARC	×	
		H6b: IU→OLC1	✓	
		H7b: IU→OLC2	✓	
		H8b: IU→AMC	✓	
	Why are these marketing capabilities important? (Capabilities-Performance)	H9: MLC→FP	✓	***These marketing capabilities are essential to companies because:*** 1) ARC leads to better decision-making and resource allocation; 2) MLC creates competitive advantages and leads to adaptability; 3) OLC allows internal collaboration and the development of other marketing capabilities; 4) AMC facilitates innovation and opportunity exploration.
		H10: ARC→FP	×	
		H11: OLC1→FP	✓	
		H12: OLC2→FP	×	
		H13: AMC→FP	✓	

✓:Supported ×: Not supported OLC1: Market-focused organisational learning capability; OLC2: Relationally-focused organisational learning capability

Table 7.1 The integration of qualitative and quantitative findings (continued)

Research questions		Quantitative findings		Qualitative explanation
	Market turbulence	H14a: CMP→FP	×	
		H14b: QUA→FP	×	***The changing business environment emphasises the importance of satisfying customer needs and connecting with customers. Thus,***
2. How do contingent factors influence the effectiveness of MPMSs?	*Technological turbulence*	H15a: CMP→FP	✓	1) companies use multiple marketing metrics to monitor different marketing activities;
		H15b: QUA→FP	×	2) companies use multiple marketing metrics more frequently to monitor competitors and connect with customers in a turbulent environment.
	Competitive intensity	H16a: CMP→FP	✓	
		H16b: QUA→FP	✓	***Interviewees consistently highlighted the need for developing data mining capability in order to make better use of MPMSs.***
	Marketing complexity	H17a: CMP→FP	×	
		H17b: QUA→FP	×	

✓:Supported ×: Not supported

7.4 Validity of the Mixed Methods Research

As discussed in Section 5.5 and Section 6.4, the validity of both quantitative and qualitative research design was secured. Compared to independent quantitative or qualitative research design, the mixed methods design may have additional validity concerns. Previous literature indicates a need for identifying and minimising these additional threats to the validity of the explanatory sequential design in the mixed methods research (Creswell & Plano Clark, 2007; Spencer et al., 2003). The potential threats to the validity of the explanatory sequential design in mixed methods research are demonstrated in Table 7.2.

Table 7.2 Potential threats to the validity of sequential designs in mixed methods research

Explanatory Sequential Designs	Minimising the Threat
Data collection issues	
1. Selecting the same or different individuals for the qualitative and quantitative data collection	1. Select the same individuals for an explanatory design
2. Using the same sample sizes for the qualitative and quantitative data collection	2. Use large sample for quantitative and small sample size for qualitative
3. Not choosing participants for the follow-up who help explain significant results	3. Choose same individuals for the qualitative follow-up
4. Not designing an instrument with sound psychometric (i.e., valid and reliable) properties	4. Use rigorous procedures for developing and validating the new instrument
Data analysis issues	
1. Choosing weak quantitative results to follow up on qualitatively	1. Choose significant results or strong predictors to follow up on
2. Choosing weak qualitative findings to follow up on quantitatively (na)	2. Use major themes as the basis for the quantitative follow-up (na)
3. Not addressing validity issues	3. Address both qualitative and quantitative validity

na: Not applicable to the current study; Source: Creswell & Plano Clark (2007, p. 148)

As shown in Table 7.2, the validity of the mixed methods research design is discussed from two perspectives: that of data collection and data analysis. As shown in Creswell & Plano Clark (2007), at the data collection stage, potential threats to the sequential design in the mixed

methods research involve the use of different respondents and same sample sizes for both qualitative and quantitative research, the failure to select participants who can help explain significant results for follow-up studies and the failure to use solid instruments in the study. In order to avoid these potential issues, during the research design, this study selected the same respondents for both the qualitative and quantitative study. As shown in Chapter Five, the survey respondents were recruited to take part in the follow-up interviews. Therefore, only a small proportion of the survey respondents were used in the follow-up study. All measures used in the quantitative research were well-designed instruments, which had been tested and validated in previous studies. The interview guide was semi-structured and pre-tested by both academics and practitioners to ensure the quality. The detailed description of quantitative and qualitative data collection was provided in Chapter Five.

Creswell & Plano Clark (2007) also highlighted three potential threats to the data analysis in the mixed methods research design. These were the selection of weak qualitative findings to follow up on quantitatively, the selection of weak quantitative results to follow up on qualitatively and the failure to address validity issues. The latter two concerns have been addressed in the current study, while the first issue was not relevant to the current research design. The purpose of the qualitative follow-up study was to explain the significant paths supported in the quantitative study. For example, in the quantitative study, organisational learning capability was found to be related to market-linking capability. Therefore, in the follow-up interviews, this significant result was further explored in depth. The validity of both qualitative and quantitative research was discussed Chapter Five and Chapter Six, respectively.

7.5 Chapter Summary

This chapter presented the discussion of the research findings, beginning with a discussion of the quantitative findings. The integration of the quantitative and qualitative results was then presented in an attempt to provide additional insights into the quantitative results. A summary of the research findings was provided following the integration of qualitative and quantitative

results. The validity of the explanatory sequential mixed methods approach was subsequently discussed at the end of the chapter.

Chapter 8 Conclusions

8.1 Introduction

This chapter first outlines the theoretical contributions to the marketing performance measurement, dynamic capabilities and mixed methods literature, and their practical implications. The limitations of this study and future research directions are then presented in detail. Finally, the conclusions of this thesis are drawn.

8.2 Theoretical Contributions

As indicated in Chapter Two, limited research has investigated how MPMSs lead to better organisational performance and failed to apply a systematic approach to explain the sophisticated MPMSs-performance relationship. This study responds to the call for the establishment of more sophisticated research models that examine the indirect and contingent effects of MPMSs on firm performance (Homburg et al., 2012; O'Sullivan & Abela, 2007). Moreover, it responds to the call for interdisciplinary studies (Sidhu & Roberts, 2008) and links theories of marketing performance measurement and DC in order to explore the critical role that the use of MPMSs plays in the development of marketing capabilities and the enhancement of firm performance. Detailed theoretical contributions are provided below.

8.2.1 Contributions to the Marketing Performance Measurement Literature

First, the study contributes to the marketing performance measurement literature by proposing and validating a new practices-uses-capabilities-performance framework that helps to explain the indirect and contingent effects of MPMSs on firm performance from a DC perspective. There is no previous study in the marketing performance measurement literature that has examined the indirect effects of MPMSs on firm performance through a marketing capabilities lens. By confirming the positive effect of the comprehensiveness of MPMSs on firm performance and marketing capabilities, this study provides solid empirical evidence for the argument that comprehensive MPMSs are more beneficial than partial systems (CMO Council, 2009; Homburg et al., 2012). In addition, the research model also reveals different types of

outcomes, e.g., marketing capabilities, financial outcomes and non-financial outcomes, that MPMSs can lead to when they are employed properly by firms.

Second, this study empirically supports the view that the diagnostic use of MPMSs has a negative impact on the development of marketing capabilities. This contributes to the debate about the mixed results of the impact of the diagnostic use of control systems on organisational capabilities (e.g., Henri, 2006a; Ylinen & Gullkvist, 2014). Previous studies in the management control literature have reported mixed results with regard to the impact of the diagnostic use of performance measurement systems on organisational capabilities (e.g., Henri, 2006a; Ylinen & Gullkvist, 2014). This study not only provides empirical support for the argument that the diagnostic use of MPMSs hinders the development of marketing capabilities, but also provides additional insights into the reasons behind the negative impact of the diagnostic use of MPMSs. The findings suggest that the diagnostic use of MPMSs leads to limited information sharing and companies' over-reliance on financial metrics and short-term objectives, thus negatively influencing the development of marketing capabilities.

Third, this study empirically supports the contextuality of MPMSs by showing that external factors can influence the effectiveness of MPMSs. Both technological turbulence and competitive intensity are found to positively moderate the impact of the comprehensiveness of MPMSs on firm performance. These research findings show that, in different contexts, MPMSs have different firm performance implications. While previous studies have mainly focused on examining how contingent factors influence the design and use of MPMSs (e.g., Frösén et al., 2013; Mintz & Currim, 2013, 2015), this study empirically confirms that these contingent factors also influence the usefulness of MPMSs. Thus, in order to design and apply MPMSs more effectively in practice, firms should consider environmental factors (Frösén et al., 2012; Morgan et al., 2002).

Fourth, this study contributes to the marketing performance measurement literature by providing insights from the Irish context. As indicated in Chapter Two, previous studies have largely focused on investigating marketing performance measurement practices in more

advanced industrial countries, such as Germany, the UK and the US. Less attention has been paid to investigate marketing performance measurement practices in other contexts, such as small open economies (e.g., Ireland). It is the first study of its kind to investigate the effectiveness of MPMSs in improving firm performance in the Irish context. Irish firms have been trying to build up their marketing skills and capabilities in order to compete in the intensely competitive global business market (Enterprise Strategy Group, 2004; Flood & O'Sullivan, 1985). It is held that marketing performance measurement practices should also be included to improve the performance of Irish firms (O'Sullivan, 2007). By testing how MPMSs influence the performance of Irish firms, this study provides valuable insights into how Irish firms have responded to these recommendations. The research findings can be generalised at least to other small open economies and help their companies develop marketing capabilities and improve firm performance.

8.2.2 Contributions to the Dynamic Capabilities Literature

The research also contributes to the DC literature in the following ways:

First, by identifying the interactive use of MPMSs as a key driver of market-linking capability, externally-focused organisational learning capability and adaptive marketing capability, this study also addresses the research gap pertaining to what firms should invest in to develop and improve their marketing capabilities (Ethiraj et al., 2005; Vorhies et al., 2011). It is amongst the very first research to empirically investigate the positive role of management processes on marketing capabilities. On the one hand, the results show that MPMSs provide a large amount of informational resources, e.g., performance information, budget status and benchmarking reports, that can enhance the firm's ability to link with its business partners and the external environment, as well as its ability to adapt to the changing environment. Thus, this study supports the previous view that informational resources and knowledge resources can be leveraged to develop marketing capabilities (Moorman & Slotegraaf, 1999; Morgan et al., 2003). On the other hand, the different effects of the diagnostic and interactive uses of MPMSs on the development of market-linking capability and adaptive marketing capability also provide

additional evidence for the argument that resources can lead to superior firm performance only when they are used in an appropriate manner (Teece et al., 1997). In this case, MPMSs can drive better firm performance when they are used more interactively than diagnostically.

Second, by offering support for the mediation model of the use of MPMSs, marketing capabilities and firm performance, this study also provides valuable evidence for the previous argument that the relationship between resources and firm performance is not direct (Rapp et al., 2010). It also endorses that marketing capabilities can intervene in the resources-performance relationship and have significant performance implications (Rapp et al., 2010). By using MPMSs to facilitate decision-making, direct organisational focus and legitimise current or future actions of the marketing department, firms can establish good relationships with customers and suppliers, sense market changes and threats, and quickly adapt to market changes. This study also sheds light on the role of marketing capabilities in explaining the variances in firm performance. This research area has great potential to enhance the understanding of the roles of organisational practices and processes in the development of certain marketing capabilities and the improvement of firm performance (Helfat et al., 2007).

Third, Orr, Bush & Vorhies (2011) have called for more studies on the complementarity of marketing capabilities because these capabilities "have varying effects when utilised together" (p. 1080). The current study responds to this call and investigates the interrelationships between marketing capabilities. By doing so, it helps uncover how firms should leverage or balance their exploitation- and exploration-based capabilities to maximise their effects on firm performance. Contrary to existing studies that show a positive complementary effect between marketing capabilities (e.g., Morgan et al., 2009; O'Cass & Sok, 2012; Rapp et al., 2010; Su et al., 2013), this study suggests that these marketing capabilities do not always enhance the effect of other capabilities on firm performance. Market-linking capability and adaptive marketing capability are found to intervene in the linkage between externally-focused organisational learning capability and firm performance, while adaptive marketing capability is found to mediate the relationship between firm performance and externally-focused organisational learning capability, architectural marketing capability and market-linking capability respectively. This

finding provides empirical support for the argument that capabilities depend on one another: the investment in developing one capability can lead to the enhancement of another (Ulrich & Smallwood, 2004).

8.2.3 Contributions to the Mixed Methods Research

This study also contributes to the marketing performance measurement literature by providing a useful mixed methods example. It applies an explanatory sequential mixed methods approach to examine the research questions and is the first of its kind to adopt a mixed methods approach to explore the indirect effects of MPMSs on firm performance. The use of qualitative data supplements the quantitative results by providing additional in-depth explanation for the mediation model and more insightful answers to the research questions. In addition, researchers have pointed out that "the advancement of multiple methods research would benefit from the adoption of a common vocabulary in reporting multiple methods studies, which would not only make the method clearer for the reader but also set a good example for other researchers who might consider implementing multiple methods research design" (Davis et al., 2011, p. 473). Thus, this study also contributes to the mixed methods literature by providing another solid example of how to interpret and integrate the mixed research results.

8.3 Practical Implications

Regarding the importance of comprehensive MPMSs, advocates maintain that comprehensive MPMSs boost firm performance, whereas critics still hold that comprehensive MPMSs are a management fashion without very meaningful practical implications. This study contributes to this debate by empirically confirming the positive impact of the comprehensiveness of MPMSs on firm performance and advocating the use of MPMSs in management practices.

First, the research findings provide insights into how MPMSs are beneficial to companies. The results indicate that comprehensive MPMSs contribute to firm performance by enhancing marketing capabilities, such as market-linking capability and adaptive marketing capability, while pointing to the need for adopting comprehensive marketing performance measurement practices. Therefore, it is recommended that companies adopt a comprehensive MPMS in order

to develop marketing capabilities and improve firm performance. Moreover, the research findings also indicate that the effectiveness of MPMSs is context-based. Environmental factors, such as technological turbulence and competitive intensity, can positively influence the effectiveness of MPMSs in improving firm performance. The results suggest that technological turbulence and competitive intensity can strengthen the positive impact of the comprehensiveness of MPMSs on firm performance. Hence, when the business environment is becoming more competitive and turbulent, there is an obvious need for companies to adopt a more comprehensive MPMSs in order to survive and flourish. Consequently, managers can use such findings to adjust their marketing performance measurement practices accordingly.

Second, the supported sequential mediation model indicates that the design of MPMSs is important, but their use is also critical. The results strongly suggest that MPMSs can enhance marketing capabilities and drive firm performance, but only if MPMSs are deployed properly. Specifically, the interactive use of MPMSs is encouraged. The empirical results highlight that, if companies only use marketing metrics to benchmark performance against objectives or track whether marketing functions hit the targets, then MPMSs are less likely to enhance marketing capabilities and drive firm performance. In order to develop superior marketing capabilities and improve firm performance, it is recommended that, in addition to using MPMSs to track and review marketing performance periodically, companies should also apply them in a way that directs organisational emphasis on critical issues, shows continuous awareness of market uncertainty and meets the critical balance between short- and long-term priorities. Moreover, as suggested by interviewees, companies generally need to develop their data mining capacities in order to make better use of MPMSs. Thus, this study further endorses that, in addition to investing in marketing performance measurement practices, companies also need to invest in their employees to ensure that they have sufficient data mining expertise to make good use of marketing performance data. For instance, companies can recruit employees who have outstanding data analysis skills and provide them with more career development opportunities to further enhance such skills.

Third, the interview data show that the interactive use of MPMSs can lead to the increased influence of the marketing department within the firm, thus increasing the resources invested in the marketing department. These results may also be useful for those marketers who have struggled to increase marketing accountability and credibility. Senior management teams are more likely to trust and invest in those departments with greater accountability. It would thus be beneficial for such marketers to improve their marketing performance measurement practices. Several measures may be taken in order to legitimise actions of the marketing department. For instance, marketing managers can use multiple marketing metrics (e.g., output-, input- and activities-related metrics) to enable senior management to understand the progress and effectiveness of marketing activities. Moreover, the marketing department can reveal and explicate the causal relationships between marketing activities and firm performance so that other departments are capable of understanding which marketing activities work effectively, thus enhancing their faith in the marketing department. It can also conduct frequent good quality marketing performance analyses in order to facilitate the decision-making process, allowing the senior management to invest accordingly.

Fourth, this study reinforces the importance of marketing capabilities in driving firm performance. Based on the quantitative and qualitative results, it is highly recommended that managers pay increasing attention to developing critical marketing capabilities that can help boost firm performance. The quantitative results suggest that companies can use MPMSs interactively to help them develop marketing capabilities. For instance, companies can use multiple marketing metrics to regularly monitor customer and market performance. By doing so, they are more capable of responding to changes in customer preferences and identifying market opportunities. The interview data highlight that, in addition to the use of MPMSs, IT infrastructures and marketing talent are also key factors that can drive marketing capabilities. For instance, CRM systems are required to create and maintain good relationships with customers and channel members. Centralised information systems are needed to reduce human errors, increase information sharing within the organisation and enable employees to get easier access to information. Therefore, companies are encouraged to invest resources in advancing

their IT infrastructures in order to develop their marketing capabilities. In addition, marketing professionals who are passionate, comfortable with changes, full of fresh ideas and have sufficient data mining expertise, are also needed for those companies that need to develop their marketing capabilities.

In addition, the relative importance of marketing capabilities in improving firm performance is also supported in this study. The results indicate that market-linking capability has a greater effect on firm performance than other capabilities of interest. It is also evident that market-linking capability partially influences firm performance through its positive impact on adaptive marketing capability. This means that, in order to cultivate their exploration-based capability (e.g., adaptive marketing capability), firms should also invest resources in developing their exploitation-based marketing capability (e.g., market-linking capability). On this basis, investment in developing market-linking capability by utilising MPMSs is highly recommended. The qualitative data show that externally-focused organisational learning capability is fundamental in the development of other capabilities. Thus, this study underscores that companies also focus on developing their externally-focused organisational learning capability. To do so, companies should cultivate a collaborative culture and encourage information sharing among departments and between internal departments and external partners. These research findings are especially beneficial to companies with limited resources. It is recommended that, in order to maximise the performance implications, such companies should invest in the development of market-linking capability, a capability that has a larger impact on firm performance and can help foster other exploration-based capabilities, or externally-focused organisational learning capability, an “enabler” of other capabilities.

The major contributions of the current research are summarised in Table 8.1.

Table 8.1 A summary of the contributions of the current study

Contributions		
Theory	• Supports the growing body of literature examining the indirect and contingent effects of MPMSs on firm performance • Connects marketing performance measurement theory with DC and contingency theories	
	Marketing Performance Measurement Literature	• Develops a practices-uses-capabilities-performance approach to explain indirect effects of MPMSs on firm performance • Empirically supports the contextuality of MPMSs • Contributes to the literature by adding insights from the Irish context • Is the first research of its kind to investigate the consequences of MPMSs in a small open-economy context
	Dynamic Capabilities Literature	• Supports DC theory by confirming the role of capabilities in explaining firm performance • Extends DC theory by empirically supporting the practices/processes-capabilities linkage • Empirically supports the interrelationships among marketing capabilities
	Mixed Methods Research	• Is the first research of its kind to adopt a mixed methods approach in the marketing performance measurement literature • Supplements the quantitative research findings with qualitative explanations, which mitigates the research bias • Provides another useful template for mixed methods studies
Practice	• Provides understandings of how MPMSs lead to superior firm performance, especially through the use of MPMSs and the development of specific marketing capabilities • Provides guidelines to practitioners regarding how to design and use MPMSs to enhance marketing capabilities and improve firm performance in different contexts • Provides insights into how to develop marketing expertise, especially when under budget/resource pressure	

8.4 Limitations and Future Research

This study has several limitations, some of which may lead to potential future research opportunities.

There are three potential limitations in the literature review conducted in this study. The use of 1995 as a cut-off point for the literature review has of course implied the exclusion of journal articles published before this date. Although there are only a handful of marketing performance measurement articles published before 1995 (Gao, 2010), these articles may provide additional evidence in this area. Thus, future research might consider including these articles to provide additional evidence for the marketing performance measurement literature. In addition, the literature review sample only consists of top-tier journal publications and several other publications from key authors in the field of marketing performance measurement. However, other publications, such as books, reports and conference papers, may supplement the literature review and could be included in any future studies. Regarding the keyword searching, although the various keywords selected in this study (e.g., marketing performance measurement, marketing performance and marketing performance measurement system) have been reviewed and validated by academic experts, it is reasonable to assume that the use of different keywords might change the literature review results. Hence, the interpretation of the literature review results should be used with caution.

Additionally, there are also several methodological limitations in this study. A first limitation lies in the use of cross-sectional research design, a widely adopted research design in the marketing literature. This may prevent the author from making strong claims of the causality between dependent and independent variables because this research design method neglects the lag effects between them. Although previous studies indicate that cross-sectional designs may have been unnecessarily criticised (Spector, Zapf, Chen & Frese, 2000), it is recommended that future research adopt a longitudinal research design in order to better reveal the causal relationships between variables. A second concern of the research design is the use of single-informant for the independent and dependent variables in this study. Because respondents may overrate their firm performance (Venkatraman & Ramanujam, 1987), there is a possibility

that the strong relationships between dependent and independent variables are due to single-informant bias (Joshi & Sharma, 2004). Although the common method bias test in Chapter Six suggests that there is no concern about single-informant bias in this study (Podsakoff & Organ, 1986), the results would have been more robust if multiple respondents from different departments of one organisation had been recruited. Therefore, although the practical difficulty related to collecting data from multiple informants has been well recognised by researchers (Kumar, Stern & Anderson, 1993), one potential future research direction that may address this concern is to use multiple informants for data collection.

A third issue regarding the research design is that this study may also be limited by the use of self-reported and subjective measures. Despite the wide adoption of such measures in the marketing literature, it is argued that the use of such measures can generally lead to stronger relationships between key constructs (e.g., Verhoef & Leeflang, 2009). These self-reported measures can be improved by using other complementary data sources. For instance, measures of firm performance might be enhanced by combining self-reported measures and secondary, objective financial measures to make them more robust (Leonidou, Palihawadana & Theodosiou, 2011).

Fourth, since the data were collected from a single country, the ability to generalise these findings to other contexts may be limited. Although the Irish context that this study investigated in provides an appropriate setting, it is reluctant to generalise its results to the entire population of companies globally. This limitation points to the need for a large-scale and cross-cultural study to examine the mechanisms through which MPMSs drive firm performance. Thus, it would be useful for future studies to replicate this study in other contexts. In addition, the interpretation of qualitative research data is subject to both the interactions between the researcher and participants and the perceptions of the author. Thus, the qualitative results should be used with caution.

Leaving aside these limitations, this study indicates several important new areas for further research. First, although this study controlled for several factors that could affect firm

performance, it was unable to control all factors that could have an impact on firm performance. Thus, future research might consider including other control variables that can influence firm performance. For instance, ownership type (state-owned enterprise or collectively owned enterprise, Ma et al., 2009; Wei & Lau, 2010) and organisational culture (Rapp et al., 2010) can potentially influence firm performance and thus should be controlled in future studies. In addition, based on DC theory, this study has only examined the effects of MPMSs on four marketing capabilities. This does not mean that these marketing capabilities are the only capabilities that can be derived from the use of MPMSs for all organisations. According to the RBV literature, each organisation has its distinctive and unique resources and capabilities (Day, 1990; Song et al., 2007). Hence, given the complexity of this phenomenon, future research may identify and include other relevant capabilities and examine their important roles in mediating the relationships between MPMSs and firm performance. For example, entrepreneurship (Henri, 2006a), innovation (Bisbe & Otley, 2004; Henri, 2006a; Marginson, 2002) and strategic capabilities (Grafton et al., 2010) could be promising mediators.

Second, though the reliability and validity of key constructs are secured, the measurement of some key constructs can be further enhanced or strengthened. For instance, in measuring marketing capabilities, market- and relationally-focused organisational learning capabilities were found to be highly correlated, thus being combined and treated as two sub-dimensions of externally-focused organisational learning capability after CFA. This could be avoided by refining and developing better measurement items for these two constructs.

Third, the finding that the use of MPMSs influences the development of marketing capabilities and the improvement of firm performance stresses that the role of MPMSs warrants future research. This study recommends that future research investigate how other attributes of MPMSs influence firm performance, how other variables can mediate the relationship between MPMSs and firm performance and how MPMSs might interact with other resources or processes to influence the development of marketing capabilities and the improvement of firm performance. In addition, this study only applies DC theory to explore the mechanisms through which MPMSs lead to superior firm performance. Other theories could also be promising to

explain the mechanism through which MPMSs drive firm performance. For instance, as suggested by Homburg et al. (2012), institutional theory can be applied to investigate how the institutional outcomes resulted from the adoption of MPMSs can influence firm performance. It is also warranted to examine the role of MPMSs in implementing marketing strategies by applying strategy-focused organisation theory (Kaplan & Norton, 2001, 2004).

Fourth, considering the impact of contingent factors on both the design and effectiveness of MPMSs, this study proposes additional investigation of how these contingent factors (e.g., market turbulence, competition intensity and technological turbulence) influence the way companies use their MPMSs. Given that the relationship between marketing capabilities and firm performance is also contingent on environmental factors (e.g., Akgün et al., 2012; Moorman & Slotegraaf, 1999), it would also be beneficial to investigate how contingent factors influence the impact of marketing capabilities on firm performance.

Fifth, this study suggests that the interactive and diagnostic uses of MPMSs have different impacts on marketing capabilities and firm performance. Given that companies use MPMSs both diagnostically and interactively, it may be worthwhile to examine how the joint use of MPMSs can influence the effectiveness of MPMSs. As suggested by Henri (2006a), the joint use of MPMSs may create dynamic tension "between creative innovation and predictable goal achievement" (p. 533) and lead to positive performance outcomes. It would be interesting to investigate how companies can reinforce the positive impact of the dynamic tension on firm performance. Moreover, as indicated in Chapter Three, the interactive use of MPMSs can be categorised into three subgroups (see Henri, 2006b). Thus, further investigation into the subgroups of the interactive use of MPMSs and their impacts on marketing capabilities and firm performance is merited. By doing so, future research can provide more insights into how companies should utilise their MPMSs to maximise their performance implications.

In addition, some interesting findings have emerged from this study and deserve further investigation. First, this study examines the two attributes of MPMSs, i.e., comprehensiveness and measurement quality, and their impacts on firm performance. While the comprehensiveness

of MPMSs is found to influence firm performance through the mediating effect of uses and marketing capabilities, the measurement quality of MPMSs is found to positively relate only to the subsequent use of MPMSs. As discussed earlier, there are two potential explanations for the non-significant relationship between measurement quality and firm performance. The first possibility is that the measurement quality of MPMSs has no direct impact on firm performance, while the other is that the relationship between measurement quality and firm performance is mediated by other factors that have not been revealed in this study. Thus, the mechanisms through which the measurement quality of MPMSs influences firm performance have not been fully revealed and need further investigation.

Second, it has been found that the use of MPMSs is not directly related to architectural marketing capability in the quantitative data. However, the qualitative data show that, at the planning stage, companies compare and benchmark marketing performance against that of previous years in order to make decisions; while, at the implementation stages, companies continuously use marketing performance measures to monitor the performance of marketing activities in order to ensure that marketing plans work effectively. These contradictory research findings merit more in-depth investigation. In addition, interview data point to the need for companies to develop their data mining capability, the emphasis upon which calls for further investigation into how companies can actually develop it. In-depth case studies might be promising to provide insights into best practices for developing such capability.

Finally, as indicated in the literature review chapter, there are several research gaps identified in the marketing performance measurement literature. This study only investigates how and under what conditions MPMSs drive firm performance, leaving other research questions unsolved. Therefore, the research gaps under the five major research themes identified in Chapter Two merit further investigation. For example, more longitudinal studies are needed to reveal how marketing activities, resources and assets contribute to firm performance (Rust et al., 2004; Stewart, 2009) and to establish the interrelationships among marketing metrics.

8.5 Conclusion

The main objective of this study was to examine the indirect and contingent effects of MPMSs on firm performance. Based on DC theory, the present study developed and confirmed a new practices-uses-capabilities-performance approach to explain the linkages between MPMSs and firm performance. Applying contingency theory, it also tested the impact of contingent factors on the effectiveness of MPMSs. Quantitative data were collected from marketing or senior managers in 209 Irish-based companies to test the model, while qualitative data were collected from 13 Irish marketing or senior managers in order to further explain the quantitative results.

The quantitative data were analysed using SPSS 21 and AMOS 21. The SEM results indicate that companies use the measurement systems more interactively to develop marketing capabilities, thus performing better. The interview data highlight the positive role played by MPMSs in the development of marketing capabilities. For example, the results show that companies that continuously use multiple marketing metrics to monitor their marketing performance, analyse customer performance and benchmark against competitors' performance, are more capable of linking with the market. The results also provide support for the mediating effects of marketing capabilities on the relationship between the use of MPMSs and firm performance. These results indicate that, if companies use MPMSs to direct organisational focus, facilitate decision-making, legitimise marketing activities and explore new opportunities, these companies are more able to build marketing capabilities, thus outperforming others. In addition, the moderation analyses indicate that MPMSs lead to different firm performance under different conditions.

The present study contributes to the literature and practice in several ways. By developing a new practices-uses-capabilities-performance approach to reveal the impact of MPMSs on firm performance, it deepens the understanding of how MPMSs drive firm performance. The identification of the use of MPMSs as a mediator between MPMSs and marketing capabilities provides empirical support for the arguments in DC theory that marketing capabilities originate from management processes and practices (Ethiraj et al., 2005; Vorhies et al., 2011), and that resources can influence superior capabilities and firm performance only when they are properly

deployed (Teece et al., 1997). Thus, it is recommended that companies improve the design of their marketing performance measurement practices as well as the way they use their MPMSs. For instance, companies should use their MPMSs more interactively in order to enhance their ability to link with the market, connect with customers and channels, learn from external partners and adapt to changes swiftly. By revealing the contingent effects, this study empirically supports the contextuality of MPMSs: the effectiveness of MPMSs can be affected by the conditions where they are used (Frösén et al., 2013; Morgan et al., 2002). Hence, this study suggests that companies operating in a more technologically turbulent and intensely competitive marketplace should consider adopting more comprehensive MPMSs with better measurement quality. Moreover, it confirms that marketing capabilities, especially market-linking capability, externally-focused organisational learning capability and adaptive marketing capability are key drivers of firm performance. It is recommended that companies take measures to develop and enhance these capabilities. To do so, they should invest resources in the improvement of their MPMSs, the advancement of their IT infrastructures, the recruitment and training of qualified employees and the cultivation of a collaborative culture. This study also contributes to the marketing performance measurement literature by providing additional empirical evidence in the Irish context. It provides guidelines for companies operating in other small and open economies regarding how to develop and utilise their MPMSs to improve firm performance. In addition, the explanatory sequential design in the current study contributes to the mixed methods research by providing a useful template for future mixed methods studies.

REFERENCES

Ahn, H. (2001). Applying the balanced scorecard concept: An experience report. *Long Range Planning*, *34*(4), 441–461.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.

Akgün, A., Keskin, H., & Byrne, J. (2012). Antecedents and contingent effects of organisational adaptive capability on firm product innovativeness. *Journal of Product Innovation Management*, *29*(1), 171–189.

Aksoy, L., Cooil, B., Groening, C., Keiningham, T. L., & Yalcin, A. (2008). The long-term stock market valuation of customer satisfaction. *Journal of Marketing*, *72*(4), 105–122.

Aldrich, H. E., & Zimmer, E. R. (1986). Entrepreneurship through social network. In D. L. Sexton & R. W. Smilor (Eds.), *The Art and Science of Entrepreneurship* (pp. 3–24). Cambridge, MA: Ballinger.

Ambler, T. (2000). Marketing metrics. *Business Strategy Review*, *11*(2), 59–66.

Ambler, T., Kokkinaki, F., & Puntoni, S. (2004). Assessing marketing performance: Reasons for metrics selection. *Journal of Marketing Management*, *20*(3/4), 475–498.

Ambler, T., Kokkinaki, F., Puntoni, S., & Riley, D. (2001). Assessing market performance: The current state of metrics. *Working Paper*.

Ambler, T., & Roberts, J. H. (2008). Assessing marketing performance: Don't settle for a silver metric. *Journal of Marketing Management*, *24*(7-8), 733–750.

Ambler, T., & Wang, X. (2003). Measures of marketing success : A comparison between China and the United Kingdom. *Asia Pacific Journal of Management, 20*(2), 267–281.

Anderson, E. W. & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, *12*(2*)*, 125–144.

Anthony, R. N. (1988). *The management control function.* Cambridge, MA: Harvard Business School Press.

Arjaliès, D. L., & Mundy, J. (2013). The use of management control systems to manage CSR strategy: A levers of control perspective. *Management Accounting Research*, *24*(4), 284–300.

Armstrong, J. S., & Overton, T. S. 1977. Estimating nonresponse bias in mail surveys. *Journal of marketing research, 14*(3), 396–402.

Arnett, D. B., & Wittmann, C. M. (2014). Improving marketing success: The role of tacit knowledge exchange between sales and marketing. *Journal of Business Research*, *67*(3), 324–331.

Artz, M., Homburg, C., & Rajab, T. (2012). Performance-measurement system design and functional strategic decision influence: The role of performance-measure properties. *Accounting, Organisations and Society*, *37*(7), 445–460.

Atkinson, A. A., Balakrishnan, R., Booth, P., Cote, J. M., Groot, T., Malmi, T., Roberts, H., Uliana, E., & Wu, A. (1997). New directions in management accounting research. *Journal of Management Accounting Research, 9,* 79–108.

Auh, S., & Menguc, B. (2005). Balancing exploration and exploitation: The moderating role of competitive intensity. *Journal of Business Research, 58,* 1652–1661.

Azofra, V., Prietro, B., & Santidrian, A. (2003). The usefulness of a performance measurement system in the daily life of an organisation: A note on a case study. *British Accounting Review, 35,* 367–384.

Banker, R. D., Chang, H., & Pizzini, M. J. (2004). The Balanced Scorecard: Judgemental effects of performance measures linked to strategy. *The Accounting Review*, *79*(1), 1–23.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120.

Barney, J., & Hesterly, W. (2012). *Strategic management and competitive advantage: Concepts and cases (4th ed.).* New Jersey: Pearson.

Barreto, I. (2010). Dynamic capabilities: A review of past research and an agenda for the future. *Journal of Management, 36*(1), 256–280.

Barwise, P., & Farley, J. U. (2004). Marketing metrics: Status of six metrics in five countries. *European Management Journal*, *22*(3), 257–262.

Becker, J. U., Spann, M., & Schulze, T. (2015). Implications of minimum contract durations on customer retention. *Marketing Letters*, *26*, 579–592.

Beckman, T. N., Davidson, W. R., & Talarzyx, W. W. (1973). *Marketing*. New York, NY: The Ronald Press.

Bennett, R. (2007). The use of marketing metrics by British fundraising charities: A survey of current practice. *Journal of Marketing Management*, *23*(9), 959–989.

Biedenbach, T., & Müller, R. (2012). Absorptive, innovative and adaptive capabilities and their impact on project and project portfolio performance. *International Journal of Project Management*, *30*(5), 621–635.

Bisbe, J., & Malagueño, R. (2012). Using strategic performance measurement systems for strategy formulation: Does it work in dynamic environments? *Management Accounting Research*, *23*(4), 296–311.

Bisbe, J., & Otley, D. (2004). The effects of the interactive use of management control systems on product innovation. *Accounting, Organizations and Society*, *29*(8), 709–737.

Bititci, U. S., Mendibil, K., Nudurupati, S., Garengo, P., & Turner, T. (2006). Dynamics of performance measurement and organisational culture. *International Journal of Operations & Production Management*, *26*(12), 1325–1350.

Blesa, A., & Ripollés, M. (2008). The influence of marketing capabilities on economic international performance. *International Marketing Review, 25*(6), 651–673.

Bonoma, T. V., & Clark, B. H. (1988). *Marketing performance assessment.* Boston: Harvard Business School Press.

Bourne, M., Mills, J., Wilcox, M., Neely, A., & Platts, K. (2000). Designing, implementing and updating performance measurement systems. *International Journal of Operations, Production Management, 20*(7), 754–771.

Bowman, C., & Ambrosini, V. (2003). How the resource-based and the dynamic capability views of the firm inform corporate-level strategy. *British Journal of Management, 14*(4), 289-303.

Bracken-Roche, D., Bell, E., Karpowicz, L., & Racine, E. (2014). Disclosure, consent, and the exercise of patient autonomy in surgical innovation: A systematic content analysis of the conceptual literature. *Accountability in Research, 21*(6), 331–352.

Bradley, F., Gao, Y., & Sousa, C. M. P. (2013). A natural science approach to investigate cross-cultural managerial creativity. *International Business Review*, *22*(5), 839–855.

Brady, M. K., Voorhees, C. M., & Brusco, M. J. (2012). Service sweethearting: Its antecedents and customer consequences. *Journal of Marketing*, *76*(2), 81–98.

Brealey, R. A., & Myers, S. C. (1996). *Principles of financial management* (5th Ed.). New York, NY: McGraw-Hill.

Brooks, J., & King, N. (2012). *Qualitative psychology in the real world: The utility of template analysis.* Paper presented at British Psychological Society Annual Conference, London,

the UK.

Brownlie, D. T. (1993). The marketing audit: A metrology and explanation. *Marketing Intellectual Planning, 1*(1), 4–13.

Bruni, D. S., & Verona, G. (2009). Dynamic marketing capabilities in science-based firms: An exploratory investigation of the pharmaceutical industry. *British Journal of Management, 20,* 101–117.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research,* 6 (1), 97-113.

Burchell, S., Clubb, C., Hopwood, A., Hughes, J., & Nahapiet, J. (1980). The roles of accounting in organisations and society. *Accounting, Organisations and Society*, *5*(1), 5–27.

Burney, L. L., Henle, C. A., & Widener, S. K. (2009). A path model examining the relations among strategic performance measurement system characteristics, organisational justice, and extra- and in-role performance. *Accounting, Organisations and Society*, *34*(3-4), 305–321.

Burney, L. L., & Widener, S. K. (2013). Behavioural work outcomes of a strategic performance measurement system-based incentive plan. *Behavioural Research in Accounting*, *25*(2), 115–143.

Bush, A. J., Smart, D., & Nichols, E. L. (2002). Pursuing the concept of marketing productivity: Introduction to the JBR Special Issue on Marketing Productivity. *Journal of Business Research*, *55*(5), 343–347.

Central Statistics Office (2012). Small and medium enterprises. Central Statistics Office. Retrieved from http://www.cso.ie/en/releasesandpublications/ep/p-bii/businessinirelandabridged2012/smallandmediumenterprises/

Chabowski, B. R., & Hult, G. T. M. (2013). *Evaluating competitive advantage and performance: How do marketing assets and financial metrics interrelate?* Paper presented at 2013 Winter Marketing Educators' Conference, Las Vegas, The United States of America.

Chang, W., Park, J. E., & Chaiy, S. (2010). How does CRM technology transform into organisational performance? A mediating role of marketing capability. *Journal of Business Research*, *63*(8), 849–855.

Chen, Y. C., Li, P. C., & Arnold, T. J. (2013). Effects of collaborative communication on the development of market-relating capabilities and relational performance metrics in industrial markets. *Industrial Marketing Management*, *42*(8), 1181–1191.

Chen, Y., Lin, M., & Chang, C. (2009). The positive effects of relationship learning and absorptive capacity on innovation performance and competitive advantage in industrial markets. *Industrial Marketing Management, 38*, 152–158.

Chenhall, R. H. (2003). Management control systems design within its organisational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, *28*(2-3), 127–168.

Chenhall, R. H. (2005). Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study. *Accounting, Organizations and Society*, *30*(5), 395–422.

Chenhall, R. H., & Morris, D. (1986). The Impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *The Accounting Review*, *LXI*, 16–35.

Christensen, J. A., & Demski, J. S. (2003). *Accounting theory: An information content perspective.* Boston, MA: McGraw-Hill.

Clark, B. H. (1999). Marketing performance measures: History and interrelationships. *Journal*

of Marketing Management, *15*(8), 711–732.

Clark, B. H. (2000). Managerial perceptions of marketing performance: Efficiency, adaptability, effectiveness and satisfaction. *Journal of Strategic Marketing*, *8*(1), 3–25.

Clark, B. H. (2001). A summary of thinking on measuring the value of marketing. *Journal of Targeting, Measurement and Analysis for Marketing*, *9*(4), 357–369.

Clark, B. H., Abela, A. V., & Ambler, T. (2005). Organisational motivation, opportunity and ability to measure marketing performance. *Journal of Strategic Marketing*, *13*(4), 241–259.

Clark, B. H., Abela, A. V., & Ambler, T. (2006). An information processing model of marketing performance measurement. *Journal of Marketing Theory & Practice*, *14*(3), 191–208.

Clark, B. H., & Ambler, T. (2011). Managing the marketing metrics portfolio. *Marketing Management*, *20*(3), 16–21.

Clark, G., & Powell, A. (2007). *Context-based measurement* (In Neely, A. Ed.). Business Performance Measurement: Unifying Theory and Integrating Practice. UK: Cambridge University Press.

CMO Council (2009). Marketing Outlook 2009: Setting the Course for Marketing Strategy and Spend. Available at http://www.cmocounil.org.

Cousins, P. D., Lawson, B., & Squire, B. (2008). Performance measurement in strategic buyer-supplier relationships: The mediating role of socialisation mechanisms. *International Journal of Operations & Production Management*, *28*(3), 238–258.

Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research (1st ed)*. Sage Publications, Inc.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research (2nd ed)*. Sage Publications, Inc.

Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. In Tashakkori, A., & Teddlie, C. (Ed.), *Handbook of mixed methods in social & behavioural research* (pp. 209–240). Newbury Park, CA: Sage Publications.

Crosno, J. L., & Brown, J. R. (2015). A meta-analytic review of the effects of organisational control in marketing exchange relationships. *Journal of the Academy of Marketing Science*, *43*(3), 297–314.

Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organisational innovation: A systematic review of the literature. *Journal of Management Studies*, *47*(6), 1154–1191.

Cruz, I., Scapens, R. W., & Major, M. (2011). The localisation of a global management control system. *Accounting, Organisations and Society*, *36*(7), 412–427.

Davis, D. F., Golicic, S. L., & Boerstler, C. N. (2011). Benefits and challenges of conducting multiple methods research in marketing. *Journal of the Academy of Marketing Science*, *39*(3), 467–479.

Davis, J. A. (2012). *Measuring marketing: 110+ key metrics every marketer needs.* John Wiley & Sons.

Day, G. S. (1994). The capabilities of market-driven organisations. *Journal of Marketing*, *58*(4), 37–52.

Day, G. S. (2011). Closing the marketing capabilities gaps. *Journal of Marketing*, *75*(3), 183–195.

Day, G.S., & Wensley, R. (1988). Assessing advantage: A framework for diagnostic competitive superiority. *Journal of Marketing, 52*(2), 1–20.

Denzin, N. K. (1978). *Sociological methods: A sourcebook.* New York: McGraw-Hill.

Dillman, D. A. (2011). *Mail and internet surveys: The tailored design method-2007 update with new Internet, visual, and mixed-mode guide*. John Wiley & Sons.

Ditillo, A. (2004). Dealing with uncertainty in knowledge-intensive firms: The role of management control systems as knowledge integration mechanisms. *Accounting, Organisations and Society*, *29*(3-4), 401–421.

Ditillo, A. (2012). Designing management control systems to foster knowledge transfer in knowledge-intensive firms: A network-based approach. *European Accounting Review*, *21*(3), 425–450.

Donaldson, G. (1984). *Managing corporate wealth.* New York, NY: Praeger.

Dossi, A., & Patelli, L. (2010). You learn from what you measure: Financial and non-financial performance measures in multinational companies. *Long Range Planning*, *43*(4), 498–526.

Drucker, P. (1974). *Management: Task, responsibilities, practices.* New York: Harper and Row.

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, *50*(1), 25–32.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal, 21*(10-11), 1105–1121.

Eker, M., & Eker, S. (2009). An empirical analysis of the association between the organisational culture and performance measurement systems in the Turkish manufacturing sector. *Journal of Economic and Social Research*, *11*(2), 43–76.

Enterprise Strategy Group. (2004). *Ahead of the Curve: Ireland's Place in the Global Economy*. Enterprise Strategy Group.

Ethiraj, S. K., Kale, P., Krishnan, M. S., & Singh, J. V. (2005). Where do capabilities come from and how do they matter? A study in the software services industry. *Strategic Management Journal*, *26*(1), 25–45.

European Commision. (2016). What is an SME? Retrieved from http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en.

Feder, R. A. (1965). How to measure marketing performance. *Harvard Business Review, 43*(3), 132–142.

Fisher, J. G. (1998). Contingency theory, management control systems and firm outcomes: Past results and future directions. *Behavioral Research in Accounting*, *10*, 47–63.

Flood, P. R., & O'Sullivan, P. (1985). *Marketing and the marketing plans: A guide to marketing and planning for small industries.* Irish Goods Council, Dublin, Ireland.

Fornell, C., & Larcker, D. F. (1981). Evaluation structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.

Fournaise Marketing Group (2012). 80% of CEOs do not really trust marketers (except if they are ROI marketers). Retrieved from https://www.fournaisegroup.com/ceos-do-not-trust-marketers/.

Franco-Santos, M., Lucianetti, L., & Bourne, M. (2012). Contemporary performance measurement systems: A review of their consequences and a framework for research. *Management Accounting Research, 23*, 79–119.

Frösén, J., Tikkanen, H., Jaakkola, M., & Vassinen, A. (2013). Marketing performance assessment systems and the business context. *European Journal of Marketing*, *47*(5/6), 715–737.

Fu, N., Flood, P. C., Bosak, J., Morris, T., & O'Regan, P. (2013). Exploring the performance effect of HPWS on professional service supply chain management. *Supply Chain Management-an International Journal*, *18*(3), 292–307.

Gao, Y. (2010). Measuring marketing performance: A review and a framework. *Marketing Review*, *10*(1), 25–40.

Gaskin, J. (2012). Structural equation modelling. Gaskination's StatWiki. Retrieved from: http://statwiki.kolobkreations.com

George, D., & Mallery, P. (2010). SPSS for Windows step by step. A simple study guide and reference. Retrieved from http://wps.ablongman.com/wps/media/objects/385/394732/george4answers.pdf.

Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organisational ambidexterity. *Academy of Management Journal*, *47*(2), 209–226.

Gimbert, X., Bisbe, J., & Mendoza, X. (2010). The role of performance measurement systems in strategy formulation processes. *Long Range Planning*, *43*(4), 477–497.

Godener, A., & Soderquist, K. E. (2004). Use and impact of performance measurement results in R&D and NPD: An exploratory study. *R & D Management*, *34*(2), 191–219.

Grafton, J., Lillis, A. M., & Widener, S. K. (2010). The role of performance measurement and evaluation in building organisational capabilities and performance. *Accounting, Organisations and Society*, *35*(7), 689–706.

Grewal, D., Iyer, G. R., Kamakura, W. A., Mehrotra, A., & Sharma, A. (2009). Evaluation of subsidiary marketing performance: combining process and outcome performance metrics. *Journal of the Academy of Marketing Science*, *37*(2), 117–129.

Grewal, R., Kumar, A., Mallapragada, G., & Saini, A. (2013). Marketing channels in foreign markets: Control mechanisms and the moderating role of multinational corporation headquarters-subsidiary relationship. *Journal of Marketing Research*, *50*(3), 378–398.

Gupta, S., Lehmann, D. R., & Stuart, J. A. (2004). Valuing customers. *Journal of Marketing Research*, *41*(1), 7–18.

Gupta, S., & Zeithaml, V. (2006). Customer metrics and their impact on financial performance. *Marketing Science*, *25*(6), 718–739.

Guthrie, J., Flood, P., Liu, W., & MacCurtain, S. 2009. High performance work systems in Ireland: human resource and organizational outcomes. *International Journal of Human Resource Management, 20*(1),112–125.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective.* Upper Saddle River, NJ: Pearson.

Halinen, A., & Törnroos, J. Å. (2005). Using case methods in the study of contemporary business networks. *Journal of Business Research*, *58*(9), 1285–1297.

Hall, M. (2008). The effect of comprehensive performance measurement systems on role clarity, psychological empowerment and managerial performance. *Accounting, Organisations and Society*, *33*(2-3), 141–163.

Hanson, D., & Grimmer, M. (2007). The mix of qualitative and quantitative research in major marketing journals. *European Journal of Marketing*, *41*(1/2), 58–70.

Hanssens, D. M., Pauwels, K. H., Srinivasan, S., Vanhuele, M., & Yildirim, G. (2014). Consumer attitude metrics for guiding marketing mix decisions. *Marketing Science*, *33*(4), 534–550.

Harrison, R. L., & Reilly, T. M. (2011). Mixed methods designs in marketing research. *Qualitative Market Research : An International Journal*, *14*(1), 7–26.

Harvey, C., Kelly, A., Morris, H., & Rowlinson, M. (2010). Academic Journal Quality Guide. London, UK: The Association of Business Schools.

Hayes, R. H., Pisano, G. P., Upton, D. M., & Wheelwright, S. (2005). *Operations, strategy, and technology: Pursuing the competitive edge.* New York, NY: Wiley.

Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M. A., Singh, H., Teece, D. J., & Winter, S. G. (2007). *Dynamic capabilities: Understanding strategic change in organisations.* Malden, MA: Blackwell.

Helfat, C. E., & Raubitschek, R. S. (2000). Product sequencing: Co-evolution of knowledge, capabilities and products. *Strategic Management Journal, 21*(10-11), 961–979.

Henri, J. F. (2006a). Management control systems and strategy: A resource-based perspective. *Accounting, Organisations and Society*, *31*(6), 529–558.

Henri, J. F. (2006b). Organisational culture and performance measurement systems. *Accounting, Organisations and Society*, *31*(1), 77–103.

Hesse-Biber, S. N., & Leavy, P. (2010). *The practice of qualitative research*. Thousand Oaks, CA: Sage Publications.

Hoffman, D. D. L., & Fodor, M. (2010). Can you measure the ROI of your social media marketing? *MIT Sloan Management Review*, *52*(1), 41–49.

Homburg, C., Artz, M., & Wieseke, J. (2012). Marketing performance measurement systems: Does comprehensiveness really improve performance? *Journal of Marketing*, *76*(3), 56–77.

Homburg, C., Grozdanovic, M., & Klarmann, M. R. (2007). Responsiveness to customers and competitors. *Journal of Marketing, 71*, 18–38.

Hooley, G. J., Greenley, G. E., Cadogan, J. W., & Fahy, J. (2005). The performance impact of marketing resources. *Journal of Business Research*, *58*(1), 18–27.

Hugh, J., & Davidson, J. H. (1999). Transforming the value of company reports through marketing measurement. *Journal of Marketing Management*, *15*, 757–777.

Hunt, S., & Morgan, R. (1995). The comparative advantage theory of competition. *Journal of Marketing, 59*(4), 1–15.

Ittner, C. D., & Larcker, D. F. (2001). Assessing empirical research in managerial accounting: A value-based management perspective. *Journal of Accounting and Economics*, *32*(1-3), 349–410.

Ittner, C. D., Larcker, D. F., & Randall, T. (2003). Performance implications of strategic performance measurement in financial services firms. *Accounting, Organisations and Society, 28 (7/8)*, 715–741.

Jacobson, R. (1988). Distinguishing among competing theories of the market share effect. *Journal of Marketing, 52 (*3), 68–80.

Järvinen, J., & Karjaluoto, H. (2015). The use of Web analytics for digital marketing performance measurement. *Industrial Marketing Management*, *50*, 117–127.

Jaworski, B. J. (1988). Toward a theory of marketing control: Environmental context, control types, and consequences. *Journal of Marketing*, *52*(3), 23–39.

Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: Antecedents and consequences. *Journal of Marketing, 57*(3), 53–70.

Jaworski, B. J., & MaCinnis, D. J. (1989). Marketing jobs and management controls: Toward a framework. *Journal of Marketing Research*, *26*(4), 406–419.

Jaworski, B. J., Stathakopoulos, V., & Krishnan, H. S. (1993). Control combinations in marketing: Conceptual framework and empirical evidence. *Journal of Marketing*, *57*(1), 57–69.

Jayachandran, S., Hewett, K., & Kaufman, P. (2004). Customer response capability in a sense-and-respond era: The role of customer knowledge process. *Journal of the Academy of Marketing Science*, *32*(3), 219–233.

Johnston, R., Brignall, S., & Fitzgerald, L. (2002). "Good enough" performance measurement: a trade-off between activity and action. *Journal of the Operational Research Society*, *53*(3), 256–262.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14–26.

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of mixed methods research*,*1*(2), 112–133.

Joshi, A. W., & Sharma, S. (2004). Knowledge development: Antecedents and impact on new product performance. *Journal of Marketing, 68*(4), 47–59.

Kaplan, R. S., & Norton, D. P. (1996). Linking the Balanced Scorecard to strategy. *California Management Review*, *39*(1), 53–79.

Kaplan, R. S., & Norton, D.P. (2000). *Strategy-focused organisation: How Balanced Scorecard companies thrive in the new business environment.* Boston, MA: Harvard Business School Press.

Kaplan, R. S., & Norton, D. P. (2001). Transforming the Balanced Scorecard from performance measurement to strategic management: Part I. *Accounting Horizons*, *15*(1), 87–104.

Kaplan, R.S., & Norton, D. P. (2004). *Strategy maps: Converting intangible assets into tangible outcomes.* Boston, MA: Harvard Business School Press.

Kaplan, R. S., & Norton, D. P. (2008). *The execution premium: Linking strategy to operations for competitive advantage.* Boston, MA: Harvard Business Press.

Katsikeas, C. S., Morgan, N. A., Leonidou, L. C., & Hult, G. T. M. (2016). Assessing performance outcomes in marketing. *Journal of Marketing*, *80* (2), 1–20.

Keh, H. T., Chu, S., & Xu, J. (2006). Efficiency, effectiveness and productivity of marketing in services. *European Journal of Operational Research*, *170*(1), 265–276.

Keller, K. L. (1993). Conceptualizing, measuring and managing customer-based equity. *Journal of Marketing, 57*(1), 1–22.

Kelly, K. (2007). Feedback and incentives on nonfinancial value drivers: Effects on managerial decision making. *Contemporary Accounting Research*, *24*(2), 523–556.

Kim, N., & Atuahene-Gima, K. (2010). Using exploratory and exploitative market learning for new product development. *Journal of Product Innovation Management, 27*(4), 519–536.

Kimbrough, M. D., & Mcalister, L. (2009). Marketing and firm value: Metrics, methods, findings, and future directions. *Journal of Marketing Research*, *46*(3), 313–329.

King, N. (2004). Using templates in the thematic analysis of texts. In Cassell, C., & Symon, G. (Ed.), *Essential guide to qualitative methods in organisational research* (pp. 256–270). London: Sage Publications.

Kitchenham, B., & Brereton, P. (2013). A systematic review of systematic review process research in software engineering. *Information and Software Technology*, *55*(12), 2049–2075.

Knight, G. A. (2000). Entrepreneurship and marketing strategy: The SME under globalisation. *Journal of International Marketing, 8*(2), 12–32.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: The construct, research propositions and managerial implications. *Journal of Marketing, 54*(2), 1–18.

Kozlenkova, I. V., Samaha, S. A., & Palmatier, R. W. (2014). Resource-based theory in marketing. *Journal of the Academy of Marketing Science*, *42*(1), 1–21.

Krush, M. T., Agnihotri, R., Trainor, K. J., & Nowlin, E. L. (2013). Enhancing organisational sensemaking: An examination of the interactive effects of sales capabilities and marketing dashboards. *Industrial Marketing Management*, *42*(5), 824–835.

Kumar, A., Bezawada, R., Rishika, R., Janakiraman, R., & Kannan, P. K. (2016). From social to sale: The effects of firm generated content in social media on customer behaviour. *Journal of Marketing*, *80*(1), 7–25.

Kumar, V., & Shah, D. (2009). Expanding the role of marketing: From customer equity to market capitalisation. *Journal of Marketing*, *73*(6), 119–136.

Kumar, N., Stern, L. W., & Anderson, J. C. (1993). Conducting interorganisational research using key informants. *Academy of Management Journal, 36*(6), 1633–1651.

Kumar, V., Venkatesan, R., Bohling, T., & Beckmann, D. (2008). The power of CLV: Managing customer lifetime value at IBM. *Marketing Science*, *27*(4), 585–599.

Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing*. EUA: Sage Publications.

Kyriakopoulos, K., & Moorman, C. (2004). Tradeoffs in marketing exploitation and exploration strategies: The overlooked role of market orientation. *International Journal of Research in Marketing, 21*(3), 219–240.

Lamberti, L., & Noci, G. (2010). Marketing strategy and marketing performance measurement system: Exploring the relationship. *European Management Journal*, *28*(2), 139–152.

Laplume, A. O., Sonpar, K., & Litz, R. A. (2008). Stakeholder theory: Reviewing a theory that moves us. *Journal of Management, 34* (6), 1152–1189.

Lee, C., Lee, K., & Pennings, J. M. (2001). Internal capabilities, external networks, and performance: A study on technology-based ventures. *Strategic Management Journal*, *22*(6-7), 615–640.

Lee, C. L., & Yang, H. J. (2011). Organisation structure, competition and performance measurement systems and their joint effects on performance. *Management Accounting Research*, *22*(2), 84–104.

Leech, N. L., & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality and Quantity*, *43*(2), 265–275.

Lenskold, J. (2007). Unlock Profit Potential. Marketing. *Marketing Management*, *16*(3), 26–31.

Leonidou, L. C., Palihawadana, D., & Theodosiou, M. (2011). National export-promotion programs as drivers of organisational resources and capabilities: Effects on strategy, advantage, and performance. *Journal of International Marketing*, *19*(2), 1–29.

Li, T., & Calantone, R. J. (1998). The impact of market knowledge competence on new product advantage: Conceptualisation and empirical examination. *Journal of Marketing*, *62*(4), 13–29.

Lillis, A. (2002). Managing multiple dimensions of manufacturing performance-an exploratory study. *Accounting, Organisations Society, 27,* 497–529.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.

Linder, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, *42*(4), 43–53.

Ling-yee, L. (2011). Marketing metrics' usage: Its predictors and implications for customer relationship management. *Industrial Marketing Management*, *40*(1), 139–148.

Lipe, M. G., & Salterio, S. (2002). A note on the judgmental effects of the balanced scorecard's information organisation. *Accounting, Organisations and Society*, *27*(6), 531–540.

Llonch, J., Eusebio, R., & Ambler, T. (2002). Measures of marketing success: A comparison between Spain and the UK. *European Management Journal*, *20*(4), 414–422.

Loning, H., & Besson, M. (2002). Channels explain differences in marketing and sales performance measurement systems ? *European Management Journal*, *20*(6), 597–609.

Lovett, M. J., & MacDonald, J. B. (2005). How does financial performance affect marketing? Studying the marketing-finance relationship from a dynamic perspective. *Journal of the Academy of Marketing Science*, *33*(4), 476–485.

Luca, L. M., & Atuahene-gima, K. (2007). Market knowledge dimensions and cross-functional collaboration: Examining the different routes to product innovation performance. *Journal of Marketing*, *71*(1), 95–112.

Luo, X., & Donthu, N. (2006). Marketing's credibility: A longitudinal investigation of marketing communication productivity and shareholder value. *Journal of Marketing*, *70*(4), 70–91.

Luo, X., & Homburg, C. (2007). Neglected outcomes of customer satisfaction. *Journal of Marketing*, *71*(2), 133–149.

Luo, X., & Jong, P. J. (2012). Does advertising spending really work? The intermediate role of analysts in the impact of advertising on firm value. *Journal of the Academy of Marketing Science*, *40*(4), 605–624.

Luoma, J., Frösén, J., Tikkanen, H., & Aspara, J. (2011). *The performance implications of marketing metrics use in different business contexts: A configurational approach.* Proceedings of the 2011 American Marketing Association Winter Marketing Educator's Conference (p. 70-81). Texas, the United States of America.

Ma, X., Yao, X., & Xi, Y. (2009). How do interorganisational and interpersonal networks affect a firm's strategic adaptive capability in a transition economy? *Journal of Business Research*, *62*(11), 1087–1095.

Madhavan, R., & Grover, R. (1998). From embedded to embodied knowledge: New product development as knowledge management. *Journal of Marketing, 62*(4), 1–12.

Mahama, H. (2006). Management control systems, cooperation and performance in strategic supply relationships: A survey in the mines. *Management Accounting Research*, *17*(3), 315–339.

Maklan, S., & Knox, S. (2009). Dynamic capabilities: The missing link in CRM investments. *European Journal of Marketing, 43*(11/12), 1392–1410.

Malina, M. A., & Selto, F. H. (2001). Communicating and controlling strategy: An empirical study of the effectiveness of the Balanced Scorecard. *Journal of Management Accounting Research*, *13*(1), 47–90.

Malina, M. A., & Selto, F. H. (2004). Choice and change of measures in performance measurement models. *Management Accounting Research*, *15*(4), 441–469.

Malone, T. W. (1987). Modelling coordination in organisations and markets. *Management Science, 33*(10), 1317–1332.

Marginson, D. E. W. (2002). Management control systems and their effects on strategy formation at middle-management levels: Evidence from a U.K. organisation. *Strategic Management Journal*, *23*(11), 1019–1031.

Marketing Science Institute (2002, 2004, 2006, 2008). Research priorities: A guide to MSI research programs and procedures. Cambridge, MA: Marketing Science Institute.

Marketing Science Institute (2012). 2012-2014 research priorities. Marketing Science Institute. Retrieved from http://www.msii.clients.bostonwebdevelopment.com/research/msi-research-priorities/

Marketing Science Institute (2014). 2014-2016 research priorities. Marketing Science Institute. Retrieved from http://www.msi.org/uploads/files/MSI_RP14-16.pdf

Maxwell, J. A. (2005). *Qualitative research design: An interactive approach (2nd Ed.).* Thousand Oaks, CA: Sage Publications.

Mcewen, T. (2008). Environmental scanning and organisational learning in entrepreneurial ventures. *The Entrepreneurial Executive*, *13*, 1–17.

McGovern, G. J., Court, D., Quelch, J. A., & Crawford, B. (2004). Bring customers into the boardroom. *Havard Business Review*, *82*(11), 70–80.

Menon, A., & Varadarajan, P. R. (1992). A model of marketing knowledge use within firms. J*ournal of Marketing, 56* (4), 53–71.

Merchant, K. A. (1998). *Modern Management Control Systems*. London, UK: Prentice Hall.

Merchant, K. A., & Van Der Stede, W. A. (2012). *Management control systems: Performance measurement, evaluation and incentives (3rd ed.).* London, UK: Prentice Hall.

Merrilees, B., Rundle-Thiele, S., & Lye, A. (2011). Marketing capabilities: Antecedents and implications for B2B SME performance. *Industrial Marketing Management*, *40*(3), 368–375.

Micheli, P., Mura, M., & Agliati, M. (2011). Exploring the roles of performance measurement systems in strategy implementation: The case of a highly diversified group of firms. *International Journal of Operations & Production Management*, *31*(10), 1115–1139.

Miemczyk, J., Johnsen, T. E., & Macquet, M. (2012). Sustainable purchasing and supply management: A structured literature review of definitions and measures at the dyad, chain and network levels. *Supply Chain Management: An International Journal*, *17*(5), 478–496.

Miller, A., & Cioffi, J. (2004). Measuring marketing effectiveness and value: The Unisys marketing dashboard. *Journal of Advertising Research*, *44*(3), 237–243.

Mintz, O., & Currim, I. S. (2013). What drives managerial use of marketing and financial metrics and does metric use affect performance of marketing-mix activities? *Journal of Marketing*, *77*(2), 17–40.

Mintz, O., & Currim, I. S. (2015). When does metric use matter less? How firm and managerial characteristics moderate the relationship between metric use and marketing mix performance. *European Journal of Marketing, 49* (11/12), 1809–1856.

Mishler, E. G. (1991). *Research interviewing*. London, Uk: Harvard University Press.

Mizik, N. (2014). Assessing the total financial performance impact of brand equity with limited time-series data. *Journal of Marketing Research*, *51*(6), 691–706.

Moorman, C., & Slotegraaf, R. J. (1999). The contingency value of complementary capabilities in product development. *Journal of Marketing Research*, *36*(2), 239–257.

Morgan, N. A. (2012). Marketing and business performance. *Journal of the Academy of Marketing Science*, *40*(1), 102–119.

Morgan, N. A., Anderson, E. W., & Mittal, V. (2005). Understanding firms' customer satisfaction information usage. *Journal of Marketing*, *69*(3), 131–151.

Morgan, N. A., Clark, B. H., & Gooner, R. (2002). Marketing productivity, marketing audits, and systems for marketing performance assessment: Integrating multiple perspectives. *Journal of Business Research*, *55*(5), 363–375.

Morgan, N. A., Katsikeas, C. S., & Vorhies, D. W. (2012). Export marketing strategy implementation, export marketing capabilities, and export venture performance. *Journal of the Academy of Marketing Science*, *40*(2), 271–289.

Morgan, N. A., & Rego, L. L. (2006). The value of different customer satisfaction and loyalty metrics in predicting business performance. *Marketing Science*, *25*(5), 426–439.

Morgan, N. A., Slotegraaf, R. J., & Vorhies, D. W. (2009). Linking marketing capabilities with profit growth. *International Journal of Research in Marketing*, *26*(4), 284–293.

Morgan, N. A., Vorhies, D. W., & Mason, C. (2009). Market orientation, marketing capabilities, and firm performance. *Strategic Management Journal, 30*(8), 909–920.

Morgan, N. A., Zou, S., Vorhies, D. W., & Katsikeas, C. S. (2003). Experiential and informational knowledge, architectural marketing capabilities, and the adaptive performance of export ventures: A cross-national study. *Decision Sciences*, *34*(2), 287–321.

Morgan, R. E., & Turnell, C. R. (2003). Market-based organisational learning and market performance gains. *British Journal of Management*, *14*, 255–274.

Morse, J. M. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research, 40*(2), 226–239.

Morse, J., & Richards, L. (2002). *Read me first for a user's guide to qualitative research.* Thousand Oaks, CA, US: Sage Publications.

Mundy, J. (2010). Creating dynamic tensions through a balanced use of management control systems. *Accounting, Organisations and Society*, *35*(5), 499–523.

Murray, J. Y., Gao, G. Y., & Kotabe, M. (2011). Market orientation and performance of export ventures: The process through marketing capabilities and competitive advantages. *Journal of the Academy of Marketing Science*, *39*(2), 252–269.

Nelson, R. R., Todd, P. A., & Wixom, B. H. (2005). Antecedents of information and system quality: An empirical examination within the context of data warehousing. *Journal of Management Information Systems*, *21*(4), 199–235.

Newbert, S. (2007). Empirical research on the resource-based view of the firm: An assessment and suggestions for future research. S*trategic Management Journal*, *28*(2), 121–146.

Ngo, L. V., & O'Cass, A. (2012). Performance implications of market orientation, marketing resources, and marketing capabilities. *Journal of Marketing Management*, *28*(1-2), 173–187.

Nicolaou, A. I., Ibrahim, M., & Van Heck, E. (2013). Information quality, trust, and risk perceptions in electronic data exchanges. *Decision Support Systems*, *54*(2), 986–996.

Nicolaou, A. I., & McKnight, D. H. (2006). Perceived information quality in data exchanges: Effects on risk, trust, and intention to use. *Information Systems Research*, *17*(4), 332–351.

Noble, C. H., & Mokwa, M. P. (1999). Implementing marketing strategies: Developing and testing a managerial theory. *Journal of Marketing, 63*(4), 57–73.

Norreklit, H. (2000). The balance on the Balanced Scorecard: A critical analysis of some of its assumptions. *Management Accounting Research, 11* (1), 65–88.

O'Cass, A., Ngo, L. V., & Siahtiri, V. (2012). Examining the marketing planning-marketing capability interface and customer-centric performance in SMEs. *Journal of Strategic Marketing, 20*(6), 463–481.

O'Cass, A., & Sok, P. (2012). Examining the role of within functional area resource–capability complementarity in achieving customer and product-based performance outcomes. *Journal of Strategic Marketing*, *20*(4), 345–363.

O'Cass, A., & Weerawardena, J. (2010). The effects of perceived industry competitive intensity and marketing-related capabilities: Drivers of superior brand performance. *Industrial Marketing Management*, *39*(4), 571–581.

O'Reilly, C. A. (1982). Variations in decision makers' use of information sources: The impact of quality and accessibility of information. *Academy of Management Journal*, *25*(4), 756–771.

O'Sullivan, D. (2007). The measurement of marketing performance in Irish firms. *Irish Marketing Review*, *19*(1&2), 26–36.

O'Sullivan, D., Abela, A. V., & Hutchinson, M. (2009). Marketing performance measurement and firm performance: Evidence from the European high-technology sector. *European Journal of Marketing*, *43*(5/6), 843–862.

O'Sullivan, D., & Abela, A. V. (2007). Marketing performance measurement ability and firm performance. *Journal of Marketing*, *71*(2), 79–93.

O'Sullivan, D., & McCallig, J. (2012). Customer satisfaction, earnings and firm value. *European Journal of Marketing*, *46*(6), 827–843.

Oktemgil, M., & Greenley, G. (1997). Consequences of high and low adaptive capability in UK companies. *European Journal of Marketing*, *31*(7), 445–466.

Orr, L. M., Bush, V. D., & Vorhies, D. W. (2011). Leveraging firm-level marketing capabilities with marketing employee development. *Journal of Business Research*, *64*(10), 1074–1081.

Otley, D. (1999). Performance management: A framework for management control systems research. *Management Accounting Research*, *10*(4), 363–382.

Ottum, B. D., & Moore, W. L. (1997). The role of market information in new product success/failure. *Journal of Product Innovation Management, 14*, 258–273.

Ouchi, W. G. (1980). Markets, bureaucracies, and clans. *Administrative Science Quarterly, 25*(1), 129–141.

Park, H. S., Auh, S., Maher, A. A., & Singhapakdi, A. (2012). Marketing's accountability and internal legitimacy: Implications for firm performance. *Journal of Business Research*, *65*(11), 1576–1582.

Park, J. E., Lee, S., & Morgan, R. M. (2011). A negative side of outsourcing marketing functions and market-based learning process. *Journal of Strategic Marketing*, *19*(5), 471–486.

Parris, D. L., & Peachey, J. W. (2013). A systematic literature review of servant leadership theory in organisational contexts. *Journal of Business Ethics*, *113*(3), 377–393.

Pauwels, K., Ambler, T., Clark, B. H., LaPointe, P., Reibstein, D., Skiera, B., & Wiesel, T. (2009). Dashboards as a service: Why, what, how, and what research is needed? *Journal of Service Research*, *12*(2), 175–189.

Pauwels, K., Silva-Risso, J., Srinivasan, S., & Hanssens, D. M. (2004). New products, sales promotions, and firm value: The case of the automobile industry. *Journal of Marketing*, *68*(4), 142–156.

Peloza, J., & Shang, J. (2011). How can corporate social responsibility activities create value for stakeholders? A systematic review. *Journal of the Academy of Marketing Science*, *39*(1), 117–135.

Peteraf, M. A., & Barney, J. B. (2003). Unravelling the resource-based tangle. *Managerial and Decision Economics*, *24*(4), 309–323.

Petersen, J. A., McAlister, L., Reibstein, D. J., Winer, R. S., Kumar, V., & Atkinson, G. (2009). Choosing the right metrics to maximise profitability and shareholder value. *Journal of Retailing*, *85*(1), 95–111.

Peterson, R., & Wilson, W. (1992). Measuring customer satisfaction: Fact and artefact. *Journal of the Academy of Marketing Science, 20*(1), 61–71.

Pfeffer, J. (1981). Management as symbolic action: The creation and maintenance of organisational paradigms (In L.L. Cummings & B. M. Staw, Eds.). *Research in organisational behaviour.* Greenwich, Conn.: JAI Press.

Phillips, P., & Halliday, S. V. (2008). Marketing/Accounting synergy: A discussion of its potential and evidence in e-business planning. *Journal of Marketing Management*, *24*(7-8), 751–770.

Pierce, B., & Gao, Y. (2013). Managing marketing performance: An integrated framework. Paper presented at Annual Conference of The Irish Accounting and Finance Association, Institute of Technology Tallaght, Dublin.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, *63*(1), 539–569.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organisational research: Problems and prospects. *Journal of Management*, *12*(4), 531–544.

Pole, C., & Lampard, R. (2002). *Practical social investigation: Qualitative and quantitative research in the social sciences.* Routledge.

Pondeville, S., Swaen, V., & De Rongé, Y. (2013). Environmental management control systems: The role of contextual and strategic factors. *Management Accounting Research*, *24*(4),

317–332.

Porter, M. E. (1980). *Competitive strategy: Techniques for analysing industries and companies*. New York.

Porter, M. E. (1985). Technology and competitive advantage. *Journal of business strategy, 5*(3), 60–78.

Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal, 12*(1), 95–117.

Powell, T. C. (1996). How much does industry matter? An alternative empirical test. *Strategic Management Journal, 17*, 323–334.

Powell, H., Mihalas, S., Onwuegbuzie, A. J., Suldo, S., & Daley, C. E. (2008). Mixed methods research in school psychology: A mixed methods investigation of trends in the literature. *Psychology in the Schools, 45*(4), 291–309.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavioural Research Methods, 40*(3), 879–891.

Priem, R., & Butler, J. (2001). Is the resource-based 'view' a useful perspective for strategic management research? *Academy of Management Review, 1,* 22–40.

Ramaswami, S. N. (1996). Marketing controls and dysfunctional employee behaviours: A test of traditional and contingency theory postulates. *Journal of Marketing*, *60*(2), 105–120.

Ramaswami, S. N., Srivastava, R. K., & Bhargava, M. (2009). Market-based capabilities and financial performance of firms: Insights into marketing's contribution to firm value. *Journal of the Academy of Marketing Science*, *37*(2), 97–116.

Ramo, D. E., & Prochaska, J. J. (2012). Broad reach and targeted recruitment using Facebook for an online survey of young adult substance use. *Journal of medical Internet research*, *14*(1), e28.

Rao, R. K. S. S., & Bharadwaj, N. (2008). Marketing initiatives, expected cash flows, and shareholders' wealth. *Journal of Marketing*, *71*(1), 16–26.

Rapp, A., Trainor, K. J., & Agnihotri, R. (2010). Performance implications of customer-linking capabilities: Examining the complementary role of customer orientation and CRM technology. *Journal of Business Research*, *63*(11), 1229–1236.

Reeves, M., & Deimler, M. (2011). Adaptability: The new competitive advantage. *Harvard Business Review*, *July-Aug*, 135–141.

Rego, L. L., Morgan, N. A., & Fornell, C. (2013). Reexamining the market share-customer satisfaction Relationship. *Journal of Marketing*, *77*(5), 1–20.

Reichheld, F. F. (1994). Loyalty and the renaissance of marketing. *Marketing Management, 2*(4), 10–21.

Ritchie, J., Spencer, L., & O'Connor, W. (2003). Carrying out qualitative analysis. In J. Ritchie & J. Lewis (Eds.), Q*ualitative research practice* (pp. 219–262). London: Sage Publications.

Rust, R. T., Ambler, T., Carpenter, G. S., & Kumar, V. (2004). Measuring marketing productivity: Current knowledge and future. *Journal of Marketing*, *68*(4), 76–89.

Rust, R. T., & Huang, M. (2012). Optimising service productivity. *Journal of Marketing*, *76*(2), 47–66.

Rust, R. T., Lemon, K. N., & Zeithaml, V. A. (2004). Return on marketing: Using customer equity to focus marketing strategy. *Journal of Marketing*, *68*(1), 109–127.

Ryals, L. (2008). Determining the indirect value of a customer. *Journal of Marketing Management*, *24*(7-8), 847–864.

Ryals, L., & Knox, S. (2007). Measuring and managing customer relationship risk in business markets. *Industrial Marketing Management*, *36*(6), 823–833.

Sampaio, C. H., Simões, C., Perin, M. G., Almeida, A., Hoffmann, C., & Gattermann, M. (2011). Marketing metrics: Insights from Brazilian managers. *Industrial Marketing Management*, *40*(1), 8–16.

Schepers, J., Falk, T., Ruyter, K. De, Jong, A. De, & Hammerschmidt, M. (2012). Principles and principals: Do customer stewardship and agency control compete or complement when shaping frontline employee behaviour? *Journal of Marketing*, *76*(6), 1–20.

Schick, A. G., Gordon, L. A., & Haka, S. (1990). Information overload: A temporal approach. *Accounting Organisation Society, 15*(3), 199–220.

Schulze, C., Skiera, B., & Wiesel, T. (2012). Linking customer and financial metrics to shareholder value: The leverage effect in customer-based valuation. *Journal of Marketing*, *76*(2), 17–32.

Schwartz., J., Kim, D., & Patterson, L. (2014). *2014 ITSMA/VEM Marketing performance management survey: The link between marketing performance management and value creation.* Retrieved from http://www.itsma.com/research/2014-itsma-vem-marketing-performance-management-survey/.

Seggie, S. H., Cavusgil, E., & Phelan, S. E. (2007). Measurement of return on marketing investment: A conceptual framework and the future of marketing metrics. *Industrial Marketing Management*, *36*(6), 834–841.

Selnes, F., & Sallis, J. (2003). Promoting relationship learning. *Journal of Marketing, 67*(3), 80–95.

Setia, P., Venkatesh, V., & Joglekar, S. (2013). Leveraging digital technologies: How information quality leads to localised capabilities and customer service performance. *MIS Quarterly*, *37*(2), 565–590.

Sevin, C. H. (1965). *Marketing productivity analysis.* New York: McGraw-Hill.

Shapiro, B. P. (1988). What the hell is market orientated? *Harvard Business Review, 66*, 119–125.

Shaw, R., & White, C. (1999). Improving marketing accountability through better management of the market research process. *Journal of Marketing Management*, *15*, 857–880.

Sheth, J. N., & Sisodia, R. S. (2002). Marketing productivity: Issues and analysis. *Journal of Business Research*, *55*(5), 349–362.

Sidhu, B. K., & Roberts, J. H. (2008). The marketing-accounting interface lessons and limitations. *Journal of Marketing Management*, *24*(7-8), 669–686.

Simon, H. A., Guetzkow, H., Kozmetsky, G., & Tyndall, G. (1954). *Centralisation vs decentralisation in organising the controllers' department.* New York: Controllership Foun-dation Inc.

Simons, R. (1995). Control in an age of empowerment. *Harvard Business Review*, *73*(2), 80–88.

Sinkula, J. M., Baker, W. E., & Noordewier, T. (1997). A framework for market-based organisational learning: Linking values, knowledge, and behaviour. *Journal of the Academy of Marketing Science*, *25*(4), 305–318.

Slotegraaf, R. J., & Dickson, P. R. (2004). The Paradox of a marketing planning capability. *Journal of the Academy of Marketing Science*, *32*(4), 371–385.

Smith, J., & Firth, J. (2011). Qualitative data analysis: The framework approach. *Nurse Researcher*, *18*(2), 52–62.

Song, M., Benedetto, C. A., & Nason, R. W. (2007). Capabilities and financial performance: The moderating effect of strategic type. *Journal of the Academy of Marketing Science*,

35(1), 18–34.

Song, M., Droge, C., Hanvanich, S., & Calantone, R. (2005). Marketing and technology resource complementarity: An analysis of their interaction effect in two environmental contexts. *Strategic Management Journal, 26*(3), 259–276.

Soo, C., Devinney, T., Midgley, D., France, F., & Deering, A. (2002). Knowledge management: Philosophy, process, pitfalls, and performance. *Knowledge Management*, *44*(4), 129–150.

Sorensen, J. B., & Stuart, T. E. (2000). Ageing, obsolescence, and organisational innovation. *Administrative Science Quarterly*, *45*(1), 81–112.

Spector, P. E., Zapf, D., Chen, P. Y., & Frese, M. (2000). Why negative affectivity should not be controlled in job stress research: Don't throw out the baby with the bath water. *Journal of Organisational Behavior*, *21*(1), 79–95.

Spekle, R. F., & Verbeeten, F. H. M. (2014). The use of performance measurement systems in the public sector: Effects on performance. *Management Accounting Research*, *25*(2), 131–146.

Spencer, L., Ritchie, J., Lewis, J., & Dillon, L. (2003). *Quality in qualitative evaluation, A framework for assessing research evidence.* Government Chief Social Researcher's Office, London, Occasional Papers Series 2. Retrieved from http://www.policyhub. gov.uk.

Srinivasan, S., & Hanssens, D. M. (2009). Marketing and firm value: Metrics, methods, findings, and future directions. *Journal of Marketing Research*, *46*(3), 293–312.

Srinivasan, S., Vanhuele, M., & Pauwels, K. (2010). Mindset metrics in market response models: An integrative approach. *Journal of Marketing Research*, 47(3), 672–684.

Srivastava, R. K., Fahey, L., & Christensen, H. K. (2001). The resource-based view and marketing: The role of market-based assets in gaining competitive advantage. *Journal of Management, 27,* 777–802.

Srivastava, R. K., Shervani, T. A., & Fahey, L. (1998). Shareholder value: A framework for analysis. *Journal of Marketing*, *62*(1), 2–19.

Stahl, F., Heitmann, M., Lehmann, D. R., & Neslin, S. A. (2012). The impact of brand equity on customer acquisition, retention, and profit margin. *Journal of Marketing*, *76*(4), 44–63.

Stewart, D. W. (2008). How marketing contributes to the bottom line. *Journal of Advertising Research*, *48*(1), 94–105.

Stewart, D. W. (2009). Marketing accountability: Linking marketing actions to financial results. *Journal of Business Research*, *62*(6), 636–643.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research*. Newbury Park, CA: Sage Publications.

Su, Z., Xie, E., Liu, H., & Sun, W. (2013). Profiting from product innovation: The impact of legal, marketing, and technological capabilities in different environmental conditions. *Marketing Letters*, *24*(3), 261–276.

Symon G., & Cassell C. (2012). *Qualitative organisational research: Core methods and current challenges.* London: Sage Publications.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combing qualitative and quantitative approaches.* Thousand Oaks, CA: Sage Publications.

Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioural sciences. In Tashakkori, A., & Teddlie, C. (Ed.), *Handbook of mixed methods in social & behavioural research* (pp. 3–50). Newbury Park, CA: Sage Publications.

Tashakkori, A., & Teddlie, C. (2010). Epilogue: Current developments and emerging trends in integrated research methodology. In Tashakkori, A., & Teddlie, C. (Ed.), *Handbook of mixed methods in social & behavioural research* (p. 803–806). Newbury Park, CA: Sage

Publications.

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319–1350.

Teece, D. J., Pisano, G., & Shuen, A. M. Y. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533.

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*, 207–222.

Tuli, K. R., Mukherjee, A., & Dekimpe, M. G. (2012). On the value relevance of retailer advertising spending and same-store sales growth. *Journal of Retailing*, *88*(4), 447–461.

Tung, A., Baird, K., & Schoch, H. P. (2011). Factors influencing the effectiveness of performance measurement systems. *International Journal of Operations & Production Management*, *31*(12), 1287–1310.

Ukko, J., Tenhunen, J., & Rantanen, H. (2007). Performance measurement impacts on management and leadership: Perspectives of management and employees. *International Journal of Production Economics*, *110*(1-2), 39–51.

Ulrich, D., & Smallwood, N. (2004). Capitalising on capabilities. *Harvard Business Review*, *82*, 119–128.

Van De Ven, A. H., & Poole, M. S. (1995). Explaining development and change in organisations. *Academy of Management Review*, *20*(3), 510–540.

Van Der Stede, W. A. (2000). The relationship between two consequences of budgetary control: Budgetary slack creation and managerial short-term orientation. *Accounting, Organisations and Society, 25*, 609–622.

Van Der Stede, W. A., Chow, C., & Lin, T. W. (2006). Strategy, choice of performance measures, and performance. *Behavioural Research in Accounting, 18,* 185–205.

Van Doorn, J., Leeflang, P. S. H., Tijs, M., & Doorn, J. Van. (2013). Satisfaction as a predictor of future performance: A replication. *International Journal of Research in Marketing*, *30*(3), 314–318.

Vandenbosch, B. (1999). An empirical analysis of the association between the use of executive support systems and perceived organisational competitiveness. *Accounting, Organisations and Society*, *24*, 77–92.

Venkatesan, R., & Kumar, V. (2004). A customer lifetime value framework for customer selection and resource allocation strategy. *Journal of Marketing*, *68*(4), 106–125.

Venkatraman, N. U., & Ramanujam, V. (1987). Measurement of business economic performance: An examination of method convergence. *Journal of Management, 13*, 109–122.

Verhoef, P. C. (2003). Understanding the effect of efforts customer relationship management on customer retention and customer share development. *Journal of Marketing*, *67*(4), 30–45.

Verhoef, P. C., & Leeflang, P. S. H. (2009). Understanding the marketing department's influence within the firm. *Journal of Marketing Research*, *73*(2), 14–37.

Voelpel, S. C., Leibold, M., & Eckhoff, R. E. (2006). The tyranny of the Balanced Scorecard in the innovation economy. *Journal of Intellectual Capital, 7*(1), 43–60.

Vorhies, D. W., & Morgan, N. A. (2003). A configuration theory assessment of marketing organisation fit with business strategy and its relationship with marketing performance. *Journal of Marketing*, *67*(1), 100–115.

Vorhies, D. W., & Morgan, N. A. (2005). Benchmarking marketing capabilities for sustainable competitive advantage. *Journal of Marketing*, *69*(1), 80–94.

Vorhies, D. W., Morgan, R. E., & Autry, C. W. (2009). Product-market strategy and the

marketing capabilities of the firm: Impact on market effectiveness and cash flow performance. *Strategic Management Journal*, *30*(12), 1310–1334.

Vorhies, D. W., Orr, L. M., & Bush, V. D. (2011). Improving customer-focused marketing capabilities and firm financial performance via marketing exploration and exploitation. *Journal of the Academy of Marketing Science*, *39*(5), 736–756.

Walker, O. C., & Ruekert, R. W. (1987). Marketing's role in the implementation of business strategies: A critical review and conceptual framework. *Journal of Marketing, 51*(3), 15–33.

Walsham, G. (1995). Interpretive case studies in IS research: Nature and method. *European Journal of Information Systems*, *4*(2), 74–81.

Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, *9*(1), 31–51.

Wang, G., Dou. W., Zhu, W., & Zhou, N. (2015). The effects of firm capabilities on external collaboration and performance: The moderating role of market turbulence. *Journal of Business Research, 68*, 1928–1936.

Webb, J. W., Ireland, R. D., Hitt, M. A., Kistruck, G. M., & Tihanyi, L. (2011). Where is the opportunity without the customer? An integration of marketing activities, the entrepreneurship process, and institutional theory. *Journal of the Academy of Marketing Science*, *39*(4), 537–554.

Webb, R. A. (2004). Managers' commitment to the goals contained in a strategic performance measurement system. *Contemporary Accounting Research*, *21*(4), 925–958.

Weerawardena, J. (2003). Exploring the role of market learning capability in competitive strategy. *European journal of marketing*, *37*(3/4), 407–429.

Weerawardena, J., O'Cass, A., & Julian, C. (2006). Does industry matter? Examining the role of industry structure and organisational learning in innovation and brand performance. *Journal of Business Research*, *59*(1), 37–45.

Weerawardena, J., Mort, G. S., Salunke, S., Knight, G., & Liesch, P. W. (2015). The role of the market sub-system and the socio-technical sub-system in innovation and firm performance: A dynamic capabilities approach. *Journal of the Academy of Marketing Science, 43*(2), 221–239.

Wei, L. Q., & Lau, C. M. (2010). High performance work systems and performance: The role of adaptive capability. *Human Relations*, *63*, 1487–1511.

White, C., Conant, J. S., & Echambadi, R. (2003). Marketing strategy development styles, implementation capability, and firm performance: Investigating the curvilinear impact of multiple strategy-making styles. *Marketing Letters*, *14*(2), 111–124.

Wiesel, T., Skiera, B., & Villanueva, J. (2008). Customer equity: An integral part of financial reporting. *Journal of Marketing*, *72*(2), 1–14.

Wilcox, J. B., Bellenger, D. N., & Rigdon, E. E. (1994). Assessing sample representativeness in industrial surveys. *Journal of Business & Industrial Marketing*, *9*(2), 51–61.

Winer, R. S. (2001). A framework for customer relationship management. *California Management Review*, *43*(4), 89–105.

Wu, J., & Shanley, M. T. (2009). Knowledge stock, exploration, and innovation: Research on the United States electro medical device industry. *Journal of Business Research, 62*(4), 474–483.

Wyner, G. (2004). The right side of metrics. *Marketing Management*, 13(1), 8–9.

Yadav, M. S. (2010). The decline of conceptual articles and implications for knowledge development. *Journal of Marketing, 74* (1), 1–19.

Yi, M., Yoon, J., Davis, J., & Lee, T. (2013). Untangling the antecedents of initial trust in

Web-based health information: The roles of argument quality, source expertise, and user perceptions of information quality and risk. *Decision Support Systems, 55*(1), 284–295.

Ylinen, M., & Gullkvist, B. (2014). The effects of organic and mechanistic control in exploratory and exploitative innovations. *Management Accounting Research*, *25*(1), 93–112.

Zahra, S. A., Sapienza, H. J., & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: A review, model and research agenda. *Journal of Management Studies, 43*(4), 917–955.

Zahay, D., Peltier, J., Schultz, D. E., & Griffin, A. (2004). The role of transactional versus relational data in IMC programs: Bringing customer data together. *Journal of Advertising Research*, *44*(1), 3–18.

Zairi, M., & Ahmed, P. K. (1999). Benchmarking maturity as we approach the millennium. *Total Quality Management, 10*(4-5), 810–820.

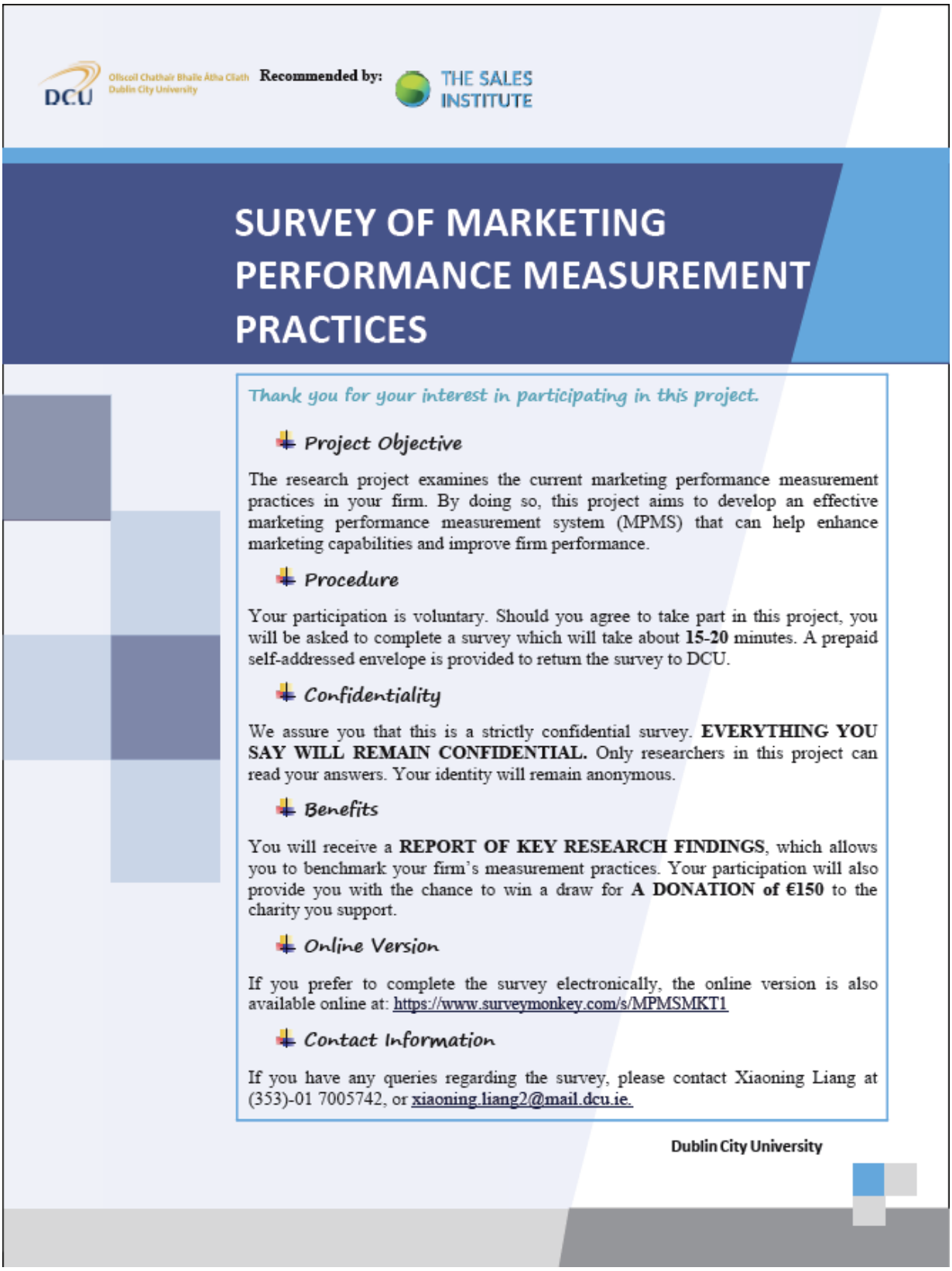
Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, *37*(2), 197–206.

Zheng, Y., Zhao, K., & Stylianou, A. (2013). The impacts of information quality and system quality on users' continuance intention in information-exchange virtual communities: An empirical investigation. *Decision Support Systems*, *56*, 513–524.

Zhou, K. Z., & Li, C. B. (2010). How strategic orientations influence the building of dynamic capability in emerging economies. *Journal of Business Research*, *63*(3), 224–231.

Zollo, M., & Winter, S. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organisation Science, 13*(3), 339–351.

APPENDIX A: QUESTIONNAIRE



Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

Recommended by: THE SALES INSTITUTE

SURVEY OF MARKETING PERFORMANCE MEASUREMENT PRACTICES

Thank you for your interest in participating in this project.

Project Objective

The research project examines the current marketing performance measurement practices in your firm. By doing so, this project aims to develop an effective marketing performance measurement system (MPMS) that can help enhance marketing capabilities and improve firm performance.

Procedure

Your participation is voluntary. Should you agree to take part in this project, you will be asked to complete a survey which will take about **15-20** minutes. A prepaid self-addressed envelope is provided to return the survey to DCU.

Confidentiality

We assure you that this is a strictly confidential survey. **EVERYTHING YOU SAY WILL REMAIN CONFIDENTIAL.** Only researchers in this project can read your answers. Your identity will remain anonymous.

Benefits

You will receive a **REPORT OF KEY RESEARCH FINDINGS**, which allows you to benchmark your firm's measurement practices. Your participation will also provide you with the chance to win a draw for **A DONATION of €150** to the charity you support.

Online Version

If you prefer to complete the survey electronically, the online version is also available online at: https://www.surveymonkey.com/s/MPMSMKT1

Contact Information

If you have any queries regarding the survey, please contact Xiaoning Liang at (353)-01 7005742, or xiaoning.liang2@mail.dcu.ie.

Dublin City University

THE RESEARCH TEAM

Xiaoning Liang is a doctoral student under the supervision of Dr. Yuhui Gao at DCU Business School, DCU. Her research interests are marketing metrics, marketing performance measurement, and marketing capabilities.

Before joining DCUBS, Xiaoning received her BA (H1) and MA (H1) in Management at Northeastern University (NEU), China. She has a proficiency in data analysis, as well as an extensive background in Marketing, HRM and Operations Management.

Her work has been presented and published in leading national and international conference proceedings, including *2014 Irish Academy of Management Conference, 2014 European Marketing Academy Conference, 2014 Global Marketing Conference* where she also served as a reviewer, and *2014 Informs Marketing Science Conference* where she also served as a session chair.

Dr. Yuhui Gao is a lecturer in Marketing at DCU Business School, Dublin City University. She is currently the Chairperson of the BSc in Marketing, Innovation and Technology programme at DCU.

Yuhui holds a PhD from Michael Smurfit Graduate School of Business, University College Dublin. Her current research interests are marketing performance management, marketing research, and firm leaders' personal values and their relevance to marketing strategy.

Yuhui has completed numerous consultancy projects with industries, such as DesignBurst, Microsoft, Blue Insurance and PACE100. She has published widely in a number of international peer-reviewed journals including *Industrial Marketing Management, Journal of Strategic Marketing, The Marketing Review, Journal of Asia Business Studies, Services Marketing Quarterly, International Business Review* and *Journal of Business Ethics*.

HOW TO COMPLETE THIS QUESTIONNAIRE

Please note that in this research, we are interested in your opinion as **a marketing manager (or a similar role)** in an Irish-based firm.

The questionnaire is divided into 6 different sections. Detailed instructions for completion are provided under each section. Generally the questions are of two simple types:

1. Fill in blanks: When you see a dashed line like this ……, simply write in a word or number as requested.

2. Rating scales: Often you will be asked for a rating of some kind and you will be provided with a scale. To answer the question, just simply **TICK** or **CIRCLE** the options that best represent your suggestion or opinion.

Please note:

Scales for agreement: **1**= strongly disagree, **2**=disagree, **3**= somewhat disagree, **4**= neither agree nor disagree, **5**=somewhat agree, **6**= agree, and **7**= strongly agree.

Scales for the extent of usage: **1**= not at all, **2**= to a very limited extent, **3**= to a limited extent, **4**= to a moderate extent, **5**= to a considerable extent, **6**= to a great extent, and **7**= to a very great extent.

Scales for relative performance: **1**= much worse, **2**= worse, **3**= somewhat worse, **4**= about the same, **5**= somewhat better, **6**= better, and **7**= much better.

SECTION A: ORGANIZATIONAL INFORMATION

** Please note that all information interested here is about your firm or the Irish subsidiary if you are part of a multinational company.*

1. Please indicate the year in which your firm was established: ……

2. Is your firm publicly traded? ☐ Yes ☐ No

3. Please choose which focus **BEST DESCRIBES** your firm: ☐ B2B* ☐ B2C*

4. Please indicate the approximate number of full-time employees in your firm. ……

5. Please indicate which of the following generic business strategy is **MOST APPLICABLE** for your firm:

- ☐ **Cost leadership**: strategy to obtain the lowest costs in the market
- ☐ **Differentiation strategy**: focusing on being better in different features of the product/service that are important to customers
- ☐ **Other** (please specify)……
- ☐ **Don't know**

6. Please indicate which industry your firm operates in.

☐ Manufacturing ☐ Service/Trade ☐ Other (Please specify)…… ……

7. Please indicate the primary background of the CEO within your firm.

☐ Engineering ☐ Other technical ☐ Marketing
☐ General management ☐ Finance ☐ Other (please specify) ……

8. Does your firm employ a Chief Marketing Officer (CMO) or a similar role?

☐ Yes ☐ No

9. Does your firm use a marketing "dashboard" (a selected set of metrics that are updated regularly) to assess marketing performance? ☐ Yes ☐ No

10. Regarding the external environment, please indicate the extent to which you agree with the following statements.

	Strongly Disagree ◄						► Strongly Agree
Our firm offers a broad set of products/services	1	2	3	4	5	6	7
Intensive competitor-related activities are a hallmark of our industry	1	2	3	4	5	6	7
It is difficult to forecast technological development in our industry	1	2	3	4	5	6	7
Customers' product demands and preferences change quite rapidly	1	2	3	4	5	6	7
There are many promotion wars in our industry	1	2	3	4	5	6	7
Our range includes many products/services	1	2	3	4	5	6	7
There are many competitive rivalries in our industry	1	2	3	4	5	6	7
Technological environment is highly uncertain in our industry	1	2	3	4	5	6	7
Customers tend to look for new products/services all the time	1	2	3	4	5	6	7
Technological changes provide big opportunities in our industry	1	2	3	4	5	6	7
Our products/services are very distinct	1	2	3	4	5	6	7
Competition in our industry is very intense	1	2	3	4	5	6	7
It is difficult to predict changes in customer needs and preferences	1	2	3	4	5	6	7
Technologically, our industry is a very complex environment	1	2	3	4	5	6	7

*B2B is commerce transactions between businesses, e.g., between a manufacturer and a wholesaler.
*B2C is commerce transactions between a company and its consumers.

SECTION B: MARKETING PERFORMANCE MEASUREMENT SYSTEM

1. Please choose the metrics that your firm uses to evaluate the overall marketing performance (**Tick all that apply**)

Consumer attitude metrics	☐ Brand awareness ☐ Perceived quality/esteem ☐ Salience ☐ Consumer satisfaction ☐ Relevance to consumer	☐ Image/personality/identity ☐ (Perceived) differentiation ☐ Other attitudes, e.g., liking ☐ Commitment/purchase intent ☐ Brand knowledge
Consumer behaviour metrics	☐ Total number of buyers ☐ Number of new buyers ☐ Purchasing on promotion ☐ Conversions (leads to sales) ☐ Number of leads generated/ inquiries	☐ Loyalty/retention ☐ Price sensitivity/elasticity ☐ Number of consumer complaints ☐ Number of products per consumer
Trade customer metrics	☐ Distribution/availability ☐ Customer satisfaction	☐ Number of customer complaints
Competition metrics	☐ Relative price ☐ Loyalty (share) ☐ Penetration	☐ Market share ☐ Relative consumer satisfaction ☐ Relative perceived quality
Innovation metrics	☐ Revenue of new products ☐ Margin of new products	☐ Number of new products in the period
Financial metrics	☐ Profit/profitability ☐ Economic value added (EVA) ☐ Sales ☐ Shareholder value	☐ Marketing spend ☐ % discounts ☐ Gross margins ☐ Return on investment (ROI)
Digital metrics	☐ Impressions ☐ Share of voice ☐ Cost per click	☐ Click through rate ☐ (Net) reach ☐ Visitors
Other (please specify)		

2. Please indicate the extent to which you agree with the following statements (1=strongly disagree, 7=strongly agree)

In our firm, the marketing performance measurement system …	Strongly Disagree ◄						► Strongly Agree
Consists of both financial and nonfinancial measures	1	2	3	4	5	6	7
Provides a balanced picture of the marketing function	1	2	3	4	5	6	7
Provides measures of different perspectives (e.g., financial, customer, innovation)	1	2	3	4	5	6	7
Provides output measures (e.g., customer satisfaction), input measures (e.g., budget), and process-related measures (e.g., the length of marketing processes)	1	2	3	4	5	6	7
Puts special weight on customer, competitor, and market-related measures	1	2	3	4	5	6	7
Is not aligned with our long-term marketing targets	1	2	3	4	5	6	7
Reflects our marketing strategy	1	2	3	4	5	6	7
Includes measures that are chosen to track marketing strategy	1	2	3	4	5	6	7
Shows how marketing strategy is to be achieved	1	2	3	4	5	6	7
Shows how marketing activities and results are connected	1	2	3	4	5	6	7
Consists of measures which build upon each other	1	2	3	4	5	6	7
Shows cause-and-effect relationships	1	2	3	4	5	6	7

3. Please indicate how often your firm tracks marketing performance in terms of the following aspects.

	Never	Rarely/ad hoc	Regularly/ yearly	Quarterly	Monthly or more
Consumer attitude metrics	1	2	3	4	5
Consumer behaviour metrics	1	2	3	4	5
Trade customer metrics	1	2	3	4	5
Competition metrics	1	2	3	4	5
Innovation metrics	1	2	3	4	5
Financial metrics	1	2	3	4	5
Digital metrics	1	2	3	4	5

4. Please rate the importance of each category to your top management team when evaluating marketing performance.

	Not at all	Of little importance	Moderately important	Important	Very important
Consumer attitude metrics	1	2	3	4	5
Consumer behaviour metrics	1	2	3	4	5
Trade customer metrics	1	2	3	4	5
Competition metrics	1	2	3	4	5
Innovation metrics	1	2	3	4	5
Financial metrics	1	2	3	4	5
Digital metrics	1	2	3	4	5

5. Please indicate the extent to which you agree with the following statement (1=strongly disagree, 7=strongly agree)

In our firm, marketing performance measures…	Strongly Disagree ←						Strongly Agree →
Are not reliable	1	2	3	4	5	6	7
Are reported on a systematic and regular basis	1	2	3	4	5	6	7
Are understandable	1	2	3	4	5	6	7
Provide accurate information	1	2	3	4	5	6	7
Are easy to get access to	1	2	3	4	5	6	7

6. Please rate the extent to which your top management team currently uses marketing metrics in terms of the following statements. (1= not at all, 7= to a very great extent)

Our top management team currently uses marketing metrics to …	Not at all ←						To a very great extent →
Enable the organization to focus on common issues	1	2	3	4	5	6	7
Enable the organization to focus on critical success factors	1	2	3	4	5	6	7
Develop a common vocabulary in the organization	1	2	3	4	5	6	7
Enable discussion in meetings of supervisors, subordinates and peers	1	2	3	4	5	6	7
Enable continual challenge and debate underlying results, assumptions and action plans	1	2	3	4	5	6	7
Tie the organization together	1	2	3	4	5	6	7
Track progress towards goals	1	2	3	4	5	6	7
Review key marketing performance measures	1	2	3	4	5	6	7
Monitor marketing results	1	2	3	4	5	6	7
Compare marketing outcomes and expectations	1	2	3	4	5	6	7

SECTION C: MARKETING CONTROLS

1. Please indicate the extent to which you agree with the following statements (1=strongly disagree, 7=strongly agree)

Our firm…	Strongly Disagree						Strongly Agree
Sets clear, planned goals and objectives for the marketing department	1	2	3	4	5	6	7
Monitors whether the marketing department attains performance goals	1	2	3	4	5	6	7
Requires the marketing department to explain why if performance goals are not met	1	2	3	4	5	6	7
Provides feedback to the marketing department concerning the extent to which it achieves performance goals	1	2	3	4	5	6	7
Specifies detailed and comprehensive specifications for the procedures that marketing department needs to follow	1	2	3	4	5	6	7
Formulates processes and methods by which marketing department has to operate	1	2	3	4	5	6	7
Monitors whether marketing department works according to prescribed methods	1	2	3	4	5	6	7

2. Please indicate the extent to which you agree with the following statements (1=strongly disagree, 7=strongly agree)

	Strongly Disagree						Strongly Agree
Our firm encourages marketing staff to have shared values, beliefs and norms	1	2	3	4	5	6	7
Our firm encourages marketing staff to feel a sense of pride in their work	1	2	3	4	5	6	7
Our firm encourages marketing staff to feel a part of the organization	1	2	3	4	5	6	7
Our firm encourages cooperation between marketing staff	1	2	3	4	5	6	7
Our firm fosters an environment where marketing staff respect each other's work	1	2	3	4	5	6	7
Our firm encourages job-related discussions between marketing staff	1	2	3	4	5	6	7
Most marketing staff are familiar with each other's productivity	1	2	3	4	5	6	7

SECTION D: MARKETING CAPABILITIES

In the following section, you will be asked to indicate the extent to which you agree with the following statement in terms of marketing capabilities of your firm. (1=much worse, 7=much better)

1. LEARNING CAPABILITY Compared to our major competitors, our firm performs effectively in…	Much Worse			About the same			Much Better
Using networks and links to acquire knowledge	1	2	3	4	5	6	7
Jointly working with other organizations to acquire knowledge	1	2	3	4	5	6	7
Networking to acquire knowledge	1	2	3	4	5	6	7
Searching for knowledge through external networks	1	2	3	4	5	6	7
Sharing knowledge acquired through networks within the firm	1	2	3	4	5	6	7
Using knowledge generated externally in innovation	1	2	3	4	5	6	7
Capability to acquire knowledge externally	1	2	3	4	5	6	7
Collecting information about markets	1	2	3	4	5	6	7
Searching for innovative ideas through market information	1	2	3	4	5	6	7
Gaining knowledge about market segments	1	2	3	4	5	6	7
Gaining knowledge of our competitors	1	2	3	4	5	6	7
Sharing market information with employees	1	2	3	4	5	6	7
Using market information in innovation	1	2	3	4	5	6	7

2. PLANNING/IMPLEMENTATION CAPABILITY

Compared to our major competitors, our firm performs….in terms of

	Much Worse			About the same			Much Better
Marketing planning skills	1	2	3	4	5	6	7
Setting clear marketing goals	1	2	3	4	5	6	7
Developing creative marketing strategies	1	2	3	4	5	6	7
Segmenting and targeting market effectively	1	2	3	4	5	6	7
A thorough marketing planning process	1	2	3	4	5	6	7
Allocating marketing resources effectively	1	2	3	4	5	6	7
Monitoring marketing programs effectively	1	2	3	4	5	6	7
Translating marketing strategies into effective action	1	2	3	4	5	6	7
Executing marketing strategies quickly	1	2	3	4	5	6	7

3. ADAPTIVE MARKETING CAPABILITY

Compared to our major competitors, our firm performs effectively in…

	Much Worse			About the same			Much Better
Handling potential threats from the market properly	1	2	3	4	5	6	7
Adapting quickly to the sudden changes in our markets	1	2	3	4	5	6	7
Succeeding in an intensely competitive business environment	1	2	3	4	5	6	7
Achieving technical complementarity in a timely manner	1	2	3	4	5	6	7
Reacting quickly to changes with regard to our competitors	1	2	3	4	5	6	7
Adjusting the management system to respond rapidly to shifts in our business priorities	1	2	3	4	5	6	7

4. MARKET LINKING CAPABILITIES

Compared to our major competitors, our firm performs effectively in…

	Much Worse			About the same			Much Better
Having strong relationships with key target customers	1	2	3	4	5	6	7
Creating durable relationships with channel members, e.g., suppliers, retailers	1	2	3	4	5	6	7
Discovering competitors' strategies and tactics	1	2	3	4	5	6	7
Gaining insights about the channel	1	2	3	4	5	6	7
Creating good relationships with customers	1	2	3	4	5	6	7
Learning about the broad market environment	1	2	3	4	5	6	7
Attracting and retaining channel members	1	2	3	4	5	6	7
Identifying and understanding market trends	1	2	3	4	5	6	7
Maintaining and enhancing relationships with customers	1	2	3	4	5	6	7
Learning about customer needs and requirements	1	2	3	4	5	6	7

SECTION E: FIRM PERFORMANCE

1. Please indicate how well your firm performs in terms of the following statements. (1=much worse, 7=much better)

Relative to our major competitors, our firm performs….in terms of	Much Worse			About the same			Much Better
Customer satisfaction	1	2	3	4	5	6	7
Market share	1	2	3	4	5	6	7
Acquiring new customers	1	2	3	4	5	6	7
Return on investment	1	2	3	4	5	6	7
Sales	1	2	3	4	5	6	7
Profitability	1	2	3	4	5	6	7

SECTION F: BACKGROUND INFORMATION

1. How many years of professional experience do you have in your career? Approximate ……..years.
2. What is your title or position?

☐ Chief Executive Officer (CEO) ☐ Chief Marketing Officer (CMO)

☐ Marketing Manager ☐ Other (please specify)……

3. Please indicate to what extent you agree with the following statements (1=strongly disagree, 7=strongly agree).

	Strongly Disagree						Strongly Agree
I have been heavily involved in my firm's key decision making process	1	2	3	4	5	6	7
I am capable of evaluating marketing performance measurement practices in my firm	1	2	3	4	5	6	7
I have sufficient knowledge to assess marketing capabilities in my firm	1	2	3	4	5	6	7

4. Your gender (optional): ☐ Male ☐ Female
5. Your age (optional): ☐ under 25 ☐ 26-35 ☐ 36-45 ☐ 46-55 ☐ above 55

You are now FINISHED THE SURVEY. Thank you for your time and commitment.

ADDITIONAL COMMENTS:

……

……

……

If you would like to **NOMINATE A CHARITY** that you support, please provide details below.

Charity Name:

……

Would you like to receive a **REPORT OF KEY RESEARCH FINDINGS**? ☐ Yes ☐ No

Would you like to take part in **A BRIEF FOLLOW-UP INTERVIEW**? ☐ Yes ☐ No

If 'yes', please provide name and address or attach a business card.

Name: …… Email: ……

Address: ……

APPENDIX B: COVER LETTER

Scoil Ghnó DCU
DCU Business School

DCU

Marketing Manager
Carillion Irishenco
Hartwell Upper,Kill,
Kildare
5/25/2015

Ref. code: 9063

Dear Mr./Ms. Marketing Manager,

Re: A study on Marketing Performance Measurement Practices

I am Xiaoning Liang, a PhD scholar under the supervision of Dr. Michael Gannon and Dr. Yuhui Gao at DCU Business School, Dublin City University. We would like to invite you to participate in a research project entitled "Marketing Performance Measurement Practices". Thank you in advance.

Measuring and communicating the value of marketing activities and investments have been identified as major challenges for firms and marketing managers. A recent industrial report by Deloitte in 2014 shows that 73% of marketers fail to put key metrics in place. Low levels of satisfaction with existing marketing metrics continue to be reported. For instance, only 20% of respondents are reported to be satisfied with their marketing measures in a 2009 global CMO report. Research has shown that measurement practices in Ireland are not very well developed due to over reliance on financial metrics, less frequent tracking, and lower levels of benchmarking. Therefore, the project aims at investigating marketing performance measurement practices in Irish-based firms, and identifying best practices for improving firm performance.

In recognition of your valuable contribution to the study, we will:

- Offer you **a copy of the main research findings**;
- Include you in a draw with a chance of winning **a donation of €150** to the charity you support.

In accordance with DCU policies, the study has been formally approved by **DCU Research Ethics Committee**. We assure you that all responses to the survey will be treated in strict confidence. Only aggregate results will be reported thereby protecting the identity of all participants. Should you agree to participate, we ask that you kindly complete the attached questionnaire, which takes about **15-20 minutes**. Please return to us by the **12th of June, 2015** using the pre-paid and self-addressed envelope provided.

If you prefer to complete the survey electronically, the online survey is also available at https://www.surveymonkey.com/s/MPMSMKT1. Please **enter the reference code** as requested in the online survey. The code is for research purposes only and is displayed on the top of this letter.

Should you have any queries regarding the study, please do not hesitate to contact me at (353)-01 7005742, or xiaoning.liang2@mail.dcu.ie.

Yours faithfully,

Xiaoning Liang on behalf of the project team
DCU Business School

Baile Átha Cliath 9, Éire
Dublin 9, Ireland
T +353 1 700 5265
F +353 1 700 5446
E dcubs@dcu.ie
www.dcu.ie/dcubs

APPENDIX C: PRE-PAID AND SELF-ADDRESSED ENVELOPE

Postage will be paid

No Postage Stamp Required

by Licensee

XIAONING LIANG
QG 24 Business School
Dublin City University
Glasnevin
Freepost F5140
Dublin 9

Ref. code: 43

APPENDIX D: RESEARCH ETHICS COMMITTEE APPROVAL1

Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

DCU

30th April 2015

Xiaoning Liang
DCUBS

REC Reference: DCUREC/2015/116

Proposal Title: Survey of Marketing Performance Measurement Practices

Applicant(s): **Xiaoning Liang, Dr. Yuhui Gao**

Dear Xiaoning,

This research proposal qualifies under our Notification Procedure, as a low risk social research project. Therefore, the DCU Research Ethics Committee approves this project.

Materials used to recruit participants should state that ethical approval for this project has been obtained from the Dublin City University Research Ethics Committee.

Should substantial modifications to the research protocol be required at a later stage, a further submission should be made to the REC.

Yours sincerely,

Dónal O'Mathúna

Dr Dónal O'Mathúna
Chairperson
DCU Research Ethics Committee

DCU
Research & Innovation

Taighde & Nuálaíocht Tacaíocht
Ollscoil Chathair Bhaile Átha Cliath,
Baile Átha Cliath, Éire

Research & Innovation Support
Dublin City University,
Dublin 9, Ireland

T +353 1 700 8000
F +353 1 700 8002
E research@dcu.ie
www.dcu.ie

APPENDIX E: RESEARCH ETHICS COMMITTEE APPROVAL2

Oliscoil Chathair Bhaile Átha Cliath
Dublin City University

DCU

15th October 2015

Ms Xiaoning Liang
DCU Business School

REC Reference: DCUREC/2015/221

Proposal Title: A Study on Marketing Performance Measurement Practices in Ireland

Applicant(s): Ms Xiaoning Liang, Dr Yuhui Gao

Dear Xiaoning,

Further to expedited review, the DCU Research Ethics Committee approves this research proposal.

Materials used to recruit participants should note that ethical approval for this project has been obtained from the Dublin City University Research Ethics Committee.

Should substantial modifications to the research protocol be required at a later stage, a further amendment submission should be made to the REC.

Yours sincerely,

Dónal O'Mathúna

Dr Dónal O'Mathúna
Chairperson
DCU Research Ethics Committee

DCU
Research & Innovation

Taighde & Nuálaíocht Tacaíocht
Oliscoil Chathair Bhaile Átha Cliath,
Baile Átha Cliath, Éire

Research & Innovation Support
Dublin City University,
Dublin 9, Ireland

T +353 1 700 8000
F +353 1 700 8002
E research@dcu.ie
www.dcu.ie

APPENDIX F: CONSENT LETTER FOR INTERVIEWS

Dublin City University
Ollscoil Chathair Bhaile Átha Cliath

Interview consent Letter

20/11/2015

Dear Ms. X,

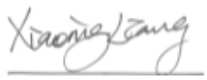
Thanks for your participation in the research project on marketing performance measurement practices. I am now inviting you to participate in a follow-up interview.

If you accept, you will be asked to participate in a brief interview, which will take approximately 30-60 minutes. No one else will be present unless you would like someone to accompany you. I will record the information you give by a digital recorder. The transcript of the interview will be viewed only by me and my supervisor Dr. Yuhui Gao. Everything you say will remain confidential. The tapes will be stored under lock and key at the researcher's office and will be destroyed in 5 years upon the completion of the PhD.

I will ask you about marketing performance measurement practices-related questions and ask you to share your knowledge. We hope to develop an effective marketing performance measurement system that can enhance marketing capabilities and improve firm performance. If there is a question you'd rather not answer, I will move to the next one. You are free to withdraw from the interview at any time.

I would like to thank you for taking the time to read this letter. If you would like to know more about the study before deciding whether to participate, please contact me at xiaoning.liang2@mail.dcu.ie. If you agree to participate, I would be grateful if you could sign the certificate of consent below.

Yours faithfully,



Xiaoning Liang
DCU Business School
Dublin City University

APPENDIX F: CONSENT LETTER FOR INTERVIEWS

(CONTINUED)

Dublin City University
Ollscoil Chathair Bhaile Átha Cliath

DCU

Certificate of Consent

I have read the foregoing information. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.

I consent voluntarily to be a participant in this study and I understand that I can withdraw from the interview at any time without any impact on my job.

Print Name of Participant:

Signature of Participant:

Date:

APPENDIX G: THE INTERVIEW GUIDE

Purpose of the interview

The interviews are conducted to complement the quantitative research findings. The major objectives are to explore why and how marketing performance measurement practices enable firms to build their ability to link with customers and suppliers, learn from the market and adapt to the changing environment.

#: notes for the interviewer

Interview Themes

I am interested in why your firm uses marketing metrics:

1. The use of marketing metrics

- As you indicated in the previous survey, your firm has been using ** (# a shortened list of measures mentioned in the survey#) as key indicators of marketing performance. Can you tell me more about what objectives your firm aims to achieve through the use of marketing metrics? (#the purposes of using marketing performance measures#)
- Do you think that the use of marketing metrics achieves the purposes you mentioned?
- Can you tell me more about how your firm uses marketing metrics?
- Do you think your firm is operating in a dynamic environment? If yes, how does it affect your organisation?

I am also interested in how your firm benefits from the use of marketing metrics:

2. Your firm's ability to create good relationships with customers and suppliers, and sense market changes (#market-linking capability#)

- Are you happy with your firm's ability to connect with customers? Why?
- Do you think it is important to maintain a good relationship with customers?
- With regard to your firm's relationship with customers, do you think your firm benefits from the use of marketing metrics? And how?
- Do you think your firm enhances the relationships with channel members through the use of marketing metrics? And how? (#optional because some firms don't have channels#)
- What do you think of your firm's ability to track market trends?
- How does your firm develop its ability to link with customers and clients?
- Does your firm gain insights into the market through marketing metrics?
- How have these insights been used in your firm?

3. Your firm's ability to make marketing plans and carry out the plans (#marketing planning and implementation skills#)

- Are you happy with your firm's ability to make marketing plans? How about carrying out these plans? Why?
- How does your firm improve such capacities?
- Does the use of marketing metrics contribute to marketing planning? If so, how?
- Does your firm use marketing metrics to assist strategy implementation? If so, how?

4. Your firm's ability to learn externally (#organisational learning skills#)

- Does your firm gain insights into the market?
- If yes, has the information been shared within the firm? And how, whom?
- Does the use of marketing metrics influence your firm's ability to learn externally?
- Has the information been shared with any parties? What parties, and how?

5. Your firm's adaptability (#adaptive marketing capability#)

- How do you feel about your firm's ability to adapt to the changing business environment? Why?
- How does your company develop its adaptability?
- Do you think your firm is more able to adapt to changes after adopting marketing metrics? And how?

I would like to know how you feel about your marketing skills, capabilities and competences:

6. Marketing skills, capabilities and competences

- In addition to the marketing skills we mentioned in our conversation, are there any other marketing skills that deserve special attention? What are they?