The impact of strategy, flexibility, efficiency and headquarter control orientations on the performance of multinational corporations adopting a matrix organisational structure

BY

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ABSTRACT

Multinational corporations implementing multidimensional strategies require multidimensional organisational structures to perform. Despite the plethora of research on organisational structures, research on the matrix multidimensional structure remain sparse. Situated in the international business field, within the strategy-structure-environment performance paradigm, understanding how performance is achieved is core to the execution of MNCs strategies providing a superior competitive advantage. Despite this, extant literature focuses on understanding how to design and manage matrix structures, failing to provide an understanding of performance when adopting the matrix structure. These studies, rooted in the information processing view, fail to address the primary reasons of flexibility, efficiency, headquarter control, and strategy that the matrix structure presented difficulty in implementation for MNCs in the 1980's.

Addressing these gaps, this research focusses on understanding to what extent strategic choice leading to the primary and secondary structural dimensions adopted, flexibility, efficiency and headquarter control affect performance in matrix structured MNCs. A mono-method quantitative study was applied, and a 146 MNCs with matrix structures participated in the study at the subsidiary level, with 56% from South African MNC subsidiaries. A moderated regression analysis was conducted to test the hypotheses to understand performance when MNCs adopt different primary by secondary structural dimensions, using organisation age as a moderator. Results indicated that matrix structure adoption is appropriate for MNCs with primary product/service, geographic region and functional dimensions by secondary customer market, functional dimension, and product/service dimensions respectively. Levers of flexibility, efficiency, headquarter control and strategy leading to performance are differentiated based on the type of primary by secondary dimensions adopted.

The implications of the results provide an *a priori* understanding of performance, contributing to transaction cost economics on the most efficient system of organising transactions, vertical integration, human assets, and contracting. This *a priori* understanding allows MNCs to understand the levers of flexibility, efficiency, headquarter control and strategy, addressing the critical attributes which led to the difficulty in implementing matrix structure, highlighting the role of headquarter-subsidiary relations. Future research inculcating type of subsidiary in headquarter-subsidiary relations will

extend understanding of the performance in MNCs with matrix structures. These studies will deepen the *a priori* levers required by MNCs require adopting the matrix structure.

Keywords: Matrix organisational structure, performance, strategy, headquarter control, flexibility, efficiency

DECLARATION

I, Manoj Dayal Chiba, declare that the thesis/dissertation, which I hereby submit for the degree Doctor of Philosophy at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

_____

Manoj Dayal Chiba

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TABLE OF CONTENTS

ABSTRACT ..... **I**
DECLARATION ..... **III**
ACKNOWLEDGEMENTS ..... **IV**
LIST OF FIGURES ..... **IX**
LIST OF TABLES ..... **X**
LIST OF ABBREVIATIONS: ..... **XIII**
CHAPTER 1: INTRODUCTION **1**
1.1 BACKGROUND 1
1.1.1 Matrix organisational structure 2
1.1.2 Organisational Performance 4
1.1.3 Strategy 5
1.1.4 HQ control 6
1.1.5 Flexibility and Efficiency 7
1.1.6 Organisational age 8
1.1.7 Theories used to study the matrix organisational structure 8
1.2 STATEMENT OF RESEARCH OBJECTIVE 9
1.2.1 Research question 1 10
1.2.2 Research question 2 10
1.2.3 Research question 3 11
1.2.4 Research question 4 11
1.3 CONTRIBUTION OF THE STUDY 12
1.3.1 Theoretical contribution 12
1.3.2 Practical contributions 13
1.3.3 Methodological contributions 13
1.4 LIMITATIONS AND DELIMITATIONS 14
1.5 ASSUMPTIONS 15
1.6 DEFINITION OF KEY TERMS 16
1.6.1 Definitions related to the multinational corporation (MNC) 16
1.6.2 Definitions related to organisational structure 17
1.6.3 Definitions related to transaction cost economics 18
1.6.4 Definitions related to performance 18
1.6.5 Definitions related to strategy 18
1.6.6 Definitions related to flexibility and efficiency 19
1.6.7 HQ control 19
1.7 STRUCTURE OF THE THESIS 19
1.8 CONCLUSION TO THE INTRODUCTION 20

CHAPTER 2: LITERATURE REVIEW 21
2.1 INTRODUCTION 21
2.2 GLOBAL MATRIX ORGANISATION STRUCTURE 21
2.2.1 MNC macro-organisational structures 23
2.3 PERFORMANCE IN THE ORGANISATION CONTEXT 26
2.3.1 Organisational performance 27
2.3.2 Firm-specific and country specific advantages 29
Organisational structure and organisational performance: 29
2.4 THEORY: INFORMATION PROCESSING VIEW AND TRANSACTION COST ECONOMICS (TCE) 31
2.4.1 Information processing view 31
2.4.2 Transaction cost economics theory (TCE) 32
2.5 ORGANISATION AGE 35
2.6 MULTINATIONAL CORPORATION STRATEGIES 37
2.6.1 Primary dimensions requiring flexibility 38
2.6.2 Primary dimensions requiring efficiency 39
2.7 FLEXIBILITY AND EFFICIENCY 40
2.8 HEADQUARTER CONTROL IN DUAL REPORTING 44
2.8.1 Contracting and control 45
2.8.2 Headquarter-subsidiary relations 48
2.9 CONCLUSION: 50
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY 51
3.1 INTRODUCTION 51
3.2 RESEARCH PHILOSOPHY AND PARADIGM 51
3.2.1 Research Philosophy 52
3.2.2 Research paradigm 53
3.3 RESEARCH APPROACH AND STRATEGY 55
3.4 RESEARCH CHOICE 55
3.5 RESEARCH METHODS 57
3.5.1 Population 57
3.5.2 Unit of analysis 57
3.5.3 Sampling 58
3.5.4 Sample frame, data collection, pre-testing and sample size 58
3.6 DATA COLLECTION 63
3.6.1 Data collection tool 65
3.6.2 Matrix organisational structure 66
3.6.3 Performance 67
3.6.4 Strategy 69
3.6.5 Moderator: Age of subsidiary 73

3.7 DATA ANALYSIS 74
3.7.1 Data editing 74
3.7.2 Data coding 74
3.7.3 Reliability 75
3.7.4 Validity 76
3.7.5 Factor analysis 77
3.7.6 Normal distribution 80
3.7.7 Outliers 80
3.8 MULTIVARIATE DATA ANALYSIS 81
3.8.1 Moderated regression (Hierarchical multiple regression) 81
3.9 QUALITY AND ETHICAL CONSIDERATIONS 84
3.10 CONCLUSION OF RESEARCH METHODOLOGY AND DESIGN 85
CHAPTER 4: RESULTS 87
4.1 INTRODUCTION 87
4.2 DESCRIPTIVE STATISTICS 87
4.3 ASSUMPTION TESTING RESULTS 94
4.3.1 Independence of observations 94
4.3.2 Homogeneity of variances 94
4.4 CONTROL VARIABLES 95
4.5 HYPOTHESES TEST RESULTS 95
4.5.1 Hypothesis one 95
4.5.2 Hypothesis 2 103
4.5.3 Hypothesis 3 111
4.5.4 Hypothesis 4 119
4.6 SUMMARY OF RESULTS 129
CHAPTER 5: DISCUSSION OF FINDINGS 135
5.1 INTRODUCTION 135
5.2 ACHIEVEMENT OF ORGANISATIONAL PERFORMANCE IN THE MATRIX ORGANISATIONAL STRUCTURE 135
5.3 HYPOTHESIS ONE 136
5.3.1 Hypothesis 1a 137
5.3.2 Hypothesis 1b 144
5.3.3 Summary hypothesis one discussion 149
5.4 HYPOTHESIS TWO 150
5.4.1 Hypothesis 2a 150
5.4.2 Hypothesis 2b 155
5.4.3 Summary of discussion, hypothesis 2 158
5.5 HYPOTHESIS THREE 159
5.5.1 Hypothesis 3a 160
5.5.2 Hypothesis 3b 163

5.5.3 Summary of discussion for hypothesis 3 167
5.6 HYPOTHESIS FOUR 168
5.6.1 Hypothesis 4a and 4b 168
5.6.2 Summary of discussion hypothesis 4 173
5.7 CONCLUSION 173
CHAPTER 6: CONCLUSION AND RECOMMENDATIONS 175
6.1 INTRODUCTION 175
6.2 CONTRIBUTIONS OF THE STUDY 177
6.2.1 Theoretical contribution 177
6.2.2 Practical contributions 181
6.2.3 Methodological contribution 183
6.2.4 Reflections on the contribution of the study 183
6.2.5 Summary of contributions 185
6.3 CONCLUSION ON HYPOTHESES 185
6.3.1 Hypothesis 1 185
6.3.2 Hypothesis 2 186
6.3.3 Hypothesis 3 187
6.3.4 Hypothesis 4 188
6.4 RECOMMENDATIONS 189
6.4.1 Future research 189
6.5 LIMITATIONS OF THE STUDY 190
REFERENCES 192
APPENDICES 218
APPENDIX A: PREAMBLE ACCOMPANYING THE QUESTIONNAIRE 218
APPENDIX B: EXAMPLE OF EMAIL SENT TO POTENTIAL PARTICIPANTS 219
APPENDIX C: QUESTIONNAIRE 220
APPENDIX C 1: SIMPLIFIED HIERARCHICAL STRUCTURE 243
APPENDIX C 2: MATRIX ORGANISATIONAL STRUCTURE 244
APPENDIX D: NORMALITY TEST RESULTS 245
APPENDIX E: SECTORS REPRESENTED IN SAMPLE 247

LIST OF FIGURES

Figure 2-1: Single command line authority for product structure 23

Figure 2-2: Siemens adopting a product x region matrix organisational structure, adopted from Siemens annual report 2002..... 24

Figure 3-1: Depiction of hierarchical organisational structure (left) and matrix organisational structure (right) 67

LIST OF TABLES

Table 2-1: Strategy, aim, structural requirement and primary dimensions for MNCs, adapted from Fouraker and Stopford (1968), Egelhoff et al. (2013), Ghoshal and Bartlett (1990), Harzing (2000), London and Hart (2004), Perlmutter (1969), and Wolf & Egelhoff (2002) 37

Table 3-1: Summary of pillars of research philosophies, adapted from Byrne, (2017) and Crossan (2003) 52

Table 3-2: 2x2 Matrix of paradigms of social theory, adapted from Burell and Morgan (1979)..... 54

Table 3-3: Date and number of responses received from email invitation to participate in research 64

Table 3-4: Construct, type of variable, number of items and reference for measured items 65

Table 3-5: Cronbach's alpha and internal consistency description (Field, 2013) 75

Table 3-6: Convergent and divergent validity 77

Table 3-7: Construct, KMO, Bartlett's test, number of factors extracted 79

Table 4-1: Demographic characteristics of respondents 88

Table 4-2: Headquarter geographic location (home country) of respondents organisations..... 89

Table 4-3: Subsidiary geographic location (host country) of respondents organisations 90

Table 4-4: Number of countries that respondent organisations have subsidiaries..... 90

Table 4-5: Employee headcount at the global and subsidiary level..... 91

Table 4-6: Descriptive statistics for performance, flexibility, and efficiency 92

Table 4-7: Descriptive statistics for Strategy and HQ control 93

Table 4-8: Correlations for all variables and interactions for organisational productivity 96

Table 4-9: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity..... 97

Table 4-10: Correlations for all variables and interactions for organisational effectiveness 98

Table 4-11: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness..... 99

Table 4-12: Correlations for all variables and interactions for organisation stability... 101

Table 4-13: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability 102
Table 4-14: Correlations for all variables and interactions for organisational productivity 104
Table 4-15: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity 105
Table 4-16: Correlations for all variables and interactions for organisational effectiveness 106
Table 4-17: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness 107
Table 4-18: Correlations for all variables and interactions for organisation stability ... 109
Table 4-19: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability 110
Table 4-20: Correlations for all variables and interactions for organisational productivity 112
Table 4-21: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity 113
Table 4-22: Correlations for all variables and interactions for organisation effectiveness 114
Table 4-23: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness 115
Table 4-24: Correlations for all variables and interactions for organisation stability ... 117
Table 4-25: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability 118
Table 4-26: Correlations for all variables and interactions for organisation productivity 120
Table 4-27: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity 121
Table 4-28: Correlations for all variables and interactions for organisation effectiveness 122
Table 4-29: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness 124
Table 4-30: Correlations for all variables and interactions for organisation stability ... 126
Table 4-31: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability 128

Table 4-32: Summary of hypothesis, outcome and explanation 130
Table 6-1: Adoption of the matrix organisational structure based on primary and secondary dimensions, with orientations for performance 179
Table 6-2: Adoption of the matrix organisational structure based on primary and secondary dimensions, with direction of orientations to perform 181

LIST OF ABBREVIATIONS:

MNC: Multinational corporation

HQ: Headquarters

The impact of strategy, flexibility, efficiency and HQ control orientations on the performance of MNCs adopting a matrix organisational structure

CHAPTER 1: INTRODUCTION

The introductory chapter provides the background to the research and the research statement. It then states the overarching research problem and objective and the four associated research questions. Furthermore, this chapter includes the scope of the research, and the definitions of the key constructs. Finally, this chapter states the importance and benefit of the research, and concludes with the outline of the document.

1.1 BACKGROUND

Multidimensional organisational structures are required for the execution of multidimensional strategies in order for organisations to achieve superior performance (Hamel & Prahalad, 1983; Qiu & Donaldson, 2012; Romelaer & Beddi, 2015). The matrix structure, defined as the structuring between a multinational corporations (MNC) headquarters (HQ) and subsidiary, is a multidimensional structure that allows for the execution of multidimensional strategies (Egelhoff, Wolf & Adzic, 2013; Qiu & Donaldson, 2012; Romelaer & Beddi, 2015). However, research on the matrix organisational structure remains nascent, despite the organisational theory, design and strategy fields being well defined within the paradigm of strategy-structure-environment fit in international business (Luo, Donaldson & Yu, 2016; Volberda, van der Weerdt, Verwaal, Stienstra & Verdu, 2012; Wilden, Gudergan, Nielsen & Lings, 2013; Xu, Cavusgil & White, 2006). Furthermore, where research has been conducted (see Egelhoff et al., 2013 for example) these studies have failed to provide an understanding of organisational performance when adopting a matrix organisational structure, often focussing on how to design and manage, rather than strategy-structure-fit.

The question therefore is why study the matrix organisational structure when there are challenges in implementation of this structure? One, the matrix organisational structure provides the coordination required by MNCs (Egelhoff et al., 2013) implementing

multidimensional strategies, by virtue of the multidimensionality of the structure (Hamel & Prahalad, 1983; Qiu & Donaldson, 2012). Non-hierarchical network structures for example may be used (Egelhoff et al., 2013), however decreases the flexibility afforded by the matrix to add dimensions to a strategy. In some circumstances, the matrix may not be appropriate MNCs, however understanding the conditions (strategy adopted, HQ control, flexibility, and efficiency) under which it should be adopted provides a competitive advantage to the MNC (Rugman & Verbeke, 2001). Two, there is an increased interest by MNC managers, despite the difficulty in management (Galbraith, 2009), and are noted to be inevitable for many MNCs (Egelhoff et al., 2013). As the matrix organisational structure is inevitable, scholarly research is required to reengage, this coupled with change in international strategies and organisational structures since the early strategy-structure work (see Daniels, Pitts & Tretter, 1984; Franko, 1976; Stopford & Wells, 1970 for example) for MNCs.

The ability for organisations to achieve superior performance is argued by the current thesis to be a function of strategy, flexibility, efficiency, and HQ control. The strength of these are however moderated by organisational age. The background on the phenomenon under study, the matrix organisational is briefly described next, followed by background on organisational performance, strategy, HQ control, flexibility, efficiency, organisational age, and finally describes the main theoretical lens applied in the study, transaction cost economics (TCE).

1.1.1 Matrix organisational structure

The organisational structures of MNCs are recognised as a source of competitive advantage and a critical mediator between an organisations strategy and the environment (Rugman & Verbeke, 2001; Rugman, Verbeke & Nguyen, 2011). The matrix organisational structure is one such structure that provides MNCs with a competitive advantage, specifically for the execution of multidimensional strategies (Egelhoff et al., 2013; Galbraith, 2014; Kutschker & Bäurle, 1997; Qiu & Donaldson, 2012; Wolf & Egelhoff, 2002). However, research on the matrix organisational structure remains nascent primarily due to the failed implementations in the 1970's and 1980's that led to the structure being labelled a failure (Piskorski & Spadini, 2007; Pitts & Daniels, 1984; Wolf & Egelhoff, 2013). MNCs such as Unilever, ASEA Brown Boveri (ABB), and 3M all adopted the matrix organisational structure during this period, however due to difficulties during and post-implementation, ultimately abandoned the structure. These difficulties

negatively affected the financial and non-financial performance of these organisations (Wolf & Egelhoff, 2013).

The reasons for challenges in implementation and failure were the primary reasons for adoption, namely flexibility and efficiency which the matrix organisational structure purported to offer (Egelhoff et al., 2013; Pitts & Daniels, 1984; Qiu & Donaldson, 2012). Retrospectively, Bartlett and Ghoshal (2003) argue that many of these failures could have been avoided through training and organisational culture. Furthermore, the failure was attributed to the forceful, rather than through an evolutionary process, for adoption (Egelhoff et al., 2013).

One of the implications of these implementation failures was the consequences for academic research in 1980's. During this period, many scholars largely ceased research prior to the development of a specified theory for the implementation and management of the structure (Egelhoff et al., 2013; Galbraith, 2013). In cases where research continued on matrix structures, these focussed on the disadvantages and the inevitability of failure (Barker, Tjosvold, & Andrews, 1988; Gibson & Tesone, 2001; Gobeli & Larson, 1986; Levinthal & Workiewicz, 2018). Despite failures in implementation and a lack of academic research, MNCs such as Procter and Gamble (P&G) adopted the matrix in the late 1990's, and began showing positive performance in the early 2000's (Guadalupe, Li & Wulf, 2013; Piskorski & Spadini, 2007). Furthermore, other MNCs continued implementing the matrix, however labelled it differently (Egelhoff et al., 2013). This has led to academic research being stimulated by the recent success of MNCs adopting the matrix structure (Egelhoff et al., 2013; Galbraith, 2013; Ghoshal & Bartlett, 1990; Guadalupe et al., 2013; Numerof & Abrams, 2002; Qiu & Donaldson, 2010; Van der Panne, Van Beers & Kleinknecht, 2003).

The successful implementation of the matrix organisational structures requires the psychological needs of managers, be addressed first and then the physiology (decision processes) (Bartlett & Ghoshal, 1989; Qiu & Donaldson, 2012; Romelaer & Beddi, 2015). Together these will lead to the realigning of the anatomy (organisational structure) (Bartlett & Ghoshal, 2003). These authors highlight the importance of the process when adopting the matrix structure for execution of multidimensional strategies, and supporting the assertion that the adoption of a matrix organisational structure is an evolutionary process (Egelhoff et al., 2013). However, the adoption of organisational structures to lead to superior performance further requires that the organisational structure fit the

information processing requirements of the strategy (Egelhoff et al., 2013; Galbraith, 1974; Qiu & Donaldson, 2012). Numerous attributes affecting the choice of design for MNCs have been identified in the literature, such as, the level of uncertainty in the environment (Burns & Wholey, 1993; Eisenhardt & Martin, 2000), the cost of transactions (Williamson, 1975), the size of the organisation (Egelhoff et al., 2013), and level of integration and differentiation (Bartlett & Ghoshal, 2003; Jansen, Tempelaar, Van den Bosch & Volberda, 2009).

The above studies have been valuable, however they are rooted in contingency theory and the information processing view, which allows for the understanding of how to design and management, not the achievement of strategy-structure environment fit. The use of this view has further produced irreconcilable differences (Judge & Li, 2012; Qiu & Donaldson, 2012) and does not allow for the understanding of how and when MNCs perform for a given set of strategic choices. Furthermore, numerous studies making inferences for the matrix structure consistent of both matrix and mixed organisational structures without clearly separating them (Egelhoff et al., 2013; Qiu & Donaldson, 2012).

Therefore, studies adopting the information processing view and contingency theory have not allowed for the understanding of the attributes, of flexibility, efficiency, HQ control, and strategy which lead to performance.

1.1.2 Organisational Performance

Organisational performance is achieved when organisations have obtained fit between the strategy-structure-environment (Clifford-Defee & Stank, 2005; Jennings & Seaman, 1994; Miles, Snow, Meyer, & Coleman, 1978; Wasserman, 2008; Wilden, et al., 2013). In order to achieve this performance, top management teams are required to make a myriad of complex decisions which balance the internal interdependencies and tensions, such as flexibility and efficiency, as requirements of organisational strategies (Zimmerman, Raisch & Birkinshaw, 2015). Despite the importance of the achievement of superior and sustained organisational performance (Caspin-Wagner, Lewin, Massini & Peeters, 2013; Geiger, Ritchie & Marlin, 2006; Luo & Child, 2015; Xu et al., 2006; Ying, Ping & Yang, 2016), and the central role of the organisational structure as a mediator to achieving superior performance (Egelhoff et al., 2013; Galbraith, 2013), the organisational structure of MNCs remains a persistent and prominent attribute of

scholarly discourse (Brouthers, Nakos & Dimitratos, 2015; Egelhoff et al., 2013; Ghoshal & Nohria, 1993; Reilly & Scott, 2014).

Organisational performance therefore indicates when organisations have achieved congruence with the environment within which they operate (Easterby-Smith, Lyles & Peteraf, 2009). This performance may be disturbed by changes in the environment and this may lead to organisations needing to re-organise occasionally (Barreto, 2010; Heracleous, & Werres, 2016). Equally, or in combination with environmental changes, the performance may be disturbed internally through changes in strategy for example (Leiblein, 2003; Gibson & Birkinshaw, 2004).

Organisational performance is therefore an outcome of a set of decisions that are made by the top management team in MNCs (Gibson & Birkinshaw, 2004). In the context of MNCs the strategy adopted is one such decision made.

1.1.3 Strategy

MNCs execute strategies through subsidiaries and the manner in which they coordinate these subsidiaries affects the successful execution of strategies (Ambos & Mahnke, 2010; Judge & Li, 2012). Four dominant types of strategy have been identified in the literature that MNCs adopt, namely multi-domestic, international, global, and transnational strategies (Fouraker & Stopford, 1968; Harzing, 2000; London & Hart, 2004; Perlmutter, 1969; Wolf & Egelhoff, 2002). The adoption of these strategies however have specific aims which they seek to achieve, and broadly can be categorised as localisation and/or global commonalities (London & Hart, 2004; Perlmutter, 1969; Wolf & Egelhoff, 2002), which require flexibility and/or efficiency in the organisational structure to achieve the aims. The adoption of these strategies has further implications on the structural dimensions of organisations. While the structural dimensions adopted fit to a strategy for elementary structures are well known (Galbraith, 2013; Ghoshal & Bartlett, 1990; Rugman et al., 2011; Verbeke & Greindanus, 2009), which of these dimensions for MNCs in matrix structures are largely debated (Egelhoff et al., 2013). Furthermore, as the dominant view adopted in the study being that of ‘structure follows strategy’ (Kunisch, Bartunek, Mueller, & Huy 2017; Melin, 1992), the manner in which these are executed is important.

Four prevalent organisational dimensions are noted in the literature, namely organising by product or service (Product/Service dimension), geography (Geographic Region

dimension), function (Functional dimension) or customer (Customer Market dimension) (Egelhoff et al., 2013; Galbraith, 2013; Piskorski & Spadini, 2007; Qiu & Donaldson, 2012; Wolf & Egelhoff, 2013). These dimensions emanate directly from the strategies adopted. As MNCs' strategies often require the over-laying of at least two of these dimensions, which dimension primarily and which dimension secondarily to achieve superior performance, is largely unknown.

The ability to achieve these strategic aims, through the overlaying of structural dimensions, are reflected in the performance of the organisation. However, in the context of MNCs subsidiaries are core to the execution of the strategy, and therefore the manner in which they are coordinated is important (Judge & Li, 2012). Therefore, depending on the level of control that HQ may have to direct the subsidiary is central for strategy execution (Carney & Child, 2013).

1.1.4 HQ control

HQ control is primarily premised on the ability for HQ to orchestrate subsidiaries for the execution of the MNCs strategy, and therefore views the role of HQ as a coordinator and strategising (Ciabushi, Dellestrand & Holm, 2012). Control provides HQ with the ability to re-allocate and/or instruct individuals at the subsidiary level to perform certain tasks as it seeks to execute the organisational strategy (Gibbons & Roberts, 2013; Lundan, 2010; Zhang, Zhong, Wen & Jiang 2014). However the amount of control that HQ has over the subsidiary is dependent on the strategy which it seeks to execute.

Localisation strategies require that HQ limit the amount of control it has over the subsidiary, specifically as localisation is the strategic aim it seeks to achieve. On the other hand, where MNCs seek global commonalities, HQ control is greater as it seeks to deliver standardised products and/or services globally (Grubenmann, 2016; Harzing, 2000). The amount of control however is dependent on the HQ-subsidiary relations.

In HQ-subsidiary relations, subsidiaries are an alternate form to overcome market failures (Roth & Nigh, 1992), however in overcoming these market failures, the role of the subsidiary is important, that is, autonomous, receptive or active (Martinez & Jarillo, 1991). While the subsidiary role is important, the level of control that HQ has over the subsidiary is an important in the execution of the strategy. A failure to execute the organisational strategy may lead to decreased performance. The manner in which HQ and subsidiary are structured is therefore core to understanding how the strategy

(through HQ control) may be executed, and is dependent on the level of integration between HQ and subsidiary (Luo, 2005).

The level of integration however allows for the understanding of the control HQ may have over the subsidiary. The strategy of localisation and/or global market commonalities, however requires the understanding of flexibility for the execution of localisation strategies, and the efficiency for the global market commonalities.

1.1.5 Flexibility and Efficiency

The matrix organisational structure provides flexibility and efficiency for the execution of multidimensional structures (Ford & Randolf, 1982; Paterson & Brock, 2002; Stopford & Wells, 1972; Qiu & Donaldson, 2012). However, strategies may require the execution of often-disparate goals such as flexibility and efficiency. For example, MNCs adopting a transnational strategy seek to leverage local responsiveness and global market commonalities (Harzing, 2002; Meyer, Mudambi & Narula, 2011). These MNCs therefore require both flexibility and efficiency in order to perform, where flexibility allows for the meeting of the needs of the local markets, and efficiency, through global market commonalities, may seek to achieve economies of scale (Benito, 2005; Harzing, 2002).

Flexibility and efficiency have often been considered paradoxes of administration. Adler, Goldoftas and Levine (1999) and Benner and Tushman (2015) report that these disparate goals may not be reconcilable, however, O'Reilly and Tushman (2013) and Raisch, Birkinshaw, Probst and Tushman (2009) argue that they are reconcilable through structural separation as a mechanism. The matrix organisational structure is therefore argued to be an effective mechanism for structural separation (Egelhoff et al., 2013).

Structural separation using the matrix organisational structure, while an effective mechanism to ensure the pursuing of often disparate goals, increases the cost of coordination (Gereffi, Humphrey, & Sturgeon, 2005; Mizutani & Uranishi, 2013). The cost of coordination therefore needs to balance the need for strategic execution which affects the performance of organisations.

1.1.6 Organisational age

Organisational age was used in the current study as a moderator for organisational performance as a function of strategy, HQ control, flexibility, and efficiency. Organisational age has often been treated as a control variable in numerous studies in international business (Loderer & Waelchli, 2010). These studies there ignore the effect that liability of newness (Stinchcombe & March, 1965) and/or the liability of age (Henderson, 1999) may have on the results achieved.

Older subsidiaries are often predicted to have stronger relationships with HQ (Rabbiosi & Santangelo, 2013), and would have more time to have developed internal integration with HQ. This in contrast to newly established subsidiaries (younger) would be at a disadvantage, having less time to have developed the relationships and decreased internal integration (Ghoshal & Bartlett, 1990). The effect of not considering subsidiary age when conducting empirical analysis has often resulted in limited insight (Ambos, Ambos, & Schlegelmilch, 2006). This despite the effects of the liability of newness being well researched at both the HQ level and at the subsidiary level (Rabbiosi & Santangelo, 2013).

Loderer and Waelchli (2010) have reported that organisational needs to be inculcated into studies, over and above that of being a control variable. Research focussed on understanding performance, are required to understand the effect that organisational age has on the performance of organisations (Rosenbusch, Rauch, & Bausch, 2013). To this end, given that organisational age has an effect on an organisations performance, the study used organisational age as moderator variable to understand its effect.

1.1.7 Theories used to study the matrix organisational structure

Research on the matrix organisational structure have been focussed on the use of the contingency theory, and the information processing view of the firm (see Egelhoff et al., 2013; Galbraith, 2014, for example). These studies have been valuable in providing an understanding of the matrix organisational structure, however they fail to provide an understanding over and above of how to design and management of the matrix organisational structures. Furthermore they have produced irreconcilable differences (Judge & Li, 2012; Qiu & Donaldson, 2012). These differences and use of contingency theory and the information processing view of the firm have often made inferences for the matrix organisational structure, however have included in their sample both matrix

and mixed organisational structures without clearly separating them (Egelhoff et al., 2013; Qiu & Donaldson, 2012).

The above studies have further failed to provide an understanding of how MNCs may perform. Therefore, this study proposed that performance is a function of the strategy the MNC implements, HQ control, flexibility, and efficiency. Furthermore, the performance of a MNC is cumulatively the sum of its parts, that is, the subsidiaries which assist in the execution of the MNC strategy, an alternate theoretical lens, transaction cost economics (TCE) was applied to understand organisational performance.

TCE has been applied in a variety of fields (Crook, Combs, Ketchen, Aguinis, 2013) and its fit to the present research is based on its application reported in literature. Firstly, TCE allows for the understanding of why organisations choose a particular organisational structure (Crook et al., 2013); and secondly, the choice of structure and the interplay with organisational performance (Williamson, 1981). While this provides some evidence to the applicability of TCE to provide a different perspective, it is recognised that overlap between the resource-based view and real options theory may exist (Crook et al., 2013; Speklé, 2001). However, without a given integrative framework, TCE was the main theoretical base for this research (Larsen, Manning & Pederson, 2013; Leiblein, 2003; Williamson, 1975).

1.2 STATEMENT OF RESEARCH OBJECTIVE

The background to the thesis, as presented in section 1.1 above provided an understanding of the link between strategy, HQ control, flexibility, and efficiency as moderated by organisational age in organisational performance. In providing the link, the gaps in understanding the phenomenon that was researched, the matrix organisational structure, were highlighted. With the above in mind, this research was designed to understand the achievement of superior performance, as a function of strategy, HQ control, flexibility, and efficiency in MNCs with a matrix organisational structure, moderated by organisational age.

The over-arching research objective of this thesis was to understand, to what extent orientations with regards to strategic choice leading to the primary and secondary dimensions adopted, flexibility, efficiency and HQ control affect the performance of MNCs adopting a matrix organisational structure, moderated by organisational age. On

this basis, the following research questions to be researched in this thesis were identified.

1.2.1 Research question 1

Research question 1, was aimed at understanding: To what extent is a MNCs performance affected with regards to flexibility, efficiency, HQ control and strategy orientations moderated by organisation age, for MNCs with a matrix organisational structure consisting of Product/Service diversity structural dimension and Customer Market structural dimension? In order to answer research question 1, two sub-research questions were asked.

Sub-research question 1a: To what extent does flexibility, low HQ control and strategy orientations, moderated by organisation age, affect the performance of MNCs adopting a Product/Service diversity by Customer Market, primary by secondary structural dimensions?

Sub-research question 1b: To what extent does efficiency, high HQ control and strategy orientations moderated by organisation age, affect the performance of MNCs adopting a Customer Market by Product/Service diversity, primary by secondary structural dimensions?

1.2.2 Research question 2

Research question 2, was aimed at understanding: To what extent is a MNCs performance affected with regards to flexibility, efficiency, HQ control and strategy orientations moderated by organisation age, for MNCs with a matrix organisational structure consisting of Geographic region structural dimension and a Functional structural dimension? In order to answer research question 1, two sub-research questions were asked.

Sub-research question 2a: To what extent does flexibility, low HQ control and strategy orientations, moderated by organisation age, affect the performance of MNCs adopting a Geographic region by Functional dimension, primary by secondary structural dimensions?

Sub-research question 2b: To what extent does efficiency, high HQ control and strategy orientations, moderated by organisation age, affect the performance of MNCs adopting a Functional dimension by Geographic region, primary by secondary structural dimensions?

1.2.3 Research question 3

Research question 3, was aimed at understanding: To what extent is a MNCs performance affected with regards to flexibility, efficiency, HQ control and strategy orientations moderated by organisation age, for MNCs with a matrix organisational structure consisting of Product/Service diversity and a Functional dimension? In order to answer research question 3, two sub-research questions were asked.

Sub-research question 3a: To what extent does flexibility, low HQ control, and strategy orientations, moderated by organisation age, affect the performance of MNCs adopting a Product/Service diversity by Functional dimension, primary by secondary structural dimensions?

Sub-research question 3b: To what extent does efficiency, high HQ control and strategy, moderated by organisation age, affect the performance of MNCs adopting a Functional dimension by Product/Service diversity, primary by secondary structural dimensions?

1.2.4 Research question 4

Research question 4, was aimed at understanding: To what extent is a MNCs performance affected with regards to flexibility, efficiency, HQ control and strategy orientations moderated by organisation age, for MNCs with a matrix organisational structure consisting of Geographic region dimension and a Customer Market dimension? In order to answer research question 4, two sub-research questions were asked.

Sub-research question 4a: To what extent does flexibility, low HQ control and strategy, moderated by organisation age, affect the performance of MNCs adopting a Geographic region dimension by Customer market, primary by secondary structural dimensions?

Sub-research question 4b: To what extent does efficiency, high HQ control and strategy, moderated by organisation age, affect the performance of MNCs adopting a Customer market dimension by Geographic region, primary by secondary structural dimensions?

1.3 CONTRIBUTION OF THE STUDY

The research was aimed at contributing to the literature on matrix organisational structures of MNCs within the strategy-structure-environment performance paradigm, by examining the relative strength that strategy, flexibility, efficiency, and HQ control, moderated by organisational age has on performance. Furthermore, as the adoption of a matrix is an evolutionary process, under which primary dimensions in existence already and used by MNCs, does the adoption of the matrix organisational structure allow for the achievement of superior performance. This thesis indicates that not all primary dimensions that MNCs currently adopt prior to the overlaying of the secondary dimension may be appropriate for the adoption to a matrix organisational structure.

The study, therefore makes contributions at three levels, namely theoretical, practical, and methodological levels. These are further highlighted in 6.3, where the details of the contribution are noted.

1.3.1 Theoretical contribution

The first theoretical contribution this research made was to heed the call for more research on the matrix organisational structure (Egelhoff et al., 2013), with a specific focus on MNCs with the matrix type structure in the sample and not mixed structures (Egelhoff et al., 2013; Qiu & Donaldson, 2012).

Extant literature (for example, Egelhoff et al., 2013; Galbraith, 1979; Qiu & Donaldson, 2012) has focussed on the use of the information processing view of the firm, resulting in irreconcilable differences (Judge & Li, 2012), and failure to address the reasons that the matrix structure were difficult to implement. The application of TCE as an alternate theoretical framework provided a granular understanding of how the MNCs should structure and under which conditions the matrix will allow for superior performance. On the other hand, the research further contributed to an understanding of under which primary dimensions currently adopted prior to the overlaying of the secondary dimension, the matrix organisational structure is not an appropriate structure.

The *a priori* nature of the above contribution allows for a contribution to contracting. Contracting is important in HQ-subsidiary relations, and understanding how this may be negotiated in advance assists with the decrease in ambiguity in contracting (Carney & Child, 2013; Gibbons & Roberts, 2013; Lundan, 2010). The understanding of this

contracting, therefore allows for an understanding of the eventualities that may occur and account for these *a priori.*

1.3.2 Practical contributions

The prevalence of the matrix organisational structure in MNCs was supported in the research. Therefore, practically, the research allows for MNCs to understand under what conditions the matrix organisational structure should be adopted and when not to be adopted. Therefore, an *a priori* understanding of when to adopt and when not to adopt is made. Aligned to this, when the decision to adopt is made, which of the levers of strategy, flexibility, efficiency and HQ control should be focussed on to achieve organisational performance. However, when the decision is not to adopt the research directs MNCs to seek alternate mechanisms which have been highlighted by Jansen et al., (2009).

The research further allows for an understanding of contracting. The theoretical contribution eludes to this, however at a practical level, HQ can negotiate for changes and how this will affect the matrix manager. Finally, this research affirms that MNCs can achieve both flexibility and efficiency, that is, high flexibility and high efficiency, and it is the primary dimension that drives this with the associated levers which need to focussed on when adopting the secondary dimension.

1.3.3 Methodological contributions

The primary methodological contribution was the integration of the strategy and structure variables which were required to be integrated. These were a central tenant of the research, and simultaneously heeded the call by Kaplan and Norton (2001), and Wasserman (2008) for greater integration.

Finally, the research provided validity and reliability to the measures of primary x secondary dimensions which Egelhoff et al., (2013) and Wolf and Egelhoff (2002) have used. In the absence of other measures, these measures are found to be adequate for the measurement of primary x secondary dimensions.

1.4 LIMITATIONS AND DELIMITATIONS

The study was focussed on understanding performance for MNCs with matrix organisational structures, and therefore is limited to MNCs that have implemented a matrix organisational structure. Egelhoff et al., (2013) and Qiu and Donaldson, (2012) call for research on the matrix organisational structure to focus only on these, and no other forms of structuring such as mixed structures. Furthermore, even though matrix structures may include three dimensions (primary x secondary x tertiary dimensions, such as Functional dimension x Product/Service dimension x Geographic Region dimension), only primary x secondary dimensions were considered. Therefore this study was limited to understanding strategy, flexibility, efficiency, HQ control, moderated by organisational age on the following dimensions: Product/Service dimension x Functional dimension; Functional dimension x Product/Service dimension; Geographic Region dimension x Functional dimension; Functional dimension x Geographic Region dimension; and Geographic Region dimension x Customer Market dimension.

Literature broadly classifies four strategies that MNCs adopt and this research is limited to these strategies. While there may be other strategic choices available and adopted by MNCs, these may have not been consolidated in the literature to date and therefore cannot be identified *ex ante*.

The study employed a quantitative method design, and used established metrics to measure performance, flexibility, efficiency, HQ control, strategy and organisational age. These measures have been used in prior studies on MNCs (Caves, 1974; Egelhoff et al., 2013; Kim, Hwang & Burgers, 1993; Kumar & Antony, 2009; Miller & Pras, 1980; Pennings & Harianto, 1992; Tan & Volberda et al., 2012; Wang, 2010; Weerdt. 2009; Wolf & Egelhoff, 2002;). The study required the collection of responses at the subsidiary level. In order to manage the data collection open-ended questions were not be included and the questionnaire was based on multiple questions per construct being measured.

In addition to the above limitation of quantitative method design, respondents were predominantly (56%) from South African subsidiary managers. MNCs with subsidiaries in South Africa adopting a matrix structure are not representative of MNC subsidiaries at a globally. These demographics of responding organisations therefore do not allow for generalisations to all subsidiaries of MNCs. Indeed, host country may be an attribute of autonomy in decision-making for example, afforded to subsidiaries (see de Jong, van

Dut, Jindra & Marek, 2015 for a review). The response bias of the sample therefore is a limitation of the results.

1.5 ASSUMPTIONS

A set of assumptions is inherent in all research, Leedy and Ormrod (2010 p.62) aptly state that “assumptions are so basic that, without them, the research problem itself could not exist.” This research makes assumptions at the theoretical, methodological and practical level.

At the theoretical level, it is widely recognised that there may be a number of theories that support the studying of organisational theory, design, and strategy within the strategy-structure-environment paradigm. How these theories are studied, in which context, could affect the results obtained. As the current study does not seek to understand the design principles of the matrix organisational structure, contingency theory and the information processing view are not deemed suitable. While other models, such as the integration-responsiveness framework (Roth & Morrison, 1990), would provide a different set of outcomes within different contexts, the given focus is not on which strategy is adopted by MNCs but rather the resulting strength of strategy, HQ control, flexibility, efficiency, moderated by organisational age, to achieve and perform. To this end the current research constrains the theory to TCE theory.

At the methodological level, the positivist research philosophy and quantitative paradigm applied in the context of this study has implications on the obtained results as well as the applicability of these results in different contexts. Due to the nature of the research and the researcher, the positivist philosophical paradigm, and more specifically mono-method quantitative method, was applied to this research. Given this paradigm, the researcher makes several assumptions with regards to ontology, epistemology, and human nature. These are detailed later in the document, see Section 3.2, with each having implications on the results obtained and the relevance of the results.

The assumption at the practical level is that the strategies identified are applicable, and that MNCs adopt one of the four strategies adopted. Furthermore, these strategies lead to a set of structural dimensions, which are assumed to be uniform. Furthermore, practically and theoretically it cannot be expected that given the majority of South African

subsidiaries represented in the sample are representative of subsidiaries globally, specifically in the manner of management, for example HQ control.

1.6 DEFINITION OF KEY TERMS

In order to ensure uniformity of understanding, the following definitions were adopted for the current study. The main areas of definition are related to the following characteristics:

i) Definitions relating to the MNC;

ii) Definitions relating to organisational structure;

iii) Definitions relating to transaction cost economics

iv) Definitions relating to performance;

iv) Definitions relating to strategy;

v) definitions relating to flexibility and efficiency; and

vi) definitions relating to HQ control.

1.6.1 Definitions related to the multinational corporation (MNC)

Multinational Corporation (MNC): Organisations that have assets and offices in at least two countries, other than the home country. These organisations further generate 10% or more of their sales from these other countries by operating beyond national boundaries. Operating beyond national boundaries broadly includes the “production and/or distribution and/or provision of services” (Rugman & Verbeke, 2004, p. 6). While discourse about truly global MNCs exists (see Rugman & Verbeke, 2008), this is outside the purview of the current research.

Subsidiary: The very nature of being a MNC requires the ‘building blocks’ upon which the MNC is built, namely subsidiaries. Subsidiaries are organisations that are partly or wholly owned by another organisation and are responsible for delivery and/or distribution of the product and/or the provision of the services of the MNC within a specified country. As per this definition, subsidiaries thus serves as organisations that allow MNCs to operate beyond national boundaries. Inherent in this definition is that MNCs by definition

have multiple subsidiaries operating in different geographic localities (two or more countries).

Headquarters (HQ): HQ is the geographic location within the home country where the organisation's executive offices and executive members are located. Conceptually, MNCs evolve (Rugman et al., 2011), and while the argument for being born global can be made, for the purposes of this research, product and/or distribution and/or provision of services begins within a specific geographic location. While the geographic location of administrative attributes (tax for example) may change as organisations evolve in their stages of being MNCs.

Home Country and Host Country: Home and host country, within the context of MNCs, are also defined. Home country is defined as the geographic locality of the HQ, while host country is defined as the geographic locality of the subsidiary.

1.6.2 Definitions related to organisational structure

Organisational structure: Important to note upfront is that this research is not rooted in understanding the organisational structure at the micro-level, that is, this research is not concerned with structure at the subsidiary level. Rather, the research is concerned with the macro-MNC structure that is implemented by MNCs as a whole, and therefore the structure between HQ and the subsidiaries.

Matrix organisational structure: For purposes of this research, the matrix organisational structure is defined as the overall MNC organisational structures that are set-up as a grid, with reporting lines between the HQ and the subsidiary (Qiu & Donaldson, 2012).

Organisation: An organisation is "a system of interrelated behaviours of people who are performing a task that has been differentiated into several distinct subsystems, each sub-system performing a portion of the task, and the efforts of each being integrated to achieve effective performance of the system" (Lawrence & Lorsch, 1967 p.3). Thus, the purpose of the organisational structure may be conceptualised as the mechanism through which an organisation achieves its objectives.

1.6.3 Definitions related to transaction cost economics

Transaction cost economics: Transaction cost economics (TCE) theory has been widely applied in the fields of organisation design choice and strategic management. While extant literature is yet to converge on a definition of transaction costs, the definition of transactions costs adopted by the current research is "when a good or service is transferred across a technologically separable interface" as proposed by Williamson (1981:552). This definition is apt for MNCs who, by definition, operate in different locations. Given that technology has converged, the definition is interpreted in the manner of understanding of geographical separation.

1.6.4 Definitions related to performance

The performance of an organisation is a multi-dimensional construct which has been conceptualised in the current study to be comprised of: i) organisational effectiveness; ii) organisational productivity; and iii) organisational stability.

Organisational effectiveness: economic rent as a product of the achievement of strategic objectives of the organisation (Auh & Menguc, 2005; Spanos, Zaralis, & Lioukas, 2004).

Organisational productivity: The ability of the organisation to exploit the market place environment (Auh & Menguc, 2005; Spanos et al., 2004).

Organisational stability: The ability of organisations to perform successfully after fluctuations over a period of time (Birkinshaw, Hood & Young, 2005).

1.6.5 Definitions related to strategy

Strategy: Consistent with studies in international business (Egelhoff et al., 2013; Ghoshal & Bartlett, 1990; Perlmutter, 1969; Rugman et al., 2011) there are a number of strategies that MNCs may engage in, namely multi-domestic, international, global, and transnational. For purposes of this research, strategy pertains specifically to the MNC strategy based on these four strategies that MNCs may engage in.

This research adopts the over-arching definition of strategy, proposed by Thomas and McDaniel (1990) that inculcates the notions of strategy proposed by Egelhoff (1982, p.

288) as “trends, developments, and dilemmas that affect an organisation as a whole and its position in its environment.”

1.6.6 Definitions related to flexibility and efficiency

Flexibility: is defined as an organisation’s capability to change and react (Volberda, 1996). Within the context of the current research, flexibility is to change and react to the local conditions that MNCs operate within. The products/services that are provided are not standardised globally and are tailored to local preferences. Flexibility is therefore synonymous with non-standardisation.

Efficiency: is associated with the costs related to production, and is defined as “converting inputs into outputs with less organisational effort” (Skogan, 1976, p. 278). The definition in the context of the research is to standardise products/services without the need to adapt to local conditions. Efficiency is often reported to be the opposite of flexibility (Tan & Wang, 2010), however MNCs may achieve both flexibility and efficiency through organisational ambidexterity (Jansen et al, 2009).

1.6.7 HQ control

Control: Control is defined as the “the residual rights of control” (Foss & Foss, 1995, p.1) . In the current study, control relates to the reporting relationship between HQ and the subsidiary and who (HQ or subsidiary) has the rights of control of the matrix manager (Davis & Lawrence, 1978; Grubenmann, 2016; Schnetler, Steyn & Van Staden, 2015).

1.7 STRUCTURE OF THE THESIS

Chapter one provided background to the problem this research studied; highlighting the phenomenon of the matrix organisational structure, and the gaps in the literature pertaining to the dearth of research on the matrix organisational structure, and where research has been done, the limitations of the information processing view of the firm as the dominant theoretical lens applied. The chapter further briefly discussed the main constructs which affect performance in MNCs adopting a matrix organisational structure. Chapter two provides a review of the literature of the constructs and associated concepts which are were important to understanding organisational performance. Furthermore, chapter two contains a discussion on the information processing view, as a dominant

theoretical lens applied in extant literature, prior to the discussion on the use of TCE as an alternative lens. Chapter two ends with the conceptual model and the hypotheses that were tested.

The hypotheses were tested through a mono-method quantitative methodology and the research design and methodology are discussed in Chapter three. Chapter three further contains the details of the operationalisation of the constructs of performance strategy, HQ control, flexibility, efficiency, and organisational age. The pre-test results, reliability and validity are further presented in chapter three. The chapter ends with a discussion on the multivariate analysis statistical test, moderated regression, which was used to test the hypotheses.

Chapter four provides the results obtained from the moderated regression, however first provides an overview of the characteristics of the sample of subsidiaries that responded to the survey. Chapter five discusses the results obtained from the empirical analysis, in the context of the relevant literature reviewed in Chapter two. Chapter five is structured and discussed per hypothesis that this research tested. The final chapter, chapter six, presents the conclusions, the contributions that this research makes at three levels, namely the theoretical, practical, and methodological. The document ends with a reference list and the abbreviations that were used in this research.

1.8 CONCLUSION TO THE INTRODUCTION

The introductory chapter of the thesis provided the background to the research and the associated constructs to the understanding of organisational performance. It further highlighted the dearth of literature on the matrix organisational structure, and the limits of the information processing view of the organisation when studying these structures. The contributions that this research makes were then highlighted, prior to the defining of the key terms used in the study. The literature review which follows will allow for understanding of the key constructs and relevant debate in the extant literature.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Multinational corporations (MNCs) are often required to execute multidimensional strategies. In order to execute these strategies, integration between headquarters (HQ) and subsidiaries is required (Andersson, Björkman, & Forsgren, 2005), in order to perform. The matrix organisational structure is an organisational structure that allows for this integration, however extant literature has focussed on the flow of information applying the information processing view of the organisation and has failed to allow for an understanding of how organisations performed. The point at which organisations perform is a function of strategic choice, HQ control, flexibility, and efficiency; decisions which top management teams make (Rosenbusch et al., 2013; Michailova & Zhan, 2015). In light of the limitation of the information processing view to provide an understanding of performance, transaction cost economics (TCE) as the main theory was applied in the current study. TCE has been widely applied to understand how transactions are structured to ensure performance (Crook et al., 2013; Larsen et al., 2013; Leiblein, 2003; Williamson, 1975). This review therefore focuses on TCE theory to understand how MNCs with matrix structures perform, as a function of strategic choice, HQ control, flexibility and efficiency, moderated by organisational age.

This chapter begins with an overview of the global matrix organisation structure as the phenomenon on which this research is based, then an understanding of performance in the organisational context. TCE and the information processing view of the firm forms the next section, which leads to organisation age as moderator as the section thereafter. MNC strategies are then discussed in the context of the structural dimensions. Flexibility and efficiency are then discussed prior to the review of the literature on HQ control in dual reporting.

2.2 GLOBAL MATRIX ORGANISATION STRUCTURE

Organisational structures are the organising modes that allow for the division of work among individuals or groups, and how these individuals or groups are coordinated in order to effectively and efficiently implement and execute organisational strategies

(Mintzberg, 1979; Pertusa-Ortega, Molina-Azorin & Claver-Cortes, 2010; Xu et al., 2006). Within organisations, how work is divided can be understood through two principles, firstly, how they are formally structured and secondly, the level of differentiation and integration (Lawrence & Lorsch, 1967; O'Reilly & Tushman, 2013). For formal structuring, organisations may structure by dimensions, which are one, functional dimension for example finance department; two, geographical region dimension for example Middle-East and Africa; three, product/service dimension; or four by customer market dimension (Piskorski & Spadini, 2007; Qiu & Donaldson, 2010). The structuring may occur through the individual dimensions or in combinations overlaying these dimensions (Egelhoff et al., 2013; Wolf & Egelhoff, 2013).

In the case of the level of differentiation and integration, differentiation allows for an understanding of how work is divided, and may be understood through the degree of similarity or differences in structuring within and between two or more departments (Lawrence & Lorsch, 1967; O'Reilly & Tushman, 2013). Integration, on the other hand, is how the organisation coordinates work across departments, and is often indicative of the level of integration (Lawrence & Lorsch, 1967; O'Reilly & Tushman, 2013). As is apparent, formal structuring, differentiation and integration, are focussed within organisations, and in the context of MNCs, subsidiaries are the departments, which are globally dispersed, and responsible for the effective and efficient execution of the MNC strategy (Egelhoff, 1982; Pertusa-Ortega et al., 2010; Xu et al., 2006). The structuring between the HQ and subsidiaries is considered the macro-structure of MNCs (Egelhoff et al., 2013; Qiu & Donaldson, 2012).

The focus of the current study was not on the level of differentiation between subsidiaries, rather on the level integration between the MNC's HQ and subsidiary, that is, the macro-structure. The level of integration in MNCs is contingent on the dependence between the MNC subsidiaries and the HQ, and the strategy is adopted by the MNC. To this end, the primary objective of the macro-organisational structure (between HQ and subsidiary) is to balance the economic advantages of specialisation with the bureaucratic costs associated with supervision, motivation and coordination (Davis & Lawrence, 1978; Egelhoff, 1982; Piekkari, Nell & Ghauri, 2010).

2.2.1 MNC macro-organisational structures

MNC macro-organisational structures are placed in two broad categories, namely elementary and matrix structures (Qiu & Donaldson, 2010; Wolf & Egelhoff, 2002; Wolf & Egelhoff, 2012). Elementary organisational structures are characterised by a single command line of authority (Qiu & Donaldson, 2010; Wolf & Egelhoff, 2012), see the example in figure 2-1 for a product structure.

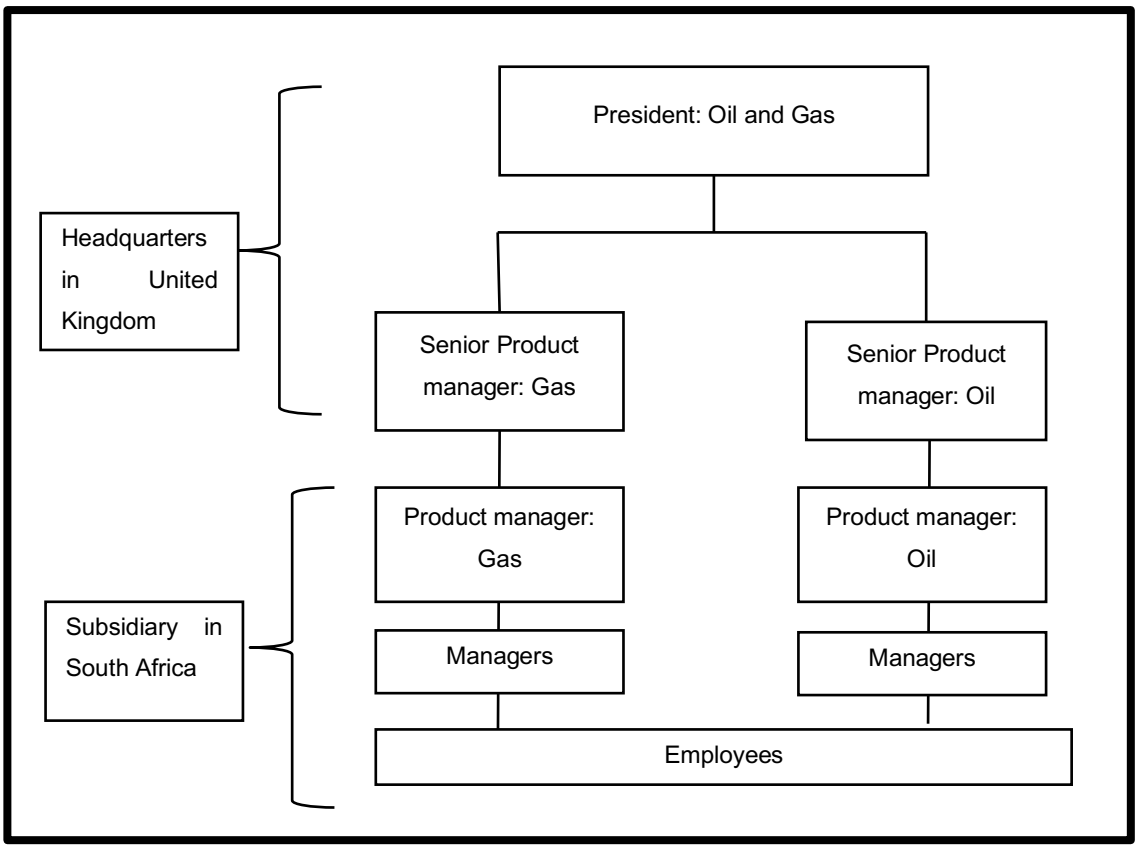

Figure 2-1: Single command line authority for product structure

In contrast, matrix organisation structures are characterised by multiple command lines of authority, with subsidiaries having multiple reporting lines at both the HQ and the subsidiary level (Piskorski & Spandini, 2007). For example, in Siemens', a MNC in the product x region matrix organisational structure the software manager of a subsidiary located in Germany reports to the software director and the programme manager at the country level (Germany) and to the software and programme vice president at HQ that is located in the United States of America. See figure 2-2 for an illustration of this example. In such structures and in matrix organisations where there is dual reporting, one line of reporting is termed the solid line reporting and the other line of reporting is

termed the dotted line (Piskorski & Spandini, 2007). Both reporting lines may be either to the subsidiary or the HQ or more commonly in MNCs one at the subsidiary level and the other to HQ. This dual reporting is reported to be a disadvantage of the matrix organisational structure as it creates conflict, obscures authority, and ultimately affects control of assets (Ghoshal & Bartlett, 1990; Galbraith, 2013; Rugman et al., 2011; Verbeke & Greindanus, 2009). It is important to note, that in some MNCs with a matrix organisational structure, subsidiary level employees may report directly (solid-line) to HQ and subsidiary (Piskorski & Spandini, 2007).

Two key differences between the elementary and the matrix structures are noted, one, the number of reporting lines, and two, the dimensionality. Elementary structures are characterised by a single line of reporting, and are often one-dimensional (e.g. focus on Product/Service dimension). However, matrix structures are characterised by multiple lines of reporting and are multi-dimensional (e.g. focus on Product/Service dimension x Functional dimension) (Qiu & Donaldson, 2010). The multiple reporting lines of the matrix structure often require a single subordinate to report to two managers, and this is referred to as the two-boss system (Piskorski & Spadini, 2007). It is this dual reporting and multi-dimensionality that pose challenges in implementation when compared to elementary structures which have a unitary in command hierarchical structure (Egelhoff et al., 2013; Galbraith, 2013; Ghoshal & Bartlett, 1990; Rugman et al., 2011; Verbeke & Greindanus, 2009).

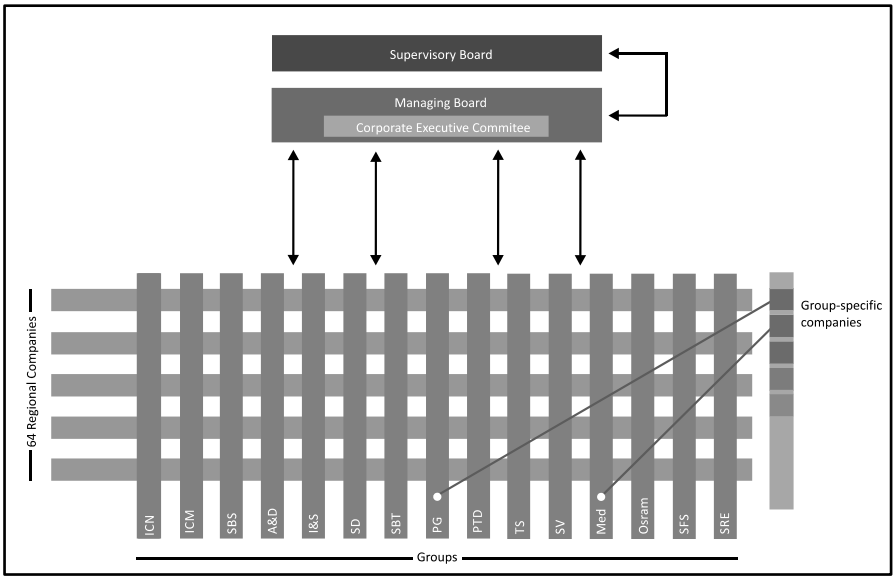

Figure 2-2: ***Siemens adopting a product x region matrix organisational structure, adopted from Siemens annual report 2002***

The elementary structure often forms the foundation of the matrix structure. The basis of differentiation in elementary structures is based on the MNC's divisionalisation at HQ. For example, if the MNC HQ is divisionalised by Product/Service then subsidiaries in foreign countries report directly to the Product/Service heads at the HQ, thus forming a global Product/Service dimension structure with a single line of reporting between HQ and subsidiary. This same logic is applied to Customer Market, Geographic Region and Functional to form the global Customer Market dimension, Geographic Region dimension and Functional dimension structures respectively. An important note is that the elementary structures are differentiated based on the manner in which the HQ is structured, that is Customer Market , Product/Service, Functional or Geographic Region with a single line of command and reporting.

However, in part due to global technological changes and global changes in customer demands (environmental change), MNCs are often required to have multiple foci, which requires flexibility (Andersson, et al., 2005). In order for MNCs to execute on strategies that have multiple priorities, the above-described elementary structures are not ideal (Ghoshal & Bartlett, 1990; Mintzberg, 1979) and therefore combinations of the elementary structures are required (Egelhoff et al., 2013; Egelhoff, 1982; Mintzberg, 1979). When these combinations of elementary structures occur they form the matrix organisational structure (Egelhoff et al., 2013). For example, the combination of a Product/Service dimension elementary structure and Geographic Region dimension elementary structure would lead to the Product/Service dimension x Geographic Region dimension matrix organisational structure. Phillips, a MNC Dutch electronics company, uses a Product/Service dimension x Geographic Region dimension matrix. This structure requires that a product manager report to both to the product director at HQ and the regional (geography) director, and further receives directives from both as well. Here it is important to note that Rugman et al., (2011) states that it is not easily observable that organisations are "born" global, thus the adoption of the matrix-structure is an evolution involving the recombination of firm specific advantages (FSA) (Davis & Lawrence, 1978; Egelhoff et al., 2013).

As MNCs evolve to the adoption of matrix structures, through the over-laying of elementary structures, MNCs face the dilemma of which two dimensions, (e.g. Product/Service dimension by Functional dimension or Product/Service dimension by Geographic Region dimension or Functional dimension by Geographic Region dimension) need to be overlaid. This dilemma is however the same as when choosing

which elementary structural type is selected (Davis & Lawrence, 1978; Egelhoff, 1982; Franko, 1976; Habib & Victor, 1991; Stopford & Wells, 1972). The elementary structure matching the strategic choice for elementary structures is well reported, see for example Galbraith (1974), Egelhoff (1982), Franko (1976), and Stopford and Wells (1972). These strategic choices for MNCs guide the elementary structure that is chosen. While this has provided considerable insight into how MNC macro-structures align with strategy for the elementary types of structure, this has only been partly developed for the matrix organisational structure (Egelhoff et al., 2013; Galbraith, 2014). This creates a gap in understanding how to achieve performance in MNCs with matrix.

In summary, the above provides an understanding of the phenomenon that the current research addresses, namely the matrix organisational structure as the structuring between HQ and subsidiaries in MNCs. The next section of the literature review discusses performance in the organisation context.

2.3 PERFORMANCE IN THE ORGANISATION CONTEXT

In organisational theory, when organisations achieve fit between their strategy, the structure implemented in order to execute the strategy, and the environmental forces which dictate the strategy (Donaldson & Joffe, 2014; Egelhoff et al., 2013; Miles et al., 1978), it is reflected in the performance of an organisation (Clifford-Defee & Stank, 2005; Jennings & Seaman, 1994; Miles, et al., 1978; Wasserman, 2008; Wilden et al., 2013).

Strategy-structure-environment fit is however often assumed in organisational theories rather than explicitly stated and integrated (Meyer et al., 2005; Rantakari, 2013). Studies often ignore the impact that unpredictable external environments can have on the disruption of the strategy-structure fit (Rantakari, 2013; Schad, Lewis, Raisch & Smith, 2016; Thietart & Forgues, 1995). The unpredictability of environments is primarily due to organisations being open systems. Organisations exist within the larger environmental context, with this environment affecting how an organisation performs, moderated by how it interacts with the environment (Child, 1972; Holm, Holmström, & Sharma, 2005; Tian & Slocum, 2014). Within open systems, organisations receive inputs and transform the inputs received from the environment to produce outputs that may be in the form of services or products. There is continual feedback allowing organisations to receive input from the environment (e.g. information). Therefore, organisations do not exist in isolation but rather within larger environments, which shape how organisations react and produce

the products or services required (Holm et al., 2005; Tian & Slocum, 2014).These reactions require congruence to ensure that organisations are able to react or even predict the inputs of the external environment in order to produce products or services that in turn ensure survival and sustained competitive advantage.

It is apparent that organisations form an interdependent web of relationships with the external environment. These relationships need to be managed in order for organisations to perform (Andersson, Dellestrand & Pedersen, 2014; Birkinshaw et al., 2005). Performance in organisations is indicative of the achievement of congruence with the environment within which organisations operate (Easterby-Smith et al., 2009). For organisations to have superior performance, the top management teams must make a myriad complex of decisions, especially in the diversified environments within which MNCs operate (Hedlund, 1986; Michailova & Zhan, 2015; Narula & Upadhay, 2010). These decisions need to further balance the internal interdependencies and tensions, such as flexibility and efficiency requirements of organisational strategies (Adler et al., 1999; Zimmerman et al., 2015). How organisations respond to external changes is dependent on the strategy that top-management teams believe will allow for effective direction that ensures the viability and sustainability of organisations (Birkinshaw et al., 2005; Gazendam, 1998; Meyer et al., 2005; Oliver, 1997). When organisations achieve fit between strategy-structure and environment, this is often reflected in the positive performance of the organisation (Caspin-Wagner et al., 2013; Geiger et al., 2006; Wilden et al., 2013; Xu et al., 2006).

2.3.1 Organisational performance

Organisational performance has been linked to being a function of numerous attributes, however studies often treat these attributes in isolation (Gibson & Birkinshaw, 2004). Simply stated, organisational performance is not solely dependent on the type of leadership, culture or strategy for example, rather a function of these in combination, with the strength of each affecting the performance of an organisation. Despite this, few studies seek to understand the interactions among various constructs to achieve superior performance (Gibson & Birkinshaw, 2004), a concern that the present study addresses.

Organisational performance is a multi-dimensional construct, and has a variety of measures that have been used in order to operationalise it (see O'Reilly & Tushman,

2013 for a comprehensive overview). To understand organisational performance, organisational effectiveness, organisational productivity, and organisational stability were used in the current study (Auh & Menguc, 2005; Spanos & Lioukas, 2001).

Organisational effectiveness refers internally to the firm, and commonly referred to as economic rent as a product of the achievement of strategic objectives of the organisation (Auh & Menguc, 2005; Spanos, Zaralis, & Lioukas, 2004). However, organisational effectiveness is a function of the external marketplace in order to extract rent (Auh & Menguc, 2005; Spanos et al., 2004) and therefore cannot be researched in isolation of organisational productivity. Organisational productivity is directly related to the market, and is a function of how successful the organisation is in exploiting the market place environment (Auh & Menguc, 2005; Spanos et al., 2004).

Organisational performance is further comprised of organisational stability. Stability is well documented in the physical sciences where systems are often studied. An organisation is a system and conceptually may be comparable (see Holm et al., 2005; Tian & Slocum, 2014) . An organisation's performance may be disturbed due to fluctuations in the external marketplace for example (Birkinshaw et al., 2005). The ability to perform sustainably is dependent on the ability of the organisation to react to the changes, and sense if these are fundamental (affecting the core of the business model for example) or an event (once off with no effect). An organisation is stable when it performs successfully after a fluctuation and this is often reflected over time (Birkinshaw et al., 2005). On the other hand, organisations are unstable when they are unable to achieve stability after fluctuations. Simply stated, when fluctuations cause persistent deviations from a goal, the performance indicators reflect this, therefore changes in the strategy, efficiency, flexibility and HQ control affect the stability of an organisation.

Organisational effectiveness, organisational efficiency, and organisational stability require a medium to moderate the relationship, with the organisational structure often prescribed as an important moderator (Egelhoff et al., 2013; Galbraith, 2013). The organisational structure therefore leads to an understanding as an important mediator, which may affect MNCs firm specific advantages (FSA) and country specific advantages (CSA).

2.3.2 Firm-specific and country specific advantages

Key to strategic competitive advantage of MNCs is their FSA which are exploited in combination with CSAs (Birkinshaw & Hood, 2001; Birkinshaw, 1996; Rugman et al., 2011; Rugman & Verbeke, 2008; Teece, Pisano & Shuen, 1997; Wilden et al., 2013). FSA are generally fall into three categories. The first category is *stand-alone*, these include patents for example. The second category is *routines* which include broader constructs such as organisational culture. The third category is *recombination capabilities*, which is the capability to recombine existing resources with new resources (Teece et al., 1997; Verbeke & Greindanus, 2009; Wilden et al., 2013). The adoption of the matrix structure through an evolutionary process is often considered a recombination process (Verbeke & Greindanus, 2009).

While FSAs generally accrue to organisations, a key feature of being a MNC is the ability to transfer these across borders for the effective and efficient exploitation of markets. FSA can be location bound, that is, an advantage in a specific market or region only, therefore being a CSA (Rugman et al., 2011). The transfer of these CSAs to other regions to no longer be location bound, and therefore FSA, is imperative for MNCs (Rugman & Verbeke, 2008). Consistent with the evolution of matrix structure being a complex recombination process, Birkinshaw (1996) argues that subsidiaries can act as valuable sources of a competitive advantage, through innovative recombination's of home and host CSA. These may lead to organisations developing new FSAs that are transferable across countries. In order to exploit FSA and CSA, the manner in which a MNC is structured is an important determinant of the ability to recombine FSA and CSA, thereby making the structure in itself a FSA (Rugman, 1985). This view of structure as a FSA, not as an added advantage that leads to a competitive advantage, is adopted in the current research.

The role of the organisational structure to achieve superior organisational performance is next described.

Organisational structure and organisational performance:

Organisational structures are important mediators in ensuring execution of strategies that ensure congruence between the strategy and environment (Egellhoff et al., 2013; Galbraith, 2013), and is reflected in the performance of the organisation. Organisational structures broadly consist of three design parameters. Firstly, decision-making, that is,

who decision-making rights are allocated to within the organisation (managers), secondly, how decision-makers are compensated and finally, operational integration (interdependence) (Curado, 2006; Child & McGrath, 2001; Egelhoff, 1999). While there are numerous organisation design typologies, these may be categorised broadly as traditional models and change models (Brookes & Roper, 2010; Egelhoff 1999).

Traditional models broadly allow for the attainment of global efficiencies and, based on the premise that the external environment is relatively stable, with changes occurring episodically (Curado, 2006). In comparison to traditional models, change models allow for localisation, rooted in the premise that environmental change is frequent, and therefore emphasis is based on lateral integration (Egelhoff, 1999). Both types of models provide an understanding of how organisations may achieve *some* performance as reflected in organisational productivity, organisational effectiveness, and organisational stability.

Traditional and change models, while conceptually different categories of typologies, have complementary advantages, offering MNCs the ability to achieve global efficiencies and local responsiveness (operational integration) and therefore flexibility (Curado, 2006; Egelhoff, 1999). One such hybrid structure that provides flexibility, global efficiency and local responsiveness is the *matrix organisational structure* (Egelhoff et al., 2013; Galbraith, 2013; Qiu & Donaldson, 2012; Stopford & Wells, 1972). The matrix further allows for simultaneous effective response to the complex external environment (Davis & Lawrence, 1978; Sy & Côté , 2004).

The unpredictability of the environment affects the strategy of organisations, this is the effects are more pronounced for MNCs as they operate in different environments and hypercompetitive markets, which are heterogeneous (Barreto, 2010; Eisenhardt & Martin, 2000). The ability to achieve superior performance is therefore a function of the strategic choices that organisations make in response to the environment, and the resulting dimensions which are overlaid to execute these strategies. In the context of MNCs and the current study, one such structure is the *matrix organisational structure*. This structure provides flexibility and efficiency to ensure that MNCs can execute multidimensional strategies (Egelhoff et al., 2013; Galbraith, 2013,); however the primary dimensions of the matrix structure implemented by organisations are rooted in the understanding of their strategic choice, and the level of HQ control.

Numerous studies such as Egelhoff, (1991) Egelhoff et al., (2013) and Galbraith, (1974) have focussed on the matrix organisational structure, and while they have provided a measurable understanding, they are rooted in the information processing view of the firm. This has allowed for an understanding of the design principles of the matrix organisation structure, and how information flows from the external environment into an organisation, and the subsequently within the organisation. The studies however fail to provide an understanding of how organisations may achieve a superior performance. The following section reviews the information processing view of the firm, then the core theoretical lens that was applied in the current study, transaction cost economics (TCE) is discussed.

2.4 THEORY: INFORMATION PROCESSING VIEW AND TRANSACTION COST ECONOMICS (TCE)

2.4.1 Information processing view

Matrix organisational structures have traditionally been studied through contingency theory and the information processing view of the organisation (Egelhoff, 1991; Egelhoff et al., 2013; Galbraith, 1974). The use of this lens is valuable in understanding how organisational structures mediate the flow of information from the external environment (Egelhoff et al., 2013; Galbraith, 1974) and how to design matrix organisational structures (Galbraith, 1977, 2013; Qiu & Donaldson, 2012). Some of the advantages of this lens are in the *a priori* nature (Qiu & Donaldson, 2012; Wolf & Egelhoff, 2013) that allows for the understanding of, and the impact on, information flow when new strategic attributes are added, changes in strategic orientation are undertaken, and the impact of a changing organisational structure, and the resulting impact on information flow (see Egelhoff et al., 2013 for the comprehensive list). Despite the inherent benefits associated with viewing organisations as information processing units, the use of this lens is limiting.

The information processing view of the firm fails to allow for an understanding of how organisations maintain and achieve a superior performance post implementation of new structures. Fit between organisational strategy, structure and environment is central to performance and the survival of organisations (Clifford-Defee & Stank, 2005; Jennings & Seaman, 1994; Miles, et al., 1978; Wasserman, 2008; Wilden et al., 2013). To achieve sustainable performance, MNCs with matrix structures are required to address two

attributes that related to current tensions reported by both practitioners and scholars, and the reasons for failure and challenges in implementation in the 1980's. These attributes are the balancing of the perceived tension between flexibility and efficiency (Santos-Vijande, López-Sánchez, & Trespalacios, 2012; Tan & Wang, 2010) and the tension created by dual reporting (Galbraith, 1974; Larson & Gobeli, 1987; Sy & Côté, 2004; Sy, Beach & D'Annunzio, 2005; Whitford, 2006).

The above limitations of the information processing view, Transaction Cost Economics theory (TCE) is applied. TCE allows for the understanding of fit between internal coordination and external environment changes (Gibbons & Roberts, 2013; Williamson, 2007), and is relevant as the organisational structure is an important mediator for the execution of organisational strategies which align the internal and external environment (Egellhoff et al., 2013; Galbraith, 2013).

Under the TCE view, fit as reflected in the performance of organisations is reached when organisations have adapted to changes in the external environment with corresponding internal coordination mechanisms (for example, organisational structure) that allow for efficiency to be achieved (Gibbons & Roberts, 2013). As the foundation of TCE allows for the understanding of efficiency, it inherently provides a suitable lens through which efficiency and flexibility may be analysed as well as under which structural dimensions, from the strategies adopted by MNCs, sustainable performance may be achieved. Furthermore, given TCE's ability to understand asset control, it is valuable in understanding HQ control, as is reflected in dual reporting, specifically when this needs to be directly to headquarters and indirectly to the subsidiary level and vice-versa.

In the subsequent section an overview of the primary theoretical lens (TCE) is provided.

2.4.2 Transaction cost economics theory (TCE)

TCE theory is predominantly concerned with transactions and how transaction costs may be arranged efficiently (Williamson, 2007). Despite TCE's focussed application within the fields of organisational theory and strategic management, definitions of transactions and transaction costs are not readily agreed upon. This is primarily due to these fields having developed largely independently, even though significant overlap is present (Crook et al., 2013; Leiblein, 2003). MNCs operate in geographically dispersed environments and while technologically connected, goods and services are dependent on localised preferences (Allen, Lee, Reiche, 2015; Kutschker & Bäurle, 1997; Okazaki, 2004; Zhao,

Park & Zhou, 2014). Due to this context of MNCs and the focus of the current research being on organisational structure (matrix structure), the following definitions are adopted. The definition of a transaction is adopted as per Williamson (1981) as “when a good or service is transferred across a technologically separable interface” (Williamson, 1981, p. 552). Transaction costs are defined as the “costs of running an economic institution” (Arrow, 1969, p. 48) and engaging in an exchange.

TCE therefore predicts transactions (exchanges) between economic actors, and the resulting organisation in terms of efficiency and efficacy (Crook et al., 2013; Leiblein, 2003; Williamson, 1981). That is, the most efficient system of organising transactions. At a basic level, TCE considers the various methods in which organisations may organise themselves in the market, and therefore why some transactions are likely to be organised by one system rather than the alternatives (Leiblein, 2003; Williamson, 1975). These methods may for example be related to buy (contracting-out) or make (contracting-in) decisions, and may be inherently applied by managers seeking efficiencies. In search for these efficiencies, Volberda (1999) and Weerdt, Volberda, Verwaal and Stienstra (2012) report that flexibility needs to be understood simultaneously (see later flexibility and efficiency). Therefore, TCE allows for comparative understanding between various organising forms and how these organising forms are affected by the environmental change, how often the changes occur, how flexible or inflexible the asset/s are, in relation to the type of transaction (Leiblein, 2003; Williamson, 1981).

Under the TCE perspective, uncertainty incorporates two perspectives. Firstly, behavioural uncertainty of bounded rationality and opportunism and secondly environmental uncertainty (Leiblein, 2003; Santoro & McGill, 2005; Williamson, 1981). Frequency relates to the scope of the activity (Carter & Hodgson, 2006), while asset specificity relates to the location, physical assets and human assets of organisations (Williamson, 1983). Organising forms may be in the form of vertical integration (e.g. a form of organisational structure) or contracting (long-term or short-term) for example (Williamson, 1981); however as transactions differ, organising forms differ as well. For the purposes of the current study, the focus using the TCE lens on the above dimensions are: firstly, environmental uncertainty as it impacts the strategies of MNCs; secondly, scope of activity which directly relates to the strategic orientation of MNCs and reflected in flexibility and efficiency focus of MNCs; and thirdly, human assets as it relates to the matrix manager reporting directly to HQ or subsidiary. Cumulatively, these affect the

performance in MNCs with matrix organisational structures (Gibbons & Roberts, 2013; Williamson, 1981).

The main theoretical predictions that TCE prescribes are based on the types of exchange, as it allows for an understanding of the relationship between the type of transaction and the form in which the transaction is organised for efficiency (Leiblein, 2003; Williamson, 1981, 1983). The theory predicts that organisations will use simple structures when the exchange is simple and complex structures when the exchanges are complex. For example, in simple exchanges where identity (e.g. brand) “does not matter and conditions of trading are specified, competition and market mediated exchange can be presumed to prevail in such circumstances, thus commoditised products such as screws, are readily and competitively supplied through spot trades in the market” (Tadelis & Williamson, 2010, p.10) simple governance would be advocated.

However, where identity matters, such as brand or proprietary knowledge of product, more complex modes of governance are required (Tadelis & Williamson, 2010). As this complexity increases the theory predicts that organising the governance of the transaction becomes increasing complex, with the cognitive limits of the managers impacting the measuring, monitoring and coordinating of the governance mechanism (Larsen et al., 2013; Leiblein, 2003; Tadelis & Williamson, 2010). As TCE seeks to predict the most efficient manner in which a transaction should occur, for the provision of efficiency, the theory postulates that there needs to be adaptation of internal environment to the external environment to provide sustainable and superior organisational performance. The organisational structure is therefore a central mediator ensuring adaptation, with adaptation reflected in the organisational productivity, organisational effectiveness and organisational stability of the MNC.

While TCE provides a lens through which superior and sustainable performance may be obtained within the MNC context, performance is a function of strategy choice, HQ control, flexibility and efficiency, and this is moderated by the age of the MNC. The literature pertaining to organisation age is reviewed prior to the review of strategic choice, HQ control, flexibility, and efficiency.

2.5 ORGANISATION AGE

Organisation age is well documented to influence an organisations performance (see Rosenbusch et al., 2011). Newly established subsidiaries are prone to a liability of newness (Stinchcombe, 1965). In the context of MNCs, the age of the organisation (liability of newness) has been well researched at both the HQ level and at the subsidiary level (see Rabbiosi & Santangelo, 2013), and while the current study does not seek to understand liability of newness, the concept is central to understanding the moderating effect of organisational age on organisational performance. This fits the notion that the role of HQ is that of strategising and coordinating (Ciabushi et al., 2012), however in order to achieve this, the level of integration between subsidiary and HQ is important. Older organisations, under the liability of newness perspective are predicted to have an advantage over newer established subsidiaries, as they would have accumulated knowledge, operational know-how, and have stronger relationships with HQ (Rabbiosi & Santangelo, 2013; Stinchcombe, 1965). While the liability of newness makes innate sense, this must also be balanced with the liability of aging (Henderson, 1999).

The liability of aging refers to the ability for older subsidiaries to provide new knowledge to the MNC network (Henderson, 1999). This is directly related to the unlearning practices which are required, and often reported to be more difficult for older organisations, and further exasperated by "… taken-for-granted attitudes, political coalitions…" (Rabbiosi & Santangelo, 2013, p. 162).

Liability of newness and liability of aging have presented valid arguments in the literature, however in the context of the current research, understanding how organisational age moderates performance, under a TCE view is central. Organisational age under a TCE view may predict that older subsidiaries will have had time to accumulate the necessary knowledge, creation of localised networks, and therefore experience for example, in a market to understand the dynamics which affect the performance at a subsidiary level (Luo & Peng, 1999). Furthermore, for the MNC network, older subsidiaries would have had longer time to develop the internal integration (Ghoshal & Bartlett, 1990), which is a critical function of the matrix organisational structure. This therefore allows for an understanding that the matrix organisational structure, and the phenomenon under study, the level of integration between HQ and subsidiary, may be more beneficial to older subsidiaries than younger subsidiaries,

The importance of organisational age as a variable of interest has primarily been driven at an industry level, specifically in relation to the new organisations such as Google (Alphabet) that are contesting older established organisations (Coad, Holm, Krafft, Quatraro, 2017). Despite the importance of organisational age, it has often been treated as a control variable in studies (see Minbaeva, Pedersen, Bjorkman, Fey, & Park, 2003, for example), however not including organisational age into empirical analysis when seeking to understand HQ-subsidiary relations provides limited insight (Ambos et al., 2006), and is a phenomenon which needs to be investigated over and above being a control or proxy variable (Loderer & Waelchli, 2010). Therefore, central to the current study is that the age of the subsidiary is an important attribute which moderates the organisational performance.

There has been an increase in the interest of organisational age and organisational performance (see Coad et al., 2017), however, it must be noted that relationships between organisational age and performance should not be construed as linear. Linear relationships between the organisational performance and organisational age will lead to spurious correlations, specifically where they are assumed to be bi-directional, as organisational performance cannot influence the age of an organisation (Coad et al., 2017). Therefore the direction of the causal relationship must be kept central, and deemed U-shaped.

Prior research has established that top management team decisions are affected by organisation age (Mintzberg, 1973; Sutcliffe & Huber, 1998). Loderer and Waelchli (2010) state that as organisations age, their performance, measured through profitability, declines. This is argued primarily to be due to the inculcation of routines which become embedded and are not easily changed, that is liability of age. Therefore, effect of organisational age is directly related to affecting the organisational performance (Bausch & Krist, 2007). The direction of effect however is dependent on the context in which organisational age is used. For studies on knowledge transfer organisational age positively affects the flow of knowledge to HQ and therefore builds the capabilities that positively affect the growth and performance of a MNC as a whole. For studies that seek to understand organisational performance and organisational age in the context of change or entrepreneurial orientation, these studies indicate that performance is negatively affected by the organisational age, as older organisations are rooted in the core rigidities that have attained success in the past (Rabbiosi & Santangelo, 2013).

Organisational age is no longer viewed as a control or proxy variable, and has shown to have an effect on the performance of an organisation. Therefore, the present study inculcates organisational age as moderating organisational performance. The next section deals with MNC strategies.

2.6 MULTINATIONAL CORPORATION STRATEGIES

Several studies (Egelhoff et al., 2013; Fouraker & Stopford, 1968; Ghoshal & Bartlett, 1990; Harzing, 2000; London & Hart, 2004; Perlmutter, 1969; Wolf & Egelhoff, 2002) have broadly identified different strategic orientations which MNCs may pursue. These include the multi-domestic, international, global and transnational strategies. The main foundation of each orientation is summarised in Table 2-1. Table 2-1 further includes the primary and secondary structural requirements required by the chosen strategy.

Table 2-1: ***Strategy, aim, structural requirement and primary dimensions for MNCs, adapted from Fouraker and Stopford (1968), Egelhoff et al. (2013), Ghoshal and Bartlett (1990), Harzing (2000), London and Hart (2004), Perlmutter (1969), and Wolf & Egelhoff (2002)***

Strategy	Strategic aim	Structural requirement	Primary dimension/s
Multi-domestic	Adaptation to local market preferences and conditions	Primarily flexibility and secondarily efficiency	Product/Service dimension or Geographic Region dimension
International	Little to no adaption of products/services. Developed at HQ and moved to subsidiaries	Primarily efficiency and secondarily flexibility	Functional dimension or Customer Market dimension
Global	Seeks global commonalities, with standardised products/services that seeks to fit commonalities	Primarily Efficiency and secondarily flexibility	Customer Market dimension or Functional dimension

Strategy	Strategic aim	Structural requirement	Primary dimension/s
Transnational	Local responsiveness and global market commonalties	Primarily flexibility and efficiency	Product/Service dimension x Geographic Region dimension or Geographic Region dimension x Product/Service dimension or Functional dimension x Customer Market dimension or Customer Market dimension x Functional dimension or Product/Service dimension x Functional dimension or Functional dimension x Product/Service dimension or Geographic Region dimension x Customer Market dimension or Customer Market dimension x Geographic Region dimension or Functional dimension x Geographic Region dimension or Geographic Region dimension x Functional dimension or Product/Service dimension x Customer Market dimension or Customer Market dimension x Product/Service dimension

2.6.1 Primary dimensions requiring flexibility

MNCs adopting a primary Product/Service dimension seek flexibility to meet the local preferences and market conditions is well documented (Egelhoff et al., 2013; Qiu & Donaldson, 2012; Stopford & Wells, 1972), and premised on varying preferences. Preferences vary globally and idiosyncrasies that exist within geographic locations cannot be ignored (Allen et al., 2015; Kutschker & Bäurle, 1997; Okazaki, 2004; Zhao et al., 2014). In order to successfully meet the varying preferences, MNCs are required to flexibly adapt to the local preferences (Harzing, 2000; Newburry & Yakova, 2006). The manner in which these obtained, is primarily through the flexibility. Flexibility allows for

the MNCs to meet these diverse demands but increases the number of products and services that require management should these strategies be adopted.

The increase in the number of products or services, resulting from flexibility, however may lead to unrelated diversification (Boyd, Haynes, Hitt, Bergh & Ketchen, 2012; Habib & Victor, 1991) which in turn may lead decreased performance. MNCs cannot continue in perpetual diversification to reach and serve every need, rather diversification needs to be maintained within organisational capabilities, and therefore product/service diversification needs to be achieved within limits. While this makes intuitive sense, there are no linkages between the product diversity and international diversification and organisation performance (Jain, Pangakar, Yuan & Kumar, 2015; Sambharya, 1994). Therefore, while the amount of product diversity may need to be kept within constraints, the number of geographic regions that MNCs operate does not negatively affect performance. The effect that product/service diversity has on organisational performance is well noted, and therefore requires flexibility (Egelhoff et al., 2013; Habib & Victor, 1991; Jain et al., 2015).

Similarly to Product/Service dimension, Geographic Region dimension requires high-levels of flexibility in order to meet the different needs of local environments (Egelhoff et al., 2013). MNCs adopting a Geographic Region dimension do so due to high-levels of product diversity that require management (Qiu & Donaldson, 2012; Stopford & Wells, 1974). There is little contention in the literature that the Geographic Region dimension fits high-product diversity and multiple locations, and is required by MNCs (Chi & Nystrom, 1998; Qiu & Donaldson, 2012). However, MNCs only adopt this dimension when operations become sufficiently large (Egelhoff, 1982).This assertion may hold, the argument that by virtue of being multinational, MNCs would have geographic dimension within multi-domestic and not only transnational strategies. This is rooted in multi-domestic strategies requiring local adaptation (Harzing, 2000) as much as transnational strategies. While the over-head costs may not immediately justify the need for a geographic dimension, MNCs with high product diversity and multiple locations will adopt a Geographic Region dimension (Qiu & Donaldson, 2012).

2.6.2 Primary dimensions requiring efficiency

Centralisation of functions is important in order for MNCs to achieve efficiency (Boyd et al., 2012; Lehrer & Asakawa, 1999). In functional organisations structuring is done by

business function, such as human resources or marketing. While this remains a valid form of organisation, organising by function decreases the organisation's ability to react to customer requirements (Egelhoff et al. 2013). While providing efficiency, this decreased ability to react may have negative consequences on organisational performance (Habib & Victor, 1991). However, the ability of organisations to achieve efficiency is comprehensively reported to provide organisations with control (Luo, 2001; Tian & Slocum, 2014). This control in MNCs is the level of control which HQ has, which negatively affects the performance, when implementing a strategy requiring efficiency. While these studies are valuable in understanding the relative advantages and disadvantages, they are also context specific. They are rooted in the search for efficiencies from a single viewpoint (e.g. manufacturing).

Rather than focus on the single viewpoint these need to occur in combination with flexibility, for example through the manufacturing of products for local preferences, flexibility and efficiency is required (Eisenhardt, Furr & Bingham, 2010; Jørgensen & Messner, 2009; Magnusson, Boccardelli & Börjesson, 2009). The single viewpoint further fails to account for centralised functions such as research and development, which benefit the entire MNC (Egelhoff et al., 2013). Therefore, while the Functional dimension and Customer Market dimension may be rooted in the search for efficiencies, they may take on different forms which would be secondary.

With the above in mind, the strategy that MNCs adopt allows for the understanding of the primary dimension/s which is required to be overlaid. When MNCs primarily pursue flexibility the resulting primary dimensions are Product/Service dimension or Geographic Region dimension. When MNCs primarily pursue efficiency the resulting primary dimensions are Functional dimension or Customer Market dimension. In the case where both flexibility and efficiency are pursued the forms highlighted in Table 2-1 are pursued.

The requirement of the strategy, flexibility and/or efficiency, drives the primary type of structural element choice. The next section reviews the literature on flexibility and efficiency as attributes which need to be understood in organisational performance.

2.7 FLEXIBILITY AND EFFICIENCY

Organisational flexibility is the ability of an organisation to change or react to change (Volberda, 1999), and is documented to be a multidimensional construct, comprised of

strategic, operational, and structural flexibility (see Weerdt, et al., 2012 for an overview). Strategic flexibility relates to an organisations ability to re-route or even change the goal that an organisation seeks to accomplish in response to changes in the environment (Dess & Davis, 1984; Galbraith, 1990; Hayes & Pisano, 1994). In the case of MNCs, the ability to serve multiple goals, some which may be divergent but within the core competency of the organisations, may be common given the often diverse environments that within which they operate. This however further relates to the ability for organisations to see new strategic options that may arise from the environments within which they operate. The ability to for the organisation to refine or change strategic course requires strategic flexibility (Dess & Davis, 1984).

The second dimension related to flexibility is operational flexibility. Operational flexibility relates specifically with the ability of an organisation to react to changes in volume of outputs and/or the combination of activities (Zollo & Winter, 2002). In the context of MNCs operating across diverse environments, the ability to shift capacity in order to ensure that demand can be met, is further related to efficiency (Weerdt et al., 2012), and is discussed later. However, in order to ensure that capacity can be changed, operational flexibility requires structural flexibility (Zollo & Winter, 2002).

Structural flexibility relates to the ability of the top management team to alter decision-making and communication norms (Volberda, 1996), without disruption to delivery of core services or products. MNCs may require the change of reporting lines, as an example, in order to ensure that these fit the local environment within which the subsidiary is located. Structural flexibility requires organic structures such as the matrix organisation structure, which are basic in their structure, but can integrate across business units to ensure ease of coordination. The structural flexibility, therefore fits the premise of the matrix, that allows for integration, where business units are the individual subsidiaries in a macro structure.

Flexible organisational structures are required to execute the strategies highlighted in Table 2-1. This flexibility of organisational structure is driven by the need of the strategy that is chosen by the organisation. As table 2-1 highlights, while the strategies often require a primary focus (e.g. efficiency), there are often secondary structural elements which need to be inculcated into the organisational structure, and is characteristic of MNCs strategic choices. These secondary structural elements are in response to the often-diverse demands that need to be served by MNCs.

Organisational efficiency is related to the use of current resources by "… engaging in similar activities more efficiently…" (Auh & Menguc, 2005, p. 1653). This eludes to ensuring that current processes within an organisation are focussed on refining, that is producing more with less, and achieving economies of scale in the least (Benner & Tushman, 2015). Efficiency therefore is related directly to ensuring the immediate viability of the organisation, whereby current resources are optimally utilised to generate short-term profitability (Magnusson, et al., 2009).

MNCs are required to achieve both flexibility and efficiency, however as the flexibility required by strategies and afforded by organisational structures increase, the efficiency that organisational structures can achieve decreases (Benner & Tushman, 2015; Kogut, 1993; Volberda, 1996). This perceived trade-off between flexibility and efficiency presents organisations with the paradox of administration (Tan & Wang, 2010), with organisations aiming to achieve both flexibility and efficiency leading to decreased performance (Volberda, 1996). For example, in order for an organisation to attain efficiency, standardisation, specialisation, and high-degrees of formalisation are required. In contrast, the requirements for flexibility are rooted in fluidity. For example in the combination of teams, based on diverse skills and technical capabilities, collaborating to allow for slack within organisational processes on an ad-hoc basis (Adler et al., 1999; Schreyögg & Sydow, 2010). As the MNC environment is characterised by increased turbulence and hyper-competition (Goeltz, 2014; Hermelo & Vassolo, 2010; Michailova & Zhan, 2015; Miles, et al., 1978), organisations require mechanisms for effective and efficient delivery of global efficiencies and localised preferences, that is both flexibility and efficiency. While this paradox of administration is well noted in the literature, organisational ambidexterity readily allows for the overcoming of these challenges, thus allowing for superior flexibility and superior efficiency simultaneously (O'Reilly & Tushman, 2013; Raisch et al. 2009).

Organisational ambidexterity refers to the ability of organisations to pursue two, often-disparate, goals simultaneously (Raisch et al., 2009) and, pertinent for MNCs, localisation (flexibility) and globalisation (efficiency) (Ghoshal & Bartlett, 1990).

Structural separation is an effective mechanism to manage these paradoxes as it allows for disparate goals to be simultaneously managed and pursued (Gibson & Birkinshaw, 2004; Jansen, et al. 2009); this however increases coordination costs (Gereffi, et al., 2005; Mizutani & Uranishi, 2013). Literature has focussed on the creation of structural

mechanisms, such as separation in the form of partitioning and temporal separation, in order to reconcile disparate goals (Gibson & Birkinshaw, 2004); it is noted that the reason the goals are often disparate is in response to the environment (Gibson & Birkinshaw, 2004). Organisations require the simultaneous execution of often-disparate goals to remain competitive and viable, "successful firms are ambidextrous – aligned and efficient in their management of today's business demands while simultaneously adaptive to changes in the environment" (Raisch & Birkinshaw, 2008, p. 375).

To bring together these disparate goals and achieve organisational ambidexterity, Jansen et al., (2009) have reported that structures which combine mechanistic and organic structuring are required. Matrix organisational structures are an example of the combination of mechanistic and organic structuring (Wolf & Egelhoff, 2012). Despite this being conceptually valid and implemented by MNCs, the internal and external environments are often volatile (Barreto, 2010; Eisenhardt & Martin, 2000). Managers tasked with operating and managing within such structures having difficulty in managing the external and internal complexity in parallel to achieve superior organisational performance (Gibbons & Roberts, 2013).

Extant research (see Egelhoff et al. 2013 for a comprehensive overview) focuses on the information processing requirements and the design principles for the execution of differing strategies (e.g. product/service and function focus). However, this study argues that in order for organisations to perform sustainably and superiorly, the execution of multidimensional strategies, organisations should use multidimensional organisational structures. The ability to achieve fit between the internal and external environment therefore requires an understanding of the degree of flexibility and/or efficiency that is required to perform, therefore:

MNCs with a Product/Service dimension x Customer Market dimension or Geographic Region dimension x Functional dimension or Product/Service dimension x Functional dimension or Geographic Region dimension x Customer Market dimension, primary by secondary structural dimensions, will perform through flexibility moderated by organisation age.

In contrast, MNCs with a Customer Market dimension x Product/Service dimension or Functional dimension x Geographic Region dimension or Functional dimension x Product/Service dimension or Customer Market dimension x Geographic Region

dimension, primary by secondary structural dimensions, will perform through efficiency moderated by organisation age.

The achievement of performance however is not only a function of flexibility and efficiency, but further a function of the level of HQ control. HQ control in the context of MNCs and matrix organisational structures is directly related to the reporting relationship between HQ and subsidiaries. The dual reporting relationship allows for an understanding of how this relationship needs to be managed (either through the HQ or subsidiary), with a chosen strategy, and degree of flexibility and efficiency in order to achieve sustainable and superior performance.

2.8 HEADQUARTER CONTROL IN DUAL REPORTING

Inherent in the adoption of a matrix organisational structure is the creation of a dual reporting. Dual reporting is a result of the overlaying of elementary structures (Wolf & Egelhoff, 2012; 2013) and is widely recognised as a disadvantage of the matrix, creating conflict and diluting responsibility and accountability (Galbraith, 1979; Larson & Gobeli, 1987; Sy & Côté, 2004; Sy et al., 2005; Whitford, 2006). Conflict arises due to constant changes, which individuals are not accustomed to (Ghoshal & Bartlett, 1990; Sy & Côté, 2004). This conflict may be overcome through training, inculcation of a change culture, and supporting of individuals to change their routine orientated mind-sets (Bartlett & Ghoshal, 2003). However, as the adoption of the matrix is driven by the need for MNCs to balance different strategic dimensions conflict is unavoidable (Egelhoff et al., 2013; Qiu & Donaldson, 2012; Sy & Côté, 2004).

While how to manage conflict is well researched (Sy & Côté, 2004), these studies fail to provide an understanding of how to structure the dual reporting for chosen strategic elements which MNCs adopt in order to achieve fit resulting in sustained and superior performance. Thereby further limiting our understanding of the nature of dual reporting, in specific relation to control *vis-à-vis* reporting between HQ and subsidiaries in the context of MNCs. Also limited is our understanding of how dual reporting needs to be structured to enable sustainable and superior performance in organisations with matrix organisational structures.

Reporting in an organisational context indicates whom an employee reports to. The manner in which this is structured is well documented for elementary structures where

single reporting lines and hierarchical levels are often indicated (Qiu & Donaldson, 2010; Wolf & Egelhoff, 2012). Matrix reporting, however, takes on the form of dual reporting, namely solid and dotted line reporting (Piskorski & Spadini, 2007; Wolf & Egelhoff, 2012). Employees often have a solid line reporting to “boss-one” (superior one), this may be the product division head at the HQ for example, and a dotted line reporting to “boss-two” (superior two), which may be the geographic region head at the subsidiary level for example.

With this reporting in mind, and the context of the current study, the reporting used in the present study is based on the matrix manager (Davis & Lawrence, 1978; Grubenmann, 2016; Schnetler et al.,2015). This matrix manager has two reporting lines, one to the HQ and the other to the subsidiary. The manner in which the matrix manager is contracted ultimately determines where (HQ or subsidiary), who to (at the HQ or subsidiary) and how (solid or dotted line) the individual will report (Piskorski & Spadini, 2007). This reporting is primarily determined through contracting.

2.8.1 Contracting and control

Contracting in employment relationships is well documented (Gibbons & Roberts, 2013) and provides an understanding of how the employment relationship will be managed. Applying the TCE perspective, the matrix manager is the asset. This matrix manager may be contracted by HQ to perform certain tasks at the subsidiary level. However, by virtue of HQ contracting the matrix manager, HQ has control of the matrix manager (Gibbons & Roberts, 2013; Lundan, 2010; Zhang, et al., 2014). This matrix manager would have a solid line report to HQ. Given that the matrix manager is an asset that can be utilised, HQ may contract the matrix manager out, to the regional head for example. This matrix manager would therefore have a solid reporting line to the HQ and a dotted line to the regional head at the subsidiary level. Using this analogy, HQ has control over the matrix manager (Carney & Child, 2013).

Control over an the asset in the example above, indicates that HQ has the rights to re-allocate and/or instruct how the matrix manager executes tasks, which tasks are executed and how much time to divide between the tasks that are directed by HQ and by subsidiary. Given the control of the asset by HQ, while the matrix manager is contracted out by HQ to the subsidiary, if contingencies arise, such as a change in strategy, HQ ultimately determines how the matrix manager’s time will be allocated in

the execution of the new strategy and tasks. This control allows for the use of resources by HQ in coordinating and executing MNC strategy. This concept of control and control rights is a direct consequence of the inability to negotiate complete contracts *a priori* and throughout the employment relationship and controlling for all possible eventualities (Leiblein, 2003; Verbeke & Greindanus, 2009). This further creates conflict as HQ in this analogy cannot *a prior* decide and inform the matrix manager of a complete set of tasks which need to be executed.

Control, as stated above is not simply a function of the nature of reporting (solid-line or dotted line), but further a function of the amount of time (Keegan, 1974). While changing the nature of reporting on a documented organisational structure may not be easily achieved, control may be obtained by increasing time spent reporting. For example, when the need arises, an individual which has a solid-line reporting to HQ, may decrease the amount of time spent reporting or conversely, an individual with a dotted-line report to HQ may spend an a high-level of time reporting to HQ. Therefore, there may be permutations to ensure that HQ can successfully coordinate subsidiaries, see below. These permutations may be solid-line coupled with high time spent reporting, solid-line coupled with low time spent reporting, and *vice-versa* dotted-line coupled with high time spent reporting and dotted-line coupled with low time spent reporting to HQ or subsidiary, therefore:

MNCs with a Product/Service dimension x Customer Market dimension or Geographic Region x Functional dimension or Product/Service dimension x Functional dimension or Geographic Region dimension x Customer Market dimension, primary by secondary structural dimensions, will perform through flexibility and low HQ control moderated by organisation age.

In contrast, MNCs with a Customer Market dimension x Product/Service dimension or Functional dimension x Geographic Region dimension or Functional dimension x Product/Service dimension or Customer Market dimension x Geographic Region dimension, primary by secondary structural dimensions, will perform through efficiency moderated by organisation age.

The above sections of flexibility, efficiency, strategy and HQ control provided a discussion of extant literature. The current research therefore posed the following overarching research question: To what extent with regards to strategic choice leading to the primary and secondary dimensions adopted, flexibility, efficiency and HQ control

orientations, affect the performance in MNCs adopting a matrix organisational structure, moderated by organisation age.

Hypothesis one, hypothesizes that MNCs with a matrix organisational structure adopting a Product/Service structural dimension x Customer Market structural dimension will perform through orientations of flexibility and low HQ control moderated by organisation age; while MNCs with a matrix organisational structure adopting a Customer Market structural dimension x Product/Service structural dimension will perform through orientations of efficiency and high HQ control moderated by organisatiol age. In order to test hypothesis one, two sub-hypotheses were formulated, hypothesis 1a and hypothesis 1b:

Hypothesis 1a: MNCs with a Product/Service dimension x Customer Market dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age; and

Hypothesis 1b: MNCs with a Customer Market dimension x Product/Service dimension primary x secondary structural dimensions will perform through orientations of efficiency and high HQ control, moderated by organisation age.

Hypothesis two, hypothesizes that MNCs with a matrix organisational structure adopting a Geographic Region structural dimension x Functional structural dimension will perform through orientations of flexibility and low HQ control moderated by organisation age; while MNCs with a matrix organisational structure adopting a Functional structural dimension x Geographic Region structural dimension will perform through orientations of efficiency and high HQ control moderated by organisation age. In order to test hypothesis two, two sub-hypotheses were formulated, hypothesis 2a and hypothesis 2b:

Hypothesis 2a: MNCs with a Geographic Region dimension x Functional dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age; and

Hypothesis 2b: MNCs with a Functional dimension x Geographic Region dimension primary x secondary structural dimension will perform through orientations of efficiency and high HQ control, moderated by organisation age.

Hypothesis three, hypothesizes that MNCs with a matrix organisational structure adopting a Product/Service diversity structural dimension x Functional structural

dimension will perform through orientations of flexibility and low HQ control moderated by organisation age; while MNCs with a matrix organisational structure adopting a Functional structural dimension x Product/Service structural dimension will perform through orientations of efficiency and high HQ control moderated by organisation age. In order to test hypothesis three, two sub-hypotheses were formulated, hypothesis 3a and hypothesis 3b:

Hypothesis 3a: MNCs with Product/Service dimension x Functional dimension primary x secondary structural dimension will perform through orientations of flexibility and low HQ control, moderated by organisation age; and

Hypothesis 3b: MNCs with a Functional dimension x Product/Service dimension primary x secondary structural dimension will perform through orientations of efficiency and high HQ control, moderated by organisation age.

Hypothesis four, hypothesizes that MNCs with a matrix organisational structure adopting a Geographic Region structural dimension x Customer Market structural dimension will perform through orientations of flexibility and low HQ control moderated by organisation age; while MNCs with a matrix organisational structure adopting a Customer Market structural dimension x Geographic Region structural dimension will perform through orientations of efficiency and high HQ control moderated by organisation age. In order to test hypothesis three, two sub-hypotheses were formulated, hypothesis 4a and hypothesis 4b:

Hypothesis 4a: MNCs with a Geographic Region dimension x Customer Market dimension primary x secondary structural dimension will perform through orientations of flexibility and low HQ control, moderated by organisation age; and

Hypothesis 4b: MNCs with a Customer Market dimension x Geographic Region dimension primary x secondary structural dimensions will perform through orientations of efficiency and high HQ control, moderated by organisation age.

2.8.2 Headquarter-subsidiary relations

Determining control (solid line reporting) to either the HQ or subsidiary is determined by the role of HQ in the HQ-subsidiary relationship. The role of HQs has been the subject of sustained research for at least the last five decades, with the role primarily dependent on the theoretical lens applied (see meta-analysis by Ciabushi et al., 2012). For the

purposes of the current study, the role of the HQ is taken as that of coordination and strategising (Gibbons & Roberts, 2013; Leiblein, 2003). Limiting role of HQ in this manner is consistent with the TCE view of the MNC HQ, which the present study adopts.

Viewing the HQ as a coordinating and strategising function delegates the role of HQ to be that of "managing business development (rather than on-going business)" (Ciabushi et al., 2012, p. 214) while simultaneously strengthening the MNCs strategic competitive advantage (Rugman & Verbeke, 2004). Coordination requires that HQ purposefully coordinates the subsidiaries. Where control becomes an imperative, HQ should be willing to decrease control (solid line reporting and high time allocation) in favour of dotted line reporting (dotted-line and low time allocation), based on the strategic elements that are chosen to ensure the MNC performs.

TCE prescribes that subsidiaries are an alternative instrument that MNCs use to overcome market failures, allowing for transactions across borders, internally from within the organisation (Roth & Nigh, 1992; Williamson, 1975). While the role of the subsidiary has often been described as asymmetrical (Bouquet & Birkinshaw, 2008; Ghoshal & Bartlett, 1990) and as an operational instrument (Roth & Nigh, 1992; Rugman et al., 2011), it remains a valid form of organising and is common in MNCs.

Birkinshaw and Morrison, (1995), Luo, (2005), Martinez and Jarillo (1991) and Meyer and Su (2015) aptly describe types of subsidiaries (e.g. autonomous, receptive and active) in relation to the MNC network of subsidiaries with all subsidiaries having a role to play within the MNC network. The role allows for the differentiated and interdependent subsidiaries through which the HQ controls the coordination of geographically distributed resources with the subsidiaries controlling some resources (Rugman et al., 2011) which are available for recombination across the MNC network (Hennart, 2009). This, however, assumes that HQs have the capability to coordinate the resources when the need arises. The organisation occurs internally and in certain structured forms, such as the matrix organisational structure, to allow for it to occur flexibly in reaction to the environmental needs. This combined with the ability of the subsidiary to coordinate the resources available at region specific locations (external environments) allows for the bundling of resources.

While intuitively the interdependencies make for an idealistic understanding of the HQ-subsidiary relationship, without a formal structure for these to be managed and engaged these networks often fail to realise the potential that they have (Egelhoff et al., 2013). To

this end, subsidiaries allow for both FSAs and CSAs to be exploited for MNCs. However in order to ensure these are leveraged, the manner in which they are structured is important. The organisational structure is the mediator between an organisations strategy and the environment. When the structure is effective organisations achieve perform, that is they achieve organisational productivity, organisational effectiveness and organisational stability. The achievement of superior performance is however dependent on the strategy, level of HQ control, degree of flexibility and degree of efficiency.

2.9 CONCLUSION:

The literature review focussed on the matrix organisational structure as the phenomenon under investigation to allow for the achievement of sustained and superior performance through performance attributes of organisation productivity, organisational effectiveness and organisational stability. The achievement of superior and sustained performance is however a function of MNC strategy, HQ control, flexibility and efficiency. Extant literature has focussed on the use of the information processing view of the firm (Egelhoff et al., 2013; Egelhoff, 1991; Galbraith, 1974; Qiu & Donaldson, 2012), and while these studies have been valuable in providing an understanding of the impact of adding new strategic variables may affect the flow of information and how to structure the matrix organisation, they fail to provide an understanding of how MNCs adopting a matrix organisational structure perform.

The application of TCE as a theoretical lens allowed for the researcher to conceptualise the matrix organisational structure and the interactions between HQ and subsidiary as a mechanism for the achievement of a competitive advantage which is ultimately reflected in the organisational productivity, organisational effectiveness and organisational stability. TCE was valuable lens to provide insight into how the transactions between HQ and subsidiaries may be structured, *a priori.*

With the grounding in the literature, this study argues that organisational performance is based on the strategic choices, HQ control, flexibility, and efficiency for MNCs adopting a matrix organisational structure.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The performance of an organisation is a function of the strategic choice, HQ control, flexibility, and efficiency decisions made by top management teams, and is moderated by organisational age. In order to test the hypotheses associated with this overarching aim of the research, the research design and methodology are central. This chapter of the thesis describes the research philosophy and paradigm which allowed for the positioning of the research. The research approach and strategy undertaken and the research methodology to collect the data. The analysis of the data through the multivariate inferential statistical test, moderated regression is further detailed in this chapter.

3.2 RESEARCH PHILOSOPHY AND PARADIGM

Lincoln, Lynham, Guba (2011) and Mertens (2014) argue that while researchers are concerned with the methodology of data collection, the question of method is secondary to the understanding of the researchers' philosophy that guides the collection, analysis and interpretation of data collected. This highlights the importance of understanding research philosophy, as an important step in the planning and execution of research, prior to understanding the choices, strategies, approach, time horizon and techniques (Byrne, 2017). To this end, research as a systematic approach (Burns, 1997) is influenced firstly, by the research philosophy and associated dimensions of ontology (what is the nature of reality or being), epistemology (what can be known) and axiology (researcher's values that affect the interpretation and perception of reality) (Byrne, 2017). Secondly, by the research paradigms, and associated dimensions of radical or regulatory change (Holden & Lynch, 2004), and finally by the methodology (how beliefs held by the researcher can be known) (Byrne, 2017; Lincoln et al., 2011). Each of these are described and applied in the context of the research in order to prove or fail to prove the stated hypotheses.

3.2.1 Research Philosophy

Research philosophy is a term, which relates the extent to which knowledge is developed and the nature of knowledge (Byrne, 2017). It is the researcher's philosophy that influences the manner in which reality is viewed, and as such conveys assumptions that the researcher makes in the interpretation of the reality of research. Lincoln et al., (2011) describe three reasons for understanding research philosophy, which guides researchers on the refinement and specification of research methodology to be employed; the evaluation of different methodologies; and selection of methodology, which may be or are outside of the researchers' experience. Byrne (2017) primarily identify four research philosophies, namely, positivism, realism, interpretivism and pragmatism, with these research philosophies differing in their ontology, epistemology, axiology, methods and methodology (see table 3-1).

Table 3-1, provides the four pillars of research philosophies, however the choice of the approach of philosophical standpoint is further determined by the context of the study and the hypotheses the research tested (Byrne, 2017; Crossan 2003; Denzin & Lincoln, 1994). The type of philosophy that resonates with the researcher is primarily that of positivism, in which social reality can be obtained from data and facts. This research philosophy is primarily derived from the researcher's background, training and field of work set in the applied sciences.

Table 3-1: Summary of pillars of research philosophies, adapted from Byrne, (2017) and Crossan (2003)

	Positivism	**Realism**	**Interpretivism**	**Pragmatism**
Conceptualisation/Association	Reality	Objects exist independently of our knowledge	Understand the difference between humans and role as a social actors	Work as both in positivism and interpretivism
Ontology *Nature of reality or being*	Single objective reality independent of researcher's belief or perspective and social actors	Reality is objective and independent of human thoughts or knowledge, but interpreted through social actors	Subjective reality created through perceptions and actions. Multiple realities exist. Socially constructed	Researcher is external, multiple views. View chosen on ability to answer the research question

	Positivism	Realism	Interpretivism	Pragmatism
Epistemology- *what constitutes acceptable knowledge*	Observable social reality, i.e. only observable data and facts. The truth exists and waiting to discovered	Observable phenomenon provides credible data and facts. Insufficient data may lead to inaccuracies. Phenomenon invokes feelings/sensations. Focus on explaining within context/s	Social actors through social interaction construct social reality. No objective reality or truth. Subjective meaning. The details of a situation reveal the reality	Both subjective and objective social reality can provide acceptable knowledge. Focus on practicalities and integration of different subjective and objective views.
Axiology- *researchers values*	Objective criteria rather than human beliefs and interests (Crossan, 2003). Independence: Researcher is independent	Research is value laden and biased by researcher's view of world, culture, and experience.	Research is value bound, that is no separation between researcher and phenomenon being researched.	Researcher adopts both objective and subjective stance.
Methods & methodology	Quantitative. Deductive (general to the specific)	Quantitative ***or*** qualitative. Method must fit the subject.	Qualitative. Inductive (observed to theory)	Mixed or multiple methods. Quantitative ***and*** qualitative data

The identified positivist philosophy of the researcher is directly related to how the research was conducted. The research hypotheses that have been developed through the literature, see section 2.8 above, as well as the dominant theme in the literature specific to the current study (see Egelhoff et al., 2013; Tan & Wang, 2010 for example) has been executed through a positivist philosophy using a quantitative method employing the use of survey questions. The use of survey questions, allowed for the collection of observable data (Byrne, 2017).

3.2.2 Research paradigm

The above positivist research philosophy, further allows for an understanding of how social phenomena are analysed (Byrne, 2017). Whereas the research philosophy relates

to the development and nature of knowledge (Holden & Lynch, 2004), research paradigm relates to ontology, the manner in which social phenomena are analysed (Holden & Lynch, 2004). The ontology therefore which resonates with the researcher and the research, is that a single reality exists, and this is independent of the researcher's beliefs, perceptions and of social actors.

Four research paradigms, namely radical humanist, radical structuralist, interpretive, and functionalist (Mackenzie & Knipe, 2006) are often described. These paradigms are associated with the research philosophies and allowed for the researcher to clarify assumptions, while further allowing for the understanding of how other researchers approach their research (see Burrell & Morgan, 1979; *see also* Mackenzie & Knipe, 2006 for explanation). Generically however, Burell's and Morgan's (1979) 2 x 2 matrix allows for a high-level understanding of the four paradigms (see table 3-2 below).

Table 3-2: 2x2 Matrix of paradigms of social theory, adapted from Burell and Morgan (1979)

Interpretation / **Sociology of regulation**	**Objective**	**Subjective**
Regulation	Functionalist	Interpretivist
Radical Change	Radical structuralist	Radical humanist

The paradigm that the current research was positioned within is the functionalist paradigm along the objective and regulation dimension (Burell & Morgan, 1979). Within management and business research, this paradigm allows for the testing of theory in order to increase the predictive power of understanding phenomena (Burell & Morgan, 1979). The over-arching phenomenon that was investigated in the study is organisational performance for MNCs adopting a matrix organisational structure. Organisational performance is however a function of the strategy adopted, HQ control, flexibility and efficiency, as core constructs affecting the performance of an organisation, moderated by organisation age.

The paradigm further makes intuitive sense to the researcher, as the researcher was an objective instrument, through the use of questionnaires allowing for the explanation of social phenomenon independent of context. This furthermore, allows for the testing of constructs of strategic choice, flexibility, efficiency and HQ control, moderated by organisation age.

The researcher is however aware, given the adopted paradigm within which the research is situated, conclusions about performance may be made, the underlying reasons for the strategic choice, flexibility, efficiency and HQ control may not be easily observable in the data (Burrell & Morgan, 1979; Myers, 1997). This is noted as a limitation of the adopted paradigm, with the interpretation of the results inculcating this limitation.

3.3 RESEARCH APPROACH AND STRATEGY

Research approaches of deductive or inductive are often described, with some research inculcating both, with some leaning towards one (Williams, 2007). However, the research approach is informed by the research strategy and research choice. The research choice in turn is guided by the hypotheses that the research seeks to test. To this end, the researcher's philosophy is primarily positivism, and therefore the research is deductive in approach. The deductive approach is often viewed as from the general to the specific, thus the hypotheses were generated from existing literature, observations were made, and confirmation or disconfirmation of hypotheses are indicated based on the results of the statistical tests conducted.

In order to test the hypotheses generated, the current study used a survey research strategy. For the survey research, a questionnaire was constructed through existing literature and sent to potential respondents. Potential respondents were chosen based on the selected population, and therefore their perceptions at the subsidiary level are the unit of analysis. The adopted survey research strategy allows for the "… structured collection of data from a sizeable population…" (Saunders & Lewis, 2012, p.115). While the survey strategy may further be in the form of structured observation and structured interviews, the current study employed the strategy of using a questionnaire (Byrne, 2017).

3.4 RESEARCH CHOICE

The research choice adopted for the study was that of a mono-method (Teddlie & Tashakorri, 2006). Mono-method research choices may be either quantitative or qualitative (Teddlie & Tashakorri, 2006). For the current study, the mono-method selected was quantitative. This choice allowed for an unbiased, value free method to

evaluate strategic choices, flexibility, efficiency and HQ control in the performance of MNCs with a matrix organisational structure.

Mono-methods using surveys have numerous advantages and disadvantages. The primary advantage of using a survey is the reported flexibility of surveys (Granello & Wheaton, 2004). The flexibility of the use of surveys offered, allows for the understanding of numerous constructs, through the careful use of individual questions (Muijs, 2004). Applicable to the current research, the constructs of strategic choice, flexibility, efficiency, HQ control, and performance were of particular interest in understanding the performance as a function of the strategic choice, HQ control, flexibility, and efficiency orientations.

Furthermore, the quantitative mono- method allowed for the collection of data from geographically distant subsidiaries, through the use of "internet" surveys at a low cost (Griffis, Goldsby & Cooper, 2003). Finally, the quantitative mono-method has the advantage of assuring confidentiality to respondents, who may then provide candid and honest responses, thus reducing bias (Muijs, 2004).

The current study did not require the need to set-up artificial situations, the results may then be generalisable to be "…real-world settings…" (Muijs, 2004, p. 44). The generalisability of the findings are however only applicable to MNCs adopting a matrix organisational structure, and MNCs with subsidiaries in host countries which display similarities to South Africa. The reason for similar to South Africa host countries, is housed in the de Jong et al., (2015) indicating that decision-making autonomy may be a function of country. Furthermore, over 50% of respondents were from South African subsidiaries of MNCs. Given the nature of the method and the questionnaire used to generate data, the standardising of questions further allowed for comparability between respondents across the constructs pertinent to the current study.

The above provides an understanding of the advantages using a survey, however a noted disadvantage is the lack of depth of understanding of responses that may be obtained from respondents using a survey method (Griffis et al., 2003). While this was mitigated through the provision of options to explain or expand on selected choices, the researcher could not specifically probe the choices made through questioning. The expansions are based on the respondent's choice on what to explain and if they wanted to explain their choice.

The applicability of the quantitative questionnaire mono-method to the current study is founded in understanding that the current research seeks to understand the performance in MNCs with matrix organisational structures.

Organisational performance is however a function of the strategy, HQ control, flexibility and efficiency.

In sum, as the relationships were hypothesised from the literature, quantitative surveys were evaluated to be best suited for the answering of the stated hypotheses. Furthermore, the constructs were well defined in the literature, measurable and therefore applicable to a quantitative method.

3.5 RESEARCH METHODS

The research method provides the detail on the population, unit/s of analysis, sampling technique, sample size and frame, data collection and data analysis (Etikan, Musa & Alkassim, 2016). The following section highlights these in the context of the current study, in order to provide answers to the hypotheses generated.

3.5.1 Population

The population for the study comprised of subsidiaries of multinational corporations (MNC) adopting a matrix organisational structure. MNCs were defined as having greater than 10% of sales outside of their home country (Rugman & Verbeke, 2008). Given the size of this universe and difficulty to explore reasonably, the OSIRIS database was used to filter organisations which met the definition proposed by Rugman and Verbeke (2008). Therefore the population comprised of those subsidiaries listed on the OSIRIS database of MNCs with more than 10% sales outside of their home country (Rugman &Verbeke, 2008).

3.5.2 Unit of analysis

The unit of analysis for the study was the subsidiary, and assessed through the individual matrix managers. A matrix manager was defined as an individual reporting to both headquarters (HQ) and at the subsidiary level (Davis & Lawrence, 1978; Grubenmann,

2016; Schnetler, et al., 2015) and is therefore at the interface between the HQ and subsidiary in a matrix organisational structure.

It is important to note that the matrix organisational structure was the primary phenomenon that was investigated. A matrix structure may occur at different levels, and most commonly in MNCs is between the HQ and the subsidiary, hierarchical structures may be found at lower levels of the MNC (Qiu & Donaldson, 2012). In order to ensure that the appropriate individuals responded, qualifying questions adapted from Egelhoff et al., (2013) were used.

3.5.3 Sampling

MNCs with subsidiaries corresponding to the definition of greater than 10% of sales outside of their home country (Rugman & Verbeke, 2008), were then purposively sampled to ensure that only the relevant organisations were contained in the sample. Purposive sampling is a non-probability sampling technique in which the researcher uses their own judgement to select the unit (Etikan, et al., 2016). The choice of unit however is not arbitrarily selected, the units selected had to fit a the characteristics of being a subsidiary of a MNC, with the MNC having more that 10% of sales outside of their home country (Rugman & Verbeke, 2008).

The purposive sampling technique applied, yielded 56,8% of the responses from MNCs with subsidiaries located in South Africa. This indicates a bias of the sample from a single geographic location. While this was not explicitly aimed for, see sample frame below, the ability to generalise the results of subsidiaries located in South Africa is a limitation on the results and generalisability. This is therefore a limitation based on the representativeness of the sample to subsidiaries globally, with de Jong et al., (2015) reporting on the effects of location on autonomy of decision-making for example. However, with the dominance of South African subsidiaries, 79% of HQ's of the organisations were reflected by the triad of the North America, Europe and Asia (Rugman et al., 2011).

3.5.4 Sample frame, data collection, pre-testing and sample size

The following section details the sample frame used in the study, how the data was collected and the sample size.

3.5.4.1 Sample frame

A sample frame is defined as "…. A list of elements from which a sample may be drawn…" (Zikmund, Babin, Carr & Griffin, 2009, p. 391). The sample frame for the research was the list of MNCs that fit the definition of MNCs that have greater than 10% of their sales outside the home country (Rugman & Verbeke, 2008), on the Osiris database. While the Osiris database contains information such as, but not limited to, company financials providing return on assets, equity, and sales; number of employees including changes in number of employees over time in absolute number; percentage of foreign ownership; shareholding; country profiles; and primary and secondary industries on listed and unlisted companies globally, it allowed for the identification of percentage of sales generated outside home country. This ability to filter organisations with greater than 10% of sales outside of the home country was a pre-condition of the research, to ensure respondent organisations fit the definition of a MNC. The database contains information related to over 80,000 companies.

The advantage of the Osiris database for the study is its ability to explore MNC with foreign subsidiaries, the location of these subsidiaries, the percentage of international sales, sales generated outside of the home country, and company financial data over a period of time. This allowed for the ensuring of the target population of MNCs as defined above.

3.5.4.2 Data collection

Data was collected through the use of internet-based surveys (online surveys), which made use of close-ended questions that were self-administered. The choice of use of online surveys, telephonic surveys and post surveys are often highlighted in the literature, and despite these avenues, online surveys are an appropriate method of collection of data (Nulty, 2008).

The appropriateness of the use of online surveys however must be balanced on the advantages and disadvantages associated with its use. Advantages include speed and cost-effectiveness, geographic reach, representativeness of the population to be studied, and respondent anonymity; while disadvantages include the high possibility of respondent misunderstanding, lack of ease of follow-up's, company security protocol's and length of survey (Evans & Mathur, 2005). In the context of the approach, strategy, method, population, unit of analysis and technique employed by the current research,

online surveys were deemed the most appropriate, allowing for the geographic reach of subsidiaries of MNCs.

Online surveys represented the method of data collection and choice for the current study, however response rates using online surveys must be considered and have been part of a central debate in the literature (Evans & Mathur, 2005). Response rates have declined to less than 50% for online surveys due to fatigue and decreased novelty from the late 1990's (Sánchez-Fernández, Muñoz-Leiva, & Montoro-Ríos, 2010). This response rate, is further negatively affected when potential respondents receive requests from unknown individuals for survey participation (Sánchez-Fernández et al., 2010). While these point to decreased response rates, this may increase if there is respondent interest in the research being conducted and if researchers have the ability to send remainders for completion (Sánchez-Fernández et al., 2010). The final response rate achieved in the current study is detailed in the data collection section below. However, prior to the collection of data, pre-testing of the questionnaire was done, and detailed in the next section.

3.5.4.3 Pre-testing

Prior to the collection of data for the research, the questionnaire should be pre-tested (Presser et al., 2004). The pre-testing phase of the research allows for the understanding if the questions presented to the respondents are clear, and no problems associated in understanding and answering the questions. Furthermore, the pre-testing of the questionnaire allows for the researcher to understand, to some extent the level of reliability and validity, and if the responses that are being provided are adequate to answering of the hypotheses. Three methods for pre-testing of a questionnaire are described, the first method is to screen the questionnaire with research professionals in the area; the second method is to screen the questionnaire with the client that has requested the questionnaire, and the third method is the screening of the questionnaire with a group of respondents which fit the profile of the desired respondents (Rothgeb, Willis & Forsyth, 2007).

Method 1: The current research builds on previous research (for example Caves, 1974; Egelhoff et al., 2013; Kim et al., 1993; Kumar & Antony, 2009; Miller & Pras, 1980; Pennings & Harianto, 1992; Volberda et al., 2012; and Weerdt, 2009; Wolf & Egelhoff, 2002), all which have developed and tested scales which are consistent with the current

research along with reported reliabilities and validities. While this is not explicitly provisioning for the research professionals in the field, given the extensive testing of the scales in literature, method 1 was assumed. Method 2: Given that the research was not commissioned by an external client, method 2 was excluded. Method 3: For method three, the questionnaire was sent to 15 individuals. The individuals chosen for method three were purposively selected. These individuals were similar in profile to the final respondents but were known to the researcher. The criteria used were individuals who reported at both the HQ and the subsidiary level and worked or are currently in the employment of MNCs at the subsidiary level. Respondents were then asked to inform the researcher of the time taken to complete and difficulty in understanding the questions via email or telephonic call. Where challenges were experienced, the questions on the questionnaire were modified in line with feedback and are highlighted below.

3.5.4.3.1 Pre-testing feedback

Feedback from the 15 individuals were grouped into two broad categories, namely design and question wording.

i) Design challenge

Initially individuals could not select the same response for example “strongly disagree” for more than one question for questions 32-37; and 47-50. This was corrected to allow for respondents to select the same response, for example “strongly agree” for all the questions.

ii) Question wording

“Thinking about your reporting to head-office, on average what percentage of your time is allocated to head-office reporting?”. The frequency (monthly, weekly or daily) needed to be more explicit. This was changed to reflect frequency as being monthly, and changed to “Thinking about your reporting to head-office, on average what percentage of your time is allocated to head-office reporting, on a monthly basis?” Furthermore, instead of the use of categories respondents were asked for numeric input.

All the results from the pre-test were excluded from the final analysis, as per Hair, Black, Babin, Anderson and Tatham (2010).

3.5.4.4 Sample size

The relative importance of the sample size is drawn from the ability of statistical studies to lead to valid conclusions has been debated in the literature (see Cohen, 1962, 1992 for example). Studies relying on statistical analysis are often prone to Type II errors, which are affected by sample size and effect size (Field, 2013). In order to ensure that Type II errors are controlled for, an appropriate confidence level, confidence interval, and population are required for calculation.

The below provides the equation used to calculate the appropriate sample size required based on the population:

Equation 1: Sample size calculation (adapted from Field, 2013)

$$ss = Z^2 (p)^* (1-p) / c^2$$

Where:

ss= sample size

Z = z-value, where 2.58 for 99% confidence level, 1.96 for 95% confidence level, and 1.65 for 90% confidence level

p= percentage of picking a choice, expressed using as a decimal, where when determining a sample size, worst case scenario is 50%(0.5)

c= confidence interval (margin of error)

However, while *a priori* the above allows for the calculation of the required sample size, this must be balanced with the practicality of obtaining the desired sample size, without compromising the ability to draw valid conclusions. For the current study, there are estimated 80 000 MNCs (Ghemawat & Pisani, 2013). While there may be 80 000 MNCs, it is reasonably expected that not all MNCs will adopt a matrix organisational structure. A search for the number of MNCs which have adopted a matrix organisational structure is unknown.

The use of the Osiris database, indicated 22 029 MNCs that was congruent with the defined population of greater than 10% of sales outside the home country (Rugman & Verbeke, 2008); while again it cannot be reasonably expected that all 22 029 MNCs have

adopted a matrix organisational structure. Given the limitations of the above in terms of the population size of MNCs with a matrix organisational structure, the calculation of the desired sample size would be inaccurate. However, in similar studies conducted, sample size ranged between 54-82 (see Egelhoff et al., 2013; Wolf & Egelhoff, 2013 for example).

Cohen (1992) report that when a desired sample size has not been achieved in the data collection, the confidence interval should be adjusted to ensure that findings from statistical outputs are valid. From the data collection, detailed in the next section, a total of 151 responses were received, of which 146 were valid responses. Therefore, the final sample size of 149 was achieved, and statistical analysis was performed at a 95% confidence level.

3.6 DATA COLLECTION

The sampling technique and sampling frame above resulted in a total of 400 MNCs targeted for the data collection. The 400 MNCs were selected from the sample frame, through the following technique. The list of MNCs were downloaded into Microsoft Excel, and randomly ranked from 1 to 22 029 using the Microsoft Excel RAND function. MNCs ranked from 1 to 400 were then isolated and subsidiaries emailed. The above was done in stages, with the first stage isolating 200 MNCs in rank order. The reason for the 200 was the practicality of a single researcher reaching out to the subsidiaries of MNCs. The websites of the 200 organisations were visited, and a cover email, with the link to the online survey, see Appendix C for questionnaire, was sent at the subsidiary level to an identified Executive or Senior manager listed. The choice of seniority level within an organisation is consistent with previous studies conducted by Egelhoff et al., (2013) and Wolf and Egelhoff (2013). In cases where no individuals were listed, the company general contact email address was used to send the email.

A series of follow-up emails were sent at different intervals from the initial request, and after three follow-ups, a new group of 100 organisations were selected in order of the random ranking, and are highlighted in the table 3-3 below Sánchez-Fernández et al., (2010) advise that researchers should not exceed three to four follow-ups, and therefore the researcher chose three follow-ups as a maximum.

Table 3-3: Date and number of responses received from email invitation to participate in research

Date of email invites	Number of responses
8 May 2017 [a]	15
23 May 2017*	10
7 June 2017*	8
6 July 2017*	18
1 August 2017[b]	11
2 September 2017**	6
10 October 2017**	7
3 November 2017**	2
28 November 2017[c]	4
8 January 2018***	70****

Key: [a] = Top 200 from randomised list sent invitation email to participate in research; * Reminder email to complete questionnaire to organisations sent as part of [a]. [b] Next 100 from randomised list sent invitation email to participate in research; ** Reminder email to complete questionnaire to organisations sent as part of [b]. [c] = Next 100, following on b, from randomised list sent invitation email to participate in research; *** Reminder email to complete questionnaire to organisations sent as part of [c]. **** these were collected over time from 8 January 2018 to May 2018.

A total of 400 unique MNCs were targeted, and emails were sent, with a total return of 151 responses during the data collection period between May 2017 and May 2018 were received. This provided a response rate of 38%. Of the 151 responses that were collected, 5 responses were not deemed appropriate for the study, for the following reasons: i) three respondents did not report to HQ, and ii) two respondents completed less than 20% of the questionnaire. The response rate of 38% provides insight into nonresponse error, which results in sample bias and self-selection bias (Zikmund et al., 2009), these biases were drawn into the interpretation of the results as limitations on the generalisability. Porter (2004) reports that it is important for researchers to understand why individuals respond to surveys. Sánchez-Fernández et al., (2010) adequately provide rationale for this, however what should be noted is the reasons for non-response as well. In the context of the current research many of the respondents were not known

to the researcher and may have contributed to the lack of response (Sánchez-Fernández et al., 2010).

3.6.1 Data collection tool

The data collection tool took the form of an online survey with specific questions allowing for the understanding of the constructs. The current study consisted of established scales to measure the following constructs: i) performance, ii) strategy, iii) HQ control, iv) flexibility, and v) efficiency. Table 3-4 below provides the construct, type of variable, items within each construct, and source.

In addition to table 3-4 below, demographic questions related to the respondent were asked and are outlined in questions 1-4 on the questionnaire, see Appendix C.

Table 3-4: Construct, type of variable, number of items and reference for measured items

Construct	Variable	Type	Number of Items	Reference
	Describe organisational structure Reporting lines	Qualifying question	2	Egelhoff et al., (2013)
	Name Home country Host country	Organisational identifier	3	Egelhoff et al., (2013)
	Primary Industry Secondary Industry Number of industries	Control	4	Egelhoff et al., (2013)
Performance	Organisational productivity, Organisational effectiveness, and Organisational stability	Dependent	10	Auh and Menguc (2005); Caves (1974); Egelhoff et al., (2013); Kim Hoskinsson and Lee., (2015); Miller and Pras (1980); Spanos and Lioukas (2001), Wolf (1977),
HQ Control	Nature and Time	Independent	3	Piskorski & Spadini, 2007; Wolf & Egelhoff, 2012
Strategy	Product diversity Functional dimension Geographic Region Customer market	Independent	13	Egelhoff et al., (2013); Wolf and Egelhoff (2001)
Flexibility	Strategic flexibility Operational flexibility	Independent	17	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)

Construct	Variable	Type	Number of Items	Reference
	Structural flexibility			
Efficiency	Efficiency	Independent	3	Auh and Menguc (2005); Tan and Wang (2010)
	Founding year	Moderator	1	Egelhoff et al., (2013)

The data collection tool, as is evident was a single-source tool, which required self-reporting across perceptual measures, with data collected at a single point in time (cross-sectional design). Studies adopting these characteristics of data collection are prone to common-method bias, which may result in biased relationships between the constructs, namely performance, HQ control, strategy, flexibility, and efficiency (Schaller, Patil & Malhotra, 2015). While Podsakoff, MacKenzie and Podsakoff (2003) propose remedies, these remedies were only considered post-hoc of data collection, and therefore could not be addressed. Harman's single factor test may be applicable to understand if there is presence of common method bias, however given the exploratory method nature of this, it is not considered a test (see Podsakoff et al., 2003 for a comprehensive overview). The researcher therefore considered these in the interpretation of the results obtained.

3.6.2 Matrix organisational structure

The current study required the identification of MNCs that have adopted the matrix organisation structure. In order to ensure that the respondents were in a matrix structured organisation, all respondents were asked qualifying questions, namely:

a. Which one of the following best describes your organisational structure?

Respondents were presented with a definition of the hierarchical structures and matrix organisational structures, adapted from Egelhoff et al., (2013), as well as indicative graphical displays of the two structures, see figure 3-1 below. This was primarily used as a qualifying question to ensure that the responses were appropriate for the study. Qiu and Donaldson (2012) and Egelhoff et al., (2013) report that the term matrix organisational structure often takes on different terminology, and therefore the graphical representation was used as an illustrative example. If a respondent responded with hierarchical, the questionnaire ended.

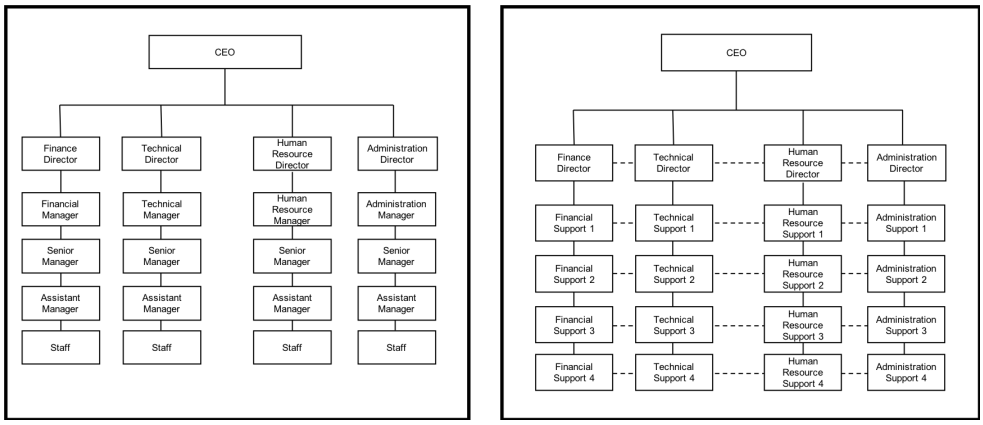

Figure 3-1: Depiction of hierarchical organisational structure (left) and matrix organisational structure (right)

The matrix manager is an individual employed at the subsidiary level of a MNC with a reporting relation to HQ and at the subsidiary level (Davis & Lawrence, 1978; Grubenmann, 2016; Schnetler et al., 2015), indicative of the dual reporting in the macro structure. In order to ensure that this individual responded, all respondents were asked whether they report to HQ and at the subsidiary level. Egelhoff et al., (2013) suggests that these individuals are often responsible for international operations. The following question was used to ascertain reporting:

a. As a subsidiary manager: You report at both the subsidiary level and headquarters;

Should a respondent have answered “No” or “Unsure” to the above, the questionnaire ended. This was done to ensure that the individual responding was deemed appropriate as the Matrix Manager (Davis & Lawrence, 1978; Grubenmann, 2016; Schnetler et al., 2015).

3.6.3 Performance

The organisational structure is an important mediator between the organisation strategy and the environment (Rugman, Verbeke & Nguyen, 2011; Rugman & Verbeke, 2001). Within the strategy-structure-environment fit paradigm, fit is achieved when organisations perform (Caspin-Wagner et al., 2013; Geiger et al., 2006; Wilden et al., 2013; Xu et al., 2006). Performance is noted to be a multi-dimensional construct, with numerous performance measures having been proposed in the literature (see O’Reilly & Tushman, 2013 for a comprehensive overview).

The current study adopted performance measures as a three dimensional construct, made up of profitability and market performance (Spanos & Lioukas, 2001, Woo, Willard & Daellenbach, 1992), and are reported to be indicative of organisational productivity, organisational effectiveness, and organisational stability (Auh & Menguc, 2005). Each of the dimensions were subjectively measured and self-reported on a rating scale of 1 (much worse) to 5 (much better) relative to competitors.

Self-reporting of financial measures may be argued to be subjective, with the use of objective financial data being preferred (Spanos & Lioukas, 2001). For the analysis objective financial data would require the treatment of data as part of a single population, however the MNCs surveyed belong to different industries, and therefore would require standardisation, along industry. However, the use of industry is further problematic given the vagueness of industry boundaries (Spanos & Lioukas, 2001). With this in mind, the current study adopted the self-reported measures. Furthermore, in order to ensure that temporal changes were mitigated, the questions were focussed on obtaining response over a three year period, which further allowed for understanding of sustainability (Auh & Menguc, 2005; Spanos & Lioukas, 2001), and in the context of the current study, stability.

Stability is a component of sustained performance, and indicates the effect of a fluctuation (Lee, Nwana, Ndumu & De Wilde, 1998). A system may be disturbed by a fluctuation, however if it normalises, the system is reported to be stable. The converse, if a fluctuation occurs, and the system does not normalise, the system is said to be unstable. In the context of the current research, stability of performance is indicated by the normalising of profit and market performance. Over a three year period if these are reported to be worse than competitors, this is indicative of instability reflected in performance measures noted below, on the other hand, stability of performance is reflected through reporting of much better than competitors.

Organisation productivity akin to profitability measures included: profitability over the last three years; return on investments over the last years; return on sales over the last three years; and return on assets over the last three years.

Organisation effectiveness akin to market performance include: growth in sales volume over the last three years; growth in market share over the last three years; and profit margin for the last three years.

Organisation stability of performance measures include: market share over the last three years; return on own capital over the last three years; and net profit over the last three years.

The above questions were adapted from Auh and Menguc (2005); Egelhoff et al., (2013); Kim et al., (1989); and Spanos and Lioukas (2001).

3.6.4 Strategy

The strategy adopted by a MNC is the primary driver of the strategic orientation and results in the structural dimensions of Product/Service dimension, Functional dimension, Geographic Region dimension and Customer Market dimension adopted by the MNC. Egelhoff et al., (2013), Tan and Wang (2010) and Wolf and Egelhoff (2002) have empirically proved proxy's for the dimensions.

3.6.4.1 Product/Service Dimension and Functional Dimension

In order to understand if the MNCs primary dimension is a Product/Service dimension, the amount of foreign (subsidiary) product diversity was used as a proxy (Egelhoff et al., 2013; Wolf & Egelhoff, 2002). Wolf and Egelhoff (2002) report that organisations with a Product/Service dimension in their organisational structure will have greater foreign product diversity than organisations which do not. Therefore, this was taken in relation to the total MNC product diversity, for two reasons. One, a relationship between total and foreign product diversity exists (Egelhoff et al., 2013; Wolf & Egelhoff, 2002), and two it further allows for the understanding of Functional dimension. MNCs adopting a Functional dimension are often associated with low product/service diversity, while MNCs adopting a primary Product/Service dimension are characterised by high product diversity.

3.6.4.2 Geographic Region Dimension

In order to understand if the MNC adopted a primary Geographic Region dimension, the percentage of sales generated at the subsidiary level in comparison to the total MNC sales was reported by the respondent. Furthermore, as reported by Egelhoff et al., (2013), and above in the literature review, MNCs with a primary Geographic Region dimension tend to have a greater number of subsidiaries in comparison to MNCs that do

not adopt a Geographic Region primary dimension. Therefore, the number of host countries that the MNC operates in served as a proxy for the number of subsidiaries.

3.6.4.3 Customer Market Dimension

In order to understand if an MNC adopts Customer Market dimension as the primary dimension, the number of global clients serviced through a single contact is often ascribed to this dimension. Therefore, in order to understand if this is the primary dimension adopted by MNC, the number of global clients in comparison to the number of national customers served is a suitable indicator of this dimension (Egelhoff et al., 2013).

3.6.4.4 Primary and Primary x Secondary dimensions

The above allowed for the understanding of, i) Product/Service dimension; ii) Functional dimension; iii) Geographic Region dimension; and iv) Customer Market dimension primary dimensions. Following Egelhoff et al., (2013) and Wolf and Egelhoff (2002), the above further allowed to understand through the application of the above, the determination of the primary x secondary dimensions. The following primary x secondary dimensions were developed for the current study:

i) Product/Service dimension x Customer Market dimension; Customer Market dimension x Product/Service dimension for hypothesis 1a and 1b respectively;
ii) Geographic Region dimension x Functional dimension; Functional dimension x Geographic Region dimension for hypothesis 2a and 2b respectively;
iii) Product/Service dimension x Functional dimension; Functional dimension x Product/Service dimension for hypothesis 3a and 3b respectively; and
iv) Geographic Region dimension x Customer Market dimension; Customer Market dimension x Geographic Region dimension for hypothesis 4a and 4b respectively.

3.6.4.5 Flexibility and Efficiency

MNCs require flexibility in order to meet local preferences and market conditions that occur in different geographic locations (Egelhoff et al., 2013; Qiu & Donaldson, 2012; Stopford & Wells, 1972). Measures of flexibility were adopted from Pennings and

Harianto (1992) and Volberda et al., (2012). These measures have been empirically proven to be valid and reliable measures of flexibility by Weerdt (2009). Flexibility however is further sub-categorised through strategic flexibility, operational flexibility, and structural flexibility. Strategic flexibility relates to the organisations ability to change goals in relation to the environment, while operational flexibility relates to the ability of the organisation to absorb changes (positive and negative) in volume of outputs, and structural flexibility relates to the ability of organisations to integrate across subsidiaries in the context of the current study.

Strategic flexibility was operationalised through understanding: ability to add new products/services; application of new techniques; new product-market combinations; and life-cycle management of products/services.

Operational flexibility was operationalised through understanding: ability to vary production or product/service capacity; ease of outsourcing; ease of hiring new employees when changes occur; and ability to switch between suppliers.

Structural flexibility was operationalised through understanding: modification of tasks and functions; rigidity of organisational structure; control system modification; and rigidity of employee positions.

Strategic, operational, and structural flexibility were measured on a 5-point Likert scale, 1- strongly disagree to 5- strongly agree, and therefore may be considered interval data.

Measures related to efficiency were adapted from Tan and Wang (2010) and Auh and Menguc (2005). Efficiency is related to operational efficiency, in which standard activities are performed more efficiently (Magnusson et al., 2009). Efficiency is related to standardisation, ensuring that all tasks for example are performed in a consistent manner, but more importantly as these are a standard or consistent set of tasks, the ability to control these and then seek efficiencies to limit duplication are noted (Auh & Menguc, 2005). Efficiency is therefore related to ensuring reliability and may be predictable. Automation of routine tasks, the achievement of economies of scale and capacity utilisation are indicators of efficiency. There is little contention in the literature around efficiency measures.

Efficiency was therefore operationalised through understanding: Automation and modernisation; economies of scale; and capacity utilisation. These were measured on a

5 point Likert scale, 1 – much less than our competitors, 5- much more than our competitors, in relation to competitors.

3.6.4.6 Headquarter control

Control in the context of the current study is based on the type of reporting to headquarters (HQ) by the matrix manager, namely solid or dotted line reporting and time spent reporting to HQ. This is indicative that HQ control is multi-dimensional construct which needs to be understood through both nature and time. Piskorski & Spadini, (2007) and Wolf and Egelhoff (2012) report that while the nature (solid or dotted line) may be in an indicator of control, time spent reporting to HQ is important to understand, as individuals may spend increased time reporting to HQ independent of the nature of the reporting. Thus, nature and time were measured.

In order to understand the *nature of the reporting* the following two questions were asked of respondents:

a. You report directly (solid-line) to headquarters, and indirectly (dotted-line) at the subsidiary level; and
b. You report directly (solid-line) at the subsidiary level, and indirectly (dotted-line) to headquarters.

The above provides an understanding that an individual may not report solid line to both HQ and subsidiary. This is however in line with control as discussed in section 2.7 above. Therefore, nature was binary, solid-line to HQ and dotted-line to subsidiary or dotted-line to HQ and solid-line to subsidiary.

Keegan (1974) report that time spent reporting as a proxy for nature is better suited to understanding rather than nature of reporting only. This provides credence that while solid may indicate primary reporting line, this may or may not relate to amount of time allocated to doing so, and vice-versa for dotted-line reporting.

Time spent reporting to HQ was measured through an understanding of average time allocated to reporting to HQ. This was measured on a 10 point scale: 1- less than 10% to 10- more than 90%. Time spent reporting was then categorised into two categories, namely low allocation of time, comprising of 1- less than 10% to 5- 41%-50%, and high allocation of time, comprising of 6- 51%-60% to 10- more than 90%.

As over 95% of the respondents responded directly (solid-line) to HQ, there was not enough variability in the nature, and therefore while the descriptive statistics are presented in the following chapter, only time could be considered for HQ control.

3.6.5 Moderator: Age of subsidiary

Moderator variables are affect the strength and the direction of the independent and dependent variables (Field, 2013). Age of the subsidiary was deemed to moderate the performance (dependent variable) and of strategy, HQ control, flexibility, and efficiency (independent variables). The founding year of the organisation was asked from respondents, and this was then computed to calculate the age. The base year was taken to be 2017 to determine age to a point. This was done as the data collection begun during 2017, and even though the majority of responses were from 2018, the year had not completed when the analysis of the data begun. Age therefore was calculated as:

2017 – founding year = age (in years).

3.6.5.1 Control variables

Control variables are important consideration in ensuring that the results obtained from the study are generalisable to MNCs with a matrix organisational structure. However, in order to ensure this, it is important to control for variables which may extraneously affect the relationships of strategy, HQ control, flexibility, and efficiency as functions of the performance (Becker, 2005). There are two methods that may be used in order to ensure that extraneous variables are managed, one, quasi and experimental designs, and two, statistical testing (Becker, 2005). However, quasi and experimental designs are not practical for research focussed on organisations, however statistical methods may be used (Field, 2013).

Egelhoff et al., (2013) and Tan and Wang (2010) report that organisation size and industry may affect relationships. Given that this may have occurred in the study, and in similar studies such as Egelhoff et al., (2013), Tan and Wang (2010) and Weerdt (2009), these variables were deemed control variables. Total assets determined size, and industry were controlled through the use of dummy variables. As a statistical technique was used for the control of these variables, a hierarchical multiple regression (HMR) was used (Hayes, 2013). These control variables were entered in step 1, with the predictors

in step 2. HMR is discussed in further detail below as it further formed the inferential statistical test to test the hypotheses.

3.7 DATA ANALYSIS

Data editing, data coding, and data entry were conducted prior to the data analysis (Field, 2013). These three stages are conducted as the error checking phases and are important prior to the analysis of the data.

3.7.1 Data editing

Raw data was downloaded from Survey Monkey into a single Microsoft Excel file, prior to the loading of the data into IBM ® SPSS version 25. For the quantitative data collected through the questionnaires, these were checked for omissions, and consistency. Omissions in quantitative questionnaires are assumed to have been due to respondent error, and therefore when a large sample (n>150) a neutral value may be inserted or alternatively the mean along an industry variable for example may be used (Field, 2013). Omissions were mitigated through the forced answering of all questions, and therefore missing responses were not present in the data. In the current study however, two respondents had only partially completed the survey (20%), and while neutral values could have been used, the sample size n=146 did not allow for this. Hair et al., (2010) further advises that where means or neutral values are inserted for omissions, the respondents should have completed at least 50% of the questionnaire.

3.7.2 Data coding

Coding was conducted through the assignment of values aligned to the responses, however financial data, and number inputs from respondents were not coded and inputted as raw data. The codebook allowed for the provision of definition, labelling of items, and assignment of numeric values to responses. In order to conduct the analysis to test the hypotheses stated in section 2.8, aggregated scores were required to be calculated and a column reflecting this was included.

3.7.3 Reliability

The first stage of data analysis involved the testing for reliability and validity. Scale reliability of the constructs are established through the use of Cronbach's alpha (Santos, 1999). Cronbach's alpha provides a measure of reliability (internal consistency), which Peterson (1994, p.381) defines reliability as "…the degree to which measures are free from error…" Reliability provides an understanding of the consistency of results of the construct over a period of time, that is, have been tested over multiple iterations, and is deemed as a suitable representation of the population (Santos, 1999). Furthermore, reliability indicates if the results of a study can be reproduced under a similar methodology, and this is achieved, the research instrument is deemed to be reliable.

HQ control was measured on an unordered categorical scale, therefore the application of Cronbach's alpha for reliability is not possible (Raykov, Dimitrov & Asparouhov, 2010), therefore test-retest reliability was applied to understand reliability. Test-retest reliability was conducted using Guttman's Lambda (Callender & Osburn, 1979). Table 3-5, adapted from Field (2013) indicates Cronbach's alpha, and internal consistency description for the constructs, strategic choice; flexibility; efficiency; performance, and HQ control.

Table 3-5: Cronbach's alpha and internal consistency description (Field, 2013)

Construct	**Cronbach's alpha**	**Questions deleted to achieve level of reliability**	**Internal consistency descriptor**
Strategic Choice 1. Foreign Product/service diversity 2. Sales generated subsidiary level (%)* 3. MNC sales* 4. Sales from Global clients serve* 5. Sales from national clients*	1. 0,723 2. N/A 3. N/A 4. N/A 5. N/A	None	1. Acceptable 2. N/A 3. N/A 4. N/A 5. N/A
Flexibility 1. Strategic 2. Operational 3. Structural	1. 0,751 2. 0,896 3. 0,837	None	1. Acceptable 2. Good 3. Good
Efficiency	0,720	None	Acceptable
Performance	1. 0,634	None	1. Questionable

Construct	Cronbach's alpha	Questions deleted to achieve level of reliability	Internal consistency descriptor
1. Organisation efficiency 2. Organisation effectiveness 3. Organisation stability	2. 0,726 3. 0,811		2. Acceptable 3. Good
HQ control 1. Nature** 2. Time***	1. 0,333 2. N/A		1. Moderate 2. N/A

*Direct percentage input from respondent, therefore Cronbach cannot be calculated, ** Guttmans Lambda, *** Single item measure

The strategic choices of Product/Service dimension, Functional dimension, Geographic Region dimension and Customer Market dimension, as discussed above in section 3.6.4, were calculated and therefore the ability to calculate reliability is not possible (Field, 2013). Furthermore, while some of the reliability statistics indicate "questionable" reliability, these remained within the range to be used (Hair et al., 2010).

3.7.4 Validity

Zikmund et al., (2009, p. 309) reports that "…reliability is a necessary but not sufficient condition for validity…" This is indicative that even though reliability may be established, it does not imply that validity has been established. Validity describes the extent to which the tool or instrument that is being used to collect data measures the underlying constructs, which it has been developed to measure (Zikmund et al., 2009). While there are numerous methods for the assessment of validity, the current research assessed validity through construct validity, and specifically convergent and discriminant validity. Convergent validity tests if concepts that may be related are in fact related. Discriminant validity on the other hand ensures that while concepts are related (convergent validity), they are different and should be treated separately (Hair et al., 2010; Zikmund et al., 2009). Zikmund et al., (2009) further reports that to establish convergent validity, Pearson's correlation co-efficient (*r)* should be significant, that is, $p<0.05$, however this must be balanced with a Pearson correlation co-efficient (*r)* should not exceed 0.75 for discriminant validity. Table 3-6, below provides convergent and discriminant validity.

Table 3-6: ***Convergent and divergent validity***

Construct	Convergent validity	Discriminant validity
Strategic Choice 1. Foreign Product/service diversity 2. Sales generated subsidiary level (%)* 3. MNC sales* 4. Sales from Global clients serve* 5. Sales from national clients*	1. p<0,05 2. N/A 3. N/A 4. N/A 5. N/A	1. 0,556 2. N/A 3. N/A 4. N/A 5. N/A
Flexibility 1. Strategic 2. Operational 3. Structural	1. p<0,05 2. p<0,05 3. p<0,05	1. 0,568 2. 0,633 3. 0,700
Efficiency	p<0,05	0,601
Performance 1. Organisation efficiency 2. Organisation effectiveness 3. Organisation stability	1. p<0,05 2. p<0,05 3. p<0,05	1. 0,453 2. 0,626 3. 0,663
HQ control 1. Nature** 2. Time***	1. p<0,05 2. N/A	1. 0,201 2. N/A

*Direct percentage input from respondent, therefore validities cannot be calculated
Pearson's Chi-square used, * Single item measure

3.7.5 Factor analysis

Factor analysis is a statistical method with the aim of reducing the number of individual variables into a set of factors which explains maximum variance (Field, 2013). The method used to achieve this is through an understanding of the number of correlations between variables into common factors (Podsakoff, & Organ, 1986; Field, 2013), which reduce the number of variables which researchers need to account for, into a number of variables which measure the underlying factors. This is primarily done in survey research, where there are a number of questions asked as indicators for a particular outcome (construct). For example, the sub-construct of performance, organisation productivity asks four questions which represent organisation productivity. Factor analysis will allow for the reduction of these four questions into a smaller set of factors, for example one. All four questions would be represented across the one factor, thus leaving the researcher with one factor representing four questions to be analysed, in

comparison to four individual questions relating to the same underlying construct to be analysed.

There are two common methods of factor analysis, namely confirmatory factor analysis (CFA) and exploratory factor analysis (EFA). Confirmatory factor analysis allows for the testing of hypotheses that there should be relationship among the variables measured and the latent construct (Hurley et al., 1997; Marsh & Hocevar, 1985). The application of CFA is based on the application of theory to derive the questions which measure the latent construct and then tests the theory that there is a relationship which exists (Hair et al., 2010; Hurley et al., 1997). In contrast, EFA does not hypothesise the relationship among the variables, and allows the underlying structure of the correlations and co-variances to be identified without *a priori* hypothesising of the relationships (Field, 2013; Podsakoff, & Organ, 1986). The underlying structure, determined by factor loadings and Eigenvalues, from an EFA and then proof of relationship and fit indices for a CFA allow for researchers to then aggregate scores by the underlying factor structure.

In order to test the model fit for CFA, the following measures are often prescribed to indicate fit: i) Comparative fit index (CFI) between 0 -1, with Hu and Bentler (1999) suggesting values between 0,9 or greater for indication of fit; ii) Root Mean Square Error of Approximation (RMSEA), between 0 -1, with Hu and Bentler (1999) suggesting that acceptable RMSEA values of less than 0,06; iii) Tucker-Lewis Index (TLI) ranging from 0-1, with Hair et al., (2010) reporting 0,90 and above as good fit; iv) Normed fit index (NFI) ranging from 0-1, with acceptable measures being 0,90 and above; v) Parsimony normed fit index, ranging from 0-1, with good fit 0,90 and above; and vi) Chi-square, where p-value should be less than 0,05, signifying non-significance. CFA produces a number of measures of fit which need to be satisfied, and Hu and Bentler (1999) report that CFI and RMSEA are the most critical.

Exploratory Factor Analysis, in comparison to CFA does not produce model fits, rather a set of different results which need to be assessed for the suitability. These include i) KMO and Bartlett's test of sphericity, with KMO above 0,5 and Bartlett's test significant, $p < 0,05$, to indicate that data is in fact factorisable; ii) Eigenvalues which represent maximum variance explained, with Eigenvalues above 1 generally used as a cut-off point; and iii) among the variables correlated there must be one correlation above 0,3.

A CFA was conducted and the results indicated that none of the hypothesised relationships were within the bounds set above, therefore indicating that model fit was

poor. Reasons for poor model fit may be primarily driven by the number of observations, Loehlin (1998) and Boomsma and Hoogland (2001) reporting that there should be ideally n = 200, the current study n = 146 was achieved.

Beavers, Lounsbury, Richards, Huck, Skolits and Esquivel (2013) report that when CFA model fits are unacceptable, an EFA may be conducted. An EFA was subsequently conducted, and table 3-7 below indicates the number of factors per construct extracted, the KMO, and Barlett's test results, using the Eigenvalue 1 rule. As table 3-7, below, indicates, all variables were reduced into single factors. Therefore the individual question responses were added together, and the mean calculated, to create a single view of the construct and sub-constructs.

Table 3-7: Construct, KMO, Bartlett's test, number of factors extracted

Construct	**KMO**	**Bartlett's test of sphericity**	**Number of factors extracted, (percentage variance explained)**
Strategic Choice 1. Foreign Product/service diversity 2. Sales generated subsidiary level (%)* 3. MNC sales* 4. Sales from Global clients serve* 5. Sales from national clients*	1. 0,83 2. N/A 3. N/A 4. N/A 5. N/A	1. p<0,05 2. N/A 3. N/A 4. N/A 5. N/A	1. 1 (73,08) 2. N/A 3. N/A 4. N/A 5. N/A
Flexibility 1. Strategic 2. Operational 3. Structural	1. 0,90 2. 0,85 3. 0,88	1. p<0,05 2. p<0,05 3. p<0,05	1. 1 (70,04) 2. 1 (60,73) 3. 1 (64,02)
Efficiency	0,639	p<0,05	1 (64,10)
Performance 1. Organisation efficiency 2. Organisation effectiveness 3. Organisation stability	1. 0,615 2. 0,645 3. 0,702	1. p<0,05 2. p<0,05 3. p<0,05	1. 1(48,81) 2. 1(65,99) 3. 1(72,64)
HQ Control 1. Nature** 2. Time***	1. N/A 2. N/A	1. N/A 2. N/A	1. N/A 2. N/A

*Direct percentage input from respondent,** Binary value, *** Single item measure

3.7.6 Normal distribution

Tests for normal distribution (normality) were conducted in order to understand the underlying distribution of the sample data collected. Normality testing is a fundamental assumption of numerous parametric statistical tests, with deviations from normality rendering many statistical tests inaccurate (Field, 2013). Furthermore, as the study relies on a probability, p-value, for the testing of the hypotheses, it was a critical step in the data analysis. While two normality tests are generally performed, namely, Kolmogorov-Smirnov and Shapiro-Wilk test, Yap and Sim (2011) report that Shapiro-Wilk's test performs marginally better. To this end, the Shapiro-Wilk test, with a Lilliefors significance correction for normality was conducted for the relevant questionnaire items and constructs, and resulted in $p<0,05$. In the context of this test, the null hypothesis that data is normally distributed was rejected. Given that the assumption of normality was violated, Field (2013) and Zikmund et al., (2009) suggest that data transformation of data may be conducted through the application of the natural log, however this should only be conducted when no alternatives to the test proposed can be used. The non-normal nature of the data achieved however is dependent on the type of inferential tests, with Tabachnick and Fidell (1996) reporting that if non-normality is due to skewness and not outliers, it does not affect the results of significance tests.

3.7.7 Outliers

Outliers, are data point/s that do not follow a samples pattern (Rousseeuw, & Van Zomeren, 1990), and often skew data, either positively or negatively (Field, 2013). Outliers are often identified when values are greater than 3 standard deviations from the mean, and may be identified by Box and Whisker plots (Field, 2013).

For the sample, one outlier, case 24, was identified as an outlier for operational and strategic flexibility. While it is common to delete the outlier (Rousseeuw, & Van Zomeren, 1990), Field (2013) note that some inferential tests (for example hierarchical multiple regression) are robust enough to adequately minimise the effect of the outlier, and therefore the deletion of the outlier should be conducted in line with the inferential statistical test being conducted. For the current study the primary inferential test conducted was a moderated regression (hierarchical regression with interaction effects), in which an outlier is not deemed to be fatal (Tabachnick & Fidell, 1996).

3.8 MULTIVARIATE DATA ANALYSIS

3.8.1 Moderated regression (Hierarchical multiple regression)

Hierarchical multiple regression (HMR) is used to assess the effect of moderating variables (Carifio & Perla, 2007). HMR requires that the dependent variable be measured on the interval or ratio level. The manner in which organisational efficiency, organisational effectiveness and organisational stability were measured, was on the interval level (Carifio & Perla, 2007). HMR further allows for the two or more independent variables, which may be measured at the ratio or interval level, or nominal level. As strategy was classified as per Egellhoff et al., (2013), this was treated as nominal, and the categorisation of HQ control was further treated as nominal level data.

A moderator is a variable, organisation age in the context of the current study, produces its effect on the independent variables, strategy, HQ control, flexibility and efficiency, on the dependent variable of performance. Similarly, HMR allows for the testing of the effect of control variables (Field, 2013). Egelhoff et al., (2013) and Tan and Wang (2010) report that organisation size as measured through total assets in the current study, and industry need to be controlled for. These variables are related to performance, as performance measures used are financial in nature, and it is therefore possible that they affect the fit as assessed through organisation productivity, organisation effectiveness, and organisation stability. These control variables are not of particular interest for the study, but may be related according to prior research, to performance.

In conducting a HMR, the control variables are entered as model 1, while the independent variables that are being tested are entered in as model 2. This allows for the understanding of significant r-square changes, which further allow for an understanding, if the control variables explain a significant amount of variance. HMR therefore allowed for testing of the effect of the control variables, as well as the moderating effect of organisation age.

Organisation age was argued to moderate organisational performance. In order to conduct the HMR, each of the interval level independent variables needed to be centered and nominal level variables needed to be made dummy (0 or 1) variables. Dummy variables allowed for the creation of a base in which the interpretation could be conducted, such that 0 was considered the base for comparison for the variable coded

as 1. Centering was achieved by subtracting the mean of the variable from the variable (Field, 2013). For example, the mean for strategic flexibility may have been 4,00, while the score for strategic flexibility was 4,5. Subtracting the two provides a centered score of 0,5. Centering for moderated regression is computed in order to minimise the correlations between the interaction terms, so that the effect of the independent variables are distinguishable from the interaction effects (Field, 2013). Furthermore, centering allows for the understanding of the effects at the mean of the independent variables (flexibility and efficiency) and the moderator (organisational age), which is important as a moderated regression allows for the estimation of conditional effects of a variable when the others are fixed (Field, 2013).

The following was computed for the independent variables:

i) Flexibility (strategic, structural, and operational) were centered;
ii) Efficiency was centered;
iii) Strategy was dummy coded as per the following, per hypothesis:
    a. Hypothesis 1:
        i. Product/Service dimension x Customer Market dimension = 0
        ii. Customer Market dimension x Product/Service dimension = 1
    b. Hypothesis 2:
        i. Geographic Region dimension x Functional dimension = 0
        ii. Functional dimension x Geographic Region dimension = 1
    c. Hypothesis 3:
        i. Product/Service dimension x Functional dimension = 0
        ii. Functional dimension x Product/Service dimension = 1
    d. Hypothesis 4:
        i. Geographic Region dimension x Customer Market dimension = 0
        ii. Customer Market dimension x Geographic Region dimension = 1
iv) HQ control was dummy coded as:
    a. HQ control high = 0
    b. HQ control low = 1

Organisation age as the moderator was further centered as well.

The interaction effects were calculated as the centered independent variable * centered organisation age, that is, the centered independent variables (strategy, HQ control, flexibility, efficiency) multiplied by the centered organisation age.

The centered independent variables were then entered in Step 1 of the regression, and the interaction effects in step 2.

HMR is accompanied by a number of assumptions prior to being conducted. These assumptions are documented below.

Assumption 1, normal distribution, and assumption 2, no outliers are documented above in section 3.7.6 and 3.7.7. Assumption 3, multicollinearity, assumption 4, independence of observations, assumption 5, homoscedasticity, and assumption 6, linearity was tested. Each of the assumptions 3-6 are above are detailed below.

Assumption 3 Multicollinearity:

Multicollinearity is ascribed to independent variables which have high correlations (Blalock, 1963),and may be used to predict each other. These relationships have an effect on the parameter estimates that are produced and do not allow for the adequate discrimination of effect of the independent predictor variables on the dependent variable (Field, 2013). In order to test the presence or absence of multicollinearity, the variance inflation factor, VIF, (Graham, 2003), was used. While there is no documented evidence for a range of acceptable VIF scores, Blalock (1963) report that VIF values over 10 are often looked at to indicate multicollinearity. Furthermore, Graham (2003) report that tolerance is another commonly used, indicator, however VIF is the inverse, that is, VIF is 1/tolerance. Both VIF and tolerance were tested, and are Chapter 4.

Assumption 4, Independence of observations:

Independence of observations allow for the understanding if two observations are independent of each other (Field, 2013), and that one of the observations does not provide information about the other observation, therefore indicating that the response from one respondent is not affected or by the measurement of other respondents (Lix, Keselman & Keselman, 1996). Independence of observations, are tested through the Durbin-Watson statistic (Durbin & Watson, 1971). Field (2013), Hair et al., (2010) report that the Durbin-Watson statistic is effective in the detection of autocorrelation or serial correlation. Autocorrelation indicates that the error terms follow a pattern which is an indicator that the values from the same variables are to some extent related and therefore are not independent in observation (Durbin & Watson, 1971). Hair et al., (2010) report that the Durbin-Watson statistic can range between 0 and 4, however to prove no

autocorrelation, and therefore independence, this statistic should be closer to 2. This was tested, and the results are presented Chapter 4.

Assumption 5, Homoscedascity:

Homogeneity of variances is the understanding that the variance across the groups are equal (Bryk & Raudenbush, 1988; Field, 2013), conversely if the variances are unequal, they are reported to be heteroscedastic (Hair et al., 2010). The implications of violating the assumption of homogeneity of variances-covariances may lead to the committing of a Type I errors, in which the null hypothesis is incorrectly rejected when in fact it is true. Homogeneity of variances was evaluated through visual inspection of the scatterplots, and the results indicate that there was homoscedascity between the plot of studentised and unstandardized predicted values, therefore this assumption was met. This was further assessed through Levene's test for homogeneity of variances. Levene's test should be less than p = 0,05 to indicate homogeneity of variance. Results indicated that all p-values for Levene's was below 0,05, therefore this assumption was met, as assessed through the p-value of Levene's tests for homogeneity of variances.

Assumption 6, Linearity:

The assumption of linearity was tested through the partial regression plots and scatterplots. Both these methods allow for the understanding if the assumption of linearity is achieved (Berry, 1993). Partial regression plots allow for the understanding of effects that adding variables to an equation which already is composed on a set of independent variables (Berry, 1993). For the moderated regression conducted in the current study, the model was first comprised of the independent variables of strategy, HQ control, flexibility, and efficiency, the second step (step 2) comprised of the interaction terms as highlighted above taking into consideration organisational age. The results from the scatterplots and the partial regression plots indicated that linearity was achieved.

3.9 QUALITY AND ETHICAL CONSIDERATIONS

The quality of the research is dependent on the transparency of the data collection and data analysis. Transparency allows for other researchers to follow the methodology of data collection and analysis, and arrive at similar findings. The study was quantitative in

design; therefore construct reliability and construct validity was established. Construct validity was ensured through the adoption of measures/questions of previous studies as well as through the testing of convergent and discriminant validity. The questions that were adopted from prior studies relate to the constructs being measured, and have been discussed above.

A covering letter, letter of consent, was attached to the questionnaire, and was on the landing page when respondents used the link to complete the questionnaire. This letter served to inform the respondent of the purpose of the study; participation was voluntary, and assured confidentiality and anonymity. As the survey was be sent out via an electronic link, respondents anonymity was achieved, even though the link was targeted at individuals, the researcher has no way of ascertaining if the person targeted, actually completed the survey. While this takes into account the respondents participation to consent freely, implications are that the researcher was not in a position to follow-up on survey completion over and above follow-up emails that were sent.

The researcher is acutely aware of the implications of the data collected being predominantly from South African managers of MNCs with subsidiaries in South Africa. While this does not diminish the quality of the data, it limits its generalisability across the subsidiaries globally (see de Jong et al., 2015). The researcher therefore makes no claims of generalisability given the extent of the data collected being biased towards subsidiaries in South Africa.

The researcher maintained honesty, and in line with the transparency above all raw data, data collection and data analysis is provided in a complete and honest manner. No data manipulation and methodology manipulation was conducted to intentionally mislead others on the findings. No data was fabricated to support a particular stance of the researcher. Here it is important to note, the researcher's independence, and no conflict of interest regarding the potential or envisioned outcomes.

3.10 CONCLUSION OF RESEARCH METHODOLOGY AND DESIGN

The research design and methodology conducted to prove or fail to prove the hypotheses was outlined above. The research consisted of a mono-method quantitative research methodology for the collection of data using a survey. The method of collection resulted

in 151 surveys at the subsidiary level of MNCs being started, with 146 useable responses for data analysis. The survey comprised of measures which covered the main constructs of, organisational productivity, organisational effectiveness, and organisational stability to understand organisation performance. Organisational performance is however a function of strategy, HQ control, flexibility, and efficiency as the main constructs.

Data was analysed using IBM SPSS version 25, and the results pertaining to the answering of the hypothesis are presented in Chapter 4 next.

CHAPTER 4: RESULTS

4.1 INTRODUCTION

This chapter presents the findings of the statistical tests performed in relation to the hypotheses. As detailed in Chapter 3 above, data was collected through a survey using the SurveyMonkey platform. Data was then prepared (edited and coded) for data analysis. The constructs, where applicable, were tested for reliability and validity, see tables 3-6 and 3-7 above. Furthermore, the constructs were tested for normality, as well outliers, these results are presented above in sections 3.7.6 and 3.7.7 respectively. The sample demographics, descriptive statistics of the constructs are presented below. In addition, the results from the moderated regression using hierarchical multiple regression as they relate to the hypotheses are presented in this chapter.

4.2 DESCRIPTIVE STATISTICS

The descriptive statistics for the demographic variables are presented below in table 4-1. The survey contained a qualifying to ensure that respondents are in the employment of an organisation which currently adopts a matrix organisational structure. If the respondent had responded “hierarchical” the questionnaire automatically ended.

Table 4-1, below indicates that the majority of respondents were between the age category of 35-44 years of age (42,5%), while the lowest was from the age category of 55-64 years of age (26%). There were no respondents from the age categories 16-24 years of age, and 25-34 years of age. The majority of respondents were male, with females only accounting for 34,2% of the respondents. Tenure that respondents were employed with their current organisation, tends to be with individuals that have spent 6 or more years, 94,5% of respondents, with the majority of respondents having been in the employment with their current organisation for 11 or more years (51,4%). Seniority level within the organisation, indicates that 80,1% of respondents were at an Executive management level, while 19,9% at a Senior management level. There were no respondents from the Junior or Middle management levels. This demographic may be partly due to the sampling undertaken, however as Egelhoff et a., (2013); Wolf and Egelhoff (2002) and Qui and Donaldson (2012) report that organisations may adopt a

matrix at higher levels of the organisation, between HQ and subsidiary, with the lower levels in an organisation remaining hierarchical in nature and structuring, this demographic may provide some credence to this assertion.

Table 4-1: Demographic *characteristics of respondents*

Demographic	Frequency	Percentage
Age		
35-44	62	42,5
45-54	46	31,5
55-64	38	26,0
TOTAL	146	100
Gender		
Male	96	65,8
Female	50	34,2
TOTAL	146	100
Tenure		
Less than 2 years	1	0,7
3-5 years	7	4,8
6-8 years	24	16,4
9-11 years	39	26,7
11 or more years	75	51,4
TOTAL	146	100
Seniority Level		
Senior Management	29	19,9
Executive Management	117	80,1
TOTAL	146	100

The organisational characteristics of respondents are presented below in table 4-2 and table 4-3. Table 4-2 reports the home country, defined as the location of the HQ of the MNC, and table 4-3 host country, defined as geographic location of the subsidiary. Furthermore, the number of countries in which the MNCs have subsidiaries are further reported in table 4-2 below. These results indicate that the majority (31,5%, n=46) of respondent organisations HQ are based in the United States of America, while the majority of the respondents at the subsidiary level, were from South Africa (56,8%, n= 83). The increased response from South African subsidiaries may be explained by the researchers context. Furthermore, 93,2%, n = 136 of organisations had subsidiaries in 11 or more countries, see table 4-4.

Table 4-2: Headquarter geographic location (home country) of respondents organisations

Home Country	Frequency	Percentage
Argentina	1	0,7
Australia	2	1,4
Brazil	1	0,7
Canada	1	0,7
China	9	6,2
Cuba	1	0,7
Finland	1	0,7
France	7	4,8
Germany	7	4,8
Great Britain	13	8,9
India	9	6,2
Ireland	3	2,1
Italy	2	1,4
Japan	10	6,8
Korea	2	1,4
Liechtenstein	1	0,7
Malaysia	1	0,7
Netherlands	3	2,1
Poland	1	0,7
Russia	2	1,4
Singapore	1	0,7
South Africa	4	2,7
South Korea	1	0,7
Spain	1	0,7
Sweden	4	2,7
Switzerland	6	4,1
Taiwan	3	2,1
Turkey	2	1,4
United States of America	46	31,5
Vietnam	1	0,7
Total	146	100

Table 4-3: Subsidiary geographic location (host country) of respondents organisations

Host Country	Frequency	Percentage
Australia	1	0,7
Belgium	2	1,4
Brazil	2	1,4
Brussels	1	0,7
Canada	1	0,7
China	3	2,1
Dubai	1	0,7
Hong Kong	1	0,7
India	3	2,1
Indonesia	1	0,7
Ireland	1	0,7
Israel	2	1,4
Japan	1	0,7
Kenya	1	0,7
Korea	1	0,7
Madagascar	1	0,7
Mexico	1	0,7
Russia	2	1,4
Singapore	3	2,1
South Africa	83	56,8
Spain	2	1,4
Turkey	1	0,7
United Kingdom	17	11,6
United States	13	8,9
Zambia	1	0,7
Total	146	100,0

Table 4-4: Number of countries that respondent organisations have subsidiaries

	Frequency	Percentage
6-8 countries	7	4,79
9 – 11 countries	3	2,05
11 or more countries	136	93,15
Total	146	100

Respondents were further asked to state the primary and secondary industries which they believe their organisation operates in. The majority of responses were received by organisations within the Information Technology sector (18%), Manufacturing (10%), Electrical Equipment (7%), and Retail (7%), the remainder of the sectors represented are presented in Appendix E. Respondents were asked for their organisations secondary industry they believed they operated in. Wolf and Egelhoff (2002) and Kumar and Antony (2009) report that numerous MNC operate in more than one industry. Results from the secondary industry indicate that 64,6% of respondents do not believe that their organisations operate in a secondary industry. For the remaining organisations, 8,9% reported that the secondary industry they operated in was Wholesale and Retail, and 6,3% in Manufacturing as the secondary industry.

The average age of organisation was calculated through subtracting the year 2017 from the founding year. The average age of organisations in sample was 79,04 years, with a standard deviation of 51,92 years. The youngest organisation in the sample was 4 years, with the oldest at 181 years.

The size of the organisation by headcount at the global and subsidiary level was further reported by the respondents, in addition to the MNC sales, and total assets. Results indicated that 51,9% of the organisations in the sample had a headcount globally of 60 000 + employees, while the 2,5% of the organisations in the sample had a headcount globally of 1000-4999 employees. Furthermore, at the subsidiary level, 34,2% of the organisations in the sample, had 500-999 employees, while 1,3% had up to 99 employees, see table 4-5 below.

Table 4-5: ***Employee headcount at the global and subsidiary level***

Headcount	Globally		Subsidiary	
	Frequency	Percentage	Frequency	Percentage
Up to 99 employees	0	0	2	1,4
100-499	0	0	42	28,8
500-999	0	0	51	34,9
1000-4999	5	3,4	41	28,1
5000-29999	42	28,8	6	4,1
30000 - 59999	24	16,4	1	0,7
60000+	75	51,4	3	2,1
TOTAL	146	100	146	100

Global sales, 96,6% (n=141) of the organisations in the sample had global sales of over $50 000 001, while two organisations had global sales between $1 000 000 and $10 000 000, and three organisations $30 000 001 - $50 000 000. Similarly, for global total assets, 96,6% (n=141) of the organisations in the sample had global assets over $50 000 001, while two organisation had global assets between $20 000 001 - $30 000 000 and three organisations between $ 30 000 001 - $50 000 000.

The above provides an understanding of the respondents and the organisations that comprised of the final sample for analysis.

The descriptive statistics for the constructs are presented in table 4-6 below.

Organisational productivity, organisational effectiveness, and organisational stability represented performance (dependent variable). HQ control was represented by the time (see section 3.6.5.6 above for note on nature of reporting), while strategy was a composite calculated as per section 3.6.5 above. Flexibility and efficiency represented the two additional constructs which affect performance. As table 4-6 indicates, for performance the mean ranged from 3,20, with a standard deviation of 0,938 for organisational stability, to 3,45, with a standard deviation of 0,792 for organisational effectiveness.

Table 4-6: Descriptive statistics for performance, flexibility, and efficiency

Construct	Mean	Median	Std. Deviation	Minimum	Maximum
Performance					
Organisational efficiency	3,23	3,50	0,860	1,50	5,00
Organisational effectiveness	3,45	3,50	0,792	1,00	5,00
Organisational stability	3,20	3,16	0,938	1,00	5,00
Efficiency	3,70	4,00	0,688	2,00	5,00
Flexibility					
Strategic	3,57	3,75	0,761	1,00	5,00
Operational	3,33	3,50	0,863	1,00	5,00
Structural	3,55	3,75	0,720	1,50	5,00

While the time spent reporting to HQ is reported in table 4-7 below, with 27,4% (n= 40) of respondents spending on average 31%-40% of their time reporting to HQ, and only 2,1% (n=3) of respondents 11%-20% of their time reporting to HQ. None of the respondents spent less than 10% of time reporting to HQ. The nature of reporting to HQ was characterised by 99,3% of the sample reporting directly (solid-line) to and 2,1% of the sample via dotted-line to HQ, note that two respondents reported directly (solid-line) to both HQ and at the subsidiary level.

Table 4-7: Descriptive *statistics for Strategy and HQ control*

Construct	**Frequency**	**Percent (%)**
HQ Control		
Time reporting to HQ		
Less than 10%	0	0
11%-20%	3	2,1
21%-30%	16	11,0
31%-40%	40	27,4
41%-50%	10	6,8
51%-60%	14	9,6
61%-70%	18	12,3
71%-80%	11	7,5
81%-90%	25	17,1
More than 90%	9	6,2
*Nature of reporting **		
Direct to HQ (solid line)	145	99,3
Indirect to HQ (dotted-line)	3	2,1
Strategy		
Product/Service dimension x Customer Market dimension	10	6,8
Customer Market dimension x Product/Service dimension	39	26,7
Geographic Region dimension x Functional dimension	22	15,1
Functional dimension x Geographic Region dimension	18	12,3
Product/Service dimension x Functional dimension	16	11,0
Functional dimension x Product/Service dimension	14	9,6
Geographic Region dimension x Customer Market dimension	12	8,2
Customer Market dimension x Geographic Region dimension	15	10,3

*reflects 2 respondents reported directly to HQ and subsidiary

For the strategy construct, organisations with a Customer Market dimension x Product/Service dimension primary x secondary dimensions accounted for 26.7% (n=39), while Product/Service dimension x Customer Market dimension primary x secondary dimensions accounted for 6.8% (n=10). This is indicative of a skew towards organisations with a Customer Market dimension x Product/Service dimension within the sample.

4.3 ASSUMPTION TESTING RESULTS

4.3.1 Independence of observations

The assumption for the HMR were highlighted in Chapter 3 above and were tested. For independence of observations a Durbin-Watson statistic for performance sub-constructs of 2,013 for organisational productivity, 2,053 for organisational effectiveness, and 2,175 for organisational stability were achieved. For the efficiency construct a Durbin-Watson statistic of 2,283 was achieved; while for flexibility sub-constructs of 1,765 for strategic flexibility, 1,586 for operational flexibility, and structural flexibility were achieved. For HQ control, a Durbin-Watson statistic of 2,132 for nature and 1,957 for time spent reporting to HQ was achieved. Durbin-Watson cannot be computed for strategy construct given the composite nature of calculation.

4.3.2 Homogeneity of variances

For homogeneity in variances, Levene's test was conducted, and yielded p-values of 0,550 for organisational productivity, 0,758 for organisational effectiveness, and 0,081 for organisational stability for the performance sub-constructs. For efficiency p-value of 0,821 was obtained, while p-values of 0,362 for strategic flexibility, 0,267 for operational flexibility, and 0,313 for structural flexibility. For HQ control time p = 0,282. For strategy and nature of HQ control Levene's cannot be computed given the measurement scales used and the composite nature of calculation.

The remainder of the assumptions tested, namely normality and outliers are noted in chapter 3, above. The next section details the test for the effect of control variables.

4.4 CONTROL VARIABLES

Studies have reported (Egelhoff et al., 2013; Tan & Wang, 2010) that control variables of size and industry should be controlled. A hierarchical multiple regression was conducted to understand the effect of these variables on the constructs.

Results for performance indicates that there were no significant changes in R-square, p>0,05 for F-change and therefore the control variables of size and industry had no effect on the results.

4.5 HYPOTHESES TEST RESULTS

4.5.1 Hypothesis one

Hypothesis one comprised of two sub-hypotheses, 1a and 1b. Sub-hypothesis 1a hypothesised that MNCs with a Product/Service dimension x Customer Market dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. While sub-hypothesis 1b hypothesised that MNCs with a Customer Market dimension x Product/Service dimension primary by secondary structural dimension will perform through orientations of efficiency and high HQ control, moderated by organisation age. Performance for sub-hypothesis 1a and 1b, were measured through organisational productivity, organisational effectiveness, and organisational stability.

4.5.1.1 Performance: Organisational Productivity

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,422, $F(12, 36)$ = 2,195, p = 0,034. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 1,124 and 6,471, with Tolerance scores between 0,155 and 0,713. These scores were all within the acceptable range. Table 4-8 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model.

In the first model, model 1, the dependent variable representing performance of organisational productivity and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ

control. These variables accounted for a significant amount of variance, R^2 = 0,248, adjusted R^2 = 0,141, $F(6, 42) = 2,308$, p = 0,05.

Table 4-8: Correlations for all variables and interactions for organisational productivity

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisational productivity													
2. Strategy	0,345												
3. Strategic Flexibility	0,276	0,157											
4. Operational Flexibility	0,004*	0,073	0,170										
5. Structural Flexibility	0,112	0,044*	0,000*	0,142									
6. Efficiency	0,016*	0,078	0,003*	0,098	0,003*								
7. HQ Control	0,248	0,315	0,001*	0,324	0,000*	0,017*							
8. Strategy * Age	0,195	0,173	0,179	0,137	0,344	0,005*	0,214						
9. Strategic Flexibility * Age	0,220	0,021*	0,007*	0,124	0,011*	0,015*	0,428	0,170					
10. Operational Flexibility * Age	0,060	0,290	0,100	0,00*	0,087	0,009*	0,240	0,117	0,493				
11. Structural Flexibility * Age	0,288	0,340	0,015*	0,107	0,333	0,005*	0,078	0,005*	0,000*	0,142			
12. Efficiency * Age	0,444	0,111	0,02*	0,02*	0,001*	0,000*	0,001*	0,161	0,000*	0,033*	0,000*		
13. HQControl * Age	0,185	0,160	0,431	0,169	0,316	0,000*	0,091	0,000*	0,071	0,262	0,002*	0,006*	

*p<0,05

Table 4-9 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity for model 1 (without moderator of age) and model 2 (with moderator of organisation age). From table 4-9 below, model 1, none of the predictors were significant, p > 0,05 contributors to predicting the dependent variable organisation productivity performance. The interaction effects were tested through step 2 in the model.

Table 4-9: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity

	DV: Performance: Organisational Productivity			
	Model 1		Model 2	
Independent Variables	b	t	b	t
Strategy	-0,055	-0,268	0,160	0,610
Strategic Flexibility	0,276	1,642	0,481*	2,240
Operational Flexibility	-0,144	-1,664	-0,112	-1,161
Structural Flexibility	-0,227	-1,124	-0,306	-1,193
Efficiency	-0,230	-1,761	-0,470*	-2,443
HQ Control	0,02	0,125	0,414	1,945
Strategy x Age			-0,002	-0,912
Strategic Flexibility x Age			0,000	-0,042
Operational Flexibility x Age			-0,001	-0,610
Structural Flexibility x Age			-0,008	-1,540
Efficiency x Age			0,01*	3,175
HQ Control x Age			0,000	0,000
R^2	0,248		0,422	
Adjusted R^2	0,141		0,230	
ΔR^2			0,175	
F	2,308		2,195*	
* p<0,05 Notes: N = 49. DV = dependent variable				

The interactions did not add a significant amount of variance, $\Delta R^2 = 0,175$, $\Delta F(6, 36) = 1,813$, $p = 0,124$. While there was not a significant amount of variance added, the final model, table 4-10, model 2, with the interactions with organisation age resulted in, strategic flexibility, efficiency, and efficiency * organisational age being significant predictors, $p < 0,05$ for organisational productivity performance.

Table 4-9 above indicates that organisational productivity can be predicted by, strategic flexibility, and efficiency, $p < 0,05$. Efficiency however is moderated by organisation age, $p < 0,05$.

4.5.1.2 Performance: Organisational Effectiveness

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,822, F(12, 36) = 13,866 , p = 0,000. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 1,124 and 6,471, with Tolerance scores between 0,155 and 0,713. These scores were all within the acceptable range. Table 4-10 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model.

In the first model, model 1, the dependent variable representing performance of organisational effectiveness and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,687, F(6, 42) = 15,391, p = 0,05. Table 4-11 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-10: Correlations for all variables and interactions for organisational effectiveness

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisational Effectiveness													
2. Strategy	0,066												
3. Strategic Flexibility	0,005*	0,157											
4. Operational Flexibility	0,000*	0,073	0,170										
5. Structural Flexibility	0,000*	0,044*	0,000*	0,142									
6. Efficiency	0,000*	0,078	0,003*	0,098	0,003*								
7. HQ Control	0,017*	0,315	0,001*	0,324	0,000*	0,017*							

	1	2	3	4	5	6	7	8	9	10	11	12	13
8. Strategy * Age	0,174	0,173	0,179	0,137	0,344	0,005*	0,214						
9. Strategic flexibility * Age	0,011*	0,021*	0,007*	0,124	0,011*	0,015*	0,428	0,170					
10. Operational Flexibility * Age	0,000*	0,290	0,100	0,002*	0,087	0,009*	0,240	0,117	0,493				
11. Structural Flexibility * Age	0,018*	0,340	0,015*	0,107	0,333	0,005*	0,078	0,004*	0,000*	0,142			
12. Efficiency * Age	0,00*	0,111	0,02*	0,025*	0,001*	0,000*	0,001*	0,161	0,00*	0,03*	0,00*		
13. HQControl * Age	0,207	0,160	0,431	0,169	0,316	0,00*	0,091	0,000*	0,071	0,262	0,00*	0,00*	

*p<0,05

From table 4-11 below, model 1, operational flexibility and efficiency were significant, *p* <0,05 contributors to organisation effectiveness. The interaction effects were tested through step 2 in the model, model 2. The interactions added a significant amount of variance, $\Delta R^2 = 0,135$, $\Delta F(6, 36) = 4,456$, $p = 0,002$. While there was a significant amount of variance added, model 2, with the interactions with organisation age resulted in, strategy (*b*=-0,735), operational flexibility (*b*=0,171), structural flexibility (*b*=0,455), and efficiency (*b*=0,683), being significant predictors of organisational effectiveness, *p*<0,05, with organisational age moderating strategic flexibility, and structural flexibility, *p*<0,05.

Table 4-11: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness

	DV: Performance: Organisational Effectiveness			
	Model 1		Model 2	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	-0,315	-1,975	-0,735*	-4,170
Strategic Flexibility	0,118	0,900	-0,115	-0,797
Operational Flexibility	0,244*	3,626	0,171*	2,652
Structural Flexibility	0,292	1,852	0,455*	2,638
Efficiency	0,471*	4,613	0,683*	5,280

Independent Variables	DV: Performance: Organisational Effectiveness			
	Model 1		Model 2	
	b	t	b	t
HQ Control	0,063	0,492	-0,261	-1,820
Strategy x Age			0,003	1,626
Strategic Flexibility x Age			-0,01*	-3,461
Operational Flexibility x Age			0,000	0,048
Structural Flexibility x Age			0,015*	4,154
Efficiency x Age			-0,002	-1,212
HQ Control x Age			0,004	1,901
R^2	0,687		0,822	
Adjusted R^2	0,643		0,763	
ΔR^2			0,135*	
F	15,391*		13,866*	
* p<0,05 Notes: N = 49. DV = dependent variable				

4.5.1.3 Performance: Organisational Stability

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,800, F(12, 36) = 12,003 , p = 0,000. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 1,124 and 6,471, with Tolerance scores between 0,155 and 0,713. These scores were all within the acceptable range. Table 4-12 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model.

In the first model, model 1, the dependent variable representing performance of organisational stability and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,705, F(6, 42) = 16,730, p = 0,05. Table 4-13 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-12: Correlations for all variables and interactions for organisation stability

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Stability													
2. Strategy	0,043*												
3. Strategic Flexibility	0,000*	0,157											
4. Operational Flexibility	0,000*	0,073	0,170										
5. Structural Flexibility	0,000*	0,044*	0,000*	0,142									
6. Efficiency	0,000*	0,078	0,003*	0,098	0,003*								
7. HQ Control	0,041*	0,315	0,001*	0,324	0,000*	0,017*							
8. Strategy * Age	0,015*	0,173	0,179	0,137	0,344	0,005*	0,214						
9. Strategic flexibility * Age	0,077	0,021*	0,007*	0,124	0,011*	0,016*	0,428	0,170					
10. Operational Flexibility * Age	0,000*	0,290	0,100	0,002*	0,087	0,009*	0,240	0,117	0,493				
11. Structural Flexibility * Age	0,057	0,340	0,01*	0,107	0,333	0,005*	0,078	0,005*	0,000*	0,142			
12. Efficiency * Age	0,000*	0,111	0,02*	0,025*	0,001*	0,000*	0,001*	0,161	0,000*	0,03*	0,001*		
13. HQControl * Age	0,024*	0,160	0,431	0,169	0,316	0,000*	0,091	0,000	0,071	0,262	0,002*	0,006*	

*p<0,05

Table 4-13: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability

	DV: Performance: Organisational Stability			
	Model 1		Model 2	
Independent Variables	b	t	b	t
Strategy	-0,612*	-2,807	-0,828*	-3,153
Strategic Flexibility	0,613*	3,414	0,826*	3,839
Operational Flexibility	0,475*	5,159	0,489*	5,082
Structural Flexibility	0,083	0,387	0,21	0,818
Efficiency	0,491*	3,52	0,469*	2,435
HQ Control	0,196	1,122	0,456*	2,14
Strategy x Age			0,002	0,793
Strategic Flexibility x Age			-0,012*	-2,643
Operational Flexibility x Age			0,001	0,536
Structural Flexibility x Age			0,001	0,137
Efficiency x Age			0,002	0,578
HQ Control x Age			-0,004	-1,172
R^2	0,705		0,8	
Adjusted R^2	0,663		0,733	
ΔR^2			0,095*	
F	16,730*		12,003*	

* p<0,05

Notes: N = 49. DV = dependent variable

From table 4-13 above, strategy, strategic flexibility, operational flexibility and efficiency were significant, p <0,05 contributors to organisation stability. The interaction effects were tested through step 2 in the model. The interactions added a significant amount of variance, ΔR^2 = 0,095, $\Delta F(6, 36)$ =2,852, p =0,022. While there was a significant amount of variance added, the final model with the interactions with organisation age resulted in, strategy (b=-0,828), strategic flexibility (b=0,826), operational flexibility (b=0,489), efficiency (b=0,469), and HQ control (b=0,456), being significant predictors of organisational effectiveness, p<0,05, with organisational age significantly moderating strategic flexibility (b=-0,012), p<0,05.

Table 4-13, above indicates that organisational stability can be predicted by strategy, strategic and operational flexibility, efficiency, and HQ control, p < 0,05. Strategic flexibility is moderated by organisational age, p < 0,05.

4.5.1.4 Summary of hypothesis one

In sum, hypothesis one consisted of hypothesis 1a and 1b, where hypothesis 1a hypothesised that MNCs with a Product/Service dimension x Customer Market dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Hypothesis 1b hypothesised that MNCs with a Customer Market dimension x Product/Service dimension primary by secondary structural dimension will perform through orientations of efficiency and high HQ control, moderated by organisation age. Performance was assessed through the sub-constructs of organisational productivity, which provided partial support for hypothesis 1a and 1b; organisational effectiveness, which provided partial support for hypothesis 1a and 1b; and organisational stability, which provided partial support for hypothesis 1a and 1b.

4.5.2 Hypothesis 2

Hypothesis two comprised of two sub-hypotheses, 2a and 2b. Sub-hypothesis 2a hypothesised that MNCs with a Geographic Region dimension x Functional dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. While sub-hypothesis 2b hypothesised that MNCs with a Functional dimension x Geographic Region dimension primary by secondary structural dimension will achieve performance through orientations of efficiency and high HQ control, moderated by organisation age. Performance for sub-hypothesis 2a and 2b, were measured through organisational efficiency, organisational effectiveness, and organisational stability.

4.5.2.1 *Performance: Organisational Productivity*

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,563, $F(12, 27)$ = 2,894, p = 0,011. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 3,510 and 1,140, with Tolerance scores between 0,285 and 0,877. These scores were all within the acceptable range. Table 4-14 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model, model 2.

Table 4-14: Correlations for all variables and interactions for organisational productivity

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Productivity													
2. Strategy	0,190												
3. Strategic Flexibility	0,425	0,004*											
4. Operational Flexibility	0,031*	0,391	0,027*										
5. Structural Flexibility	0,054	0,087	0,211	0,162									
6. Efficiency	0,027*	0,075	0,335	0,170	0,048*								
7. HQ Control	0,075	0,03*	0,02*	0,114	0,391	0,025*							
8. Strategy * Age	0,376	0,000*	0,068	0,144	0,216	0,002*	0,012*						
9. Strategic flexibility * Age	0,376	0,149	0,007*	0,332	0,179	0,259	0,418	0,433					
10. Operational Flexibility * Age	0,177	0,104	0,430	0,007*	0,401	0,039*	0,005*	0,02*	0,00*				
11. Structural Flexibility * Age	0,079	0,241	0,244	0,329	0,00*	0,403	0,329	0,118	0,01*	0,01*			
12. Efficiency * Age	0,02*	0,456	0,078	0,172	0,02*	0,001*	0,187	0,391	0,332	0,179	0,023*		
13. HQControl * Age	0,405	0,00`*	0,402	0,071	0,468	0,005*	0,165	0,00*	0,358	0,208	0,022*	0,430	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational productivity and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,317, F(12, 27) = 2,555, p = 0,038. Table 4-15 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-15: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity

	DV: Performance: Organisational Productivity			
	Model 1		Model 2	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	-0,073	-0,25	0,454	1,119
Strategic Flexibility	-0,079	-0,348	-0,368	-1,423
Operational Flexibility	0,587*	2,795	1,142*	4,086
Structural Flexibility	-0,319	-1,659	-0,308	-1,246
Efficiency	-0,314	-1,52	-0,922*	-3,245
HQ Control	0,384	1,364	0,206	0,754
Strategy x Age			0,008	0,914
Strategic Flexibility x Age			-0,006	-0,819
Operational Flexibility x Age			-0,006	-1,162
Structural Flexibility x Age			0,001	0,208
Efficiency x Age			-0,014	-1,792
HQ Control x Age			0,015*	2,882
R^2	0,317		0,563	
Adjusted R^2	0,193		0,368	
ΔR^2			0,245*	
F	2,555*		2,894*	
* p<0,05 Notes: N = 40. DV = dependent variable				

From table 4-15 above, only operational flexibility was a significant, p <0,05 contributor to organisation productivity. The interaction effects were tested through step 2, model 2 in the model. The interactions did add a significant amount of variance, ΔR^2 = 0,245, ΔF(6, 36) =2,525, p =0,045. While there was a significant amount of variance added, the final model, model 2 with the interactions with organisation age resulted in, operational

flexibility (*b*=1,142), efficiency (*b*=-0,922), being significant predictors of organisational productivity, *p*<0,05, with organisational age significantly moderating HQ control (*b*=-0,015), *p*<0,05.

Table 4-15 above, indicates that organisational productivity can be predicted by operational flexibility and efficiency, p < 0,05. HQ control is moderated by organisational age, p < 0,05.

4.5.2.1 Performance: Organisational Effectiveness

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,636, *F*(12, 27) = 2,894, *p* = 0,02. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 3,510 and 1,140, with Tolerance scores between 0,285 and 0,877. These scores were all within the acceptable range. Table 4-16 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model, model 2.

Table 4-16: Correlations for all variables and interactions for organisational effectiveness

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Effectiveness													
2. Strategy	0,082												
3. Strategic Flexibility	0,444	0,004*											
4. Operational Flexibility	0,416	0,391	0,027*										
5. Structural Flexibility	0,139	0,087	0,211	0,162									
6. Efficiency	0,000*	0,075	0,335	0,170	0,048								
7. HQ Control	0,074	0,029*	0,02*	0,114	0,391	0,025*							

	1	2	3	4	5	6	7	8	9	10	11	12	13
8. Strategy * Age	0,148	0,000*	0,068	0,144	0,216	0,002*	0,012*						
9. Strategic flexibility * Age	0,217	0,149	0,007*	0,332	0,179	0,259	0,418	0,433					
10. Operational Flexibility * Age	0,142	0,104	0,430	0,007*	0,401	0,039*	0,006*	0,02*	0,00*				
11. Structural Flexibility * Age	0,307	0,241	0,244	0,329	0,00*	0,403	0,329	0,118	0,010*	0,001*			
12. Efficiency * Age	0,075	0,456	0,078	0,172	0,023	0,001*	0,187	0,391	0,332	0,179	0,023*		
13. HQControl * Age	0,005*	0,00*	0,402	0,071	0,468	0,005*	0,165	0,00*	0,358	0,208	0,022*	0,430	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational effectiveness and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,448, F(6, 33) = 5,243, p = 0,001. Table 4-17 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-17: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness

	DV: Performance: Organisational Effectiveness			
	Model 1		Model 2	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	-0,177	-0,666	-0,575	-1,471
Strategic Flexibility	-0,123	-0,596	-0,012	-0,048
Operational Flexibility	-0,178	-0,927	-0,273	-1,015
Structural Flexibility	0,011	0,062	0,200	0,839

Independent Variables	DV: Performance: Organisational Effectiveness			
	Model 1		Model 2	
	b	t	b	t
Efficiency	0,902*	4,778	1,245*	4,554
HQ Control	-0,092	-0,359	-0,149	-0,566
Strategy x Age			-0,023*	-2,721
Strategic Flexibility x Age			-0,002	-0,266
Operational Flexibility x Age			0,001	0,319
Structural Flexibility x Age			0,005	0,942
Efficiency x Age			0,011	1,371
HQ Control x Age			0,001	0,266
R^2	0,488		0,636	
Adjusted R^2	0,395		0,474	
ΔR^2			0,147	
F	5,243*		3,923*	

* p<0,05

Notes: N = 40. DV = dependent variable

From table 4-17 above, only efficiency was a significant, p <0,05 contributor to organisation effectiveness. The interaction effects were tested through step 2, model 2, in the model. The interactions did not add a significant amount of variance, ΔR^2 = 0,147, Δ $F(12, 27)$ =1,821, p =0,132. While there was not a significant amount of variance added, the final model with the interactions with organisation age resulted in, efficiency (b=1,125), being a significant predictor of organisational effectiveness, p<0,05, with organisational age significantly moderating strategy (b= -0,002), p<0,05.

Table 4-17 above indicates that organisational effectiveness can be predicted by efficiency, p < 0,05. Strategy is moderated by organisational age, p < 0,05.

4.5.2.3 Performance: Organisational Stability

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,682, $F(12, 27)$ = 4,817, p = 0,00. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 3,510 and 1,140, with Tolerance scores between 0,285 and 0,877. These scores were all within the acceptable range. Table 4-18 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model, model 2.

Table 4-18: Correlations for all variables and interactions for organisation stability

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Stability													
2. Strategy	0,075												
3. Strategic Flexibility	0,373	0,004*											
4. Operational Flexibility	0,217	0,391	0,027*										
5. Structural Flexibility	0,442	0,087	0,211	0,162									
6. Efficiency	0,00*	0,075	0,335	0,170	0,048*								
7. HQ Control	0,091	0,029*	0,02*	0,114	0,391	0,025*							
8. Strategy * Age	0,337	0,000*	0,068	0,144	0,216	0,002*	0,012*						
9. Strategic flexibility * Age	0,05*	0,149	0,007*	0,332	0,179	0,259	0,418	0,433					
10. Operational Flexibility * Age	0,272	0,104	0,430	0,007*	0,401	0,03*	0,006*	0,021*	0,00*				
11. Structural Flexibility * Age	0,386	0,241	0,244	0,329	0,00*		0,329	0,118	0,01*	0,001*			
12. Efficiency * Age	0,077	0,456	0,078	0,172	0,023*	0,001*	0,187	0,391	0,332	0,179	0,023*		
13. HQControl * Age	0,117	0,00*	0,402	0,071	0,468	0,005*	0,165	0,00*	0,358	0,208	0,022*	0,430	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational stability and seven independent variables were entered, namely, strategy,

strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,390, F(6, 33) = 3,512, p = 0,008. Table 4-19 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-19: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability

	DV: Performance: Organisational Stability			
	Model 1		Model 2	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	-0,22	-0,662	-1,398*	-3,341
Strategic Flexibility	0,067	0,258	0,024	0,091
Operational Flexibility	-0,362	-1,51	-0,377	-1,309
Structural Flexibility	-0,193	-0,879	-0,026	-0,101
Efficiency	0,922*	3,906	1,639*	5,601
HQ Control	-0,074	-0,23	-0,387	-1,373
Strategy x Age			-0,03*	-3,335
Strategic Flexibility x Age			0,004	0,516
Operational Flexibility x Age			-0,009	-1,901
Structural Flexibility x Age			0,008	1,56
Efficiency x Age			0,009	1,121
HQ Control x Age			-0,01	-1,912
R^2	0,390		0,682	
Adjusted R^2	0,279		0,540	
ΔR^2			0,292*	
F	3,512*		4,817*	
* p<0,05 Notes: N = 40. DV = dependent variable				

From table 4-19 above, only efficiency was a significant, p <0,05 contributor to organisation stability. The interaction effects were tested through step 2, model 2 in the model. The interactions did add a significant amount of variance, ΔR^2 = 0,292, Δ F(12, 27) =1,821, p = 0,005. While there was a significant amount of variance added, the final model with the interactions with organisation age resulted in, strategy (b = -1,398) and efficiency (b=1,639), being a significant predictor of organisational effectiveness, p<0,05, with organisational age significantly moderating strategy (b = -0,03).

Table 4-19 above, indicates that organisational stability can be predicted by strategy and efficiency, p < 0,05. Strategy is moderated by organisational age, p < 0,05.

4.5.2.2 Summary of hypothesis two

In sum, hypothesis two consisted of hypothesis 2a and 2b, where hypothesis 2a hypothesised that MNCs with a Geographic Region dimension x Functional dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Hypothesis 2b hypothesised that MNCs with a Functional dimension x Geographic Region dimension primary by secondary structural dimension will achieve performance through orientations of efficiency and high HQ control, moderated by organisation age. Organisational performance was assessed through the sub-constructs of organisational productivity, was rejected for hypothesis 2a and 2b; organisational effectiveness, was rejected for hypothesis 2a and 2b; and organisational stability, which provided partial support for hypothesis 2b, while hypothesis 2a was rejected.

4.5.3 Hypothesis 3

Hypothesis three comprised of two sub-hypotheses, 3a and 3b. Sub-hypothesis 3a hypothesised that MNCs with a Functional dimension x Product/Service dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. While sub-hypothesis 3b hypothesised that MNCs with a Functional dimension x Product/Service dimension primary by secondary structural dimension will perform through orientations of efficiency and high HQ control, moderated by organisation age. Organisational performance for sub-hypothesis 3a and 3b, were measured through organisational efficiency, organisational effectiveness, and organisational stability.

4.5.3.1 Performance: Organisational Productivity

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,718, $F(12, 17) = 3.607$, p = 0,008. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 4,803 and 1,187, with Tolerance scores between 0,189 and 0,842. These scores were all within the acceptable

range. Table 4-20 below, provides the correlations for all variables and independent variables * organisation age (interaction) in the final model, model 2.

Table 4-20: Correlations for all variables and interactions for organisational productivity

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Productivity													
2. Strategy	0,004*												
3. HQ control	0,018*	0,334											
4. Strategic Flexibility	0,090	0,439	0,351										
5. Operational Flexibility	0,058	0,331	0,267	0,012*									
6. Structural Flexibility	0,212	0,367	0,091	0,000*	0,002*								
7. Efficiency	0,008*	0,066	0,100	0,014*	0,119	0,323							
8. HQControl x Age	0,384	0,236	0,167	0,102	0,420	0,011*	0,461						
9. Strategy x Age	0,476	0,029*	0,388	0,488	0,380	0,098	0,490	0,051					
10. Strategic Flexibility x Age	0,028*	0,101	0,444	0,086	0,186	0,178	0,408	0,008*	0,029*				
11. Operational Flexibility x Age	0,381	0,237	0,453	0,311	0,185	0,455	0,376	0,393	0,253	0,154			
12. Structural Flexibility x Age	0,414	0,282	0,175	0,168	0,289	0,444	0,255	0,325	0,022*	0,000*	0,061		
13. Efficiency x Age	0,021*	0,033*	0,088	0,227	0,468	0,474	0,061	0,019*	0,352	0,019*	0,105	0,243	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational productivity and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,528, F(6, 23) = 4,287 , p = 0,005. Table 4-21 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-21: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity

	DV: Performance: Organisational Productivity			
	Model 1		**Model 2**	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	0,746*	2,921	1,250*	3,575
Strategic Flexibility	-0,032	-0,138	0,077	0,315
Operational Flexibility	-0,232	-1,285	-0,039	-0,209
Structural Flexibility	-0,093	-0,337	-0,734	-2,186
Efficiency	-0,155	-0,730	-0,153	-0,794
HQ Control	0,722*	2,705	1,348*	3,953
Strategy x Age			-0,004	-1,049
Strategic Flexibility x Age			0,001	0,095
Operational Flexibility x Age			0,002	0,537
Structural Flexibility x Age			0,002	0,283
Efficiency x Age			-0,010	-1,744
HQ Control x Age			-0,018*	-2,559
R^2	0,528		0,718	
Adjusted R^2	0,405		0,519	
ΔR^2			0,190	
F	4,287*		3,607*	
* p<0,05 Notes: N = 30. DV = dependent variable				

From table 4-21 above, strategy and HQ control, were significant, p <0,05 contributors to organisation productivity. The interaction effects were tested through step 2, model 2 in the model. The interactions did not add a significant amount of variance, ΔR^2 = 0,190, Δ F(12, 17) =1,910, p =0,137. While there was not a significant amount of variance added, the final model with the interactions with organisation age resulted in, strategy (*b*

= 1,250), HQ control (*b*=1,348), being significant predictors of organisational efficiency, *p*<0,05, with organisational age significantly moderating HQ control only, *p* < 0,05.

Table 4-21, above indicates that organisational productivity can be predicted by strategy and HQ control, p < 0,05. HQ control is moderated by organisational age, p < 0,05.

4.5.3.2 Performance: Organisational Effectiveness

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,823, $F(12, 17)$ = 6,580, p = 0,000. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 4,803 and 1,187, with Tolerance scores between 0,189 and 0,842. These scores were all within the acceptable range. Table 4-22 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model.

Table 4-22: Correlations for all variables and interactions for organisation effectiveness

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Effectiveness													
2. Strategy	0,022*												
3. HQ control	0,225	0,334											
4. Strategic Flexibility	0,164	0,439	0,351										
5. Operational Flexibility	0,011*	0,331	0,267	0,012*									
6. Structural Flexibility	0,436	0,367	0,091	0,00*	0,002*								
7. Efficiency	0,000*	0,066	0,100	0,014*	0,119	0,323							
8. HQ Control x Age	0,083	0,236	0,167	0,102	0,420	0,011*	0,461						

	1	2	3	4	5	6	7	8	9	10	11	12	13
9. Strategy x Age	0,418	0,029*	0,388	0,488	0,380	0,098	0,490	0,051					
10. Strategic Flexibility x Age	0,011*	0,101	0,444	0,086	0,186	0,178	0,408	0,008*	0,029*				
11. Operational Flexibility x Age	0,038*	0,237	0,453	0,311	0,185	0,455	0,376	0,393	0,253	0,154			
12. Structural Flexibility x Age	0,337	0,282	0,175	0,168	0,289	0,444	0,255	0,325	0,022*	0,00*	0,061		
13. Efficiency x Age	0,090	0,033*	0,088	0,227	0,468	0,474	0,061	0,019*	0,352	0,019*	0,105	0,243	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational effectiveness and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,591, F(6, 23) = 4,287 , p = 0,001. Table 4-23 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-23: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness

	DV: Performance: Organisational Effectiveness			
	Model 1		Model 2	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	-0,313	-1,330	-0,246	-0,894
Strategic Flexibility	-0,074	-0,341	0,141	0,732
Operational Flexibility	0,425*	2,555	0,105	0,723
Structural Flexibility	-0,203	-0,800	0,060	0,229
Efficiency	0,642*	3,281	0,613*	4,056
HQ Control	-0,057	-0,230	-0,315	-1,174

Independent Variables	DV: Performance: Organisational Effectiveness			
	Model 1		Model 2	
	b	t	b	t
Strategy x Age			-0,004	-1,426
Strategic Flexibility x Age			-0,009	-1,853
Operational Flexibility x Age			0,007*	2,378
Structural Flexibility x Age			-0,001	-0,282
Efficiency x Age			0,006	1,234
HQ Control x Age			0,010	1,838
R^2	0,591		0,823	
Adjusted R^2	0,485		0,698	
ΔR^2			0,231*	
F	5,548*		6,580*	
* p<0,05 Notes: N = 30. DV = dependent variable				

From table 4-23 above, operational flexibility and HQ control, were significant, p <0,05 contributors to organisation effectiveness. The interaction effects were tested through step 2, model 2, in the model. The interactions did add a significant amount of variance, ΔR^2 = 0,231, Δ $F(6, 17)$ = 3,702, p =0,015. While there was a significant amount of variance added, the final model with the interactions with organisation age resulted in, efficiency (b = 0,613) being significant predictors of organisational efficiency, p<0,05, with organisational age significantly moderating operational flexibility only, p < 0,05.

Table 4-23, above, indicates that organisational effectiveness can be predicted by efficiency, p< 0,05. Operational flexibility is moderated by organisational age, p < 0,05.

4.5.3.3 Performance: Organisational Stability

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,667, $F(12, 17)$ = 2,835, p = 0,025. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 4,083 and 1,187, with Tolerance scores between 0,189 and 0,842. These scores were all within the acceptable range. Table 4-24 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model.

Table 4-24: Correlations for all variables and interactions for organisation stability

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Stability													
2. Strategy	0,023*												
3. HQ control	0,349	0,334											
4. Strategic Flexibility	0,121	0,439	0,351										
5. Operational Flexibility	0,003*	0,331	0,267	0,013*									
6. Structural Flexibility	0,223	0,367	0,091	0,00*	0,002*								
7. Efficiency	0,001*	0,066	0,100	0,014*	0,119	0,323							
8. HQControl x Age	0,092	0,236	0,167	0,102	0,420	0,011*	0,461						
9. Strategy x Age	0,444	0,029*	0,388	0,488	0,380	0,098	0,490	0,051					
10. Strategic Flexibility x Age	0,045*	0,101	0,444	0,086	0,186	0,178	0,408	0,008*	0,029*				
11. Operational Flexibility x Age	0,050	0,237	0,453	0,311	0,185	0,455	0,376	0,393	0,253	0,154			
12. Structural Flexibility x Age	0,474	0,282	0,175	0,168	0,289	0,444	0,255	0,325	0,022*	0,00*	0,061		
13. Efficiency x Age	0,141	0,033*	0,088	0,227	0,468	0,474	0,061	0,019*	0,352	0,019*	0,105	0,243	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational stability and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,532, $F(6, 23)$ = 4,356 , p = 0,004. Table 4-25 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-25: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability

	DV: Performance: Organisational Stability			
	Model 1		Model 2	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	-0,315	-1,269	-0,434	-1,171
Strategic Flexibility	-0,013	-0,056	0,013	0,05
Operational Flexibility	0,451*	2,577	0,233	1,186
Structural Flexibility	-0,186	-0,696	0,195	0,548
Efficiency	0,532*	2,583	0,511*	2,506
HQ Control	0,259	0,998	-0,032	-0,09
Strategy x Age			0,001	0,29
Strategic Flexibility x Age			-0,005	-0,707
Operational Flexibility x Age			0,004	1,149
Structural Flexibility x Age			0,002	0,311
Efficiency x Age			0,005	0,887
HQ Control x Age			0,01	1,383
R^2	0,532		0,667	
Adjusted R^2	0,410		0,432	
ΔR^2			0,135	
F	4,356*		2,835*	
* p<0,05 Notes: N = 30. DV = dependent variable				

From table 4-25 above, operational flexibility and efficiency, were significant, p <0,05 contributors to organisation stability. The interaction effects were tested through step 2, model 2, in the model. The interactions did not add a significant amount of variance, ΔR^2 = 0,135, $\Delta F(6, 17)$ = 1,147, p =0,378. While there was not a significant amount of variance added, the final model with the interactions with organisation age resulted in,

efficiency (b = 0,511) being a significant predictor of organisational stability, p<0,05, with organisational age not significantly moderating any variables, p > 0,05. Table 4-25 above indicates that organisational stability can be predicted by efficiency, p< 0,05.

4.5.3.4 Summary of hypothesis three

In sum, hypothesis three consisted of hypothesis 3a and 3b, where hypothesis 3a hypothesised that MNCs with a Functional dimension x Product/Service dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Hypothesis 3b hypothesised that MNCs with a Functional dimension x Product/Service dimension primary by secondary structural dimension will perform through orientations of efficiency and high HQ control, moderated by organisation age. Organisational performance was assessed through the sub-constructs of organisational productivity, was partially supported for hypothesis 3a and 3b; organisational effectiveness, was rejected for hypothesis 3a and partial support for hypothesis 3b; and organisational stability, which was rejected for hypothesis 3a, and partially supported for hypothesis 3b.

4.5.4 Hypothesis 4

Hypothesis four comprised of two sub-hypotheses, 4a and 4b. Sub-hypothesis 4a hypothesised that MNCs with a Geographic Region dimension x Customer Market dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. While sub-hypothesis 4b hypothesised that MNCs with a Customer Market dimension x Geographic Region dimension primary by secondary structural dimension will perform through orientations of efficiency and high HQ control, moderated by organisation age. Organisational performance for both sub-hypothesis 4a and 4b, were measured through organisational efficiency, organisational effectiveness, and organisational stability.

4.5.4.1 Performance: Organisational Productivity

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,696, F(12, 14) = 2.676, p = 0,041. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 1,376 and 9,012, with Tolerance scores between 0,052 and 0,726. These scores were all within the acceptable

range. Table 4-26 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model.

Table 4-26: Correlations for all variables and interactions for organisation productivity

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Productivity													
2. Strategy	0,083												
3. HQ Control	0,290	0,435											
4. Strategic Flexibility	0,123	0,071	0,006*										
5. Operational Flexibility	0,027*	0,070	0,001*	0,000*									
6. Structural Flexibility	0,155	0,008	0,008*	0,000*	0,000*								
7. Efficiency	0,00*	0,334	0,361	0,02*	0,014*	0,119							
8. Strategy x Age	0,076	0,160	0,112	0,338	0,183	0,417	0,075						
9. HQ Control x Age	0,00*	0,057	0,122	0,006*	0,000*	0,031*	0,0045*	0,01*					
10. Strategic Flexibility x Age	0,150	0,320	0,001*	0,0001*	0,002*	0,027*	0,043*	0,02*	0,031*				
11. Structural Flexibility x Age	0,086	0,263	0,002*	0,019*	0,011*	0,031*	0,089	0,001*	0,036*	0,000*			
12. Operational	0,042*	0,263	0,00*	0,002*	0,00*	0,021*	0,017*	0,003*6	0,003*	0,000*	0,000*		

	1	2	3	4	5	6	7	8	9	10	11	12	13
Flexibility x Age													
13. Efficiency x Age	0,031*	0,402	0,209	0,060	0,083	0,119	0,00*	0,442	0,283	0,041	0,130	0,081	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational productivity and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,591, F(6, 20) = 4,816 , p = 0,003. Table 4-36 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-27: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational productivity

	DV: Performance: Organisational Productivity			
	Model 1		Model 2	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	0,456	1,468	0,532	1,433
Strategic Flexibility	0,401	1,270	0,172	0,332
Operational Flexibility	-0,346	-1,125	-0,477	-0,779
Structural Flexibility	0,042	0,129	0,408	0,732
Efficiency	-0,83*	-4,090	-1,205*	-2,412
HQ Control	0,105	0,309	0,425	0,942
Strategy x Age			0,006	0,982
Strategic Flexibility x Age			-0,006	-0,473
Operational Flexibility x Age			0,017	1,324
Structural Flexibility x Age			-0,010	-0,803
Efficiency x Age			-0,009	-0,864
HQ Control x Age			0,000	-0,026
R^2	0,591		0,696	
Adjusted R^2	0,468		0,436	
ΔR^2			0,105	
F	4,816*		2,676*	

* p<0,05
Notes: N = 27. DV = dependent variable

From table 4-27 above, only efficiency, was a significant, p <0,05 contributor to organisation productivity. The interaction effects were tested through step 2, model 2, in the model. The interactions did not add a significant amount of variance, ΔR^2 = 0,105, $\Delta F(6, 14)$ = 0,810, p =0,579. While there was not a significant amount of variance added, the final model with the interactions with organisation age resulted in, efficiency (b = 1,205) being a significant predictor of organisational efficiency, p<0,05, with organisational age not significantly moderating any variables, p > 0,05.

Table 4-27 above indicates that organisational productivity can be predicted by efficiency, p < 0,05 only.

4.5.4.2 Performance: Organisational Effectiveness

Results from the moderated regression indicate that the overall model was significant, R^2 = 0,649, $F(12, 14)$ = 2, 159, p = 0,008. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 4,803 and 1,187, with Tolerance scores between 0,189 and 0,842. These scores were all within the acceptable range. Table 4-28 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model.

Table 4-28: Correlations for all variables and interactions for organisation effectiveness

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Effectiveness													
2. Strategy	0,354												
3. HQ Control	0,089	0,435											

	1	2	3	4	5	6	7	8	9	10	11	12	13
4. Strategic Flexibility	0,001*	0,071	0,006*										
5. Operational Flexibility	0,0001*	0,070	0,0001*	0,000*									
6. Structural Flexibility	0,050	0,008*	0,008*	0,000*	0,000*								
7. Efficiency	0,00*	0,334	0,361	0,022*	0,014*	0,119							
8. Strategy x Age	0,101	0,160	0,112	0,338	0,183	0,417	0,075						
9. HQ Control x Age	0,001*	0,057	0,122	0,006*	0,00*	0,03*	0,005*	0,015*					
10. Strategic Flexibility x Age	0,058	0,320	0,001*	0,0001*	0,002*	0,027*	0,043*	0,025*	0,031*				
11. Structural Flexibility x Age	0,176	0,263	0,002*	0,019*	0,011*	0,031*	0,089	0,001*	0,036*	0,000*			
12. Operational Flexibility x Age	0,009*	0,263	0,000*	0,002*	0,000*	0,021*	0,017*	0,003*	0,003*	0,000*	0,000*		

	1	2	3	4	5	6	7	8	9	10	11	12	13
13. Efficiency x Age	0,031*	0,402	0,209	0,060	0,083	0,119	0,00*	0,442	0,283	0,041	0,130	0,081	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational effectiveness and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,525, F(6, 20) = 3,690 , p = 0,012. Table 4-39 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-29: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational effectiveness

	DV: Performance: Organisational Effectiveness			
	Model 1		Model 2	
Independent Variables	**b**	**t**	**b**	**t**
Strategy	0,039	0,152	0,327	1,054
Strategic Flexibility	-0,064	-0,243	-0,139	-0,321
Operational Flexibility	0,474	1,838	-0,323	-0,63
Structural Flexibility	-0,173	-0,628	0,456	0,98
Efficiency	0,396*	2,333	-0,125	-0,3
HQ Control	0,007	0,024	0,088	0,233
Strategy x Age			0,004	0,735
Strategic Flexibility x Age			-0,002	-0,171
Operational Flexibility x Age			0,018	1,655
Structural Flexibility x Age			-0,014	-1,277
Efficiency x Age			-0,01	-1,224
HQ Control x Age			0,019	1,583
R^2	0,525		0,649	
Adjusted R^2	0,383		0,349	

Independent Variables	DV: Performance: Organisational Effectiveness			
	Model 1		Model 2	
	b	t	b	t
ΔR^2			0,124	
F	3,690*		2,159*	
* p<0,05 Notes: N = 27. DV = dependent variable				

From table 4-29 above, only efficiency, was a significant, p <0,05 contributor to organisation effectiveness. The interaction effects were tested through step 2, model 2, in the model. The interactions did not add a significant amount of variance, ΔR^2 = 0,124, $\Delta F(6, 14)$ = 0,824, p =0,570. While there was not a significant amount of variance added, the final model with the interactions with organisation age resulted in, none of the independent variables being a significant contributor and no significant moderating effects of organisational age are noted, p > 0,05.

Table 4-29 above, indicate that none of the variables were significant predictors of organisational effectiveness, p>0,05, in model 2.

4.5.4.3 Performance: Organisational Stability

Results from the moderated regression indicate that the overall model was not significant, R^2 = 0,674, $F(12, 14)$ = 2,417, p = 0,059. Multicollinearity of the model was assessed with VIF and Tolerance scores. VIF scores were between 4,803 and 1,187, with Tolerance scores between 0,189 and 0,842. These scores were all within the acceptable range. Table 4-30 below, provide the correlations for all variables and independent variables * organisation age (interaction) in the final model.

Table 4-30: Correlations for all variables and interactions for organisation stability

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Organisation Stability													
2. Strategy	0,286												
3. HQ Control	0,057	0,435											
4. Strategic Flexibility	0,004*	0,071	0,006*										
5. Operational Flexibility	0,002*	0,070	0,001*	0,000*									
6. Structural Flexibility	0,094	0,008*	0,008*	0,000*	0,000*								
7. Efficiency	0,000*	0,334	0,361	0,022*	0,014*	0,119							
8. Strategy x Age	0,034*	0,160	0,112	0,338	0,183	0,417	0,075						

	1	2	3	4	5	6	7	8	9	10	11	12	13
9. HQ Control x Age	0,0001*	0,057	0,122	0,006*	0,000*	0,03*	0,005*	0,015*					
10. Strategic Flexibility x Age	0,008*	0,320	0,001*	0,001*	0,002*	0,027*	0,043*	0,025*	0,031*				
11. Structural Flexibility x Age	0,028*	0,263	0,002*	0,019*	0,02*	0,031*	0,089	0,001*	0,036*	0,000*			
12. Operational Flexibility x Age	0,001*	0,263	0,000*	0,002*	0,000*	0,021*	0,017*	0,003*	0,003*	0,000*	0,000*		
13. Efficiency x Age	0,059	0,402	0,209	0,060	0,083	0,119	0,00*	0,442	0,283	0,041*	0,130	0,081	

*p<0,05

In the first model, model 1, the dependent variable representing performance of organisational stability and seven independent variables were entered, namely, strategy, strategic flexibility, operational flexibility, structural flexibility, efficiency and HQ control. These variables accounted for a significant amount of variance, R^2 = 0,595, $F(6, 20)$ = 4,892 , p = 0,003. Table 4-31 below provides the effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability for model 1 (without moderator of age) and model 2 (with moderator of organisation age).

Table 4-31: Effect of strategy, flexibility, efficiency and HQ control, moderated by organisation age on organisational stability

	DV: Performance: Organisational Stability			
	Model 1		Model 2	
Independent Variables	b	t	b	t
Strategy	0,32	1,124	0,585	1,651
Strategic Flexibility	0,272	0,94	0,415	0,839
Operational Flexibility	0,389	1,375	-0,248	-0,423
Structural Flexibility	-0,386	-1,275	-0,015	-0,029
Efficiency	0,460*	2,473	0,146	0,307
HQ Control	-0,102	-0,328	0,124	0,288
Strategy x Age			0,003	0,613
Strategic Flexibility x Age			0,005	0,435
Operational Flexibility x Age			0,005	0,4
Structural Flexibility x Age			-0,013	-1,05
Efficiency x Age			-0,004	-0,389
HQ Control x Age			0,011	0,859
R^2	0,595		0,674	
Adjusted R^2	0,473		0,395	
ΔR^2			0,080	
F	4,892*		2,417	
* p<0,05 Notes: N = 27. DV = dependent variable				

From table 4-31 above, only efficiency, was a significant, p <0,05 contributor to organisation stability. The interaction effects were tested through step 2 in the model. The interactions did not add a significant amount of variance, ΔR^2 = 0,080, $\Delta F(6, 14)$ = 0,571, p =0,747. While there was not a significant amount of variance added, the final model with the interactions with organisation age resulted in, none of the independent variables being a significant contributor and no significant moderating effects of organisational age are noted, p > 0,05.

Table 4-43 above indicates that none of the variables were significant predictors, p > 0,05, in model 2.

4.5.4.4 Summary of hypothesis four

In sum, hypothesis four consisted of hypothesis 4a and 4b, where hypothesis 4a hypothesised that MNCs with a Geographic Region dimension x Customer Market dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Hypothesis 4b hypothesised that MNCs with a Customer Market dimension x Geographic Region dimension primary by secondary structural dimension will perform through orientations of efficiency and high HQ control, moderated by organisation age. Organisational performance was assessed through the sub-constructs of organisational productivity, organisational effectiveness, and organisational stability. All sub-hypotheses across the sub-constructs of performance were rejected.

4.6 SUMMARY OF RESULTS

The results from the moderated regression showed that the organisational performance as a function of strategy, HQ control, flexibility, and efficiency varied per level of performance sub-construct. The sub-constructs of perfomance of organisational productivity, organisational effectiveness, and organisational stability were predicted differently, with no clear trend apparent. Hypothesis one was partially supported across the three sub-constructs of performance, while hypothesis two was rejected for organisational productivity, organisational effectiveness and only partially accepted for organisational stability. The partial acceptance was further only for hypothesis 2b while hypothesis 2a was rejected. Hypothesis 3 indicated partial support for organisational productivity for both 3a and 3b, while organisational effectiveness was only partially accepted for hypothesis 3b and rejected for hypothesis 3a. Organisational stability was rejected for 3a and only partial support was found for hypothesis 3b. Hypothesis 4 was rejected for both hypotheses 4a and 4b. Table 4-44 below shows a summary of the hypothesis, outcome and explanation based on the results.

Table 4-32: Summary of hypothesis, outcome and explanation

Hypothesis	Outcome	Explanation
1a. MNCs with a Product/Service dimension x Customer Market dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. 1b. MNCs with a Customer Market dimension x Product/Service dimension primary by secondary structural dimension will perform through orientations of	Organisational productivity (OP): Partial support for 1a and 1b. Organisational effectiveness (OE): Partial support for 1a and 1b Organisational stability (OS): Partial support for 1a and 1b	**OP:** Can be predicted by ***strategic flexibility, and efficiency***. Efficiency however is moderated by organisation age. Strategy and HQ control were not significant predictors. For Customer Market dimension x Product/Service dimension OP was predicted *positively by strategic flexibility and efficiency, and negatively for efficiency moderated by organisational age*. For Product/Service dimension x Customer Market dimension OP was *negatively predicted by strategic flexibility and efficiency, and positively for efficiency moderated by organisational age*. HQ control and strategy were not significant predictors. **OE:** Can be predicted by ***strategy, operational and structural flexibility, and efficiency***. Strategic and structural flexibility is moderated by organisational age. For Customer Market dimension x Product/Service dimension OE was predicted *negatively by strategy, and positively by operational and structural flexibility, and efficiency*. Strategic flexibility was *negatively moderated by organisational age, and positively by structural flexibility*. For Product/Service dimension x Customer Market dimension, OE was predicted *positively by strategy, and negatively by operational and structural flexibility.* Strategic flexibility was *positively moderated by organisational age, and negatively by structural flexibility*. HQ control was not a significant predictor in the model. Predicted OE for Product/Service dimension x Customer Market dimension was 0,735 greater than predicted OE for Customer Market dimension x Product/Service dimension. **OS:** Can be predicted by ***strategy, strategic and operational flexibility, efficiency, and HQ control***. Strategic flexibility is moderated by organisational age. For Customer Market dimension x Product/Service dimension OS was predicted *negatively for strategy, positively for strategic and operational flexibility, efficiency and HQ control.* Strategic flexibility was *negatively moderated by organisational age.* For Product/Service dimension x Customer Market dimension, OS was predicted *positively for strategy, negatively for strategic and operational flexibility, efficiency and HQ control.* Strategic

Hypothesis	Outcome	Explanation
efficiency and high HQ control, moderated by organisation age		flexibility was *positively moderated by organisational age.* Predicted OS for Product/Service dimension x Customer Market dimension was 0,828 greater than predicted OS for Customer Market dimension x Product/Service dimension.
2a. MNCs with a Geographic Region dimension x Functional dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age 2b. MNCs with a Functional dimension x Geographic Region dimension primary by secondary structural dimension will perform through orientations of	Organisational productivity (OP): Rejected for 2a and 2b Organisational effectiveness (OE): Rejected for 2a and 2b Organisational stability (OS): Partial support for 2b. Rejected for 2a.	**OP:** Can be predicted by ***operational flexibility and efficiency***. HQ control is moderated by organisational age. For Functional dimension x Geographic Region dimension OP was predicted *positively for operational flexibility, and negatively for efficiency*. HQ control was *positively moderated by organisational age*. For Geographic Region dimension x Functional dimension OP was predicted *negatively for operational flexibility, and positively for efficiency*. HQ control was *negatively moderated by organisational age.* **OE:** Can be predicted by **efficiency**. Strategy is moderated by organisational age. For Functional dimension x Geographic Region dimension OE was predicted positively for efficiency. Strategy was negatively moderated by organisational age. For Geographic Region dimension x Functional dimension, OE was predicted negatively for efficiency. Strategy was positively moderated by organisational age. Predicted OE for Geographic Region dimension x Functional dimension was 0,023 greater than predicted OS for Functional dimension x Geographic Region dimension. **OS:** Can be predicted by strategy and efficiency. Strategy is moderated by organisational age. For Functional dimension x Geographic Region dimension OS was predicted negatively for strategy and positively for efficiency. Strategy was negatively moderated by organisational age. For Geographic Region dimension x Functional dimension was predicted positively for strategy, and negatively for efficiency. Strategy was positively moderated by organisational age. Predicted OS for Geographic Region dimension x Functional dimension was 1,398 greater than predicted for OS for Functional dimension x Geographic Region dimension, but this decreased to 0,004 greater when organisational age is a moderator.

Hypothesis	Outcome	Explanation
efficiency and high HQ control, moderated by organisation age		
3a. MNCs with a Functional dimension x Product/Service dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. 3b. MNCs with a Functional dimension x Product/Service dimension primary by secondary structural dimension will perform through orientations of	Organisational productivity (OP): Partial support for 3a and 3b. Organisational effectiveness (OE): Rejected by 3a.Partial support for 3b. Organisational stability (OS): Rejected for 3a. Partial support for 3b.	**OP:** Can be predicted by strategy and HQ control. HQ control is moderated by organisational age. For Functional dimension x Product/Service dimension OP was predicted positively for strategy and HQ control. HQ control was positively moderated by organisational age. For Product/Service dimension x Functional dimension OP was negatively predicted by strategy and HQ control. HQ control was negatively moderated by organisational age. Predicted OP for Functional dimension x Product/Service dimension was 1,250 greater than predicted for OE for Product/Service dimension x Functional dimension. **OE:** Can be predicted by efficiency. Operational flexibility is moderated by organisational age. For Functional dimension x Product/Service dimension OE was predicted positively for efficiency. Operational flexibility was positively moderated by organisational age. For Product/Service dimension x Functional dimension OE was predicted negatively for efficiency. Operational flexibility was negatively moderated by organisational age. **OS:** Can be predicted by efficiency. For Functional dimension x Product/Service dimension OS was predicted positively for efficiency. For Product/Service dimension x Functional dimension OS was predicted negatively for efficiency.

Hypothesis	Outcome	Explanation
efficiency and high HQ control, moderated by organisation age.		
4a. MNCs with a Geographic Region dimension x Customer Market dimension primary by secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. 4b. MNCs with a Customer Market dimension x Geographic Region dimension primary by secondary structural dimension will	Organisational productivity (OP): 4a and 4b Rejected Organisational effectiveness (OE): 4a and 4b rejected. Organisational stability (OS): 4a and 4b rejected	**OP:** Can be predicted by efficiency. For Customer Market dimension x Geographic Region dimension OP was predicted negatively for efficiency. For Geographic Region dimension x Customer Market dimension was predicted positively for efficiency. **OE:** While the model was significant, none of the variables were significant predictors. **OS:** While the model was significant, none of the variables were significant predictors.

Hypothesis	Outcome	Explanation
perform through orientations of efficiency and high HQ control, moderated by organisation age		

CHAPTER 5: DISCUSSION OF FINDINGS

5.1 INTRODUCTION

This chapter discusses the results from the statistical analysis conducted in the context of the literature review presented in chapter two. Therefore, it discusses the over-arching research objective: to what extent orientations with regards to strategic choice leading to the primary and secondary dimensions adopted, flexibility, efficiency and HQ control affect the performance of MNCs adopting a matrix organisational structure, moderated by organisational age. The results obtained do not support some of the assertions from which the hypotheses were derived from extant literature. Despite some divergent findings, the literature provides a basis for discussion of the research findings.

The main theme through the research was grounded in the understanding the organisational performance for MNCs adopting a matrix organisation structure. The matrix organisational structure remains an under studied organisational form, despite its prevalence in MNCs. Therefore, this study adds to the dearth of literature on the matrix organisational structure, and organisational performance. This chapter concludes with a summary of the discussion of the results.

5.2 ACHIEVEMENT OF ORGANISATIONAL PERFORMANCE IN THE MATRIX ORGANISATIONAL STRUCTURE

The introductory chapters of this research asserted that despite the prevalence of the matrix structure in MNCs, there is a dearth of understanding how the strategy adopted, HQ control, flexibility and efficiency affect organisational performance and further how organisation age may moderate the strength of these constructs. This research therefore hypothesised for MNCs with a matrix organisation structure, organisational performance will be a function of the orientations of strategy, HQ control, flexibility, and efficiency and will be moderated by organisational age.

The point at which organisations perform is important, as it relates to superior and sustainable competitive advantages that MNCs may achieve. Organisational performance however is a multi-dimensional construct, which was assessed through organisational productivity (external), organisational effectiveness (internal), and organisational stability (internal and external alignment). Furthermore, organisational age was deemed a moderator which affects organisational performance, specifically as it pertains to HQ-subsidiaries relationships. It must be noted that extant literature often includes organisational age as a control variable, and while not central to the current study, ignores the effects of liability of newness and liability of age (Henderson, 1999; Stinchcombe, 1965). The ability to inculcate age as a moderator therefore allowed for an understanding of the effect that organisation age may have on performance. The constructs tested in the research were the main constructs which initially led to the challenges in implementation of the matrix organisational structure (Egelhoff et al., 2013; Pitts & Daniels, 1984; Qiu & Donaldson, 2012).

An organisations structure is often viewed as a source of competitive advantage (Rugman & Verbeke, 2001; Rugman, Verbeke & Nguyen, 2011), therefore an understanding the levers of strategy, HQ control, flexibility, and efficiency to affect organisational performance, to leverage this competitive advantage becomes central, in specific relation to the matrix organisational structure. The structural dimensions emanating from the chosen MNC strategy are well documented (see table 2-1), and have been empirically proven by Egelhoff et al., (2013), Tan and Wang (2010), and Wolf and Egelhoff (2002) in the context of the matrix organisational structure. This research built on these structural dimensions, and extends the understanding of the conditions which lead to the adoption of the matrix organisational structure. Finally, Leiblein (2003) and Verbeke and Greindanus (2009) reported that *a priori* contracting cannot account for a complete set of eventualities, and therefore studies which assist in understanding *a priori,* the effect of differing top management decision variables and implications on the strategy and control as it pertains to HQ, and operations (flexibility and efficiency) are required.

5.3 HYPOTHESIS ONE

Hypothesis one tested two sub-hypotheses, 1a and 1b. Hypothesis 1a hypothesised that MNCs with a Product/Service dimension x Customer Market dimension primary x

secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Hypothesis 1b hypothesised that MNCs with Customer Market dimension x Product/Service dimension primary x secondary structural dimensions will perform through orientations of efficiency and high HQ control, moderated by organisation age.

5.3.1 Hypothesis 1a

The results for hypothesis 1a and 1b were tested across the three sub-constructs of performance, namely organisational productivity, organisational effectiveness, and organisational stability. Across the three sub-constructs of performance, hypothesis 1a was partially supported through: i) flexibility, negative and significant; ii) efficiency, negative and significant; iii) efficiency moderated by organisational age, positive and significant; iv) strategy, positive and significant; v) strategy moderated by organisational age, positive and significant; vi) structural flexibility moderated by organisational age, negative and significant; and vii) HQ control, negative and significant.

MNCs with a Product/Service dimension x Customer Market dimension primary x secondary structural dimensions are primarily focussed on flexibility and secondarily on efficiency (Egelhoff et al., 2013; Stopford & Wells, 1972; Qiu & Donaldson, 2012). However, the results indicate that while flexibility and efficiency were significant, these were negative. These results indicate that while MNCs may be primarily concerned with the localised delivery of products and/or services, organisational performance is attained through decreased flexibility and efficiency, thus supporting Egelhoff et al., (2013); Stopford and Wells, (1972); Qiu and Donaldson, (2012) for efficiency, but not for the primary dimension allowing for flexibility. The implications of these results are discussed next.

Flexibility is often ascribed to the need to deliver for localised preferences globally, that is, markets for products/services differ globally and the products/services offered by MNCs need to be tailored to suit the localised market needs (Allen et al., 2015; Kutschker & Bäurle, 1997; Okazaki, 2004; Zhao et al., 2014). The product/service primary dimension allows for these localised needs to be met (Egelhoff et al., 2013); however the results obtained indicate that MNCs adopting the product/service diversity primary dimension do not achieve organisational performance through increased flexibility. These results may indicate firstly, that MNCs, while seeking to deliver localised market

preferences and conditions (Egelhoff et al., 2013; Qiu & Donaldson, 2012; Stopford & Wells, 1972), may be seeking global commonalities among markets, which may enhance their delivery of product/service efficiency, avoiding unrelated diversification (Boyd et al., 2012; Habib & Victor, 1991), which suppresses the achievement of efficiency. Therefore, MNCs with a product/service primary structural dimension, do not achieve organisational performance through increased flexibility, but through exploitation of efficiency gains, and limited diversification, characteristic of the secondary Customer Market dimension. This view however must be balanced with organisational age.

The average organisational age of the sample of MNCs was 79,04 years, this indicates that older organisations may have accumulated sufficient knowledge and experience in a market (Luo & Peng, 1999), to exploit global market commonalties. This knowledge and experience accumulation, therefore allows for decreased need for flexibility, having established products/services which meet the localised needs and only require occasional revision when competition and market needs arise. Thus, once the localised market preferences are achieved, efficiency to achieve an organisational performance is focussed on. It is noted that the age of the sample limits discussion on younger MNCs, but support the notion that younger MNCs should not begin with a matrix structure, rather through an evolutionary process adopt the structure (Verbeke & Greindanus, 2009).

Secondly, the contradictory results obtained in comparison to similar studies such as Egelhoff et al., (2013), may be explained by the sample itself. Egelhoff et al., (2013) sample comprised of German MNCs, and does not represent MNCs from the triad countries. MNCs from the triad countries of North America, Europe and Asia dominate international business (Rugman et al., 2011). The results from the current study do represent the triad countries, and the differences obtained in the results are therefore apparent through the sample limitations of extant studies. For flexibility results of the current study do not support the notion that the primary structural dimension of product/service diversity allows for flexibility in the attainment of organisational superior and sustained performance. These results highlight the need for studies in international business to be more representative, and specifically in the case of international business, MNCs from the triad countries are required given the concentration of MNCs from within these geographic regions, prior to the generalisation of results to MNCs. German MNCs represent a micro-cosim of Europe, and while contributing significantly to European trade, does not allow for generalisation to MNCs with HQ's in other parts of the triad such

as North America or Asia, where differences in governance (processes, policies, technology, culture for example) exist at both the national and organisational levels.

Thirdly, research on the flexibility primary dimension is often founded on the earlier work of Galbraith (1974), Egelhoff (1982), Franko (1976), and Stopford and Wells (1972), and therefore ignore the shifts in strategies implemented by MNCs as well as organisational designs (Ambos & Mahnke, 2010). These studies fail to account for the shifts observed in the environment (Wolf & Egelhoff, 2002) which require strategic and structural changes. The changes in the environment of MNCs cannot be ignored as they directly affect the achievement of organisational performance in the strategy-structure-environment fit paradigm. The dearth of recent studies seeking to understand fit, is therefore disadvantageous without an adaptation of the related environmental changes (Ambos & Mahnke, 2010). Therefore, the results indicate that reliance on fit paradigms developed within an era of different conditions, while having added to our current understanding, fail to account for changes seen through rapid globalisation and technological shifts as purveyors of globalisation (Ghoshal & Bartlett, 1990; Gibson & Birkinshaw, 2004; Eisenhardt & Martin, 2000; Raisch & Birkinshaw, 2008).

Fourthly, the primary theoretical lens applied in studies concerned with the matrix organisational structure is the information processing view of the firm (see Egelhoff et al., 2013 for a comprehensive overview), and while valid has produced irreconcilable differences. The information processing view of the firm purports that increased product/service diversity requires greater flexibility to respond to the diverse information from the environment. It is this need for greater information processing that may bias the conclusions that the primary dimension of product/service diversity is associated with flexibility (Egelhoff et al., 2013; Galbraith, 1974). This may be true from an information processing perspective, but cannot be used as an *a priori* understanding for organisational performance. That is, MNCs adopting a product/service primary dimension and while delivering a multi-domestic strategy(Egelhoff et al., 2013; Fouraker & Stopford, 1968; Ghoshal & Bartlett, 1990; Harzing, 2000; London & Hart, 2004; Perlmutter, 1969; Wolf & Egelhoff, 2002), do not require flexibility in delivery of products/service which affect organisational performance, rather only in the ability to assimilate multiple sources of information input.

The information processing view of the firm therefore does not readily allow for the *a priori* understanding of the primary structural dimension of product/service dimension

required for flexibility to achieve organisational performance, rather only how if strategy changes the related need for the changes in the information processing capacity of the firm. The information processing view of the firm further may not allow for the understanding of when MNCs should implement a matrix organisational structure, nor address the very reasons for failure and challenges in the implementation of the structure, and finally for the understanding of knowledge accumulation and creation of networks which is affected by organisational age.

The average age of organisations in the sample may further provide evidence to the limits of the information processing view of the firm. The average age of 79,04 years for the organisations may be indicative that the MNCs have accumulated sufficient knowledge (Luo & Peng, 1999) on how to structure the transactions to ensure performance of the organisation, as purported by TCE (see Crook et al., 2013; Leiblein, 2003; Williamson, 1981). Therefore, the results obtained support the notion that TCE is a better suited theoretical lens to understand how organising forms such as the matrix organisational structure are affected by environmental changes, flexibility of assets and the type of transactions (Leiblein, 2003; Williamson, 1981). The information processing view of the firm, while applicable, may be inappropriate for a holistic understanding of organisational structures such as the matrix.

For efficiency, results support Egelhoff et al., (2013); Stopford and Wells, (1972); Qiu and Donaldson, (2012) whom report that MNCs with a Product/Service dimension primary dimension are not primarily focussed on efficiency and this is reflected in the results. While these results are congruent with previous literature, an important attribute that the matrix organisational structuring allows for, namely organisational ambidexterity. Organisational ambidexterity allows for organisations to pursue often disparate goals simultaneously (Raisch et al., 2009), with structural separation being an effective mechanism to manage the disparate goals (Gibson & Birkinshaw, 2004; Jansen, et al. 2009). The results therefore refute the notion that as one goal, for example flexibility, the other associated goal, for example efficiency, decreases (Benner & Tushman, 2015; Kogut, 1993; Volberda, 1996), both goals can be achieved, and this may not necessarily be a trade-off. The matrix organisation structure, which combines both organic and mechanistic structuring (Jensen et al., 2009) therefore is an effective mechanism to allow for organisational ambidexterity to be achieved, and MNCs may use the structure to achieve both goals.

The above discussed flexibility and efficiency independently, however efficiency was further moderated significantly and positively by organisational age. The positive and significant moderation of organisational age and efficiency indicate that older organisations are more efficient, and these results are congruent with Luo and Peng (1999). As organisations age, they will have had the time to accumulate the necessary knowledge and the creation of localised networks, and this is strenghthend by the age of the organisation. The knowledge accumulated over time, and creation of localised networks, is therefore congruent with what may be predicted by TCE. It may however be argued that these results are reflective of the age of the MNCs in the sample, however does not mitigate the importance of knowledge and experience of localised markets as a critical levers for the achievement of organisational sustained and superior performance. Furthermore, while organisational age moderates efficiency, the direction and strength of relationship must support being U-shaped (Coad et al., 2017).

Organisational age strengthens the relationship between the performance and efficiency. Younger organisations, such as Alphabet which are contesting older organisations, therefore are predicted not to be able to achieve efficiency, unless the rate at which such organisations accumulate knowledge and create localised networks (Ghoshal & Bartlett, 1990; Luo & Peng, 1999; Rabbiosi & Santangelo, 2013) can be accelerated. Therefore, MNCs contesting established MNCs require this acceleration. An important note however must be made: MNCs such as Alphabet, which are born global by virtue of the product/service offering, and have minimal competition were outside of the scope of the current research, however should a new competitor enter the market, they would be required to accumulate the knowledge gained by Alphabet as an example.

A key concern of organisational age however is embeddedness. As organisations age, decision-makers become embedded in their decision-making routines (Loderer & Waelchli, 2010). Embeddedness in routine must not be viewed as a negative, and while often reported to negatively affect performance, it is often treated separately. That is, not as moderator, rather as a direct relationship between organisation age and performance for example, therefore does not inculcate variables such as efficiency, knowledge accumulation and creation of localised networks. Embeddedness may in fact drive efficiency for MNCs, which positively affects organisational performance, by influencing the strength of the relationship. Without organisational age as a moderator, the relationship is significant and negative, but as this variable is accounted for, it becomes significant and positive, thus changing both strength and direction. Therefore, this

indicates that organisational age is an important variable, supporting Ambos et al., (2006) whom report it provides valuable insights, suggesting that research on MNCs ought to include organisational age as a moderator rather than a proxy or control variable. Extant literature (see Egelhoff et al., 2013 for example), continue controlling for organisational age, rather than inculcating into empirical analysis, thus limiting the results obtained to provide insights, such as embeddedness discussed above.

The results obtained further indicate that organisational age does lead to integration which allows for efficiency to be exploited (Ghoshal & Bartlett, 1990) and this in-turn affects the organisations ability to perform. Interestingly, while organisational age did not moderate flexibility significantly, it must be noted that the efficiency moderation may have been affected by the older organisations becoming increasingly more rigid, and therefore find it difficult to change (Rabbiosi & Santangelo, 2013), but this must be balanced with embeddedness in routine allowing for knowledge accumulation, and creation of localised networks as stated above. This however does allow for MNCs to understand how best to structure transactions, the more knowledge they have in different markets, a view consistent with TCE.

Finally, for MNCs with a Product/Service dimension x Customer Market dimension primary x secondary dimension, results indicated that structural flexibility was negatively moderated by organisational age. Structural flexibility is the ability for top management teams to alter decision-making and communication norms (Volberda, 1998) without disruption of core services or products. These results support the notion that as organisations age, they become set into taken-for-granted-attitude (Rabbiosi & Santangelo, 2013), and therefore the communication norms and decision-making limits the ability for top management teams to alter decision-making norms (Volberda, 1998). Decreased structural flexibility in older organisations positively affects the achievement of organisational sustained performance. Therefore consistency of decision-making norms and communication norms are important for organisations with a Product/Service dimension primary structure, and the internal integration which is achieved through the matrix organisational structure should be maintained to perform.

MNCs by virtue of being multinational, have subsidiaries located in host countries. The ability to achieve organisational performance through flexibility, efficiency and flexibility and efficiency moderated by organisation age has implications on the type of subsidiaries and their respective roles (Birkinshaw & Morrison, 1995). The results

indicate that when structuring by Product/Service dimension x Customer Market dimension subsidiaries ought to be autonomous (Meyer & Su, 2015). The autonomy of the subsidiary to react to localised needs, allows for effective differentiation which may assist in the achievement of organisational performance. Autonomous subsidiaries however may not allow for the effective recombination of resources across the MNC network, unless the level HQ control is managed effectively. In order for MNCs to obtain a strategic competitive advantage, combining firm specific advantages with country specific advantages across the MNC network is required (Rugman & Verbeke, 2008), however in order to achieve this, HQ control is imperative as an orchestrator.

MNCs with a Product/Service dimension x Customer Market dimension primary x secondary dimensions are focussed on flexibility primarily, and the attainment of this flexibility requires that HQ control is decreased (Dess & Davis, 1984; Weerdt et al., 2012). The results obtained support the premise that in order for subsidiaries to achieve perform, decreased HQ control is required to ensure that the subsidiaries deliver products and/or services to localised preferences. Therefore, the control that HQ has over subsidiaries with Product/Service dimension primary dimensions needs to minimised to ensure organisational performance is achieved. This however indicates that HQ coordinates and assists in the strategising for MNC as a whole.

The execution of the MNC strategy at the subsidiary level therefore should be controlled at the subsidiary level, that is, subsidiaries afforded the status of being autonomous (Ciabushi et al., 2012). The challenge for MNCs is therefore how to ensure autonomy while ensuring that strategies are executed in line with the broader MNC. To this point, the matrix is an effective mechanism through dotted-line reporting to ensure congruency in strategy execution, while allowing for autonomy. While the above may make intuitive sense for HQ control, it must be noted that HQ control was not significant for the achievement of organisational performance. The above discussion is based on the beta's obtained for Product/Service dimension x Customer Market dimension, as reported in chapter four above.

The strategy adopted by the MNCs with a Product/Service dimension x Customer Market dimension primary x secondary dimension was positive, significant, and moderated by the age of the organisation. These results indicate that in order to achieve organisational performance, MNCs with Product/Service dimension x Customer Market dimension follow a transnational strategy approach and these results confirm that the

Product/Service dimension x Customer Market dimension primary x secondary structural dimensions fit this strategy (Fouraker & Stopford, 1968; Harzing, 2000; London & Hart, 2004; Wolf & Egelhoff, 2002). The transnational strategic focus allows for the adaptation to local market preferences and conditions as well searching for global efficiencies, and the achievement of organisational performance. These results however must be viewed in the context of organisational age, which positively moderated the achievement of an organisational performance. These results affirm Luo and Peng (1999) whom report that age of the organisation affects the performance of an organisation, as older organisations would have had time to accumulate the necessary knowledge, creation of localised networks which are central to a multidomestic strategy, and therefore experience. Therefore, the matrix structure allows for internal integration (Ghoshal & Bartlett, 1990), is affected by the age of the subsidiary, and positively affects organisational performance.

Internal integration afforded through the implementation of the matrix organisational structure is therefore central to the strategy adopted and effective execution of multidimensional strategies (Andersson et al., 2005). This therefore highlights the important role of the matrix structure in allowing for integration for the achievement of organisational performance. The matrix is an effective structure for the balancing the economic advantages of specialisation with the bureaucratic costs associated with supervision, motivation and coordination (Davis & Lawrence, 1978; Egelhoff, 1982; Piekkari, Nell & Ghauri, 2010). The above allows for an understanding of organisational age positively moderating strategy, however strategy cannot influence the age of an organisation. This however may hold-true if part of the organisational strategy is focussed as a priority on rapid knowledge gaining and network creation.

The results obtained therefore support the assertion that the matrix organisational structure allows for integration, and this integration between HQ and subsidiary is required for the delivery of a multidomestic strategy, which the matrix organisational structure effectively allows for.

5.3.2 Hypothesis 1b

The above discusses Product/Service dimension x Customer Market dimension, however hypothesis 1 further sort to understand how Customer Market dimension x Product/Service dimension affects the performance of matrix MNC organisations.

Across the three sub-constructs of performance, hypothesis 1b was partially supported through: i) flexibility, positive and significant; ii) strategic flexibility moderated by organisational age, negative and significant; iii) efficiency, positive and significant; iv) efficiency moderated by organisational age, negative and significant; v) strategy, negative and significant; and vi) HQ control, positive and significant.

MNCs adopting a primary Customer Market dimension are primarily concerned with efficiency (Egelhoff et al., 2013; Fouraker & Stopford, 1968; Harzing, 2000; London & Hart, 2004). Results support that MNCs with a Customer Market dimension primary dimension will achieve organisational performance through efficiency, however the efficiency is negatively moderated organisational age. These results may indicate that the older organisations become, the search for efficiencies which may have been obtained become prioritised, and supported by the average age of the organisations in the sample of 79,04 years, negatively affects the achievement of organisational performance. That is, MNCs with a Customer Market dimension primary dimension having achieved efficiency, and continually seeking to standardise products/services for the needs of global market commonalities should seek to rather deliver idiosyncratic changes that are required by the markets. The efficiencies obtained are directly related to the viability of the organisation to generate short-term profitability (Magnusson et al., 2009) and therefore should be maintained. This may be explained as organisations while they may seek to continually increase efficiencies, particularly with newer technologies, when economies of scale for example are achieved, may gain some advantage, but is not reflected immediately. The capital outlays required to increase efficiencies may negatively affect the achievement of organisational performance. This may be directly related to older organisations requiring significantly greater effort in change management initiatives when implementing newer technologies that deliver efficiency. Therefore, there is a ceiling of efficiency which may obtained, and continual seeking of efficiencies may be disruptive to the existing methods of delivery and production of products and/or services. This however does not elude to not leveraging new and improved methods of production or delivery of services, rather that the changes required to inculcate these should not fundamentally disrupt the internal efficiency methods that are currently adopted, and delivering a superior performance. In sum, the cost-benefit associated with the need to drive efficiencies need to be carefully balanced to organisational performance, specifically when MNCs have adopted a matrix organisational structure.

Flexibility while not primarily related to the primary dimension of Customer Market dimension, is related to the secondary dimension of Product/Service dimension in the Customer Market dimension x Product/Service dimension primary x secondary dimension. Results indicate that flexibility is significant positive predictor of performance in MNCs with a Customer Market dimension x Product/Service dimension primary x secondary dimensions. Fouraker and Stopford (1968), Egelhoff et al., (2013), Perlmutter (1969) and Wolf and Egelhoff (2002) report that Customer Market dimension seeks global commonalities, with standardised products and service seek to fit commonalities, therefore flexibility need not be a focus. The results however indicate that when adopting the secondary Product/Service dimension, the flexibility that this dimension contributes is an important attribute to the achievement of organisational performance. This may be explained by the customer markets, while global and require similar products and/or services, there may be some differences (idiosyncrasies) which need to be accounted for. In order to meet the differences that may occur even when serving a global customer for example, flexibility is required. This may be in response to customers requiring changes, which the MNC needs to provide.

Conceptually organisational flexibility is the ability of an organisation to change or react to change (Volberda, 1999), and therefore when MNCs can react to the changes required, there is a positive effect on the achievement of organisational performance. The flexibility offered by the matrix organisational structure (Wolf & Egelhoff, 2012) therefore is an important attribute of the structure to ensure that flexibility and efficiency (as discussed above) (Adler et al., 1999; Zimmerman et al., 2015) can be obtained to achieve organisational performance. Flexibility, and particularly strategic flexibility was however negatively moderated by organisational age.

The above noted negative moderation of strategic flexibility and organisational age, may be explained by the ability of organisations to re-route or change (Galbraith, 1990; Hayes & Pisano, 1994) negatively affecting the achievement of organisational performance. These results support the notion that serving global clients requires consistency is line with the expectations of the organisation being served (Fouraker & Stopford, 1968; Egelhoff et al., 2013; Perlmutter, 1969; Wolf & Egelhoff, 2002). The structure and framework of operations that produce a set of standardised products/services, with some flexibility as noted above, requires that older organisations become highly specialised in the delivery of these products/services, and therefore the need for change may not be often or require radical change (Galbraith, 1990; Hayes & Pisano, 1994). Therefore,

older organisations strategic flexibility need not be a focus in the obtaining of an fit, rather that the focus remain of flexibility and efficiency gains required by an organisation. Continual change will negatively affect the performance of the organisation, and this is more pronounced in older MNCs.

HQ control was predicted to be positive and significant for MNCs adopting a Customer Market dimension x Product/Service dimension primary x secondary dimensions. The results obtained corroborate this, and support Boyd et al., (2012); Lehrer and Asakawa, (1999) and Egelhoff et al., (2013) that report that for efficiency to be obtained centralisation is required. In order to achieve centralisation a central coordinating function is required to ensure consistency in the delivery of products/services. This centralisation is further reported to provide control (Luo, 2001; Tian & Slocum, 2014), and performance of the organisation therefore related to the increased HQ control that is required to obtain the efficiency.

The increased HQ control, may further allow for the FSA and CSA to be re-combined and shared across the MNC network (Rugman et al. 2011; Hennart, 2009), which may provide the MNC as a whole a competitive advantage, however the role of the matrix structure in allowing for this to occur needs to be balanced with the ability of the structure to allow for the execution of the organisational strategy. The matrix is an effective mechanism that allows for integration (Andersson et al., 2005), and specifically the internal integration between HQ and subsidiary. Therefore, where the primary structural dimension is a customer market, and MNCs adopt a matrix organisational structure, the reporting to HQ by the subsidiary manager is required to be a solid line (Carney & Child, 2013; Leiblein, 2003; Verbeke & Greindanus, 2009). This solid-line, a proxy for HQ control, allows for the execution of the MNC global strategy primarily, but furthermore allows for effective communication which allows for FSA and CSA to be recombined (Teece et al., 1997; Verbeke & Greindanus, 2009; Wilden et al., 2013). Therefore, in sum, the matrix for customer market dimensions is an effective mechanism through solid-line reporting to allow for a competitive advantage for the MNC.

The strategy adopted by MNCs with a primary Customer Market dimension is reported to be a global strategy, and when a Product/Service dimension secondary dimension is added, a transnational strategy is followed (see table 2-1). Results indicate that when MNCs adopting a Customer Market dimension x Product/Service dimension primary x secondary dimension, and implementing a transnational strategy, organisational

performance is negatively affected. These results indicate that when MNC implement a matrix organisational structure, the achievement of organisational performance with a transnational strategy is affected. These results however should be justified in the context of the other constructs which the matrix allows for, flexibility, efficiency and HQ control. The results indicate that while a transnational strategy may be implemented the seeking of both local responsiveness and global market commonalities performance is negatively affected. These results indicate that when MNCs seek to primarily serve global clients through standardised products/services, a global strategy should be followed in order to achieve organisational performance rather than a transnational strategy which Egelhoff et al., (2013), Fouraker & Stopford, (1968), Harzing, (2000) and London & Hart, (2004) purport.

The transnational strategies that Egelhoff et al., (2013), Fouraker & Stopford, (1968), Harzing, (2000) and London & Hart, (2004) report when MNCs have the Customer Market by Product/Service Dimension primary by secondary structural components therefore may be a strategy followed, but does not allow for organisational performance. While contradictory to the extant literature, MNCs serving global clients should focus on product/service lines that are common, and not serve the idiosyncrasies of the local market which cannot serve the common global markets. In sum, when MNCs seek to serve a few global clients, a transnational strategy is not suitable and therefore a global strategy is mooted. This however is based on the implementation of the matrix organisational structure. Therefore, given that the matrix allows for internal integration, the structure constrains MNCs which are attempting to follow a transnational strategy serving common global clients.

The constraint of the matrix organisational structure therefore raises the debate of strategy following structure following strategy (Hall & Saias, 1980). As stated in chapter 2 the view that structure follows strategy was adopted for the current study, therefore the matrix organisational structure does not fit *a priori* a transnational strategy. In sum, while organisational ambidexterity is reported to allow for this (Jansen et al., 2009), and the matrix structure an efficient mechanism for structural separation (Egelhoff et al., 2013; Jansen et al., 2009), the results indicate that this has a negative effect on the dual strategy of primary efficiency and primary flexibility. To this end, when common customers are served at a global level, and MNCs seek both efficiency and flexibility the matrix may not be a suitable organisational structure.

5.3.3 Summary hypothesis one discussion

The matrix organisational structure is an effective structure for organisational performance, however where dual strategies of primary flexibility and primary efficiency are implemented by MNCs, with a Customer Market dimension primary dimension, the matrix organisational structure may not be suitable, other mechanisms offered reported by Raisch et al., (2009), Bartlett and Ghoshal (1989), Gibson and Birkinshaw, (2004) and Jansen et al., (2009) may be more suitable. The matrix is therefore an effective structure for Product/Service dimension x Customer Market dimension, and the levers of flexibility, efficiency, HQ control and strategy are predicted. Furthermore, organisational age is a significant moderator, for efficiency, strategy, and structural flexibility and the significant effect that this has, has implications on how MNCs need to manage the HQ-subsidiary relations.

The above therefore indicate implications at the theoretical and practical levels. At the theoretical level, the efficient structuring of the transactions should be prescribed for the level of complexity. Customer Market dimensions are often based on common global clients, which may indicate that the nuances required to serve these clients is limited, that is, consistency rather than diversity is the main driver. The matrix organisational structure is a complex organisational structure, and therefore where the exchange based on the type of product/service and the nuances within customer markets is purported, the matrix is not required. The results however do indicate that the level of product/service diversity is a driver for the adoption of the matrix organisational structure. The greater the product/service diversity, and therefore complexity is transactions, requires a complex structure such as the matrix organisational structure, and therefore is an appropriate organisational structure.

The above discusses implications at the theoretical level, however at the practical level, an MNCs strategy that is primarily focussed on Customer Market's should not adopt the matrix organisational structure. The matrix organisational structure is only suited for high product/service diversity, which is akin to complex transactions. Therefore when MNCs have a large number of products/services that are tailored to the market needs, a matrix organisational structure is appropriate.

5.4 HYPOTHESIS TWO

Hypothesis two tested two sub-hypotheses, 2a and 2b. Hypothesis 2a hypothesised that MNCs with a Geographic Region dimension x Functional dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Hypothesis 2b hypothesised that MNCs with Functional dimension x Geographic Region dimension primary x secondary structural dimensions will perform through orientations of efficiency and high HQ control, moderated by organisation age.

5.4.1 Hypothesis 2a

The results for hypothesis 2a and 2b were tested across the three sub-constructs of performance, namely organisational productivity, organisational effectiveness, and organisational stability. Across the three sub-constructs of performance, hypothesis 2a was partially supported through: i) flexibility, negative and significant but only for operational flexibility; ii) efficiency, positive and negative and significant; iii) strategy, positive and significant; iv) strategy moderated by organisational age, positive and significant; and vi) HQ control moderated by organisational age, negative and significant.

MNCs adopting Geographic Region dimension x Functional dimension primary x secondary dimensions are primarily concerned with flexibility, and secondly efficiency (Fouraker & Stopford, 1968; Egelhoff et al., 2013; Perlmutter, 1969; Wolf & Egelhoff, 2002). The results indicate that while these MNCs are concerned with flexibility, this was negative and furthermore only for operational flexibility. Operational flexibility is primarily concerned with an organisations ability to react to changes in volume of outputs and/or the combination of activities (Zollo & Winter, 2002). The results therefore indicate that while MNCs may be concerned with the ability to shift capacity to ensure that demand can be met (Weerdt et al., 2002), and corresponds to the need for flexibility broadly, this negatively affects performance of the organisation.

The negative effect of operational flexibility on the organisational performance may be explained by an over-emphasis on MNCs seeking to meet diverse needs within regions. That is, MNCs may be too focussed on within regional differences rather than within regional commonalities. Within-regional differences may lead to the need to continually shift production processes in manufacturing plants for example, or customer service

expectations for example in service organisations, which are not readily achieved. MNCs are further large organisations, as is evidenced in the sample as well, with 96,6% of MNCs having a more than 5000 employees, and 51,4% in the sample of MNCs having more than 60 000 employees. Organisations within such large numbers of employees whether geographically dispersed or not, will have policies and procedures which govern changes in product/service offerings. The rigidity of these policies and procedures therefore make quick frequent changes difficult as approvals may often be difficult to obtain. Therefore, while attaining operational efficiency, the nature and frequency of change may be limited or drawn out before these can occur.

Operational flexibility in MNCs may further require the recombination of resources. Resource recombination, while an advantage of the adoption of the matrix organisational structure, may increase the cost of coordination (Hennart, 2009; Rugman et al., 2011). The increased cost of coordination in MNCs with a primary Geographic Region structural dimension may surpass the value add related to performance, and therefore may be a liability. This cost of coordination (Davis & Lawrence, 1978; Egelhoff, 1982; Piekkari et al., 2010) is further related to HQ control.

HQ control is an important facet in the recombination process (Hennart, 2009; Rugman et al., 2011) required for operational flexibility. This HQ control allows for the orchestration of activities (Hennart, 2009) which may be regionally bound. The results for HQ control indicate that HQ control while significant is negative. The negative effect of HQ control on performance is therefore indicative of HQ control being indirect, rather than direct, thus limiting the ability for HQ to orchestrate the required control needed to orchestrate this. Therefore, while the Geographic Region dimension may elude to the need for flexibility and this is often associated with indirect HQ control, indirect HQ control (Piskorski & Spadini, 2007) may be limiting the ability to perform outside of the coordination mechanism. These results therefore contradict the generalisation that MNCs requiring flexibility for the delivering of regionally localised products/services (Chi & Nystrom, 1998; Qiu & Donaldson, 2012). Only operational flexibility was significant, albeit negatively. Therefore, while MNCs may adopt the geographic region dimension to fit high product/service diversity and multiple locations (Chi & Nystrom, 1998; Qiu & Donaldson, 2012), its inculcation does not allow for organisational performance.

In MNCs with a Geographic Region dimension x Functional dimension primary x secondary structural dimensions, it is often the Functional dimension that signals search

for efficiency (Fouraker & Stopford, 1968; Egelhoff et al., 2013; Perlmutter, 1969; Wolf & Egelhoff, 2002). The results indicate that efficiency is significant, however positively for the prediction of organisational productivity performance, and negatively for organisational stability performance.

Organisational productivity, is primarily concerned with how successful organisations are in exploiting the external market place (Gazendam, 1998). The results support a more regionalised orientation that is afforded by the Geographic Region focus of the organisation strategy. MNCs are more adapt through a regionalised strategy to understand how to ensure that delivery of products and/or services are met, and therefore allow for an understanding that the efficiency gains associated with engaging in similar activities more efficiently (Auh & Menguc, 2005) are achieved. This has a direct positive effect on organisational performance, and therefore the results corroborate Auh and Menguc (2005), Benner and Tushman (2015) and Magnusson et al., (2009).

The above stated results however, must be balanced with flexibility, and specifically operational flexibility as discussed above. In isolation, the efficiency gains that a MNC may obtain by engaging in similar activities with minimal changes positively affects the performance for MNCs adopting a matrix organisational structure. While the matrix organisational structure may allow for effective and efficient achievement of disparate goals (organisational ambidexterity) in the case of MNCs with the matrix organisational structure, this separation does not organically allow for both to be achieved without increased HQ control, as discussed above. Therefore, in order to perform, MNCs with a Geographic Region structural dimension are required to increase HQ control, which is counter to an understanding of flexibility being offered by the geographic region dimension, which with efficiency allow for the successful exploitation of the external marketplace.

Efficiency was however negative for organisational stability as reported in the results. Organisational stability is the ability of an organisation to achieve stability after fluctuations (Birkinshaw et al., 2005). The results therefore may indicate, that MNCs adopting the Geographic Region dimension x Functional dimension primary x secondary structural dimensions, while achieving organisational productivity performance as stated above, need to balance this achievement with fluctuations that may occur in the environment (Birkinshaw et al., 2005). The ability for organisations to vary production for example is important, as when disturbances affect the stability, supply and demand

which have led to the efficiency may be misaligned. This misalignment may affect the congruence between the internal organisation and the external environment which organisational stability proxies. Efficiency which is concerned with the engagement of similar activities more efficiently (Auh & Menguc, 2005) and achievement of economies of scale (Benner & Tushman, 2015), when not aligned with the environmental needs negatively affects the achievement of an organisational productivity performance.

These results may further be explained as the environment within which MNCs operate are diverse, by virtue of being multinational, and changing (Raisch & Birkinshaw, 2008). The changes in the environment which MNCs may be reacting to (Birkinshaw et al., 2005), through organisational productivity, are disturbed through organisational stability. Fluctuations may be more frequent and unpredictable, and as such require changes more frequently to achieve organisational productivity, but in doing so, organisational stability is negatively affected by efficiency. Efficiency and organisational stability may be complimentary, however when environments in which MNCs operate are dynamic, this complementarity is disturbed and therefore negatively affects performance of organisations. The matrix organisational structure, while allowing for flexibility and efficiency to be established, may not be appropriate for MNCs seeking to achieve superior and/or sustained performance through organisational stability, where changes are sporadic and stability is required through the coordination of activities and individuals.

Strategy for MNCs adopting a Geographic Region dimension x Functional dimension primary x secondary structural dimensions was a significant predictor for the organisational performance and furthermore, this was significantly and positively moderated with organisational age. MNCs with a Geographic Region dimension are often reported to follow multidomestic strategy, however the addition of the Functional dimension indicates that a transnational strategy is being followed (Fouraker & Stopford, 1968; Harzing, 2000; London & Hart, 2004; Wolf & Egelhoff, 2002). The results indicate that MNCs with a matrix organisational structure seeking to deliver both flexibility and efficiency primarily through the Geographic Region dimension x Functional dimension primary x secondary dimensions, the matrix organisational structure is an appropriate structure mediating organisational performance.

Organisation age was a furthermore a significant moderator, strengthening the relationship between the strategic choice and performance. The longer subsidiaries

operate in an environment (Henderson, 1999; Rabbiosi & Santangelo, 2013), the better they are able to align the internal and external environments, that is organisational effectiveness (internal) and organisational stability (link between internal and external) for organisational performance . This indicates that subsidiaries by virtue of being able to achieve growth in sales volume, growth in market share, profit margin (organisational effectiveness) and market share, return on own capital, and net profit margin (organisational stability) have accumulated sufficient knowledge to operate and exploit the market to execute (Luo & Peng, 1999) a transnational strategy. This is further complimented with the increased operating age having had a longer time to develop the internal integration (Ghoshal & Bartlett, 1990) which is necessary for MNCs with a matrix organisational structure. Therefore, the matrix organisational structure allows for the achievement of sustained performance in MNCs with a Geographic Region dimension x Functional dimension primary x secondary structural dimensions executing a transnational strategy.

Internal integration and market knowledge which older organisations have an advantage over newer established subsidiaries (Ghoshal & Bartlett, 1990; Luo & Peng, 1999), depends however on the level of HQ control. HQ control alone as a variable of interest was not significant, but when moderated with age, was significant. Decreased HQ control was significantly predicted to allow for the attainment of sustained performance. This result corroborates Egelhoff et al., (2013) that in order for MNCs to meet the localised needs and hence flexibility is required, HQ should be willing to have less control over the matrix manager at the subsidiary level. However, this in the context of being moderated by organisational age is further embedded. Organisational age positively affects the amount of HQ control that is allowed, and this may be a function of the HQ-subsidiary relations. Older organisations having been successful as a strategy execution unit of the MNC (Gibbons & Roberts, 2013; Leiblein, 2003), may be afforded greater breadth of flexibility in order to perform for the MNC, and therefore the HQ remains a coordinator of the subsidiary (Ciabushi et al., 2012).

The matrix organisational structure is therefore an effective structure which allows for the execution of a transnational strategy, and therefore the ability for MNCs to execute a transnational strategy may be dependent on the matrix structuring between HQ and subsidiary. These results indicate that while numerous non-hierarchical network structures may be used by MNCs (Egelhoff et al., 2013), the increased coordination cost associated with the use of non-hierarchical structures indicate that the matrix is an

alternative form. The results however for execution of a transnational strategy should not over-ride the efficiency, flexibility, and HQ control changes required to perform.

5.4.2 Hypothesis 2b

The above discusses Geographic Region dimension x Functional dimension, however hypothesis 2 further sort to understand how Functional dimension x Geographic Region dimension affects organisational performance. Across the three sub-constructs of performance, hypothesis 2b was partially supported through: i) efficiency, positive and negative and significant; ii) operational flexibility, negative and significant; iii) strategy, negative and significant; iv) strategy negative and significantly moderated by organisational age; and v) HQ control positively and significantly moderated by organisation age.

Efficiency, similar to MNCs with a Geographic Region dimension x Functional dimension primary x secondary structural dimension, were both positive, negative and significant for MNCs with a Functional dimension x Geographic Region dimension primary x secondary structural dimensions. For positive and significant efficiency, the results were supported for the sub-constructs of organisational effectiveness and organisational stability. These results corroborate Benner and Tushman (2015), Egelhoff et al., (2013), Fouraker and Stopford (1968), Harzing (2000) and Magnusson et al., (2009), who report that MNCs with a Geographic Region dimension primary dimension are seeking efficiency. The mechanism through which business functions are controlled at HQ, and products and/or services are moved to subsidiaries with little to no adaptation. The Functional dimension allows for standardisation of products and/or services at a global level and there is no or little duplication of functions. When adopting a Functional dimension this efficiency allows for the achievement of efficiency at HQ, which is reflective is the ability to perform. While this may be valid, efficiency was however negatively predicted organisational productivity.

Organisational productivity, as stated above is related to the market and how successful organisations are able to exploit the market place (Gazendam, 1998). The results indicate that this negatively affects the organisational productivity performance. This may be explained by the strategy, that is, efficiency at a global level, rather than the exploitation of local conditions that the MNCs may seek to achieve. MNCs adopting the Functional dimension primary structural dimension do not seek to meet the localised

needs through flexibility, rather that they seek to search for efficiencies through an understanding of global commonalities that may be exploited. There may be some localisation, as is evidenced through the Geographic Region dimension, however these organisations in the main are focussed on serving regional clients (Fouraker & Stopford, 1968; Ghoshal & Bartlett, 1990) rather than country level clients, and therefore do not require efficiency at the localised level. The results therefore are consistent with what is expected. Importantly, however is the integration across the MNCs that the matrix organisational structure effectively allows for this to be obtained to achieve sustained performance.

Operational flexibility was predicted to positively and significantly affect organisational performance. These results while not expected in the context that MNCs with a Functional dimension primary and Geographic Region dimension secondary dimension seek efficiency over flexibility, as these MNCs are executing a transnational strategy, see later, they require both flexibility and efficiency primarily. The flexibility offered through operational flexibility is directly related to the ability for MNCs to change volume or outputs and/or the combination of activities (Zollo & Winter, 2002), and in the context of a primary Functional dimension, as HQ has control, see below, over the functioning and operations at a global level, HQ has the ability to shift excess capacity to regions (Geographic Region dimension) that require it, allowing the coordination of subsidiaries to be better managed. Therefore, operational flexibility does allow for the attainment of sustained performance, however this needs to be in the context of the level of control that HQ has to shift resources for example across the MNC network and provide the entire network with FSA's. While this understanding of the FSA's are not core to the current study, operational flexibility and the ability positively predict performance allows for the exploitation of FSA's across the MNC network, however this requires HQ control. In contrast to hypothesis 2a with MNCs with a Geographic Region dimension (flexibility) primary dimension and low control the ability to shift these resources is limited.

The above results and discussion therefore indicate that matrix organisational structure effectively allows for the solving of the paradox of management through organisational ambidexterity (O'Reilly & Tushman, 2013; Raisch et al. 2009). These results have implications for both theory and MNCs. At the theoretical level, where the paradox of management indicated that choices of either or were required (Benner & Tushman, 2015; Kogut, 1993; Volberda, 1996), this does not hold true. The results provide support to mechanisms existing to overcome these challenges of choice of either or (Ghoshal &

Bartlett, 1990; O'Reilly & Tushman, 2013; Raisch et al. 2009). Extant literature however failed to provide what mechanisms, often stating that organisational structure may be an effective mechanism. The current research, therefore allows for direction on the type of structure, namely the matrix organisational structure. These findings therefore provide *a priori* understanding of what is required to overcome the paradox of management.

The implications for MNCs, where choices of which (flexibility or efficiency) to focus on, is primarily driven by the strategy adopted. The results of the current study indicate that this may not be necessary, however the decision may be influenced by the choice of number and type of products/services offered and who the consumers (businesses or individuals for example) are. While these results, and those above may indicate that the matrix is an appropriate structure for the achievement of sustained performance through flexibility and efficiency, HQ control needs to be further included to provide a holistic understanding.

HQ control was positive and significant, however moderated by organisational age. Gibbons and Roberts (2013), Lundan (2010); Zhang et al., (2014) report that when HQ has control over the matrix manager, this provides HQ with the ability to instruct and re-allocate the matrix manager to perform certain tasks. This increased control however is beneficial to the MNC, and as the results indicate allows for the achievement sustained performance. HQ control allows for a centralised control of assets as well as the ability to coordinate (Bartlett & Ghoshal, 1989; Galbraith, 2013; Rugman et al., 2011; Verbeke & Greindanus, 2009) the resource to execute strategies. The ability to re-allocate resources requires a macro-view of the entire organisation. By virtue of seeking efficiency through the Functional dimension, HQ has a higher level of coordinating ability even when this is in combination with flexibility as with the Geographic Region dimension. The searching for both efficiency and flexibility though the Functional dimension x Geographic Region dimension primary x secondary dimensions allows for this coordination to occur and performance. Therefore, when MNCs adopt a Functional dimension x Geographic Region dimension primary x secondary structural dimensions, high HQ control allows for sustained performance. The matrix provides the structural mechanism for this to occur.

Strategy was predicted to negatively affect the organisational performance and was further negatively moderated in MNCs with the Functional dimension x Geographic Region dimension primary x secondary dimensions. These results indicate when

adopting a transnational strategy, the performance is negatively affected. While it may be argued that by adopting a Functional dimension primarily, and Geographic Region dimension secondarily, an international strategy is being followed with a primary focus on efficiency, which is afforded, and secondarily flexibility (Fouraker & Stopford, 1968; Harzing, 2000; London & Hart, 2004; Wolf & Egelhoff, 2002), a transnational strategy which is reported for the overlaying of the dimensions leads to a negative effect on performance.

The results therefore indicate, while MNCs adopting a Functional dimension x Geographic Region dimension primary x secondary structural dimensions achieve performance, the transnational strategy negatively affects this, and therefore, the adoption of a matrix, which Egelhoff et al., (2013) report is for primarily flexibility and primarily efficiency, leads to negative effects on the achievement of organisational performance. Therefore, where efficiency is required core to the MNC, the matrix may not be an ideal structure. The strategy was further moderated by organisational age negatively. MNCs therefore while adopting a given strategy, the longer they have been implementing the strategy, fail to change when required. Organisations become set in routines (Coad et al., 2017), and this in combination with the strategy in the context of the matrix has a negative effect on organisational performance.

The results and the discussion above indicate that when the MNC strategy is transnational and the primary dimension is efficiency, organisational performance is negatively affected. These results and the subsequent discussion therefore indicates that the matrix organisational structure is not appropriate for MNCs pursuing a transnational strategy when efficiency is the primary aim of the strategy. Non-hierarchical structures may be more appropriate. Therefore global, multi-domestic and international strategies which require flexibility and efficiency may benefit from the implementation of a matrix organisational structure, however this must be balanced with increased HQ control required.

5.4.3 Summary of discussion, hypothesis 2

Similar to the findings and subsequent discussion for hypothesis one, the discussion of hypothesis two and the results indicate that the strategy adopted by MNCs affects and drives organisational performance. When MNCs adopt a Functional dimension primary dimension, the matrix organisational structure may not be suitable, however this must

be balanced with the ability of the matrix organisational structure to understand efficiency, operational flexibility, strategy and HQ control in organisational performance. The results and the discussion indicate, again similar to hypothesis one, when the primary dimension is focussed on flexibility, the matrix organisational structure is an effective structure to achieve sustained organisational performance.

The implications of the results are therefore at two levels, namely the theoretical and the practical level. At the theoretical level, the matrix where predicted to allow for both flexibility and efficiency, however results indicate that it is not suitable for efficiency. This is pertinent when the primary strategy adopted is based on efficiency gains through the functional dimension. The type of transaction being conducted when seeking efficiency may be driven by the commoditised products, and therefore require a simple mode of governance. The matrix organisational structure is however often ascribed to being a complex mode of governance, and therefore when the transaction is simple, the adoption of the matrix is not suitable. Furthermore, the Geographic Region dimension and the Functional Dimension may be too similar a strategy based on a flexibility-efficiency continuum firstly, and therefore effecting the manner in which HQ controls the subsidiary.

The implications of the results at the practical level are therefore based on the amount flexibility. If a MNC has a large suit of products/services that need to managed, the matrix organisational structure is a suitable structure, however where the focus is on efficiency rather than flexibility, the matrix is not a suitable structure. The level or amount of control that HQ has over a subsidiary should only be decided upon once flexibility afforded by the matrix has been decided upon.

5.5 HYPOTHESIS THREE

Hypothesis three tested two sub-hypotheses, 3a and 3b. Hypothesis 3a hypothesised that MNCs with a Functional dimension x Product/Service dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Hypothesis 3b hypothesised that MNCs with Product/Service dimension x Functional dimension primary x secondary structural dimensions will perform through orientations of efficiency and high HQ control, moderated by organisation age.

5.5.1 Hypothesis 3a

The results for hypothesis 3a and 3b were tested across the three sub-constructs of performance, namely organisational productivity, organisational effectiveness, and organisational stability. Across the three sub-constructs of performance, hypothesis 3a was partially supported through: i) strategy, positive and significant; ii) HQ control positive and significant; iii) HQ control positively and significantly moderated by organisational age; iv) efficiency, positive and significant; and v) operational flexibility, positive and significantly moderated by organisational age.

MNCs adopting a Functional dimension x Product/Service dimension primary x secondary structural dimensions are focussed on the achievement sustained performance through efficiency primarily and secondarily through flexibility (Fouraker & Stopford, 1968; Harzing, 2000; London & Hart, 2004; Wolf & Egelhoff, 2002). Results indicate that efficiency was significantly and positively predicted. These results are consistent with previous work by Egelhoff et al., (2013) that indicate that when adopting Functional dimension as the primary dimension efficiency is the focus. These results further indicate that MNCs adopting a Functional dimension x Product/Service dimension primary x secondary structural dimensions, firstly focus on efficiency, and flexibility remains secondary when adopting the Product/Service dimension. However, MNCs with matrix organisational structures have a second dimension, and for hypothesis 3a this was a Product/Service dimension which is often ascribed to allowing for flexibility. The results however indicated the only operational flexibility was significant, and the significance was positive and further moderated by organisational age.

Operational flexibility, as described earlier allows for the an understanding of the ability for organisations to change volume of outputs and/or re-combination of activities and resources (Zollo & Winter, 2002). This indicates that increased operational flexibility afforded by the matrix organisational structure in specific relation to Functional dimension x Product/Service dimension allows for MNC to shift capacity in order to ensure demand is met (Weerdt et al., 2012). The primary aim of MNCs with a functional diversity dimension is efficiency, therefore, while operational flexibility pertains to the ability to change volume of outputs and/or recombination of activities and resources, the ability to do this without affecting the efficiency requires that MNCs coordinate the activities required to meet changes in demand.

The ability to coordinate the changes, while delivering efficiently therefore requires a central coordinating mechanism. This mechanism in a matrix organisational structure is HQ. Therefore the operational flexibility requires a direct influence by HQ to ensure coordination is effective. This coordination in primary functional dimension of the organisational structure is embedded through the evolutionary process (Verbeke & Greindanus, 2009). The positive moderation of organisational age on operational flexibility indicates that organisational age positively affects the ability to change capacity (volume of outputs) and/or combinations of activities. This result indicates that older organisations have gained knowledge (Bausch & Krist, 2007) and experience which affect the capability to execute on changes in volume of outputs and/or combination of activities. It is this complimented with older organisations being more integrated within the MNC network which allows for the achievement of sustained and superior performance. This however further requires that HQ control the manner in which the operational flexibility can be used for organisational performance.

HQ control in the context of the current study sort to understand the nature and the time spent reporting to HQ. The results indicated that time spent reporting HQ was significantly predicted. These results corroborate the extant literature Egelhoff et al., (2013), that MNCs adopting a Functional dimension, and specifically when this dimension is the primary dimension, this will result in HQ having greater control. The HQ control was further significantly and positively affected by organisational age. These results indicated that HQ control is greater the older a subsidiary is. This may be due to the greater integration within the MNC network that older subsidiaries are afforded (Ghoshal & Bartlett, 1990). This HQ control while positively and significantly being a predictor of performance, may further have the benefit of HQ being able to coordinate the operational flexibility, as discussed above. Furthermore, the coordination that is afforded by the matrix organisational structure by HQ has strategic implications.

The coordinating function by HQ through control further allows for the exploitation of FSA's and CSA's which may be recombined to provide a competitive advantage (Birkinshaw & Hood, 2001; Birkinshaw, 1996; Rugman et al., 2011; Rugman & Verbeke, 2008; Teece et al., 1997; Wilden et al., 2013). The competitive advantage is achieved through the ability of HQ through the direct control to understand multiple perspectives and allow for HQ to direct the transfer of CSA's to other regions (Luo, 2001; Tian & Slocum, 2014). This indicates that CSA's are no longer location bound and therefore become FSA's (Rugman & Verbeke, 2008). While HQ control is central to this, the matrix

organisational structure is the conduit which allows for this to occur. The ability of the MNC to transfer CSA's to become FSA's however is dependent on the knowledge that the MNCs are able to assimilate in different contexts, and this may be further dependent on the maturity of the MNC which allows for knowledge gains.

Organisational age, while only positively and significantly affecting the HQ control, may be allowing for the embedding of integration within the MNC network (Ghoshal & Bartlett, 1990). Organisation age is attributed to increased performance of organisations, as organisations have had time to gain knowledge and develop the necessary networks. This when coupled with strengthening the relationship of HQ control (direct control) may indicate that older organisations have an understanding of how to assimilate the knowledge and leverage the networks effectively. However this requires the embedding of integration, which the matrix organisational structuring allows (Davis & Lawrence, 1978; Egelhoff, 1982; Piekkari et al., 2010). This embedding may have multiple benefits which may accrue to the MNC, and this is highlighted above through HQ control allowing for the leveraging of operational flexibility. Furthermore, while there are benefits that accrue through efficiency and operational flexibility, the strategy that the MNC seeks to execute through the subsidiaries requires that this be balanced. This is further dependent on the HQ-subsidiary relationship, which may affect the ability to leverage the operational flexibility effectively.

HQ-subsidiary relations are well noted in the literature (see; Birkinshaw & Morrison, 1995; Hennart, 2009; Luo, 2005; Rugman et al, 2011, for example), and may take on different forms (e.g. autonomous, receptive and active). In the case where efficiency is required by the strategy, as is with MNCs adopting a Functional dimension primary structural dimension, the role of the subsidiary needs to be receptive (Meyer & Su, 2015). It is the receptiveness of the subsidiary that allows for the efficiency gains, as well as the ability for the subsidiary to leverage the operational flexibility through HQ control. This, as highlighted above, is further a function of the subsidiary (organisational) age which provides an understanding of the level of integration (Ghoshal & Bartlett, 1990).

Strategy was positively and significantly predicted to affect organisational performance. Fouraker and Stopford, (1968), Harzing, (2000), London and Hart, (2004), and Wolf and Egelhoff, (2002) report that organisations with a primary Functional dimension seek to implement an international strategy. However by adding the second dimension, a transnational strategy may be pursued with the dual aim of flexibility and efficiency as

primary objectives. As the results above indicated, efficiency was pursued, however only operational flexibility. This indicates that while MNCs may be seeking to execute a transnational strategy, the primary dimension of the MNC, Functional dimension in hypothesis 3a, appears to skew the strategy implemented. That is, while a transnational strategy may be being pursued, the structure limits the ability to achieve both flexibility and efficiency. The matrix structure, while reported (Egelhoff et al., 2013; Galbraith,1974, 1979) to allow for both, MNCs that have adopted the structure remain rooted in the lever espoused by the primary dimension. The results indicated that strategy pursued by Functional dimension x Product/Service dimension primary x secondary structural dimensions does have a positive effect on organisational performance. Therefore, the strategy implemented may be in line with the international strategy, as evidenced by efficiency, and only operational flexibility.

The above for hypothesis 3a provides a discussion on the significant levers for organisational performance, however strategic and structural flexibility were not supported as significant levers. Flexibility cumulatively deals with these sub-constructs as well, and while the results do not support the secondary dimension through strategic and structural flexibility of the product/service structural dimension, it must be noted that these are secondarily. The secondary nature may indicate that MNCs may be constrained in understanding that both efficiency and flexibility may be achieved simultaneously, through organisational ambidexterity. The bias to one may therefore serve as a constraint on organisational performance through the use of the levers available to the managers. This constraint however may be borne from the understanding that for many decades, the paradox of management which ascribed that flexibility and efficiency cannot be achieved simultaneously remains, and this coupled with the large scale failures of the matrix may be a constraint.

5.5.2 Hypothesis 3b

The results for hypothesis 3a and 3b were tested across the three sub-constructs of performance, namely organisational productivity, organisational effectiveness, and organisational stability. Across the three sub-constructs of performance, hypothesis 3b was partially supported through: i) operational flexibility, negative and significantly moderated by organisational age; ii) efficiency, negative and significant; iii) HQ control negative and significant; and iv) HQ control negative and significantly moderated by organisational age.

MNCs adopting a Product/Service dimension x Functional dimension primary x secondary structural dimensions are reported to seek flexibility primarily and secondary efficiency, when overlaying the Product/Service dimension with Functional dimension (London & Hart, 2004; Wolf & Egelhoff, 2002). The primary dimension of Product/Service diversity dimension allows for flexibility to deliver local responsiveness which leads to a decrease in HQ control required.

The results from hypothesis 3b indicates that only operational flexibility was a significant predictor for organisational performance, however this was negative, that is, had a negative effect on organisational performance. These results are contradictory to London and Hart, (2004) and Wolf and Egelhoff, (2002), whom report that MNCs with a Product/Service dimension primary dimension are seeking flexibility, and therefore one would expect that an increase in flexibility to achieve sustained and superior performance, given that the primary dimension is associated with flexibility to meet the localised needs.

The contradictory results obtained by the current study, firstly only relate to operational efficiency, and not strategic and structural flexibility, which were not significant. Operational flexibility relates specifically to an organisations ability to react to changes in volume of outputs and/or the combination of activities (Zollo & Winter, 2002). This further is only one dimension of flexibility. The results obtained for operational flexibility in isolation intuitively fits the notion that while organisations with a product/service primary structural dimension are seeking to deliver localised products/services, they are not seeking to shift capacity to ensure that demand can be met (Weerdt et al., 2012), as products/services are bespoke to the localised environment. These bespoke products/services may not be readily moved to different markets, without adaptation to suit the needs of the local market to where they are distributed secondarily.

Operational flexibility, as it relates to the ability to react to changes, may further require that MNCs have slack in their systems (Adler et al., 1999; Schreyögg & Sydow, 2010) to adjust to changes which may or may not occur. This slack in the system for products/services that are localised therefore negatively affects organisational performance. While an argument that may be mooted is that this slack in organisational systems allow for excess capacity which may be distributed across the MNC network, MNCs delivering localised products/services may not simply allow for the capacity or excess to be used, again without adaptation of the product/service. When minimal or no

adaptation of product/service is required, the ability to coordinate the changes becomes central. This however requires direct HQ control to ensure orchestration of this, which is further contradictory of extant literature (see Egelhoff et al., 2013; Fouraker & Stopford, 1968; Wolf & Egelhoff, 2002).

HQ control, was significant and negative, and these results indicate that there is decreased control from HQ on subsidiaries with a Product/Service dimension primary structure. These results support Egelhoff et al., (2013). Minimal HQ control ensures that subsidiaries can deliver for local preferences, and therefore the subsidiary is autonomous. This autonomy may allow for organisational performance, and therefore fits the delivery of localised products/services which are market specific in the context of MNCs. When HQ control is coupled with the operational flexibility, MNCs are better positioned to minimise slack in their systems, as this negatively affects organisational performance, while further minimising the HQ control, that is indirect as this is positively affects organisational performance. Therefore, the results for HQ control corroborate Fouraker and Stopford, (1968) and Wolf and Egelhoff, (2002).

Organisational age negatively and significantly moderated HQ control. This result indicates that older organisations have significant autonomy by virtue of experience (Ghoshal & Bartlett, 1990) in executing the MNC strategy. These results corroborate Fouraker and Stopford, (1968) and Wolf and Egelhoff, (2002), who indicate that decreased HQ control is required for MNCs seeking flexibility.

The results therefore indicate that in pursuit of flexibility in MNCs with a Product/Service dimension primary dimension, however was not significant across all measures, while efficiency was significant, albeit negatively. Therefore, while London and Hart, (2004) and Wolf and Egelhoff, (2002), report that Product/Service dimension is focussed on flexibility, the secondary dimension of Functional dimension may result in the MNCs seeking efficiency, and as the primary dimension and history, recall that the overlaying of structural dimensions is an evolutionary process (Egelhoff et al., 2013; Perlmutter, 1969; Strikwerda & Stoelhorst, 2009), indicate that flexibility is a given, efficiency may be focussed on. The possible focus on efficiency however leads to decreased performance, that is, for MNCs adopting a Product/Service dimension x Functional dimension, efficiency negatively affects organisational performance. The negative effect of efficiency on performance is however known not to be a central to the achievement of organisational performance. Despite this, MNCs within the sample have, on average,

focussed on efficiency, which has led to the decreased performance. Therefore, while efficiency may be the focus of the functional dimension, focussing on this in light of indirect HQ control negatively affects performance, and therefore should not be a focus of MNCs when adopting a functional division dimension as the secondary dimension as overlaid with product/service diversity.

The final attribute that was significant was that of strategy for the Product/Service dimension x Functional dimension primary x secondary structural dimensions. MNCs with a primary Product/Service dimension reported to be following a multi-domestic strategy, focussing on ensuring adaptation to local market preferences and conditions (Egelhoff et al., 2013). However, as stated above, the addition of the second dimension of Functional dimension, MNCs may be following a transnational strategy, focussing on local responsiveness and global market commonalities (Harzing, 2002; Meyer, et al., 2011). Similar to the results obtained for hypothesis 3a, the results indicate that when pursuing a transnational strategy with a Product/Service dimension x Functional dimension matrix organisational structure, performance is negatively affected. That is, as MNCs pursue a transnational strategy through the overlaying of Functional dimension onto Product/Service dimension, the performance is negatively affected. Egelhoff et al., (2013), Perlmutter, (1969) and Strikwerda and Stoelhorst, (2009) report that the adoption of a matrix structure, specifically the second dimension is through an evolutionary process, that is, it is not easily observable that MNCs are born global, therefore the overlaying of the second dimension is accomplished as organisations grow, and require the second dimension.

The second dimension of Functional division dimension in the hypothesis 3b, may indicate that the subsidiaries surveyed, do not achieve flexibility, and the efficiency that is attained (significant predictor), is negative. This result may be explained by MNCs having focussed on flexibility of the product/service diversity dimension and a multi-domestic strategy have not yet been able to attain both flexibility and efficiency, that is, they have foregone flexibility in favour of efficiency, but have not been able to achieve the efficiency gains associated with Functional division dimension as it has been adopted.

Transnational strategies require high levels of coordination between HQ and subsidiaries in order to ensure cooperation (Fouraker & Stopford, 1968; Harzing, 2000; London & Hart, 2004; Perlmutter, 1969; Wolf & Egelhoff, 2002). However, where there needs to be

a balance of HQ control, which needs to be direct in order to accomplish the goal of a transnational strategy, HQ control was further found to be focussed on localisation and not on integration, that is indirect. The results therefore may indicate that subsidiaries of MNCs in the sample, while they have adopted the matrix organisational structure have not yet achieved integration, which the transnational strategy requires. Therefore, the focus of these MNCs should be focussed on ensuring integration between HQ and the subsidiaries. The integration however is dependent on the HQ-subsidiary relationships.

HQ-subsidiary relations are noted to take on different forms, however the challenge for organisations is two-fold. One, the adoption of the matrix organisational structure is an evolutionary process, therefore the ability of MNCs to change the role of the subsidiary requires focus; and two, the use of the matrix for primary dimensions such as Product/Service dimension focussed on flexibility to balance and ensure obtaining of both flexibility and efficiency. The results obtained indicate that MNCs with a Product/Service dimension x Functional dimension primary x secondary structural dimensions choose, rather than use organisational ambidexterity (Jansen et al., 2009) mechanisms to achieve both.

5.5.3 Summary of discussion for hypothesis 3

The matrix organisational structure allows for integration between HQ and subsidiary, however this integration is dependent on the primary structural dimension adopted, and subsequently the ability to change the type of subsidiary (e.g. autonomous, receptive, and active) (Birkinshaw & Morrison, 1995; Luo, 2005; Martinez & Jarillo, 1991; Meyer & Su, 2015) . This ability to change the type requires changes in level of HQ control, however HQ control should not over-ride the ability to continue to deliver localisation when required, specifically in the case where flexibility is required. The results and subsequent discussion indicated that mechanisms offered by organisational ambidexterity (Bartlett & Ghoshal, 1989; Gibson & Birkinshaw, 2004; Jensen et al., 2009; Raisch et al., 2009) may be suitable outside of only structural separation and integration offered by a matrix type of structure.

The matrix is therefore an effective structure for Functional dimension x Product/Service dimension, and the levers of operational flexibility, efficiency, HQ control and strategy are predicted. Furthermore, organisational age is a significant moderator, for HQ control, and operational flexibility. In contrast, Product/Service dimension x Functional dimension

primary x secondary structural dimensions are not well served only by the matrix structure, and require integration, changes in HQ control and strategy to perform.

5.6 HYPOTHESIS FOUR

Hypothesis four tested two sub-hypotheses, 4a and 4b. Hypothesis 4a hypothesised that MNCs with a Geographic Region dimension x Customer Market dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Hypothesis 4b hypothesised that MNCs with Customer Market dimension x Geographic Region dimension primary x secondary structural dimensions will perform through orientations of efficiency and high HQ control, moderated by organisation age.

Hypothesis 4 was rejected, and the subsequent discussion therefore firstly, focusses on the single predictor, efficiency, which was significant, albeit in different directions, that is positive for Geographic Region dimension x Customer Market dimension and negative for Customer Market dimension x Geographic Region dimension together, and secondly on the implications of the non-significance of flexibility, HQ control and strategy.

5.6.1 Hypothesis 4a and 4b

The results for hypothesis 4a and 4b were tested across the three sub-constructs of performance, namely organisational productivity, organisational effectiveness, and organisational stability. Across the three sub-constructs of performance, hypothesis 4a was rejected, and the only significant predictor was efficiency, positive and significant. Across the three sub-constructs of performance, hypothesis 4b was also rejected, and the only significant predictor was efficiency, negative and significant.

MNCs adopting a primary Geographic Region dimension are rooted in the requirement of high-levels of flexibility to meet the needs of multiple regional environments and high-levels of product/service diversity which requires management (Egelhoff et al., 2013; Qiu & Donaldson, 2012; Stopford & Wells, 1974). The results obtained however indicate that performance is positively and significantly only predicted for efficiency, and further only for organisational productivity performance measure. These results are therefore contradictory to Qiu and Donaldson (2012) specifically, in that MNCs with a Geographic region primary structural dimension seek flexibility to manage high product/service

diversity. MNCs by virtue of being multinational are often argued to have a geographic region dimension inherently (Egelhoff, 1982). It is this argument therefore that may indicate that while MNCs formally adopt a geographic region structural dimension, the cost of doing so (Egelhoff, 1982; Qiu & Donaldson, 2012) and not immediately justifiable, may be being pursued, and negatively affecting the performance.

The adoption of the Geographic region primary structural dimension while allowing for flexibility (Egelhoff et al., 2013; Qiu & Donaldson, 2012; Stopford & Wells, 1974), must be noted is regionally based. In the context of MNCs these regions may consistent of numerous countries and continents included, for example Middle-East, Africa and Asia, commonly referred to as the MEA region, similarly Latin America region consisting of a number of South American countries. The countries that constitute these markets are therefore treated as homogenous to some extent (Boyd et al., 2012; Lehrer & Asakawa, 1999), and therefore while there is a need to deliver localised products/services, the commonalities that MNCs are seeking to serve may be not be as diverse as when serving localised products/services at the country-level. This is an important nuance for flexibility, and given the average age of the MNCs in the sample of 79,04 years, may indicate that these MNCs have been able to adapt their products/services and therefore rather than seek localised idiosyncrasies within countries in the region, are more focussed on the efficient delivery of product/services at the regional level.

Organisational age however did not significantly moderate performance from the results obtained. This may be indicative that while organisational age may be an indicator of success and performance, the ability of a MNC to gain knowledge of the regions rapidly and establish the relevant networks (Rabbiosi & Santangelo, 2013; Stinchcombe, 1965) once obtained has no effect. These results therefore may indicate that for younger MNCs with a Geographic region dimension, when the adopting a matrix organisational structure the aim should be to increase the rate of knowledge accumulation, which may then positively affect the ability to extract the benefits of the efficiently exploiting regional market commonalities. Therefore, while the adoption of the Geographic Region primary structural dimension is present, the focus is not on flexibility rather efficiency.

The above deals specifically with the non-significance of any of the flexibility dimensions, and supports the need for efficiency. Efficiency, while a significant positive contributor to performance, only the dimension of organisational productivity of performance was significant. Organisational productivity is focussed on the external environment, and

therefore, while MNCs with a Geographic Region dimension are focussed on the delivery of high-product/service diversity management, the results indicate they may be focussed on the efficient delivery of high diversity products and/or services in the geographic markets served. The discussion above indicates that the markets served with a geographic region structural dimension are not focussed at the country level, rather at a regional level. The focus at a regional level and the average age of MNCs in the sample therefore support the notion that the focus ought to be on efficiency and not flexibility.

The adoption of the Geographic Region dimension, however is only adopted by MNCs when operations become sufficiently large (Egelhoff, 1982) and overhead costs justify the need. MNCs by virtue of being multinational have a geographic dimension but this geographic dimension may be more implicit rather than explicit when adopting a multi-domestic and transnational strategy. The results corroborate Qiu and Donaldson (2012), whom report that MNCs will adopt a Geographic Region dimension, and this was apparent as 23,3% (n=34) of the sample contained MNCs adopting a Geographic Region dimension as the primary dimension. However, in order to perform the results indicate that the focus should be on efficiency. This focus on efficiency is however premised that MNCs have understood the commonalities that exist at the regional level and as these have been met, efficiency can be focussed on. The matrix structure therefore may only be advantageous to MNCs adopting the Geographic region primary structural dimension if the coordination by HQ can be achieved to extract the efficiency for commonalities at the regional level.

The results for the HQ control were non-significant contributors to performance. HQ control was hypothesised to be significant but indirect given the flexibility that is required by MNCs adopting the Geographic region primary structural dimension. The non-significance may be attributed to the autonomy of the subsidiary, which coupled with the average age of the MNCs in the sample, allows for less control required by HQ as trust for example may have been attained at the subsidiary level. The non-significance therefore may further indicate that independent of level of control which is afforded through matrix structuring, does not affect performance. This control however should not be confused with reporting, directly or indirectly to HQ from the subsidiary to enable the coordination for organisational performance. In sum, while the HQ control was not a significant contributor, the matrix structuring may allow for the coordination required to exploit the efficiencies, as well as, however this need not be a focus for performance.

That is, direct or indirect control from HQ to subsidiary will not affect performance, when using the matrix as a structure.

The adoption of the Customer Market dimension for hypothesis 4a as a secondary dimension, does seek efficiency (O'Reilly & Tushman, 2013; Raisch et al. 2009). MNCs adopting a Customer Market dimension are predicted to seek global commonalities, with standardised products/services that seek to fit the commonalities (Qiu & Donaldson, 2012; Stopford & Wells, 1974). When MNCs overlay the Geographic Region dimension with a Customer Market dimension, they seek to deliver these products and services with the idiosyncrasies that may exist at the localised regional level, and therefore require the changing (drastic or subtle) of products and/or services to ensure that they are relevant to the regions that are being served. However, the results from hypothesis 4b, indicate that where adopting and making subtle changes for regional differences, and the primary dimension being Customer Market dimension, these negatively affect performance.

The above results therefore do not fit the *a priori* notion that MNCs with a primary Customer Market dimension seek efficiency and those with a Geographic Region dimension primary dimension seek flexibility. In contrast, where only efficiency was significant for the prediction of organisational productivity, when seeking performance, MNCs with a Geographic Region dimension x Customer Market dimension primary by secondary dimension should have the ability to shift from flexibility (not significant) and focus on efficiency to delivery at the regional levels which require localisation. MNCs with a Customer Market dimension x Geographic Region dimension primary x secondary structural dimension should understand that delivery of products/services with subtle changes negatively affect the obtaining of organisational productivity. As stated above organisational productivity is concerned with the external environment and as the Customer Market dimension seeks commonalities or serving of single global clients, efficiency of attempting to deliver common products and/or services as they would occur at a global level. This may allow for an understanding that even when serving global clients, as is the case when adopting a Customer Market dimension, the subtle differences that may occur needs to be accounted for at the regional level. This may not be the case for all global clients, but in cases where this is required, the focus should not be on obtaining efficiency of delivery, rather meeting of these diverse needs.

MNCs adopting a primary dimension of Geographic Region structural dimension are further hypothesised to be following a multi-domestic strategy, and when overlaid with the Customer Market secondary structural dimension a transnational strategy (Fouraker & Stopford, 1968; Harzing, 2000; London & Hart, 2004; Wolf & Egelhoff, 2002). The strategy adopted, multi-domestic or transnational do not significantly affect the performance. Multi-domestic and transnational strategies with a Geographic primary structural dimension both require adaptation at the regional level, and therefore there is no benefit that can be seen on the adoption of either of these strategies. This however has implications on the adoption of the matrix for performance.

The matrix organisational structure, allows for flexibility, efficiency, and HQ control. The adoption of the matrix organisational structure however only allows for the exploiting of the efficiency value afforded by matrix structuring, and further only for organisational productivity. Organisational productivity, as stated above, is related to the understanding of the external market and while an important dimension of performance is required to be balanced with the cost of implementing and adopting the matrix organisational structure.

The Geographic Region dimension x Customer Market dimension and Customer Market dimension x Geographic Region dimension primary x secondary structural dimensions are not good fits for the adoption of the matrix organisational structure. There is some value that may be derived as discussed above, but given the costs associated with the adoption of the matrix (financial and non-financial) (Gereffi, et al., 2005; Mizutani & Uranishi, 2013), these may not be inherently justifiable. Furthermore, as presented above, the need for the Geographic Region structural dimension, whether primary or secondary as a distinct dimension is not clear. The inherent nature of being multinational indicates that MNCs do Geographic Region structural dimension (Chi & Nystrom, 1998; Harzing, 2000; Qiu & Donaldson, 2012). Therefore, the inclusion when serving Customer Markets globally may not require a formal structuring by Geographic Region dimension. The results obtained indicate that when MNCs have a Geographic Region dimension and Customer Market dimension focus, independent on which is the primary dimension and which is the secondary dimension, the matrix is not a suitable structure.

5.6.2 Summary of discussion hypothesis 4

Hypothesis 4 was rejected, and the results and subsequent discussion, while supporting efficiency to achieve organisational productivity (one of three sub-constructs of performance), indicates that the matrix structure may not be suitable. At the theoretical level, understanding that MNCs inherently have a Geographic Region by virtue of being multinational is therefore important. The inculcation of the Geographic region while being adopted by MNCs formally (Qiu & Donaldson, 2012), may only be adding to the over-head costs (Qiu & Donaldson, 2012) that negatively affects performance. Furthermore, Egelhoff (1982) reports that the Geographic Region dimension should only be adopted when the operations become sufficiently large, however the results of the current study do not support this. The sample of MNCs had 51,4% of MNCs with more than 60 000 employees in employment. Therefore, size of organisation further is not an *a priori* decision point for the adoption of a matrix organisational structure.

The above briefly discusses the implication at the theoretical level, however at the practical level, MNCs serving common customers globally need not adopt a Geographic Region dimension. The Geographic Region and Customer Market dimensions are not supported by the adoption of a matrix organisational structure. Therefore, as the results indicate, the cost of adoption and the increased complexity does not affect the performance by MNCs with Geographic Region and Customer Market dimensions.

5.7 CONCLUSION

The discussion chapter discussed the findings of the statistical tests conducted in reference to existing literature. None of the hypotheses were fully accepted, however partial support was found for hypotheses 1-3, and rejection of hypothesis 4. The resulting discussion indicated that the adoption of the matrix organisational structure through an evolutionary process of overlaying of structural dimensions is not suitable for all primary dimensions. When MNCs begin with a efficiency focussed dimensions of Customer Market dimension and Functional dimension, prior to the overlaying of the secondary dimensions, which are focussed on flexibility, Product/Service dimension and Geographic Region dimension, the matrix organisational structure may not be a suitable mechanism for structuring to perform. These results therefore indicate that primary

structuring dimensions may constrain the ability to execute transnational strategies, despite the matrix allowing for integration.

The matrix structuring may however suit MNCs that begin with flexibility focussed dimensions, such as Product/Service dimension and Geographic Region dimension. These MNCs may achieve performance through the levers discussed in the chapter. This assertion is largely supported through the use of the TCE lens.

The HQ-subsidiary relationships cannot be ignored when implementing a matrix organisational structure. Again, while the matrix structure allows for integration, the initial type of subsidiary (autonomous, receptive, active) may further moderate the ability to achieve integration. Organisation age is a significant moderator for some primary and secondary dimensions as indicates in the discussion, however the results indicate that these tend to favour older subsidiaries that have had a longer time to integrate. MNCs that have a matrix organisational structure tend to focus on specific levers, rather than treating all the levers in an integrated manner. This assertion is supported through the partial support for specific levers rather than all the levers.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

The objective of the study was to understand to what extent strategic choice leading to the primary and secondary dimensions adopted, flexibility, efficiency and HQ control affect performance in MNCs adopting a matrix organisational structure, moderated by organisational age. Performance was hypothesised to be a function of the following orientations:

i) The strategy adopted by the MNC;
ii) HQ control;
iii) Flexibility; and
iv) Efficiency

With the above further moderated by organisation age.

The literature review was focussed on the above constructs, underpinned by the transaction cost economics as the main theoretical lens applied. Extant literature has focussed on the use of the information processing view of the firm (Egelhoff et al., 2013; Galbraith, 1974, Qiu & Donaldson, 2012), and while valuable to provide an understanding of how to design, implement and understand how changes in strategy affect the flow of information, fail to provide an understanding of performance once the matrix organisational structure is implemented. A central premise which the current study attempted to understand.

The current study leveraged of the work of Egelhoff et al., (2013); Galbraith (2014); Qiu and Donaldson (2012), Wolf and Egelhoff (2002) for example, whom have all reported that the matrix organisational structure is an effective mechanism to deliver flexibility and efficiency, rather than either. This study builds on a stream of research which seeks to understand the matrix organisational structure and how it can be leveraged to achieve performance. However, research on the matrix organisational structure remains in infancy. This state of research on the structure is primarily rooted in the history of failed implementations. Research on the matrix structure largely seized in the late 1980's due

to reported failure in implementation which was reflected the performance of MNCs such as Procter and Gamble (Piskorski & Spadini, 2007). However, the resurgence for research, and has been primarily driven by William Egelhoff, Jay Galbraith, and Joachim Wolf over the last two decades. The renewed interest from an academic perspective is due to the implementation of the structure by MNCs, with Egelhoff et al., (2013) reporting that structure provides the coordination required by MNCs implementing multidimensional strategies, and the inevitability of the adoption to provide a competitive advantage as reported by MNCs managers.

The focus on the constructs related to performance in MNCs with a matrix organisational structure, and is rooted on dearth of literature that focussed primarily on MNCs with matrix organisational structures only. While the field of International Business has progressed, understanding of the nuances that exist across MNCs to provide a strategic competitive advantage remains relevant. Furthermore, despite decades of research, the organisational structure of MNCs remains a persistent and prominent attribute of scholarly discourse (Brouthers, Nakos & Dimitratos, 2015, Egelhoff et al., 2013; Ghoshal & Nohria, 1993; Reilly & Scott, 2014).

In prior studies on the matrix organisational structure (see Egelhoff et al., 2013; Galbraith, 2014; Qiu & Donaldson, 2012; Wolf & Egelhoff, 2002, for example), none have focussed solely on those dimensions which test the premise of matrix organisational structures allowing for primarily efficiency and primarily flexibility, that is the focus on a multidomestic strategy. Furthermore, extant literature is often based on limited samples of MNCs, for example German MNCs, without due consideration for the main regions of where MNCs emanate from, namely the triad regions of North America, Europe and Asia (Rugman et al., 2011). If the matrix organisational structure is to be implemented, MNCs require the understanding of how to leverage the key advantages of the structure (flexibility and efficiency), and closely aligned levers of strategy and HQ control that effect performance. Prior studies have failed to provide an understanding of the effect of the matrix organisational structure on performance of the organisation. Extant literature furthermore fails to account for different structures within a single MNC, for example Qiu and Donaldson (2012) report that matrix structuring in MNCs may only be between HQ and subsidiary, with lower levels remaining hierarchical. Extant literature does not make this explicit, and further do not account for the effects of the relationship between HQ and subsidiary, nor the strategy adopted by the MNC. These were addressed in the current study.

This chapter begins with the main contributions that the study makes at three levels, namely, theoretical, practical and methodological levels. The author's reflection on the contributions made are then presented. The contributions are supported by the results obtained and therefore the conclusion of the hypotheses are presented thereafter as support. This is then followed by the recommendations for future research on the matrix organisational structure are proposed and the conclusion of the current study.

6.2 CONTRIBUTIONS OF THE STUDY

The contributions that this study makes are presented below. Contributions were made at three levels, namely, theoretical, methodological and practical levels. The results and the subsequent discussion from Chapter 5 above indicate that some primary dimensions which lead the evolution towards a matrix organisational structure differ, and have an influence on the primary decision to adopt the matrix structure or not. If the decision to adopt the matrix organisational structure, the subsequent levers of strategy, HQ control, flexibility, and efficiency, moderated by organisational age which need to be focussed on were then discussed.

6.2.1 Theoretical contribution

Academic research on the matrix organisational structure was largely abandoned in the late 1980's, in part due to the failure in implementation of the structure; and where research continued, the focus was on the disadvantages of adoption (Barker, Tjosvold, & Andrews, 1988; Gibson & Tesone, 2001; Gobeli & Larson, 1986). Despite the research focus, organisations continued implementing the matrix structure, however labelled it differently (Egelhoff et al., 2013).

At the theoretical level, this study contributes at multiple levels. Firstly, there remains a dearth of academic literature on the matrix organisational structure. Research on the matrix organisational structure remains in a nascent phase, and where studies have focussed on the structure, they often include a mix of structures (Egelhoff et al., 2013; Qiu & Donaldson, 2012). The present study has focussed solely on the matrix structure, ignoring other forms of structuring that may occur. This heeds the call from Egelhoff et al., (2013) that future research should focus on the matrix structure and not a mix of organisational structures. The results of the study indicate that the adoption of the matrix organisational structure is not suitable for all MNCs, and therefore allows for the *a priori*

decision for adoption to be made by MNCs seeking to adopt the matrix organisational structure.

Secondly, the application of transaction cost economics (TCE) is a valuable lens to predict how transactions should be structured. The *a priori* nature of the TCE lens allowed for the current research to propose the most efficient and effective manner in which the transactions between HQ and subsidiary should be structured to ensure superior and sustained performance. The adoption of the matrix organisational structure is an evolutionary process (Egelhoff et al., 2013), achieved through the over-layering of dimensions. The primary dimension is a pre-cursor to the addition of the second dimension, and therefore as MNCs would have been adopting the secondary dimension, the results indicate that some primary dimensions do not allow for superior performance when adopting some secondary dimensions , and therefore MNCs with these should not adopt the matrix organisational structure.

The limitations of the information-processing view of the firm as the primary theoretical lens is further highlighted. If academic research is to make an impact on understanding the matrix organisational structure, only focussing on information flow does not address the fundamental reasons for failure of the matrix structure initially. TCE which seeks to understand how transactions should be structured, based on complexity of transactions and types of transactions primarily is therefore a suitable lens that allows for the *a priori* decision-making to understand suitability of the adoption of a matrix organisational structure. Therefore, theoretically the current study provides an *a priori* understanding of the adoption of the matrix organisational structure. The primary and secondary dimensions which are suitable for the matrix organisational structure and the pertinent levers are presented in table 6-1 below.

Table 6-1: Adoption of the matrix organisational structure based on primary and secondary dimensions, with orientations for performance

Primary dimension	Secondary dimension	Adopt matrix (yes/no)	Orientations to focus on to perform
Product/Service dimension	Customer Market dimension	Yes	Flexibility, efficiency, HQ control, strategy
Customer Market dimension	Product/Service dimension	No	N/A
Geographic Region dimension	Functional dimension	Yes	Strategy, efficiency, operational flexibility, HQ control
Functional dimension	Geographic Region dimension	No	N/A
Product/Service dimension	Functional dimension	No	N/A
Functional dimension	Product/Service dimension	Yes	Operational flexibility, efficiency, HQ control, strategy
Customer Market dimension	Geographic Region dimension	No	N/A
Geographic Region dimension	Customer Market dimension	No	N/A

Table 6-1, above provides an understanding of when to adopt a matrix organisational structure, and when not to, in order to perform, an *a priori* decision support for adoption. The above however must be noted to only apply to MNCs, as defined by Rugman and Verbeke (2008).

Thirdly, table 6-1 above allows for a contribution to theory on contracting. Leiblein, (2003) and Verbeke and Greindanus, (2009) report that control and control rights is a direct consequence of the inability to negotiate complete contracts *a priori*. This research contributes through an understanding of how this may change, specifically for HQ control

when adopting the matrix organisational structure. The current research argued that dependent on the time allocated to HQ reporting, this was indicative of control over the asset, which was operationalised to the matrix manager (Davis & Lawrence, 1978; Grubenmann, 2016; Schnetler, et al., 2015). Therefore, when adopting the matrix organisational structure, contracting may be less ambiguous, in accounting for some of the eventualities.

Fourthly, the study contributes to an understanding of the increased role that HQ-subsidiary relations play in structuring decisions. While the role of the subsidiary is well documented (Martinez & Jarillo, 1991; Meyer & Su, 2015), as MNCs seek to change organisational structure to ensure alignment between strategy-structure-environment, the nature of the relationship is critical in the ability to mediate the change.

Fifthly, the prevalence of the of MNCs adopting a matrix organisational structure is often reported, however extant literature sample sizes often are limited to 54-84 (see Egelhoff et al., 2013), and MNCs from single countries. This study provides veracity of the prevalence of the matrix organisational structure, which is reflective of the triad (Rugman et al., 2011). While the response rate achieved was low, this study achieved 151 responses, despite only 146 being usable. The prevalence of the matrix organisational structure therefore is affirmed in MNCs, and therefore this study affirms that studies focussed on the matrix are required, if academia is to continue making an impact on practice.

Finally, the study highlights the importance of understanding organisation age as a moderator. Organisation age has often been treated as a control variable (see Minbaeva et al., 2003 for example), and therefore has limited the insights in understanding HQ-subsidiary relations (Ambos et al., 2006) which are central to MNCs. Organisation age should therefore be elevated to at least moderate relations in studies, as it effects the strength and at times the direction of relationships as highlighted in the current study. Furthermore, the liability of newness and liability of age has been studied to understand the flow of knowledge primarily, entrepreneurial orientation, and change, but has largely ignored how this affects performance. Organisational age and performance should however not be seen as linear.

6.2.2 Practical contributions

The prevalence of the matrix organisational structure is supported in the current study, and further the design and implementation is well noted by Galbraith (1974, 1979, 2013, 2014) and Egelhoff et al., (2013). At the practical level, the present study contributes firstly to whether to adopt or not, as highlighted in table 6-1 above, and secondly the manner in which the levers need to be leveraged. Table 6-2 below, provides an overview of this.

Table 6-2, below, indicates the first decision, then each of the constructs measured in the current research to be leveraged. An important consideration that MNCs need to heed is the liability of newness at the subsidiary level. Practically MNCs need to be explicit that younger subsidiaries do not significantly increase the attainment of an performance.

Table 6-2: Adoption of the matrix organisational structure based on primary and secondary dimensions, with direction of orientations to perform

Primary dimension	**Secondary dimension**	**Adopt matrix (yes/no)**	**Strategy**	**Flexibility**	**Efficiency**	**HQ control**
Product/Service dimension	Customer Market dimension	Yes	Maintain multi-domestic primary focus	Decrease focus	Seek balance	Low
Customer Market dimension	Product/Service dimension	No	N/A	N/A	N/A	N/A
Geographic Region dimension	Functional dimension	Yes	Maintain multi-domestic	Decrease operational flexibility	Seek balance	Low
Functional dimension	Geographic Region dimension	No	N/A	N/A	N/A	N/A

Primary dimension	Secondary dimension	Adopt matrix (yes/no)	Strategy	Flexibility	Efficiency	HQ control
Product/Service dimension	Functional dimension	No	N/A	N/A	N/A	N/A
Functional dimension	Product/Service dimension	Yes	Maintain international or global	Increase operational efficiency*	Increase	High
Customer Market dimension	Geographic Region dimension	No	N/A	N/A	N/A	N/A
Geographic Region dimension	Customer Market dimension	No	N/A	N/A	N/A	N/A

*organisational age is an important positive lever to leverage.

Thirdly, the point at which MNCs perform (Caspin-Wagner et al., 2013; Geiger et al., 2006; Wilden et al., 2013; Xu et al., 2006), this performance of directly related to understanding the pre-conditions of HQ-subsidiary relations that allow for this to be achieved. In the context of the current study the results may be used to understand the role of HQ-subsidiary relations, and how to manage the tensions that may arise when adopting the matrix organisations structure. These results should be read in context with Jansen et al., (2009) that have provided input into how to manage the tensions that may arise when adopting the matrix organisational structure. The autonomy of the subsidiary is an important lever that directs whether a subsidiary will enable performance or not. The amount of control that HQ has over subsidiaries is an important consideration, and therefore in the context of the HQ-subsidiary relations, this control that HQ exerts, should be a function of what the strategy adopted seeks to achieve. Table 6-2, provides an overview of this, but what is pertinent is types of strategy supported by the matrix organisational structure. The matrix organisational structure does not support the implementation of all types of strategy.

Finally, MNCs need not make a trade-off (see paradox of management) and the attainment of high flexibility and high efficiency is possible, however the appropriate mechanism to achieve this is required. To this end, the current study ascertained that the matrix structure is effective when over-laying some of the above dimensions. In cases where a MNC may want to over-lay Functional dimension and Geographic Region dimension for example, other separation mechanisms, as suggested by Jansen et al., (2009) may be more effective. In cases where the primary structural dimensions are, Product/Service diversity, Geographic Region, and Functional overlaid with Customer Market, Functional, and Product/Service dimensions respectively, the matrix organisational structure is appropriate.

6.2.3 Methodological contribution

Methodologically, the current study required the operationalising of the strategy-structure variables, which has often been criticised for the lack of integration. The very nature of the research required these measurements, therefore addressed the call by Kaplan and Norton (2001) and Wasserman (2008) for greater integration of the strategy-structure variables.

Building primarily on the work of Egelhoff et al., (2013), Wolf and Egelhoff (2002) these authors have empirically tested the primary x secondary dimensions associated with the matrix organisational structure. This research therefore contributes further to the validity and reliability of these measures, through the operationalising of the integration between strategy and structure, however future research may need to provide a broader set of strategic orientations at a more granular level.

6.2.4 Reflections on the contribution of the study

The potential contribution to the field of international business, specifically the strategy-structure-environment paradigm, was influenced by Egelhoff et al., (2013), Galbraith (2014) and Piskorski and Spadini (2007). These authors all reported on the matrix structure, may be an effective structure to deliver strategic competitive advantage. However, what was not reported was under what conditions the matrix should be adopted. The reasons for challenges in implementation were well documented, and what was not clear was that the matrix structuring is not for all MNCs. However, what was not clear was under what conditions is the matrix structuring appropriate and under what

conditions is it not. Without an understanding when it should be adopted and when it should not be adopted was not clear, how can MNCs make these fundamental decisions?

The above studies further applied an information processing view of the firm, and while valuable, none of the studies sort to understand the effect on the performance. Decreased performance and increased cost of coordination was one of the primary reasons for challenges in adoption of the matrix structure in the 1980's, therefore not understanding how the structure effects performance was limited. Extant literature continues to use the information processing view, however this view fails to account for how transactions should be structured. This study therefore adopted transaction cost economics as an alternate theoretical lens to understand how these transactions should be structured in order to perform.

The study added a more granular understanding of the matrix organisational structure, which was influenced by Qiu and Donaldson (2012). They reported that structuring differs, based on the level of organisation, that is, a MNC may have a matrix between HQ and subsidiary, however within the subsidiary for example, the structuring could be hierarchical in nature. Therefore, this study focussed solely on the structuring between HQ and subsidiary, that is, the macro-structure.

The above together allowed for an understanding of when a MNC should adopt a matrix organisational structure, and based on the following: firstly, the matrix organisational structure is achieved through the overlaying of the primary structural dimension with a second dimension, which is through an evolutionary process (Egelhoff et al., 2013). Therefore, the primary dimension is likely to have existed and will continue to exist, and the secondary layer added on. Under what primary dimensions would a matrix structure rather than other forms of separation be used? Secondly, what are the critical levers which should be focussed on when adopting a matrix organisational structure, in specific relation to strategy, HQ control, flexibility, and efficiency. Finally, what is the role of HQ-subsidiary relations in MNCs adopting or planning to adopt a matrix organisational structure. These have the potential to allow for the *a priori* understanding on the effect the matrix may have on the performance of an organisations.

6.2.5 Summary of contributions

The above presented the contributions that the study made at three levels, namely, theoretical, practical and methodological. Tables 6-1 and 6-2 adequately summarise the *a priori* nature in which the research allows for the understanding of performance. Overall the results indicate that indeed the matrix structure is prevalent form of organising which MNCs adopt. However, the adoption of the matrix organisational structure, requires that MNCs clearly note that adoption is not merely the over-laying of structural dimensions, rather an evolutionary process to adoption.

The primary dimensions which MNCs are founded upon is an important pre-cursor to the type of matrix that may be adopted, that is, the secondary dimension, and then whether the matrix is indeed the correct structure to be implemented.

6.3 CONCLUSION ON HYPOTHESES

The results obtained from the quantitative analysis of the hypotheses that the current study set-out to accept or fail to accept (reject) are concluded as per the following:

6.3.1 Hypothesis 1

Hypothesis one comprised on two sub-hypotheses: Hypothesis 1a: MNCs with a Product/Service dimension x Customer Market dimension primary x secondary structural dimensions perform through orientations of flexibility and low HQ control, moderated by organisational age. MNCs adopting a Product/Service dimension primary dimension seek flexibility, which requires low HQ control, to deliver on a multi-domestic strategy. The addition of the second structural dimension Customer Market dimension seek to further leverage efficiency, therefore the overlaying of the structural dimensions are indicative of the execution of a transnational strategy. The results from the research indicated the following: firstly, the matrix organisational structure is an effective structure for the achievement of performance; secondly, MNCs should focus on the levers of flexibility, efficiency, HQ control and strategy implemented in line with the differential effects of each of the constructs reported in Chapter 4 and Chapter 5 above; and thirdly organisational age affects efficiency, structural flexibility, and strategy, therefore this has implications on how the MNC manages the HQ-subsidiary relationships. The HQ-

subsidiary relationships must however be viewed in the context of the type of subsidiary (autonomous, reactive, active) (Martinez & Jarillo, 1991).

Hypothesis 1b: MNCs with a Customer Market dimension x Product/Service dimension primary x secondary structural dimensions perform through orientations of efficiency and high HQ control, moderated by organisational age. MNCs with a Customer Market dimension seek efficiency, which requires increased HQ control, to deliver on an international or global strategy. Similar to hypothesis 1a, the overlaying of the second dimension, in this instance Product/Service dimension is indicative of the execution of a transnational strategy. The results from the research indicate that the matrix organisational structure is not an effective structure for performance. MNCs adopting a Customer Market dimension x Product/Service dimension or planning to adopt a Product/Service dimension as a secondary dimension over Customer Market dimension ought to consider alternative mechanisms as offered by Ghoshal and Bartlett (1990), Gibson and Birkinshaw, (2004),Jansen et al., (2009), and Raisch et al., (2009),. The matrix organisational structure does not allow for performance.

6.3.2 Hypothesis 2

Hypothesis two comprised of two sub-hypotheses: Hypothesis 2a: MNCs with a Geographic Region dimension x Functional dimension primary x secondary structural dimensions will perform through orientations of flexibility and low HQ control, moderated by organisation age. Similar to organisations adopting a Product/Service dimension as in hypothesis 1a above, MNCs with a primary Geographic Region dimension seek flexibility, requiring low control, to execute a multi-domestic strategy. The overlaying of the Functional dimension as the second structural dimension therefore indicates that there is a shift from a multi-domestic to transnational strategy. The Functional dimension however is in search of efficiency. The results indicate for a primary dimension of Geographic Region dimension, the matrix organisational structure may be a suitable structural orientation for performance. Firstly, the strategy adopted should suit that of multi-domestic and while the adoption of the Functional dimension may indicate a transnational strategy, the focus should remain on the multi-domestic strategy adapted at a larger scale to achieve some efficiency offered by Functional dimension; secondly efficiency affects different sub-constructs of performance and therefore where these may be deficient, in organisational effectiveness (internal) should be focussed on; thirdly, an increased focus on operational flexibility negatively affects performance, and therefore

excessive slack to benefit the entire MNC negatively affects performance. This is further in relation to the amount of HQ control, therefore finally, HQ control should remain low, as this allows for performance and therefore indicative of the primary dimension rooted in flexibility. The age of the subsidiary is an important moderator for the HQ control, therefore, the manner in which HQ controls the subsidiary needs to be understood in the context of the HQ-subsidiary relationships and how HQ increases the learning curve for younger subsidiaries.

Hypothesis 2b: MNCs with a Functional dimension x Geographic Region dimension primary x secondary structural dimensions perform through orientations of efficiency and high HQ control, moderated by organisation age. Results and the subsequent discussion indicates that for MNCs with an efficiency focussed dimension should not adopt the matrix organisation structure. The matrix structure may be inappropriate when the initial dimension is Functional dimension and efficiency focussed, even though the matrix is often credited with the ability to deliver efficiency and flexibility (Benito, 2005; Egelhoff et al., 2013; Galbraith, 1974). As the adoption is through the overlaying of the primary dimension, with a secondary dimension, MNCs with the Functional dimension primary dimension will not benefit from the adoption of the matrix, that is they may not perform.

6.3.3 Hypothesis 3

Hypothesis three comprised of two sub-hypotheses: Hypothesis 3a: MNCs with a Product/Service dimension x Functional dimension primary x secondary structural dimensions perform through orientations of flexibility and low HQ control, moderated by organisational age. Similar to hypothesis 1a, MNCs with Product/Service dimension primary structural dimension seek flexibility, which requires low HQ control, to deliver on a multi-domestic strategy. However with the overlaying of a Functional dimension as secondary, indicates that MNCs are tending towards the execution of a transnational strategy. The results indicate that even when the primary dimension is flexibility, the matrix structure is not a suitable structure for performance. These results in comparison to hypothesis one and two, which indicated when flexibility dimensions are the primary dimension MNCs may adopt a matrix organisational structure, this is not the case for hypothesis 3a. MNCs with a primary Product/Service dimension considering a Functional dimension secondary dimension should not seek to use the matrix structure. Alternative forms for separation to achieve organisational ambidexterity should be sort (see O'Reilly & Tushman, 2013; Raisch et al. 2009). The challenges arise in the type of subsidiary

(e.g. autonomous, receptive, and active) (Birkinshaw & Morrison, 1995; Luo, 2005; Martinez & Jarillo, 1991; Meyer & Su, 2015), and the associated need to change the HQ control from low to high while delivering flexibly for local market preferences.

Hypothesis 3b: MNCs with a Functional dimension x Product/Service dimension primary x secondary structural dimensions perform through orientations of efficiency and high HQ control, moderated by organisational age. MNCs with a primary Functional dimension structure are seeking efficiency, through high HQ control, in order to execute an international strategy. However, as stated above, these MNCs by overlaying Product/Service dimension seek to execute on a transnational strategy when adopting the Product/Service dimension secondary structural dimension. The matrix organisational structure is an effective organisational structure for the achievement of performance. The levers of operational flexibility, efficiency, HQ control, and strategy in combination allow for the achievement of performance. Therefore, MNCs adopting or planning to adopt a matrix organisational structure through the overlaying of Product/Service dimension over Functional dimension may achieve performance.

6.3.4 Hypothesis 4

Hypothesis four comprised of two sub-hypotheses: Hypothesis 4a: MNCs with a Customer Market dimension x Geographic Region dimension primary x secondary structural dimensions perform through orientations of efficiency and high HQ control, moderated by organisation age. Hypothesis 4b: MNCs with a Geographic Region dimension x Customer Market dimension primary by secondary structural dimensions will perform through orientations of flexibility, and low HQ control, moderated by organisational age.

Hypothesis 4a and 4b were rejected, with only efficiency being a significant predictor of organisational productivity. These results indicate that the matrix organisational structure is not appropriate for MNCs adopting or seeking to adopt Customer Market dimension x Geographic Region dimension or Geographic Region dimension x Customer Market dimension primary x secondary structural dimensions. As stated above, alternative mechanisms for the effective management of these dimensions (see O'Reilly & Tushman, 2013; Raisch et al. 2009) should be sort. The current study was not focussed on these alternate forms, rather on the matrix only.

6.4 RECOMMENDATIONS

The contributions made above at the theoretical, practical, and methodological levels highlight some pertinent areas for future research. Research on the matrix organisational structure remains nascent and further studies contributing to an understanding the performance in MNCs adopting a matrix organisational study are required.

6.4.1 Future research

The current study only assessed the strategy, flexibility, efficiency, and HQ control as pertinent constructs that affect performance. Future research should seek to extend the above constructs, and add specifically those related to HQ-subsidiary relations. HQ-subsidiary relations, and specifically the type of subsidiary (see Martinez & Jarillo, 1991) should be inculcated into these studies. These relationships have significant effects on the structuring of the matrix, and therefore are required to be further studied. The use of TCE, as a theoretical grounding is suggested, given the value in understanding how transactions are structured *a priori.*

The environment in which MNCs operate has fundamentally changed, especially with the advent of the technological companies such as Alphabet. The manner in which these organisations deal with the liability of newness will add to the current understanding of the matrix organisational structure. The current study average age of organisation was 79 years, and age of the organisation had a significant effect on the moderation of the constructs. While these may not include a matrix, understanding the liability of newness allows for a once in a lifetime opportunity to understand how they perform.

Organisational ambidexterity provides mechanisms for dealing with paradoxes of management (Jansen et al., 2009), such as the attainment of high flexibility and high efficiency. The matrix structuring is one such mechanism, however how other mechanism may operate in unison with the matrix remain largely unknown. Understanding these will assist MNCs whom do not fit the matrix structuring, but may benefit from some complimentary interactions.

The field of international business and the strategy-structure-paradigm are well defined. However, future studies on the matrix organisational structure may benefit from applying a mixed-methods approach. The value in obtaining depth of responses to some questions will greatly allow for the understanding of why. The reasons for adoption and

the decision-making process followed by top management teams is required. This is largely missing from the current study. Furthermore, while the current study has validated the measures used by Egelhoff et al., (2013), there is a need to create a more diverse set of questions which will allow an understanding of the strategic options as well as the overlaying of the primary x secondary dimensions. This is consistent with the hypotheses of the current study which were only partially supported. Furthermore, the use of organisational strategic aim is focussed only on the four strategic typologies that are identified, and may pose a constraint should MNCs adopt hybrid or a different set of strategies.

Finally, the current study only analysed primary x secondary dimensions, yet MNCs such as Microsoft and International Business Machines (IBM) are known to use matrix organisational structures with more than two dimensions. While Egelhoff et al., (2013) reports on these, an increased sample of these are required to be studied.

6.5 LIMITATIONS OF THE STUDY

The limitations of the study are mainly related to the research design and methodology in which the research was conducted. While existing measures were used to understand the structural dimensions adopted by organisations, and have been empirically tested, these were primarily based on the work by Egelhoff et al., (2013). These measures were constructed through indicator measures, relating to the dimensions. These measures were used as the foundation, however do not readily allow for the understanding of MNCs with more than primary x secondary dimensions. While Egelhoff et al., (2013) have identified MNCs with primary x secondary x tertiary structural dimensions these are not observed from the measures used in the study. Therefore, this research limits the findings to MNCs with primary x secondary dimensions only, despite MNCs having more than these dimensions when adopting a matrix organisational structure.

The current research only focussed on performance which was hypothesised to be functions of strategy, efficiency, flexibility, and HQ control, all moderated by organisational age. There may be other attributes, specifically focussed to understanding the HQ-subsidiary relations which were not accounted for over and above HQ control. The understanding of the role of HQ is therefore was not tested in the current research.

The research operationalised performance, and while it is widely accepted that performance of an organisation is a multi-dimensional construct, only questions relating to financial performance were valid. This limits the findings to financial performance and not non-financial measures of performance. This limits the understanding of performance holistically, and therefore a limitation for the research. Furthermore, the performance measures used were disaggregated into three sub-constructs, namely organisational productivity, organisational effectiveness, and organisational stability. Conceptually these measures are not mutually exclusive and have significant overlap in drivers to achieve them.

This study assumed a quantitative design, and this in itself is a limitation to understanding at depth, why MNCs adopt and the nuances associated with the decision-making process. Closely aligned to this is further the problem of the sample size required for statistical analysis. While this study achieved a sample size of 146, this does limit the type of statistical tests that can be conducted. The 146 responses needed to be disaggregated to match the primary x secondary dimensions, which further led to lower sub-samples. The statistical test therefore limits the predictive power based on these sample sizes.

The respondents for the study were predominatly (56%) from MNCs with subsidiaries in South Africa. De Jong et al., (2015) for example provides a review which indicates that based on location of the subsdiary, autonomy of decision-making may be affected. Therefore the generalisability of the findings to subsidiaries globally is limited, even when adopting a matrix structure.

Lastly, the research did not consider the design principles of the matrix organisational structure and therefore the nuances associated with the design were not interrogated. This may pose a limitation in the recommendations suggested and the resultant effect this interaction may have.

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APPENDICES

APPENDIX A: PREAMBLE ACCOMPANYING THE QUESTIONNAIRE

Dear Participant,

In an effort to better understand the trade-off multinational corporations need to undertake when adopting a matrix organisational structure, you have been selected to participate in a survey that will be used to determine "Achievement of an equilibrium in macro-matrix organisational structured of MNCs: Flexibility-efficiency and HQ control trade-off."

Your completion of this survey is **voluntary** and you may withdraw from the process at any time. Your responses are participation is however valuable to us and we would appreciate your assistance. The collated results of the study are for Doctoral research currently being undertaken at the University of Pretoria's Gordon Institute of Business Science. While the collated results of the study will be published as part of the thesis, **your individual responses will be kept confidential at all times.**

The questionnaire has been divided into different sections. Please complete all the sections. The questionnaire should take approximately **30 minutes** to complete.

Thank you in advance for your time and contribution to this research study. Please do not hesitate to address any enquiries about the questionnaire or the research study to:

Researcher:	or	**Supervisor:**
Manoj Chiba		Professor Albert Wocke
ChibaM@gibs.co.za		WockeA@gibs.co.za
manojchiba@gmail.com		+2711 771 4000
+27 82 784 5769		

APPENDIX B: EXAMPLE OF EMAIL SENT TO POTENTIAL PARTICIPANTS

Dear Fergus,

RE: Invitation to partake in study on macro-matrix organisational structures

As part of my PhD, which I am completing at the University of Pretoria's Gordon Institute of Business Science (GIBS), I am trying to understand the trade-offs that multinational corporation's need to make in order reach equilibrium.

I have identified your role and organisation as a potential respondent to the questionnaire. Ethical clearance has been obtained to conduct the research, and I believe your responses will be invaluable. The questionnaire should take no longer than 30 minutes of your time, and all responses will be treated with the strictest of confidentiality.

Please find attached the link to the questionnaire, which is being hosted through SurveyMonkey.

Should have any queries please do not hesitate to contact me. My supervisors details, are also provided on the consent statement.

Thanking you in advance for all your assistance in this regard.

Regards,

Manoj Chiba

082 784 5769

APPENDIX C: QUESTIONNAIRE

Section A: Demographics (About you)

Question number	Question	Response	Reference, adapted from
1	Age	Drop-down options 1. 16-24; 2. 25-34; 3. 35-44; 4. 45-54; 5. 55-64; 6. 65+	
2	Gender	Drop-down options 1. Male 2. Female	
3	How long have you been employed with your current organisation	Drop-down options: 1. less than 2 years; 2. 3-5 years; 3. 6-8 years; 4. 9 – 11 years; 5. 11 or more years	Egelhoff et al., (2013)
4	Which **one** of the following best describes your job title	Drop-down options 1. Junior management; 2. Middle management; 3. Senior management; 4. Executive management 5. Other: Please state	

Section B: About your organisation: NOTE: Your organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
5	Name of organisation. **NOTE: Only used for Standard Industry Classification *and* to ensure no duplication of respondents from single organisations**	Respondent input	Egelhoff et al., (2013); Wolf and Egelhoff (2002)
6	In which year was your organisation established?	Respondent input	Egelhoff et al., (2013);
7	Home country refers to where your organisations head-office is located. In **which country** (name for example Germany) is your organisation's head-office located?	Respondent input	Egelhoff et al., (2013)
8	Host country refers to where your organisation's subsidiary is located. In which country are you located (name for example South Africa).	Respondent input	Egelhoff et al., (2013);
9	Host country refers to the country/ies that your organisation has subsidiary/ies. In how many (for example 3) countries does your	Drop-down options: 1. 2 or less countries; 2. 3-5 countries; 3. 6-8 countries; 4. 9 – 11 countries; 5. 11 or more countries	Egelhoff et al., (2013);

	organisation have subsidiaries?		
10	Which **one** of the following best describes the **primary industry** in which your organisation operates in	Drop-down options 1. Chemical 2. Steel and non-ferrous metals 3. Machinery 4. Automotive and transportation 5. Electrical equipment 6. Textile 7. Food products 8. Aerospace 9. Pharmaceuticals 10. Printing/Paper 11. Mechanical 12. Financial services; 13. Energy; 14. Media; 15. Agriculture; 16. Mining; 17. Mining and quarry; 18. Manufacturing; 19. Electricity; 20. Gas and Water supply; 21. Construction; 22. Wholesale and Retail; 23. Information technology; 24. Communication 25. Other: Please state	Wolf and Egelhoff (2002); Kumar and Antony (2009)
11	Which one of the following describes the **secondary industry** your organisation operates in	Drop-down options 1. Chemical 2. Steel and non-ferrous metals 3. Machinery 4. Automotive and transportation 5. Electrical equipment 6. Textile 7. Food products 8. Aerospace 9. Pharmaceuticals 10. Printing/Paper 11. Mechanical 12. Financial services; 13. Energy; 14. Media; 15. Agriculture; 16. Mining; 17. Mining and quarry; 18. Manufacturing;	Wolf and Egelhoff (2002); Kumar and Antony (2009)

		19. Electricity; 20. Gas and Water supply; 21. Construction; 22. Wholesale and Retail; 23. Information technology; 24. Communication 25. Other: Please state 26. Not applicable	
12	In how many industries do you believe your organisation operates in?	Respondent input	Wolf and Egelhoff (2002); Kumar and Antony (2009)
13	Which one of the following best describes your organisational structure **Note: This is a qualifying question. Should the respondents organisational structure be hierarchical, the questionnaire will end.**	Options: 1. Hierarchical: Description: You have one clear supervisor with a single clear reporting line. Employee only reports to one manager. **NOTE: Image 1 in Appendix A will be presented here on the electronic version** 2. Matrix: Description: You have more than one manager to report to (commonly referred to as solid line and dotted line reporting). **NOTE: Image 2 in Appendix A will be presented here on the electronic version**	Egelhoff et al., (2013)
14	What is the total number of employees globally by headcount?	Drop-down options: 1. Up to 99 employees; 2. 100 – 499 employees; 3. 500 – 999 employees; 4. 1000 – 4999 employees; 5. 5000 – 29 999 employees; 6. 30 000 – 59 999 employees;	Egelhoff et al., (2013), Wolf, 1977; Kim, Hwang and Burgers, 1989

		7. 60 000 + employees;	
15	What is the total number of employees at your subsidiary by headcount?	Drop-down options: 1. Up to 99 employees; 2. 100 – 499 employees; 3. 500 – 999 employees; 4. 1000 – 4999 employees; 5. 5000 – 29 999 employees; 6. 30 000 – 59 999 employees; 7. 60 000 + employees;	Egelhoff et al., (2013), Wolf, 1977; Kim, Hwang and Burgers, 1989
16	Which of the following best describes your organisations **global sales** amount in US dollars ($)	Drop-down options: 1. Less than $ 1 000 000; 2. Between $1 000 000 and $ 10 000 000 3. Between $ 10 000 001 and $ 20 000 000 4. Between $20 000 001 and $ 30 000 000 5. Between $30 000 001 and $50 000 000 6. Over $50 000 001	Wolf and Egelhoff (2001)
17	Which of the following best describes your organisations **total assets** in US dollars globally ($)	Drop-down options: 1. Less than $ 1 000 000; 2. Between $1 000 000 and $ 10 000 000 3. Between $ 10 000 001 and $ 20 000 000 4. Between $20 000 001 and $ 30 000 000 5. Between $30 000 001 and $50 000 000 Over $50 000 001	Miller and Pras, 1980; Caves, 1974)

Section C: About you in your organisation: NOTE: Your organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
18	As a subsidiary manager: You report both at the subsidiary level and headquarters **Note: This is a qualifying question. Should the respondents answer be No or Unsure, the questionnaire will end.**	Drop-down: 1. Yes 2. No 3. Unsure	
19	You report directly (solid-line) to headquarters, and indirectly (dotted-line) at the subsidiary level **Note: This is a qualifying question. Should the respondents answer be No or Unsure, the questionnaire will end.**	Drop-down: 1. Yes 2. No 3. Unsure	
20	You report directly (solid-line) at the subsidiary level, and indirectly (dotted-line) to headquarters **Note: This is a qualifying question. Should the respondents answer be No or**	Drop-down: 1. Yes 2. No 3. Unsure	

	Unsure, the questionnaire will end.		
21	Thinking about your reporting to head office, on average what percentage of your time is allocated to head office Then indicate the indicative time (%)	Drop-down options: 1. Less than 10% 2. 11%-20% 3. 21%-30% 4. 31%-40% 5. 41%-50% 6. 51%-60% 7. 61%-70% 8. 71%-80% 9. 81%-90% 10. More than 90%	

Section D: Your organisations Product/Service Diversity: NOTE: Your organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
22	Product diversity: Which of the following applies your organisation:	Drop-down options: 1. My organisation derives 95% of revenue from our primary business activity; 2. My organisation derives 70%-95% of revenue from our primary business activity 3. My organisation derives 55%-70% of revenue from our primary business activity 4. My organisation derives 30%-55% of revenue from our primary business activity	Rumelt (1974)

		5. My organisation derives less than 30% of revenue from our primary business	
23	Product Diversity change: In the last three years which of the following applies to your organisation	Drop-down options: 1. My organisation derived 95% of revenue from our primary business activity; 2. My organisation derived 70%-95% of revenue from our primary business activity 3. My organisation derived 55%-70% of revenue from our primary business activity 4. My organisation derived 30%-55% of revenue from our primary business activity 5. My organisation derived less than 30% of revenue from our primary business	Rumelt (1974)
24	What percentage of your organisation's sales are from: Products developed for each local market and respond to local market conditions	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)
25	What percentage of your organisation's sales are from: Products developed for the home country and are moved into international markets with little to no adaptation	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)

26	What percentage of your organisation's sales is from: Products developed to fit the common demands of global markets. There is complete standardisation of products and processes	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)
27	What percentage of your organisation's sales is from: Products developed with localised preference and common demands of global markets	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)
28	What percentage of your organisation's sales is generated by all subsidiaries outside the home country?	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)
29	What percentage of your organisation's sales is generated by your subsidiary in comparison to the organisations total sales?	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)
30	What percentage of sales is generated by your subsidiary is derived from clients served globally?	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)

31	What percentage of sales generated by your subsidiary is derived from clients served nationally in your host country?	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)
32	What percentage of your organisation's manufacturing is generated outside the home country?	Respondent input percentage allowed: 0%-100%	Egelhoff et al., (2013)

Section E: Your organisation's flexibility (Non-routine technology): NOTE: Our organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
33	The lay-out and set-up of our primary process can be changed easily	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
34	Our equipment and information systems can be used for multiple purposes	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
35	Our employees master several methods of	Drop-down options: 1. Strongly Disagree 2. Disagree	Pennings and Harianto (1992); Volberda et al.,

	production and operations	3. Neither agree or disagree 4. Agree 5. Strongly Agree	(2012); Weerdt (2009)
36	Our organisation is up to date regarding "know-how"	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)

Section F: Your organisation's organic structure: NOTE: Our organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
37	Our organisation uses extensive and structured systems for planning and control (R)	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
38	In our organisation, the division of work is defined in detailed descriptions of jobs and tasks (R)	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
39	In our organisation, everything has been laid down in rules (R)	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)

40	In our organisation there are a lot of consultation bodies (R)	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)

Section G: Your organisation's innovative culture: NOTE: Our organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
41	For our organisation goes: "The rules of our organisation can't be broken, even if someone means that it is in the company's best interest" (R)	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
42	Deviating opinions are not tolerated in our organisation (R)	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
43	Creativity is highly appreciated in our organisation	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree	Pennings and Harianto (1992); Volberda et al.,

		4. Agree 5. Strongly Agree	(2012); Weerdt (2009)
44	The person that introduces a less successful idea in our company can forget about his/her career (R)	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)

Section H: Your organisation's operational flexibility. NOTE: Our organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
45	In our organisation we can easily vary the production and/or service capacity when demand changes	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
46	Our organisation can easily outsource activities of the primary process	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
47	Our organisation can easily hire temporary employees to anticipate demand fluctuation	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree	Pennings and Harianto (1992); Volberda et al.,

		5. Strongly Agree	(2012); Weerdt (2009)
48	Our organisation can easily switch between suppliers	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)

Section I: Your organisation's structural flexibility: NOTE: Our organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
49	In our organisation, tasks and functions can be easily modified	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
50	Our organisational structure is not fixed and can be easily modified	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
51	Control systems are modified often in our organisation	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)

52	People in our organisation don't have a fixed position, but often carry out various jobs	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)

Section J: Your organisation's strategic flexibility: NOTE: Your organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
53	Our organisation can easily add new products/services to the existing assortment	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
54	In our organisation, we apply new technologies relatively often	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
55	Our organisation is very active in creating new product-market combinations	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Pennings and Harianto (1992); Volberda et al., (2012); Weerdt (2009)
56	In our organisation, we try reduce risks by assuring	Drop-down options: 1. Strongly Disagree	Pennings and Harianto (1992);

	we have products/services in different phases of their lifecycles	2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Volberda et al., (2012); Weerdt (2009)
57	How does your company view change in the marketplace or our external environment	Drop-down options: 1. We usually try to initiate change 2. We see change as continuous 3. We don't think much about change 4. We usually try adapt to change 5. We usually resist change	Parnell et al., (2000)
58	In the future, we primarily plan to:	Drop-down options: 1. Do lots of things nothing in particular 2. Focus on high innovation 3. Learn more about our customers 4. Improve our efficiencies 5. Improve our ability to meet changes in the environment quickly and effectively	Parnell et al., (2000)
59	One of our goals for the future is to offer products and services that:	Drop-down options: 1. Are easily differentiated from those of our competitors 2. Contribute to profits, regardless of what we sell; 3. Are similar to those of our competitors, but at a lower cost 4. Meet specific consumer demands 5. Maximize quality and value for the consumer	Parnell et al., (2000)
60	Our company concentrates most on:	Drop-down options: 1. Being flexible	Parnell et al., (2000)

		2. Different areas that constantly change 3. High efficiency 4. Innovation 5. Understanding our customers	
61	We plan to:	Drop-down options: 1. Remain steadfast and consistent regardless of changes and trends in the marketplace 2. Modify our products and services as necessary in order to meet changes in the marketplace 3. Redefine our industry 4. Make major changes in our strategy as dictated by the marketplace and our competitors 5. Maintain our strategic focus, but continuously make incremental changes in our strategy to address changes in the marketplace.	Parnell et al., (2000)

Section K: Your organisation's efficiency. NOTE: Your organisation refers to the subsidiary level at which you are located.

Question number	Question	Response	Reference, adapted from
62	Please provide subsidiary revenue in US dollars in the last financial year		Tan and Wang (2010)
63	Please provide organisational revenue in		Tan and Wang (2010)

	US dollars for the last financial year		
64	Please provide the value of total assets in US dollars at the subsidiary level		Tan and Wang (2010)
65	Please provide value of total assets in US Dollars for the organisation in the last financial year		Tan and Wang (2010)
66 (1)	Please rate your organisation's return on investment (ROI) over the last three years relative to your principal competitor	Drop-down options: 1. Much worse 2. Somewhat worse 3. Stayed the same 4. Somewhat better Much better	Auh and Menguc (2005)
67 (1)	Please rate your organisation's return on sales (ROS) over the last three years relative to your principal competitor	Drop-down options: 1. Much worse 2. Somewhat worse 3. Stayed the same 4. Somewhat better Much better	Auh and Menguc (2005)
68 (1)	Please rate your organisation's return on assets (ROA) over the last three years relative to your principal competitor	Drop-down options: 1. Much worse 2. Somewhat worse 3. Stayed the same 4. Somewhat better Much better	Auh and Menguc (2005)
69 (3)	Please rate your organisation's profitability over the last three years relative to your principal competitor	Drop-down options: 1. Much worse 2. Somewhat worse 3. Stayed the same 4. Somewhat better	Auh and Menguc (2005)

		Much better	
70 (3)	To what extent does your organisation use modernisation and automation of production/service processes	Drop-down options: 1. Much less than competitors 2. Somewhat less than competitors 3. Same as competitors 4. Somewhat more than competitors Much more than competitors	Auh and Menguc (2005)
71 (1)	To what extent are your organisation's efforts to achieve economies of scale	Drop-down options: 1. Much less than competitors 2. Somewhat less than competitors 3. Same as competitors 4. Somewhat more than competitors Much more than competitors	Auh and Menguc (2005)
72 (2)	To what extent is your organisation's capacity utilization	Drop-down options: 1. Much less than competitors 2. Somewhat less than competitors 3. Same as competitors 4. Somewhat more than competitors Much more than competitors	Auh and Menguc (2005)
73 (2)	To what extent is your organisation's research and development expenditures for product development	Drop-down options: 1. Much less than competitors 2. Somewhat less than competitors 3. Same as competitors 4. Somewhat more than competitors Much more than competitors	Auh and Menguc (2005)

74 (3)	To what extent is your organisation's research and development expenditures for process innovation	Drop-down options: 1. Much less than competitors 2. Somewhat less than competitors 3. Same as competitors 4. Somewhat more than competitors Much more than competitors	Auh and Menguc (2005)
75 (2)	To what extent is your organisation's rate of product innovations	Drop-down options: 1. Much less than competitors 2. Somewhat less than competitors 3. Same as competitors 4. Somewhat more than competitors Much more than competitors	Auh and Menguc (2005)
76 (4)	To what extent is your organisations innovations in marketing techniques	Drop-down options: 1. Much less than competitors 2. Somewhat less than competitors 3. Same as competitors 4. Somewhat more than competitors Much more than competitors	Auh and Menguc (2005)

Section L: Your organisation's performance. NOTE: Your organisation refers to the subsidiary level at which you are located.

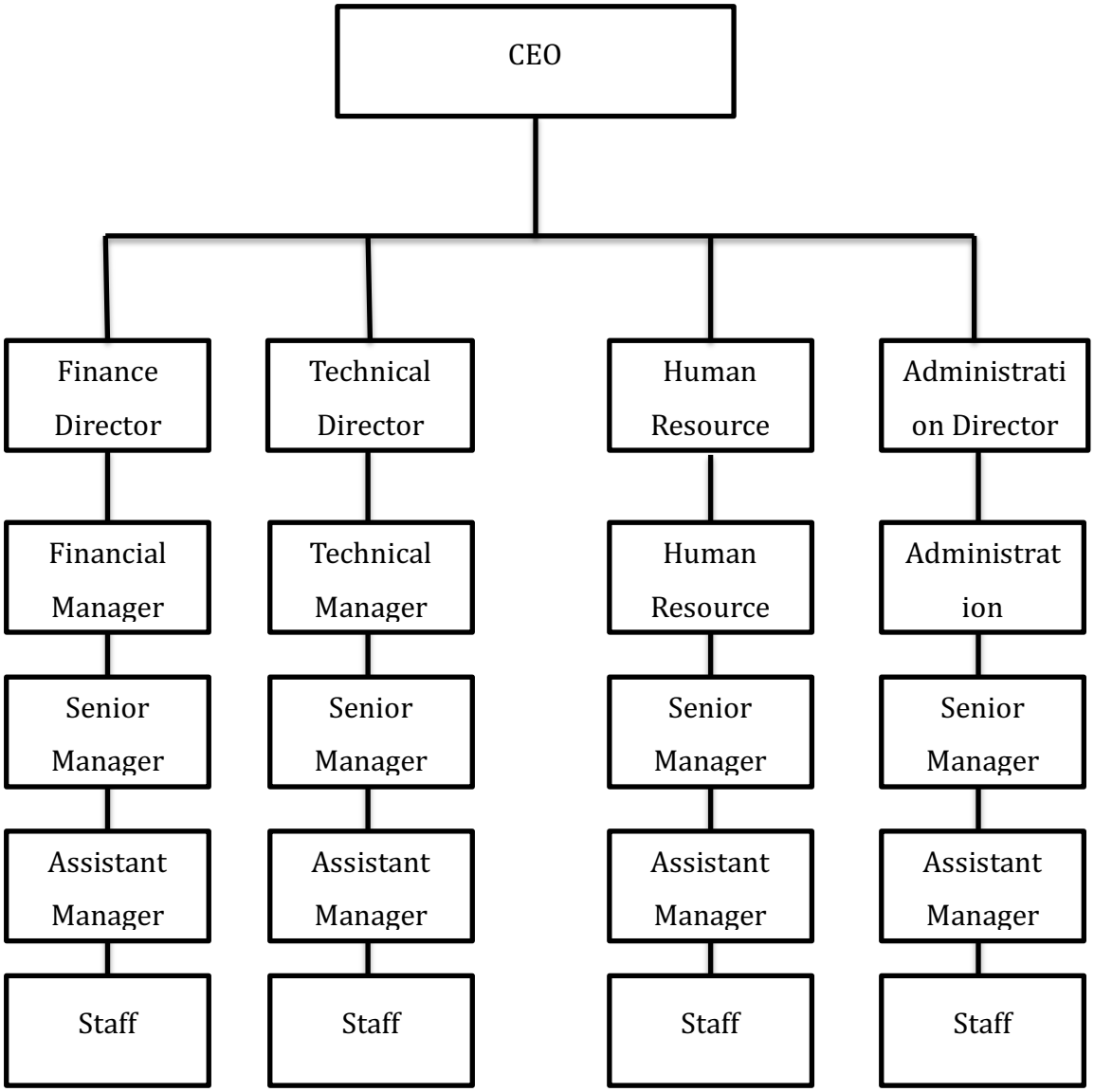
Question number	Question	Response	Reference, adapted from

77 (1)	Our organisation is very profitable	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree Strongly Agree	Auh and Menguc (2005); Spanos and Lioukas (2001)
78 (1)	In comparison with similar organisations, we are doing very well	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree Strongly Agree	Auh and Menguc (2005); Spanos and Lioukas (2001)
79 (1)	Our competitors can be jealous of our performance	Drop-down options: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree	Auh and Menguc (2005); Spanos and Lioukas (2001)
80 (1)	Our organisation's sales volume relative to competitors for the last three years is	Drop-down options: 1. Much below the average 2. Below the average 3. The same as the average 4. Above the average 5. Much above the average	Auh and Menguc (2005); Spanos and Lioukas (2001)
81(2)	Our organisation's growth in sales volume relative to competitors for the last three years is	Drop-down options: 1. Much below the average 2. Below the average 3. The same as the average 4. Above the average 5. Much above the average	Auh and Menguc (2005); Spanos and Lioukas (2001)

82 (2)	Our organisation's market share relative to competitors for the last three years is	Drop-down options: 1. Much below the average 2. Below the average 3. The same as the average 4. Above the average 5. Much above the average	Auh and Menguc (2005); Spanos and Lioukas (2001)
83 (1)	Our organisation's growth in market share relative to competitors for the last three years is	Drop-down options: 1. Much below the average 2. Below the average 3. The same as the average 4. Above the average 5. Much above the average	Auh and Menguc (2005); Spanos and Lioukas (2001)
84 (3)	Our organisation's profit margin in comparison to competitors for the last three years is	Drop-down options: 1. Much below the average 2. Below the average 3. The same as the average 4. Above the average 5. Much above the average	Auh and Menguc (2005); Spanos and Lioukas (2001)
85 (3)	Our organisation's return on own capital in comparison to competitors for the last three years is	Drop-down options: 1. Much below the average 2. Below the average 3. The same as the average 4. Above the average 5. Much above the average	Auh and Menguc (2005); Spanos and Lioukas (2001)
86 (3)	Our organisation's net profit in comparison to competitors for the last three years is	Drop-down options: 1. Much below the average 2. Below the average 3. The same as the average 4. Above the average 5. Much above the average	Auh and Menguc (2005); Spanos and Lioukas (2001)

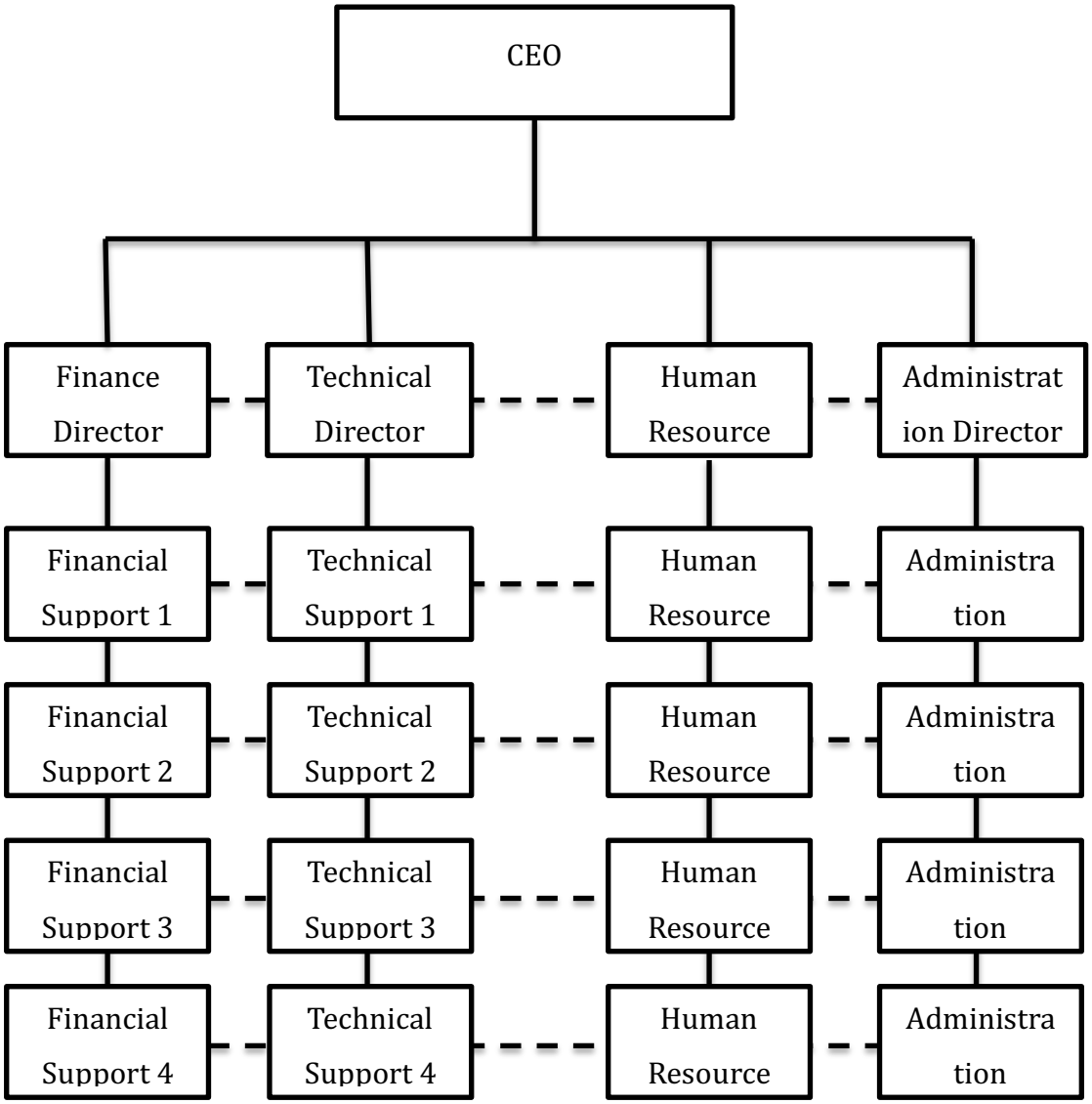
APPENDIX C 1: SIMPLIFIED HIERARCHICAL STRUCTURE

Image 1: Simplified representation of Hierarchical Organisational Structure



APPENDIX C 2: MATRIX ORGANISATIONAL STRUCTURE

Image 2: Simplified representation of Matrix Organisational Structure



APPENDIX D: NORMALITY TEST RESULTS

	Shapiro-Wilk		
	Statistic	df	Sig.
Strategic Flexibility	0,964	145	0,029
Operational Flexibility	0,96	145	0,016
Structural Flexibility	0,96	145	0,017
Efficiency	0,945	145	0,002
Organisational Stability	0,96	145	0,015
Organisational Effectiveness	0,958	145	0,013
Organisational Productivity	0,938	145	0,001
Strategy	0,908	145	0
HQ control	0,959	145	0,014
Organisational age	0,871	145	0
a. Lilliefors Significance Correction			

APPENDIX E: SECTORS REPRESENTED IN SAMPLE

Sector	Number of responses	Percentage
Information technology	32	22%
Manufacturing	15	10%
Electrical equipment	10	7%
Professional service	10	7%
Retail	10	7%
Pharmaceuticals	7	5%
Telecommunications	7	5%
Consumer Electronics	6	4%
Financial services;	6	4%
Consumer Products	5	3%
FMCG	5	3%
Automotive and transportation	4	3%
Mining and quarry	4	3%
Mining	4	3%
Automobile	3	2%
Aerospace	2	1%

Distribution	2	1%
Energy;	2	1%
Oil and Gas	2	1%
Arts	1	1%
Education	1	1%
Engineering	1	1%
Machinery	1	1%
Medical Equipment	1	1%
Multimedia	1	1%
Print	1	1%
Property	1	1%
Transport and Logistics	1	1%
Wholesale and Retail	1	1%