



**A Comparative Study between Public and Private School
Provision in the Sultanate of Oman**

Fathiya Hamed Sulaiman Al-Rahbi

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Abstract

There has been recent interest in the role of private education as an alternative to state education in Oman. It has been presumed that private sector interventions will help enhance educational quality. This study aimed to examine the strengths and weaknesses of both government and private schools in Oman to explore these claims. The two systems are examined in terms of student's academic achievements and the satisfaction of the main stakeholders – students, teachers and parents.

This study aims to fill the gap in school effectiveness research in Arab countries with a focus on Oman. A mixed-method approach was employed to answer the research questions. Both quantitative and qualitative data were collected in two stages. To generate empirical evidence of student academic achievement, a secondary analysis was performed on TIMSS 2015 mathematics assessment data for grade 8. In addition, a teachers' job satisfaction survey was administered in public and private schools. In the second stage, in-depth semi-structured interviews were carried out with teachers and focus group discussions were employed with students to consider their perceptions of effectiveness and help triangulate the quantitative findings.

The results show that the achievement of private school students in mathematics is statistically significantly higher than that of their counterparts in government schools. This advantage persists even when the socioeconomic status of students is held constant. This finding is consistent with previous studies in different parts of the world. Participants' views of their schools provide an insight into their perceptions of school effectiveness. In general, parents and students seem to prefer private schools, albeit for different reasons. While the parents' primary reason for preferring private schools is academic achievement, the students' main focus is on teaching quality and teacher–student relationships. Based on the teachers' satisfaction survey, teachers in government schools are more satisfied with management, while teachers in private schools are more satisfied with their work conditions and parental involvement in their schools. Teachers in private schools are also more satisfied with their work as teachers. The qualitative data show most teachers prefer to work in the state sector, primarily because of the financial benefits offered by the government (salary, allowances, pension). However, there is no consensus on what makes a school more effective among the different school management participants.

The thesis makes an original contribution to knowledge of the education system in Oman and argues that there is scope for closer collaboration between private and government school systems and that these could learn from each other.

Dedication

*To the memory of my mother, Zayana, who started this journey with me,
but never saw its end.*

*To my selfless sister Samia and my precious baby Amal,
my companions on this journey.*

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May Allah who is able to do so bless you all abundantly.

Table of Contents

Dedication	ii
Acknowledgements	iii
List of Tables	vii
List of Figures	ix
List of Abbreviations	x
Chapter 1. Introduction	1
1.1 Introduction	1
1.2 Why examine the differences between public and private schools?	1
1.3 Purpose of the study	2
1.4 Research questions	3
1.5 Study rationale and research gap	3
1.6 Scope of the study	4
1.7 Strengths and weaknesses of the study.....	5
1.8 Thesis outline and structure.....	6
1.9 Summary.....	7
Chapter 2. Research Context	8
2.1 Introduction	8
2.2 Sultanate of Oman: An overview	8
2.3 Development of the education system in Oman.....	9
2.4 Current public school system	10
2.5 Challenges facing public education in Oman	13
2.5.1 Quality of education.....	13
2.5.2 Education finance	16
2.5.3 Gender gap in academic achievement	19
2.6 Private education	20
2.6.1 Private school types	24
2.6.2 Why do parents select private schools in Oman?	26
2.6.3 Tuition fees	26
2.7 Summary.....	29
Chapter 3. Literature Review	30
3.1 Introduction	30
3.2 Section one: School effectiveness	30
3.2.1 Definition of school effectiveness	31
3.2.2 Development of school effectiveness research (SER)	32
3.2.3 School effectiveness research (SER) in developing countries.....	36
3.2.4 Determinants of school effectiveness	39
3.2.5 Limitations of school effectiveness research (SER)	41
3.2.6 Stakeholders' perspectives on school effectiveness	43
3.2.7 Summary.....	46
3.3 Section two: Government versus private schools.....	47
3.3.1 International literature on the effectiveness of private schools	47
3.3.2 Private school effectiveness in the MENA region.....	53
3.3.3 Research findings concerning inputs likely to enhance student performance	58
3.4 Summary and conclusion	72
Chapter 4. Methodology	77
4.1 Introduction	77
4.2 Philosophical position	77
4.2.1 Post-positivism: Epistemology and ontology	80
4.3 Research methodology: Mixed-method research	83
4.3.1 Why use a mixed-method approach?.....	85

4.3.2 Application of mixed methods.....	87
4.4 Research instruments.....	91
4.4.1 TIMSS data.....	91
4.4.2 Job satisfaction questionnaire.....	96
4.4.3 Interviews.....	98
4.4.4 Focus groups.....	99
4.5 Research context.....	101
4.5.1 Research participants.....	101
4.5.2 Access and ethical considerations.....	101
4.5.3 Researcher’s role.....	103
4.6 Research procedures.....	104
4.6.1 Pilot testing.....	104
4.6.2 School sampling.....	105
4.6.3 Teacher sampling.....	105
4.6.4 Student sampling.....	106
4.6.5 Administering the semi-structured interviews.....	107
4.6.6 Administering the focus groups.....	108
4.7 Data analysis procedures.....	109
4.7.1 Quantitative data analysis.....	109
4.7.2 Qualitative data analysis.....	113
4.8 Validity and reliability.....	119
4.8.1 Content and face validity.....	119
4.8.2 Construct validity.....	120
4.8.3 Reliability.....	121
4.9 Summary.....	122
Chapter 5. Students’ Achievement in Government and Private Schools.....	123
5.1 Introduction.....	123
5.2 Students’ characteristics.....	124
5.2.1 Gender.....	124
5.2.2 Socioeconomic characteristics.....	125
5.3 Student achievement by school type.....	127
5.3.1 Student achievement against TIMSS International Benchmarks.....	127
5.4 Student achievement by gender.....	128
5.5 Teacher characteristics.....	129
5.6 Regression analysis.....	132
5.6.1 Variables included in the regression analysis.....	132
5.7 Regression results.....	137
5.7.1 Factors affecting students’ achievement in government schools.....	137
5.7.2 Factors affecting students’ achievement in private schools.....	140
5.10 Conclusion.....	143
Chapter 6. Teachers’ Job Satisfaction.....	144
6.1 Introduction.....	144
6.2 Demographic and background characteristics.....	145
6.3 Inferential analysis.....	147
6.3.1 Factor analysis.....	148
6.3.2 Teachers’ job satisfaction by school type.....	151
6.3.3 Teachers’ job satisfaction by nationality.....	152
6.3.4 Teachers’ job satisfaction by gender.....	154
6.3.5 Teachers’ job satisfaction based on their qualifications.....	155
6.3.6 Teachers’ job satisfaction by age.....	156
6.3.7 Teacher’s job satisfaction by experience.....	157
6.4 Government versus private schools: What do teachers say?.....	158

6.4.1 School management, policy and regulations	158
6.4.2 Students.....	161
6.4.3 Work conditions.....	163
6.4.4 Parental involvement	166
6.4.5 Being a teacher.....	169
6.5 Public or private: Which school type do teachers choose for their own children?	169
6.6 Teachers' thoughts on private sector involvement in managing public schools	170
6.7 Conclusion.....	171
Chapter 7. Students' and Parents' Perspectives	172
7.1 Introduction	172
7.2 Students' and parents' satisfaction with their schools.....	172
7.2.1 Satisfaction with teachers	172
7.2.2 Satisfaction with school resources	174
7.2.3 Class size.....	176
7.2.4 Parental involvement	177
7.2.5 Curriculum	179
7.2.6 Tuition fees	181
7.3 Conclusion.....	182
Chapter 8. Discussion	184
8.1 Introduction	184
8.2 Research question 1	185
8.3 Research question 2	186
8.3.1 Student-related factors	188
8.3.2 Teacher-related factors.....	190
8.3.3 School-related factors	192
8.4 Research question 3	194
8.5 Research question 4	196
8.6 Policy and educational implications	199
8.6.1 Accountability and school governance	201
8.6.2 School-home collaboration	202
8.7 Conclusion.....	204
Chapter 9. Conclusion	205
9.1 Introduction	205
9.2 Summary of the findings	205
9.3 Contributions of the study	207
9.4 Limitations and directions for future research.....	208
9.5 Summary.....	209
References.....	211
Appendix A1: Teachers' job satisfaction survey (English Version)	248
Appendix A2: Teachers' job satisfaction survey (Arabic Version)	252
Appendix B1: Student focus group guide.....	257
Appendix B2: Teacher interview guide	259
Appendix B3: Transcription of a teacher/parent interview	261
Appendix C1: Participants' information document.....	267
Appendix C2: Participants' consent form.....	271
Appendix C3: Ministry of Education's approval letter	273
Appendix D: Exploratory analysis of TIMSS data	274
Appendix E: Exploratory analysis of job satisfaction survey data	276
Appendix F: A sample analysis of a teacher's interview	284
Appendix G: Principal component analysis of school- and teacher-related variables in TIMSS data	285

List of Tables

Table 2.1. The structure of school education in Oman.....	11
Table 2.2. Omani grade 8 students' results in TIMSS 2011 and 2015.....	14
Table 2.3. Gross domestic product per capita at current rates for GCC countries and the world 2008–2016	18
Table 2.4. Average achievement in mathematics by gender in TIMSS 2007, 2011 and 2015	19
Table 2.5. Development of private education in Oman	20
Table 2.6. Distribution of government and private schools by educational governorate	21
Table 2.7. Distribution of students in government and private schools by level and gender in 2016/2017	22
Table 2.8. The distribution of students (grades 1–12) in government and private schools in the GCC countries from 2014–2017	24
Table 2.9. Annual tuition fees in some private schools for the academic year 2019/2020	27
Table 3.1. Inputs found to affect students' achievement	74
Table 4.1. Omani students' mathematics and science performance in TIMSS 2007, 2011 and 2015	92
Table 4.2. Content domains in TIMSS mathematics and science tests	93
Table 4.3. TIMSS international benchmark levels	94
Table 4.4. Characteristics of participating schools	105
Table 4.5. Characteristics of interview participants	106
Table 4.6. Number and gender of participants in focus group discussions	107
Table 4.7. Example of the theme review process	117
Table 4.8. Cronbach's alpha reliability analysis	122
Table 5.1. Participants by gender and school type	124
Table 5.2. Characteristics of students' households by school type.....	125
Table 5.3. Independent samples t-test of students' achievement by school type	127
Table 5.4. Students' results in different school types based on TIMSS International Benchmarks	128
Table 5.5. An independent <i>t</i> -test of students' achievement by gender	129
Table 5.6. Characteristics of mathematics teachers	131
Table 5.7. Principal component analysis (PCA) for items related to school characteristics .	137
Table 5.8. Factors affecting mathematics achievement in government schools.....	139
Table 5.9. Difference in mathematics scores between government and private schools after controlling for SES variables.....	141

Table 5.10. Factors affecting mathematics achievement in private schools.....	142
Table 6.1. Characteristics of teachers by school type.....	146
Table 6.2. Factor loadings and commonalities based on promax rotated, principal axis factoring (PAF) analysis of variables in the job satisfaction survey	150
Table 6.3. Teachers’ job satisfaction in relation to school type.....	151
Table 6.4. Teachers’ job satisfaction in relation to nationality.....	152
Table 6.5. Teachers’ job satisfaction in relation to gender	154
Table 6.6. Teachers’ job satisfaction in relation to qualifications	156
Table 6.7. Teachers’ job satisfaction in relation to age	157
Table 6.8. Teachers’ job satisfaction in relation to experience.....	158
Table 6.9. Teachers’ responses to the class size question.....	165
Table 6.10. Teachers’ responses to parental involvement levels in government and private schools	167
Table 6.11. Teachers’ responses to questions related to their children’s schooling	170

List of Figures

Figure 2.1. TIMSS 2011 mathematics scores for MENA countries compared to GDP per capita.....	16
Figure 2.2. General finance statistics in GCC (2012–2016).....	19
Figure 2.3. Types of private school in Oman	24
Figure 3.1. The main components of the Omani educational system.....	46
Figure 4.1. Sequential explanatory design (adapted from Ivankova <i>et al.</i> , 2006, p. 16).....	90
Figure 4.2. An example of a thematic map used in qualitative analysis	116
Figure 4.3. Emergent themes and sub-themes from the data.....	118
Figure 6.1. Scree plot indicating eigenvalues and factors resulting from PAF on items related to the job satisfaction survey	149

List of Abbreviations

BERA: British Educational Research Association

CLR: Cost of Living Reports

GBP: British pound

GCC: Gulf Cooperation Council

GCC STAT: Statistical Centre for the Gulf Cooperation Council

GDP: Gross domestic product

IEA: The International Association of the Evaluation of Educational Achievement

IRT: Item response theory

MENA: Middle East and North Africa

MNPV: Mean (average) of the plausible values

MoD: Ministry of Development

MoE: Ministry of Education

MoNE: Ministry of National Economy

NCSI: National Centre for Statistics and Information

OECD: Organisation for Economic Co-operation and Development

OMR: Omani rial

PIRLS: Progress in International Literacy Study

SER: School effectiveness research

TIBRD: The International Bank for Reconstruction and Development

TIMSS: Trends in International Mathematics and Science Study

UAE: United Arab Emirates

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNPD: United Nations Development Programme

Chapter 1. Introduction

1.1 Introduction

Rapid advances in the education system in Oman over the past few decades have led to significant expansion in the education system, from only three schools for boys in 1970, to 1,125 schools in 2018. Approximately 98% of school-age children are now enrolled in school and 49.7% are girls. In 2016, the Omani government allocated 5.2% of its gross domestic product (GDP) to school education. In the 1990s, the focus of the Ministry of Education (MoE) shifted from quantity to quality and the education system underwent comprehensive reforms in 1998.

However, recent Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS) results indicate that Omani students' performance, although on a par with other Gulf Cooperation Council (GCC) countries, is well below international standards. Increasing the effectiveness and efficiency of public education to enhance quality and achieve higher learning outcomes has been a primary concern of the Omani government. The main aim is not only to enhance students' scores in core subject areas, but also to equip them with the required skills and knowledge to compete in a global economy. Taken together with the Omani goal to diversify its economy and 'Omanize' its workforce to make it globally competitive, these results assume great significance.

Encouraging private investment in education has been one of the policies proposed to enhance the quality of education in Oman. The MoE considers that private education will help improve quality as it provides parents with choices and creates competitiveness with public schools. Although private schools are under the administrative and technical supervision of the MoE, private investors are offered generous subsidies to establish schools. Publicly, there is a common-held perception that private schools offer better education than government schools. However, there is no empirical evidence to verify these assumptions.

1.2 Why examine the differences between public and private schools?

The MoE is interested in supporting private investment in education for a number of reasons: i) to provide parents with different options, enabling them to choose the most suitable schools for their children; ii) to help enhance the quality of education by creating competitiveness with public schools; iii) to reduce government spending on education through private sector contributions (MoE, 2006a, 2016a).

In addition to increasing government support to the private sector through investor-friendly policies, the MoE is currently considering a proposal to contract out to private providers to manage public schools while maintaining ownership and funding of the schools. To this end, a committee has been formed to study the Proposal by Ministerial Decree (3/2017) issued on 1 January 2017.

Despite the lack of empirical evidence, private education is assumed to offer an alternative in terms of higher quality education. However, enrolment in private schools is still limited and well below the ministry's expectations (MoE, 2006a). According to a joint report by the MoE and the World Bank, the high tuition fees charged by private schools might be the reason and consequently there is a fear that quality private education is only available to the children of affluent families who can afford the cost (World Bank, 2012). Given the deteriorating quality of public schools as measured by national and international assessments, there are significant social and economic implications.

The measurement of difference in performance between private and public schools is often a key aspect of debate regarding educational policy in both developed and developing countries (Cox and Jimenez, 1990). In spite of the proliferation of studies in this field all around the world, to the researcher's knowledge, thus far, no published study on the effectiveness of private schools in Oman has been found. However, a limited number of comparative studies examining public and private schools in other neighbouring gulf countries are to be found in literature, for example in Kuwait (Al-Duwaila, 2012; Alsuwaileh, 2013; Al Shatti, 2015), Qatar (Cheema, 2015, 2016), the United Arab Emirates (McKinnon *et al.*, 2013; Dickson *et al.*, 2015) and Saudi Arabia (Al Muqwashi, 2000; Alsuiadi, 2015). The lack of data regarding private schools' effectiveness and efficiency could be an impediment for policymakers and leaders who plan further reform.

1.3 Purpose of the study

The main purpose of this study is to determine if there are differences between the education provided by the government and that by the private sector. Such analysis is important because it can help us evaluate the effectiveness of educational reform efforts undertaken by the Omani government and can help shape educational policies directed towards the future. This study will hopefully benefit the MoE as it will highlight the differences and similarities between the two systems from different angles, namely students' academic performance and the views of teachers, students and parents.

1.4 Research questions

In order to address the overarching aim, this thesis attempts to answer the following questions:

1. Is there any statistically significant difference between government and private school students' academic performance in mathematics?
2. If a difference between school management types exists, what are the factors that contribute to this?
3. How satisfied are teachers in private and government schools?
4. How satisfied are students and parents in private and government schools?

1.5 Study rationale and research gap

The justification for the research is derived from different sources: personal interest, factors related to the context of the study and gaps in the literature related to government and private education in Oman and the neighbouring GCC countries: Saudi Arabia, the UAE, Kuwait, Qatar and Bahrain.

Having been a teacher, I am personally interested in issues related to educational quality. I have also witnessed the decline in public trust in government schools as many parents, some of whom are teachers in such schools, endure financial and logistical burdens to enrol their children in private schools, sometimes far from their place of residence. As a mother, I will be obliged to make a decision on school type myself, more specifically, the potential of the private sector to create competitiveness, enhance quality and provide parents with an alternative to government education.

This research was also motivated by a number of challenges associated with the current Omani educational context. Some of the documented challenges include the quality of learning outcomes and their relevance to the needs of the national and global workplace (World Bank, 2012). Other factors were related to the rapid demographic growth in the region, the growth of private education and economic considerations. Demographic growth has significant implications for the financing of education (Burney *et al.*, 2013). The issue of how education might be financed and the role the private sector can play in this regard have been raised many times both by educators and officials in Gulf countries. Al-Hurr (1999) and Burney *et al.* (2013) point out that the increasing demand for education in the region creates a real challenge for governments in fulfilling their commitments to provide quality education. Being part of this region, Oman faces the same demographic and economic challenges. The

2012 World Bank report clearly stated that the private sector can contribute to financing education. Most recently, in October 2014, the Education Council organized a symposium to present and discuss the main aims and policies of the proposed National Strategy for Education 2040, emphasizing the need to enhance the role of private sector in education as a potential alternative to government finance. This suggests that the private sector will be of significant importance in the future process of economic growth. According to Karoly (2010), the key challenges facing the GCC countries are maintaining growth in educational attainment, enhancing the quality of education, addressing the imbalances in their labour markets and providing information on the performance of their education systems and labour market outcomes through in-depth studies.

A review of the literature on public versus private education reveals a substantial number of studies carried out in both the developing and developed world (Ritzen *et al.*, 1997; Tooley, 1999; Alderman *et al.*, 2001; Davies and Hentschke, 2006; Tooley *et al.*, 2010; Gouda *et al.*, 2013; Stern, 2015, Dronkers and Robert, 2008a). However, it is also evident that there is a scarcity of such comparative studies in the Gulf countries. Thus, the aim of this research is to fill this gap by investigating the differences between public and private schools in Oman, considering various aspects, particularly academic achievement and the views of students, parents and teachers. While focusing on Oman, the findings may also have relevance for other Gulf countries and beyond. Based on the findings, it will be possible to offer some important recommendations to policymakers in the MoE in Oman, which supervises both public and private schools. The findings of this thesis may provide evidence that could allow them to review some of their important policies and regulations in order to attain the desired collaboration between the public and private sectors to enhance the quality of education in Oman.

The research-related gaps, the aforementioned context-related challenges in Omani education and my own personal interest provide reasonable grounds for this study of public and private systems in the Omani educational context and suggesting ways of developing them. By studying the effectiveness of private education in one of the GCC countries, Oman, this thesis aims to fill a gap in the literature and to present findings which will be of interest and relevance to educational managers and policymakers both in Oman and potentially in other countries in the geographical region facing similar educational demands.

1.6 Scope of the study

The focus of inquiry of this study pertains to school effectiveness. The concept of 'effectiveness' is defined in this study as 'the extent to which the desired level of output is

achieved' (Scheerens, 2000, p. 21). In similar empirical studies of school effectiveness, it has been measured by students' achievement in core subjects, such as mathematics, science and/or English (e.g. Bashir, 1994; Dronkers and Robert, 2003; Aslam, 2009; Adefeso-Olateju, 2013). In this study, students' achievement in TIMSS 2015 Mathematics was used as an indicator of school effectiveness.

In this thesis, much of the evidence on school effectiveness is drawn from the international literature on school effectiveness research (SER). However, the focus of the study is the effectiveness of government and private schools in Oman. Thus, much of the discussion and empirical analysis focuses on the Middle East and North Africa (MENA) region given the paucity of research on school effectiveness in the Omani context. While recognizing that cost efficiency related to schooling is an equally important concept, the scope of this study does not permit in-depth analysis of schooling output against costs, but focuses rather on how well schools are able to produce learning outcomes taking into account the individual and home background characteristics of students.

Finally, it is worth mentioning that this thesis aims to present an insightful examination of the effectiveness of private school provision in general, although private schools in Oman are divided into three major types, Arabic, bilingual and global, which differ in terms of the curriculum followed and resources.

1.7 Strengths and weaknesses of the study

This study makes both empirical and conceptual contributions to the limited literature on the effectiveness of public and private schools in Oman. Empirical contributions are made by providing a more robust analysis of the determinants of school effectiveness than is currently available in most extant studies. By synthesizing a wide spectrum of the available literature on school effectiveness, this study contextualizes the effect of variables related to family background, students, teachers and school characteristics on learning outcomes. Through the use of a sequential explanatory research design, rich empirical evidence on school effectiveness is generated from four sources (TIMSS mathematics assessment, a teacher job satisfaction survey, semi-structured individual interviews and focus group discussions), with the findings critically analysed in the context of international discourses on school effectiveness. As such, this study incorporates both quantitative and qualitative methods examining the issue of school effectiveness from different perspectives. By doing so, it attempts to: i) avoid using students' outcomes as the only measure of school effectiveness, which could limit the scope of the research; ii) acknowledge the multi-level structure of educational data by taking into account variables related to students, parents and teachers; iii)

explore the perspectives of the main stakeholders to present as comprehensive a picture as possible of the effectiveness of the two school types. Moreover, this study aims to counter a key limitation of other research on the determinants of school effectiveness, namely a lack of consideration of the stakeholders' voice (as discussed in Chapter 3).

As is the case with most studies that use the education production function method, an exhaustive list of variables could not be generated in the dataset (Hanushek, 2008). In addition, although TIMSS data encompass a wide range of variables, the assessment was designed for an international context. Hence, not all the variables included in the dataset pertain to the socio-geographic context of Oman. However, qualitative data provide the opportunity to contextualize findings. Finally, by focusing the analysis on school effectiveness, other interesting aspects of the study, such as the scope of public-private partnerships, were excluded from the discussion. However, it was necessary to narrow the scope of the study to address the research questions in a robust and thorough manner.

1.8 Thesis outline and structure

This thesis is organized into eight chapters, including this introductory chapter. The remaining chapters of the study are structured as follows. Chapter 2 presents a contextual overview of the educational system in Oman and relates it to the wider context of the neighbouring countries in the MENA region. Chapter 3 provides an extensive review of the relevant literature, including research on school effectiveness and the existing literature on public versus private schools, with a particular focus on developing countries. Detailed description of the methodology is presented in Chapter 4, which includes my philosophical position and the study design adopted, in addition to comprehensive information on the sampling and data collection and analysis procedures. Chapters 5, 6 and 7 present the findings of quantitative and qualitative analysis based on the research questions. Specifically, the findings in Chapter 5 address the first two research questions concerning differences in academic achievement between the two types of school. Chapter 6 discusses the findings related to the third research question on teachers' job satisfaction, based on the teachers' survey and individual interviews. Chapter 7 addresses the findings regarding the satisfaction of students and parents with the schools, answering the fourth research question. Chapter 8 presents the discussion of the results of this study. It also includes the policy and educational implications of the study. Finally, chapter 9 presents a summary of the findings, the contributions and limitations of the study, as well as directions for future research.

1.9 Summary

This chapter has provided an introduction to the study. It has presented a general description of the contextual background to the public and private systems in Oman, the rationale for and importance of the study, the questions the study aims to address and the strengths and weaknesses of the study. A thorough description of the educational system in Oman is detailed in the next chapter to provide the contextual background to the study.

Chapter 2. Research Context

2.1 Introduction

This chapter aims to set the scene of the study by providing an overview of the Sultanate of Oman and its education system. A general preview of the economic features is presented before discussing the education system, its development, features and challenges. Omani education is considered in relation to the wider educational systems in the MENA region, especially the GCC countries, given the similar social and economic features these countries share and most importantly the educational challenges they have to deal with.

2.2 Sultanate of Oman: An overview

Oman is an Islamic, Arab and Gulf developing country. Its population is approximately 4.6 million, of whom 44% are expatriates (National Centre for Statistics and Information, 2018a). Oman is a young country with 65% of its population under 29 years old. The annual population growth was 5.9% in 2016, compared to 4.1% in 2015, due to the high growth rate of expatriate labour in the country (National Centre for Statistics and Information, 2017a).

Oman's economy depends on oil and gas revenues. In 2018 crude oil accounted for 65.3% of total export earnings, contributing about 36.2% to the gross domestic product (GDP) (National Centre for Statistics and Information, 2019). Although it is classified by the World Bank as a high-income state, Oman's economy is unstable due to its minimal and dwindling oil reserves (Ministry of National Economy [MoNE], 2007). The country's budget has witnessed dramatic deficits due to the decline in oil prices since 2015 when the oil price dropped from about USD 110 to less than USD 50 per barrel (Vohra, 2017). These changes had economic and social implications. Many state projects were suspended and the number of Omani job seekers increased. The economic deficits inevitably affected the education sector.

Having anticipated the consequences of an oil-dependent economy, Oman's strategic plans such as the 'Vision for Oman's Economy: Oman 2020', which was launched in 1996, and 'Oman 2040', which is still under formulation, place specific emphasis on economic diversification through increased industrialization, trading, privatization and foreign investment. Plans were made to localize some jobs in the private sector with Omani employees to address high unemployment rates (MoNE, 2007; Al-Nahdi, 2016). However, this has not been realized as different official reports indicate that Omani graduates lack the appropriate knowledge and skills required for the labour market, especially in the private sector (World Bank, 2012; Al-Nahdi, 2016). As a result, the private sector continues to

employ more skilful and cheaper expatriate labour. The unemployment rate was 8.8% for Omanis aged 15–24 years in 2018 (National Centre for Statistics and Information, 2018a). To succeed in the global marketplace, the Sultanate requires an education system that can produce future employees who can engage in analytical thinking and problem solving and who are creative, adaptable and competitive.

Overall, considering the fluctuation in oil prices, the declining oil reserves and the rapid growth of Omani's young population, Oman will continue to encounter economic challenges in the years to come if the government fails to find adequate non-oil income resources. This, in turn, influences the financial sustainability of public education in the long term, which argues the importance of expanding private investment in education; an intervention that it is assumed will play a significant role in promoting economic diversification and enhancing educational quality (MoE, 2006a).

2.3 Development of the education system in Oman

Before 1970, there were only three government schools in Oman. Most parents sent their children, mainly boys, to Quranic schools, where they only learned the Quran, Arabic and arithmetic (Issan, 2005). This era ended when His Majesty Sultan Qaboos ascended the throne in 1970. The main goal of the new government was to provide free access to education for all children. A large proportion of the public budget was dedicated to building schools and hiring teachers. In 2014–2015 the number of public schools reached 1,048 with 56,211 teachers, 83% of whom were Omani. The number of students rose significantly to 701,081, of whom 51% are male and 49% are female (National Centre of Statistics and Information, 2015). Currently, over 98% of Omani children of school age are enrolled in school, a level that is equal to or above that observed in other MENA countries (World Bank, 2012).

Some researchers (Al Hinai, 2006; Issan and Gomaa, 2010) have traced the development of education in Oman, which can be summarized in three main stages as follows:

Stage one (1970–1980): The emphasis was on quantitative development. The main focus was to spread free formal education and make it accessible to both boys and girls.

Stage two (1981–1995): The spread of education continued with a new emphasis on improving the quality of education.

Stage three (1995–2020): A comprehensive education reform was initiated as a result of the declaration of the future vision for the Oman economy – Oman 2020.

Having succeeded in providing universal access to education, the government's focus shifted to enhancing the quality of education so as to align educational outcomes with the requirements of the local labour market and prepare students to meet the challenges of a knowledge-based economy (MoE, 2016b). To achieve this, the MoE implemented a number of major reform initiatives across the whole system. These comprehensive and costly reforms, however, did not seem to improve educational quality as Omani students' achievement was unsatisfactory in international assessments, such as TIMSS.¹

2.4 Current public school system

The Basic Law of the State of the Sultanate of Oman states that education is a fundamental right for all citizens and should be provided free of charge. Hence, free public education is provided to all children in Oman (Omanis and Arabs) between the ages of 6 and 17. Pre-school education, however, is mostly offered by the private sector and other governmental departments.

In 1998, the MoE began a reform project to replace the general education system, which emphasized teacher-centred, passive learning and high stakes examinations, with a basic education system emphasizing a learner-centred, active learning pedagogy and formative continuous assessment. Activity-based learning is central to the new basic education system and resources for hands-on activities are incorporated into the mathematics and science curriculum to provide active learning classrooms. The reform includes changes in the structure of the school system, updates of curriculum content and textbooks, changes in teaching, learning and student assessment, upgrading the qualifications of teachers, adding new resources and facilities, improved teacher training and encouraging the private sector to enter the education field (MoNE, 2006).

Government education applies co-education from grades 1 to 4, in which girls and boys are taught by female teachers. From grade 5 onwards, single-sex education is applied. Thus, girls are taught by female teachers and boys are taught by male teachers, most of whom are Omanis. Table 2.1 presents the structure of the basic education system.

¹ See, for example, Omani national reports on TIMSS 2011 (Ministry of Education, 2013a, 2013b) and TIMSS 2015 (Ministry of Education, 2018a, 2018b)

Table 2.1. The structure of school education in Oman

Level	Grade	Structure
Cycle 1	1–4	Co-education 1600 minutes per week 180 days per school year
Cycle 2	5–10	Separate schools for boys and girls 1600 minutes per week 180 days per school year
Post-basic	11–12	Separate schools for boys and girls Electives 1600 minutes per week 180 days per school year

Oman has adopted a centralized financial and administrative education system. The centralized education policies include a national curriculum and a unified assessment system, the distribution of financial resources and the administration of school staffing levels and teacher recruitment procedures (MoE, 2006a). The MoE regulates public schools distributed in the 11 governorates across the country. The educational directorates follow up the enforcement of centralized policies. Recently, however, the MoE has delegated some aspects of authority to the regional directorates regarding teachers' in-service training and has granted some freedom in decisions related to the allocation of financial resources. There has also been an attempt to enhance school autonomy through applying school-based management systems as an essential part of the reform. In 2009 Ministerial Decree No. 21/2009 was issued, according to which full implementation of school-based management has to be implemented by all schools in all governorates. The main features of the new system lie in giving schools power over several issues, such as administrative and financial decisions, students' affairs, examinations, activities, projects, maintenance, services and educational supervision (MoE, 2009).

The MoE thus wishes to create a decentralized education system to build capacity and introduce comprehensive accountability. However, it maintains that developing the overall vision, policy and priorities for education should remain centralized (MoE, 2006a). According to the MoE, public education in Oman is facing the following challenges:

- A mismatch between educational outcomes and national labour market demands.
- A considerable disparity between teachers in terms of the required competency levels.
- A lack of stringent mechanisms for assessment and accountability.

- A lack of detailed regular financial reports illustrating the aspects of spending on educational services.
- Less instructional time for Omani students appear compared to international standards.
- Lack of partnership between schools on the one hand and parents and local society on the other.
- Limited use of data management and performance indicators as measures of accountability in the educational system.
- Significant gender disparity in achievement in favour of girls.
- Lack of qualified teachers in some specializations, such as special needs education and continuous education.

(MoE, 2006a; World Bank, 2012; Education Council, 2014)

The Omani government has realized the future risks of its dependence mainly on oil as a source of income. In addition, there has been a “need to develop and upgrade the efficiency of the current policies...due to global changes...and the emergence of a new international order” (MoNE, 2007, p. 128). Therefore, the Omani leadership, assisted by planning economists and technocrats from various sectors, formulated the future vision for Oman's economy – Oman 2020 – which was launched in 1996. The ultimate goal was to achieve economic balance and sustainable growth through four major strategies: sustainable development within a stable macroeconomic framework, human resource development, diversification of the economy and development of the private sector. To achieve its goals, the government evaluated the performance of different sectors of the economy. Education was recognized as one of the challenges facing the development of human resources due to its inadequacy in coping with the rapid scientific and technological advancements. The reform primarily aimed to modernize basic education completely to improve its content, quality, efficiency, effectiveness and relevance to meet the learning needs of the 21st century. Therefore, in 1998 the new basic education system was introduced with a view to gradually replacing the old general education system. The aim was to develop human resources by enhancing the skills and competencies of Omanis in order to be able to compete in the local and global markets (MoNE, 2007).

Developing educational outcomes continues to be of central importance in the current strategic plan – Oman 2040 – which also emphasizes economic diversification and developing

national capabilities by equipping Omanis with the necessary knowledge and skills that will enable them to cope with international challenges. Education is considered a top priority, as stated in the published preliminary document:

‘The development of the educational system at all levels and the improvement of its outputs have become necessary for building the Omani citizen, confident of his identity and committed to his social values. This is attainable through increasing the quality of basic and higher education, and through developing scientific and educational curricula. Graduates of such an educational system are well poised for local and global labour markets through competitive capabilities and skills, and they will have the required productivity and competitiveness for a knowledge-based economy.’ (Oman 2040 Main Committee, 2019, p. 15)

2.5 Challenges facing public education in Oman

In a speech before the Consultative ‘Shura’ Council in 2016, HE the Minister of Education identified two main challenges facing the education system: quality and finance. She discussed in depth several projects initiated by the ministry to improve students’ performance in international standardized assessments such as TIMSS and PIRLS and to equip Omani students with the skills needed to participate effectively in the national and global workforce. She also explained the measures and procedures that the ministry has adopted to address issues related to the future of finance for education, such as supporting private investments in the education sector and cooperating with international organizations like UNESCO and the World Bank to study ways of enhancing the efficiency and effectiveness of government spending.

2.5.1 Quality of education

In the mid-1990s in Oman, enhancing the quality of education was identified as one of the top priorities for the Omani government. A number of national and international indicators showed unsatisfactory levels of school outcomes. One of the earliest national level assessments was undertaken through Monitoring Learning Achievement (MLA) studies sponsored by the United Nations Educational, Scientific and Cultural Organization (UNESCO). These were carried out between 1993 and 2001 to measure students’ performance in Arabic, mathematics, science and life skills in grades 4, 6, 9 and 10. The findings established that the results for students across grades and subjects were below expectations.

In addition, the MoE carried out another national assessment in 2008/2009, which tested students in Arabic, social sciences, mathematics, English and science. The sample included 6,817 students from grades 4, 7 and 10. Again, students’ performance was found to be lower

than expected, with girls outperforming boys in all subject areas in all 11 regions of the country. It was also found that private school students performed higher than those attending government schools.

At the international level, Oman's participation in TIMSS and PIRLS, both conducted by the International Association for the Evaluation of Educational Achievement (IEA), indicates that while student performance in Oman is on a par with other GCC countries, it is well below the international average in mathematics, science and reading. Indeed, they were below the TIMSS scale average of 500 points, as illustrated in Table 2.2. For example, of the 39 participating countries in the TIMSS 2015 mathematics assessment, all Arab countries scored below the international average of 500, Oman ranking 32 with an average score of 403.

Table 2.2. Omani grade 8 students' results in TIMSS 2011 and 2015

Subject	TIMSS 2011		TIMSS 2015		PIRLS 2011	PIRLS 2016
	Maths	Science	Maths	Science	Grade 4	Grade 4
Average scale score	366	420	403	455	391	418
Ranking						
Internationally	41/ 42	36/ 42	28/ 39	27/ 39	44/45	47/51
Arab world	11/ 11	8/ 11	5/10	4/10	4/5	5/9
GCC countries	5/5	4/ 5	4/6	4/6	4/4	5/6

Source: TIMSS and PIRLS International Study Centre (<https://timssandpirls.bc.edu/>)

The lack of quality has been attributed to various factors. For example, a report by the World Bank identifies deficiencies in the educational system, including lack of resources (libraries, computers and learning resource centres), insufficient training of educators, high repetition and dropout ratios and inadequate educational policies regarding curricula and quality of teachers (World Bank, 1991). Al-Rawahi (1996) claims that the weakness in the standard of education, especially in primary schools, is a result of the lack of qualified teachers, lack of facilities and the high student–teacher ratio. Some researchers maintain that quality drops when the concentration of efforts is on making education available for all and the quality of education is not a priority (Riddell, 1993; Al-Nuaimi, 2002).

In an attempt to improve quality, the MoE has collaborated with a number of international organizations to evaluate the education system, including the World Bank in 2012, the New Zealand Education Consortium in 2013 and UNESCO in 2015. An extensive report jointly produced by the World Bank and the MoE, identifies a number of challenges currently facing the Omani education system, in addition to the failure to reach the international average in

literacy, mathematics and science. These include, inter alia, dropout rates especially for boys, numbers of repeating students, the significant proportion of students, the gender gap in academic achievement and allocation of financial resources (World Bank, 2012). The report presents the following suggestions to help address these issues:

1. Create a culture of high standards, which includes: increasing the time students spend on learning, setting realistic targets and involving parents, addressing the achievement gap between boys and girls and improving school curricula.
2. Develop the pedagogical capacity of the teaching force through improving teacher education courses, focusing on quality teaching and learning, preparing an adequate supply of Omani teachers and revising current policies regarding salaries and incentives, especially for teachers appointed in remote areas.

The UNESCO report also reviewed the efficiency of government spending and called for the revision of policies on the allocation of resources to increase the quality of education (Chawla and Khan, 2015).

Improving the quality of educational outcomes is a pressing issue not only in Oman but also in other GCC states, given the need to manage the shortage of local skilled and unskilled labour and the heavy reliance on foreign labour. According to the GCC statistical centre, in 2016 the foreign workforce amounted to 83.5% in the UAE, 87.9% in Bahrain, 73.1% in Saudi Arabia, 92.5% in Qatar and 82.8% in Kuwait (GCC Statistical Centre, 2019b). The reliance on an expatriate workforce has various social, economic and political implications. Consequently, the governments in these countries have embarked on job localization programmes to limit the influx of foreign workers and make more jobs available to their citizens (Al-Nahdi, 2016). The success of these plans, however, has been limited due to a number of social and economic factors. One of the most important obstacles to localization initiatives has been the inadequacy of educational outcomes, as reported in Oman (Al-Nahdi, 2016), Saudi Arabia (Al-Asfour and Khan, 2013), Qatar (Williams and Fish, 2011) and the UAE (Jabeen and Katsioloudes, 2018).

Looking at school education in the MENA region overall, quality is also a major concern, as indicated by TIMSS results. Salehi-Isfahani *et al.* (2014, p. 490) examined the achievement of the participating MENA countries in the TIMSS mathematics and science tests in the years 1999, 2003 and 2007, and revealed that MENA countries “apparently failed in terms of education quality and equity”. They found many differences between children’s results and a

considerable drop in performance in Egypt, Iran, Jordan, Turkey, the UAE (Dubai) and Lebanon. The results indicated that although there has been sizeable investment in free government education in most MENA countries, this effort had not provided more equal opportunities in terms of educational achievement. Indeed, the TIMSS 2011 results, for example, revealed that the region is still below the level expected, even in countries with high per capita income, such as the UAE and Qatar, as shown in Figure 2.1.

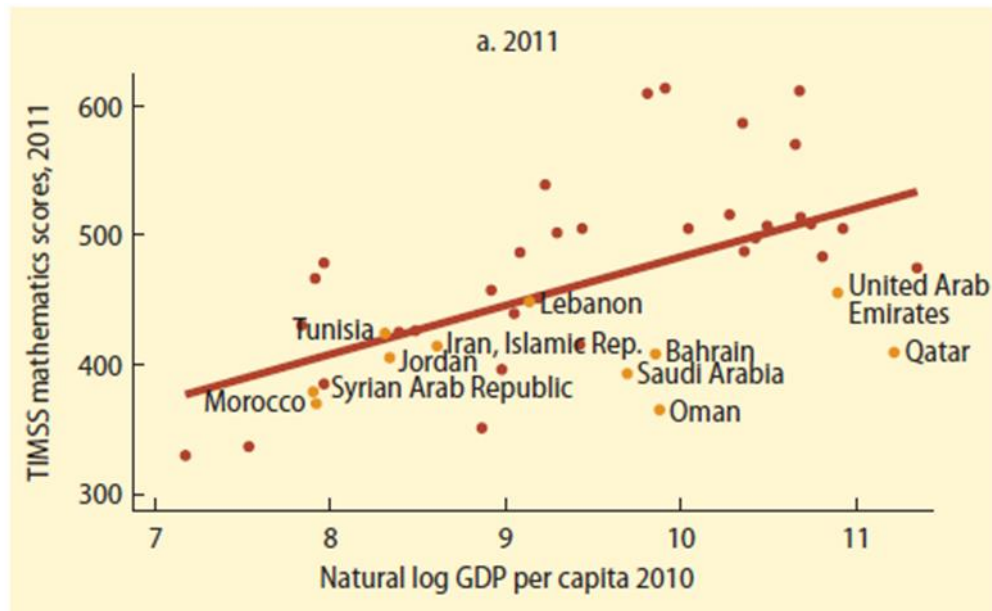


Figure 2.1. TIMSS 2011 mathematics scores for MENA countries compared to GDP per capita.

Source: (Gatti *et al.*, 2013)

Based on analysis of TIMSS 2007 data in 15 educational systems in the MENA region, Bouhlila (2015) concludes that the worst performers in the region are students from high-income countries. She explains this as being due to the difference in student motivation in the two blocks of countries. That is to say, students in lower income countries are more motivated to study hard to secure employment in the future, whereas students in high-income countries are less obliged to find a job after school as they can usually depend on their families' wealth. Another plausible explanation is the inefficient allocation of resources in the education sector.

2.5.2 Education finance

In Oman, education is primarily funded through the state budget, which finances the education of over 80% of all Omani children attending government school. Household expenditure on education takes the form of spending on private and international schools, as well as out-of-pocket payments to public schools. In 2013, Oman spent 4.8% of its GDP on education, equivalent to 16.5% of the government's current expenditure (32.7% of government spending excluding defence). In nominal terms, Oman spent OMR 1.813 (GBP

3,619) per school-going student (basic and post-basic only) (Chawla and Khan, 2015). Thus, compared to the budget allocated to other ministries, the government allocates a high budget for free education. However, the current economic situation coupled with the high population growth rate poses serious concerns regarding the feasibility and the sustainability of publicly funded education.

The 2012 World Bank report indicates that almost 90% of the budget annually allocated to education is spent on recurrent expenditures, namely salaries and wages. Of the remaining 10% of non-salary ancillary expenditure, only 11% is allocated to learning materials, suggesting wastage in resources due to 'inefficient practices' (World Bank, 2012, p. 197). The report, therefore, suggests a comprehensive review of the financial structure in the MoE, including the budgeting system, remuneration and staffing policies.

Expenditure on education has significantly increased in the last 10 years, reflecting the government's emphasis on the development of human resources. However, spending policies that simply maintain the existing structures of school operations will not necessarily lead to improvements in student outcomes (Hanushek and Wößmann, 2007). The recent TIMSS and PIRLS scores for Omani students are below the average in mathematics, science and reading among all countries participating in the assessments, a large number of which spend significantly less per student than Oman (Chawla and Khan, 2015). Encouraging the private sector to invest in the education sector is one of the solutions proposed by the government to enhance effectiveness and reduce wastage of financial resources. Furthermore, establishing partnerships with the private sector in education will hopefully diversify educational opportunities and provide educational alternatives, whether at the school or higher education level.

Similar to the Omani context, demographic projections in the MENA region reveal that its youth population was set to grow steadily. In the Arab countries, for example, youth of ages 15-29 make up about 30% of the total population (United Nation Development Program, 2016). This growth in the youth population will result in increased demand for educational services at all levels and will place immense pressure on existing educational institutions. Most MENA countries provide access to both compulsory and non-compulsory education by means of public resources. Education is provided essentially free of charge at all levels. Governments plan, execute and supervise all aspects of the educational system, including schools, recruiting and paying teachers, curricula, instructional materials and examinations. As budget constraints have become more stringent over time due to demographic growth,

MENA governments have become increasingly aware of the need to promote the efficiency and financial sustainability of the education system. Some countries, such as Jordan, Kuwait and Lebanon, have attempted to diversify the source of revenue, encouraging private investment in the education sector. Other countries have started other initiatives to mobilize resources, expanding through community partnerships and delegating educational provision to nongovernmental actors. For instance, in 2009, the government in Qatar decided to subsidize the private sector to provide support for education and to act on the government’s behalf in all Qatar government schools (Constant *et al.*, 2010).

Distinct from other MENA countries, the GCC countries rank among the wealthiest in the world. The average GDP per capita in the Gulf countries is just under USD 32,000; well above that in the MENA region and in line with Europe and North America (Abyad, 2018). This is largely due to huge oil reserves and an expanding non-oil sector. The citizens enjoy several benefits, such as free public education, free healthcare and a tax-free environment, among others, leading to a high personal income level among the population as shown in the Table 2.3.

Table 2.3. Gross domestic product per capita at current rates for GCC countries and the world 2008–2016

Year	World (USD)	GCC (USD)
2008	9.371	28.266
2009	8.775	21.952
2010	9.509	25.578
2011	10.444	31.209
2012	10.539	33.080
2013	10.709	32.967
2014	10.850	32.428
2015	10.130	26.796
2016	10.151	25.375

Source: GCC Statistical Centre (2017)

The six countries, however, currently find themselves at a critical juncture. The region has one of the fastest growing populations in the world. In 2016 for instance, the average population growth in the Gulf countries was 3.2%, compared with an international average of 1.2%. These countries have one of the world’s youngest demographic profiles, with the majority of individuals under the age of 25 (GCC Statistical Centre, 2017). The GCC’s population is expected to double to an estimated 106.8 million by 2031 (GCC Statistical Centre, 2019c). The level of population growth will demand significant investments in infrastructure and services, including education, which will place increasing pressure on government budgets (Abyad, 2018).

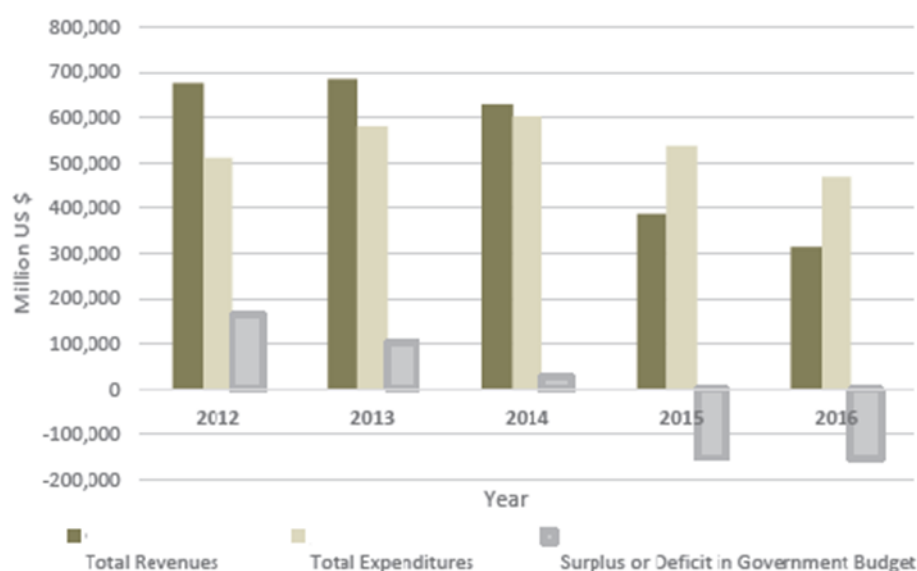


Figure 2.2. General finance statistics in GCC (2012–2016)
 Source: GCC-STAT (2017)

2.5.3 Gender gap in academic achievement

A gender gap in academic achievement, in favour of girls, has been reported in many national and international reports as one of the main challenges confronting the educational system in Oman (World Bank, 2012; Education Council, 2014, 2018). Female students outperforming male students was evident in the results for both mathematics and science in the three TIMSS rounds in which Oman participated. In the TIMSS 2015 mathematics assessment, as shown in Table 2.4, Oman had the highest difference in attainment between genders among all the participating countries, with girls outperforming boys by 32 points (international average scores indicate a 3-point difference between the genders).

Table 2.4. Average achievement in mathematics by gender in TIMSS 2007, 2011 and 2015

	Male	Female	Difference
TIMSS 2007	344	399	55
TIMSS 2011	334	397	63
TIMSS 2015	388	420	32

Source: TIMSS and PIRLS International Study Centre (<https://timssandpirls.bc.edu/>)

A study of the possible reasons for the disparity in achievement between Omani male and female students undertaken by Chapman *et al.* (2014) found that Omani male teachers were significantly less committed to teaching, less satisfied with their employment and more inclined to leave teaching if they had the opportunity to do so. The authors claim that the male teachers' low levels of satisfaction and commitment might be a reason for the gender achievement gap. This conclusion requires further investigation, considering that in Oman boys are taught by male teachers, a great proportion of whom are non-Omani.

Some studies in neighbouring countries have discovered differences in pedagogical practices between national and expatriate teachers. Abdulmalik and Chapman (1994), for example, used classroom observations and self-reported survey data to compare 37 Yemeni teachers and 23 expatriate teachers in Yemen. They found that Yemeni teachers tended to use interactive methods, while expatriate teachers used a teacher-centred approach and hence had lower student involvement. This point was further confirmed by Ridge (2009) in a study of the gender differences in Ras Al-Khimah, UAE. She claimed that part of boys' underachievement was due to the consequences of a reliance on expatriate teachers in boys' schools, these teachers being less qualified, lower paid and less secure. These circumstances, in addition to local students' lack of respect for and low perceptions of their expatriate teachers, contribute to the poor quality of education boys receive in schools.

In Oman, the government has been committed to replacing expatriates with qualified Omani teachers as part of its Omanization policy. In 2016/2017, 72.5% male teachers and 88.6% female teachers in government schools were Omanis. In private schools, however, only 1.8% of male teachers and 44.5% of female teachers were Omani (Education Council, 2017)

2.6 Private education

Many factors have contributed to the establishment and growth of private schooling in Oman. Politically, privatization is one of the policies proposed by the government to diversify the economy and reduce government expenditure on public services, such as education. In addition, there is public demand for alternative school types, given parents' lack of satisfaction with the quality offered in government schools. Table 2.5 presents the contribution of private education in the education system in Oman.

Table 2.5. Development of private education in Oman

Academic year	Private education				Government education			
	Schools		Students		Schools		Students	
2005/2006	158	11.6%	28183	4.7%	1204	88.4%	567,074	95.3%
2011/2012	406	28%	71,274	12%	1,040	72%	517,053	87.8%
2017/2018	636	36.2%	105,680	15.4%	1,125	63.8%	581,180	84.6%

Source: National Centre for Statistics and Information (2018b)

As can be seen, the government sector is the predominant provider of education in Oman, with 84.6% of students attending public schools compared to 15.4% in 2017/2018. However, the number of private schools has continued to grow vertically and horizontally in terms of the number of schools and school stages and the number of students enrolled, bringing the number of schools up from 158 in 2005/2006 to 636 in 2017/2018. It is worth noting, though,

that the geographic distribution of private schools is not equal throughout the governorates of Oman. The greatest intensity of private schools is in Muscat, the capital city of Oman, with 242 schools, whereas there is only one private school in the Al-Wusta governorate, as seen in Table 2.6. The governorate of Batinah North, on the other hand, has the largest number of government schools (189 schools).

Table 2.6. Distribution of government and private schools by educational governorate

Region	School Type	2012	2013	2014	2015	2016	2017
<i>Muscat</i>	Government	146	128	134	144	160	169
	Private	166	176	182	199	216	242
<i>Dhofar</i>	Government	150	144	147	150	153	154
	Private	27	27	30	30	33	32
<i>Musandam</i>	Government	17	16	16	16	18	18
	Private	4	4	4	4	3	3
<i>Al Buraymi</i>	Government	27	25	25	25	29	30
	Private	8	11	11	14	13	12
<i>Ad Dakhliyah</i>	Government	139	126	127	135	147	150
	Private	58	58	56	59	61	64
<i>Al Batinah North</i>	Government	175	153	156	172	186	189
	Private	64	66	68	77	89	105
<i>Al Batinah South</i>	Government	116	109	111	113	120	123
	Private	38	44	46	54	58	64
<i>Ash Sharqiyah South</i>	Government	87	81	83	85	91	91
	Private	33	35	39	35	43	44
<i>Ash Sharqiyah North</i>	Government	84	80	84	85	90	93
	Private	30	31	34	41	41	45
<i>Adh Dhahirah</i>	Government	79	74	75	77	81	82
	Private	15	15	15	15	19	24
<i>Al Wusta</i>	Government	23	23	23	23	25	26
	Private	1	1	1	2	2	1
Total	Government	1043	959	1048	1025	1100	1125
	Private	444	468	486	530	578	636

Source: National Centre of Statistics and Information online data portal (2019), <https://www.ncsi.gov.om/Pages/NCSI.aspx>

Generally, the private sector plays a greater role in secondary school provision, while the government's role is more dominant in basic education (World Bank, 1991). This is attributed to the states' will to instil national values and culture in children during the early years of schooling; in contrast, in secondary education, the focus tends to be on developing the skills required for the labour market (Riddell, 1993). This is not the case in Oman, however, where the majority of students enrolled in the private sector are predominantly in the pre-school

stages, for which there is no universal provision by the MoE. As shown in Table 2.7, the number of students in grades 11 and 12 is significantly lower than that in cycles 1 and 2 of basic education. This could be attributed to the higher fees for secondary education in most private schools (as discussed further in 2.5.3).

Table 2.7. Distribution of students in government and private schools by level and gender in 2016/2017

	Government		Private	
	Male	Female	Male	Female
Kindergarten	972	961	25,326	24,442
Basic Education Cycle 1 (1–4)	102,407	101,094	16,661	14,539
Basic Education Cycle 2 (5–10)	140,874	138,247	11,648	6,326
Post-Basic Education (11–12)	39,703	40,098	3,041	1,375
Total	283,956	280,400	56,676	46,682

Source: National Centre for Statistics and Information (2017b)

The Omani MoE has established an educational system based on public and private schools, which all fall under its supervision, and it has established a regulated approach to private school operations. This approach includes everything related to teacher recruitment, the teaching process, the curriculum and management and is applied in such a way that it is in line with the aims of the country. All private schools in Oman are under the direct supervision of the MoE to ensure high-quality education. The ministry's supervision includes:

- Approval for opening new private schools.
- Approving the tuition fees set by each school.
- Approving the appointment of new teachers.
- Supervision over the curriculum and assessment methods adopted by the schools.
- Regular visits by supervisors from the MoE to ensure that schools are in line with the ministry's policy and regulations.
- Regular visits by MoE's supervisors to follow up on the performance of teachers and students' academic achievement.

(MoE, 2006b)

Encouraging the private sector to take an active part in education has been one of the policies implemented as part of educational reform in Oman. Private investors benefit from different forms of support from the government, such as free land on which to build their facilities, the provision of free training to teachers and a discount of 50% on some goods. Based on Ministerial Decision No. 287/2017, issuing the By-Laws Regulating Private Schools in Oman, an applicant for a private school licence must be an Omani or a foreigner investor with a local Omani partner. According to the ministry's regulations, a number of conditions must be met

by the investor to establish a private school. For example, evidence of the financial capacity of the applicant to finance the construction of the school is required. In addition, the potential premises must conform to all the conditions and specifications as stipulated by the MoE. A detailed proposal for the project must be submitted, including for example the educational programme to be applied, tuition fees, admissions policy, assessment procedures and services provided. Once approved, private schools are obliged to obtain official permission from the Directorate General of Private Schools regarding the employment of teaching and administrative staff.

The aforementioned Ministerial Decision added a new development to the current structure of private education in Oman. For example, schools are now required to appoint a board of trustees of no fewer than five members, including a parent representative, two experts in the field of education and the school principal. Moreover, a private schools rating office was also established as per Ministerial Decision No. (211/2017), which is responsible for rating private schools according to their quality and efficiency in providing educational services. Schools are evaluated by neutral teams. The results are published by the ministry on its website and various media platforms (MoE, 2017). This is an indication of a move towards enhancing the private sector's quality control mechanisms, which was one of the suggestions of the World Bank to promote the participation of the private sector in education (World Bank, 2012). In addition, applying transparent measures can provide information for parents and students, enabling them to make more rational decisions concerning their educational choices (LaRocque and Fielden, 2009).

Despite the benefits offered by the government to facilitate investment in education, very slow progress has been achieved in this regard. Oman has very modest enrolment in private schools compared to other Arab countries, as can be seen in Table 2.8. The MoE attributes this low enrolment rate to the relatively high cost of private schools, which make them unaffordable for most parents (MoE, 2006a), as does the World Bank (2012).

Table 2.8. The distribution of students (grades 1–12) in government and private schools in the GCC countries from 2014–2017

	2014/2015		2015/2016		2016/2017	
	Government	Private	Government	Private	Government	Private
UAE	29.8	70.2	28.0	72.0	27.8	72.2
Bahrain	68.5	31.5	67.8	32.2	NA	NA
Saudi Arabia	88.5	11.5	88.4	11.6	87.6	12.4
Oman	91.0	9.0	91.0	9.0	91.3	8.7
Qatar	42.9	57.1	42.4	57.6	42.3	57.7
Kuwait	57.9	42.1	60.1	39.9	62.8	37.2

Source: GCC Statistical Centre (2019a)

Moreover, spending on school education is not a priority for most families, as most Omanis send their children to free public schools. According to the joint report issued by the MoE and the World Bank (2012), Omani parents allocate only 4.8% of their budget to education, significantly less than expatriates, who allocate 6.3%, despite the fact that the Omani income is twice as great. This relates to the low percentage of children enrolled in kindergartens in Oman, since this is not universally provided by the government and is hence dominated by the private sector. Only around 46% of children go to pre-school institutions, which is well below the enrolment rates in Gulf countries overall (NCSI, 2015).

2.6.1 Private school types

As shown in Figure 2.3, there are several types of school operating under the umbrella of private education in Oman, all of which follow the regulations of the MoE.

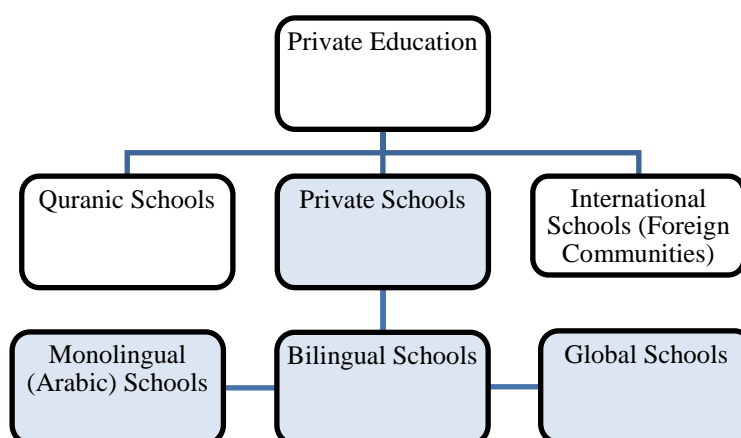


Figure 2.3. Types of private school in Oman

Source: Education Council (2014)

However, each type applies a different educational system and hence caters for different requirements. It is worth noting, though, that one school may apply more than one educational

programme upon ministry approval. For example, an Arabic and a bilingual programme can be applied in the same school. Below is a description of the school types:

1. *Arabic schools* have to teach the following MoE subjects from grades 1 to grade 12: Islamic studies, Arabic, social studies, mathematics and information technology (IT). However, in terms of teaching English, they can adopt the curriculum they think appropriate, provided it is approved by the MoE. These schools could also add their own syllabi or programmes after obtaining approval from the MoE.
2. *Bilingual schools* also have to apply the national curriculum for Islamic studies in grades 1–12. For grades 1–8, they have to teach the national curriculum in Arabic and social studies. However, for English, mathematics and IT, each school is free to select their own curricula, provided they are approved by the MoE. For grades 9–12, the school can adopt international curricula to teach Arabic as a first language or English as a second language. They can also introduce other international subjects after obtaining approval from the MoE. All private schools (monolingual and bilingual) receive both Omani and non-Omani students (MoE, 2006b).
3. *Global schools* apply internationally accredited educational programmes and are usually affiliated with recognized educational institutions. However according to MoE regulations, if the school has Omani students, they are obliged to study the Arabic and Islamic studies curriculum issued by the MoE for grades 1–12, as well as national social studies and Arabic for grades 1–8 or equivalent. Schools can select other international curricula for these subjects, but they have to be approved by the MoE. Arabic also has to be taught as a first language in grades 9–12 (Ministerial Decision 26/2006). International schools cater for a variety of nationalities. In general, these schools offer a high standard of education and facilities and charge high fees. As such, they are open only to children whose parents can afford the high cost of education (Issan, 2016)
4. *International schools*, also known as *foreign community schools*, are dedicated mainly to catering for the children of expatriates working in Oman. Most of these schools have been established to serve certain nationalities – American, British, Pakistani, Indian, Sri Lankan and so on – and hence they are free to apply the curriculum from the country they represent. In the academic year 2016/2017 there were 44 international schools with 61,930 students, with Omani students comprising 0.4% of the overall number.

2.6.2 Why do parents select private schools in Oman?

In 2015, the National Centre for Statistics and Information carried out a survey that aimed to discover how satisfied parents were with private school services. The survey involved 3,039 parents with children in different types of private education in Oman (NCSI, 2016). In addition to parents' satisfaction, the survey aimed to identify the reasons for selecting private over government schools. The findings revealed that in general 83% of parents were satisfied with the private schools their children attended. Based on their experience, parents were asked to express their opinions of specific aspects related to private education. In all, 88% of parents were satisfied with the quality of education and teacher efficiency, 85% were satisfied with school facilities, 83% were satisfied with the assessment methods and parental involvement and 75% were satisfied with the tuition fees. When asked to give reasons for preferring private over government schools, the primary reason given was the quality of education and the curriculum (58% of parents), followed by English language tuition and use as a medium of instruction (22%), the school being close to home (18%), siblings and relatives at the same school (10%), children being too young to be accepted in government schools (9%) and fewer students in the classroom (8%). Interestingly, aspects such as school management, facilities, tuition fees (2%) and more qualified teachers came at the end of the list.

Despite the high levels of parents' satisfaction, the results also established that 50% of children transfer to government schools after finishing kindergarten and 19% of private school students move to government schools after they complete cycle 1 of basic education (Grades 1–4). Parents gave various reasons for this school transfer. Two main reasons were education quality (30%) and tuition fees (21%). This point is taken up in the following subsection.

2.6.3 Tuition fees

The affordability of tuition fees is a concern for parents in GCC countries, Oman included. The cost of private schooling in the GCC countries is generally regarded as among the highest globally (Thacker and Cuadra, 2014). According to Middle East Cost of Living Reports (CLR), Oman has the second highest fees in the GCC after the UAE. The average annual school fees are USD 10,105 (GBP 7,083) in Oman, USD 10,250 (GBP 7,187) in the UAE, USD 8,652 (GBP 6,059) in Saudi Arabia, USD 8,461 (GBP 5,925) in Kuwait, USD 8,312 (GBP 5,821) in Qatar and USD 7,242 (GBP 5,075) in Bahrain (Qatar Tribune, 2014). The World Bank (2012) emphasized that private schools, unless made affordable, may be limited to a certain economic and political elite, which is socially and economically unfair as it excludes children of less well-off families.

School fees vary extensively based on the school type: Arabic, bilingual and global. In almost all schools, fees increase by grade level, a common practice in many private schools globally. In addition to the annual tuition fees, however, the parents have to pay non-refundable registration fees, as well as the cost of text books, transportation and extra-curricular activities, to name but a few extras. Table 2.9 demonstrates the annual tuition fees in a sample of different types of private school in Oman.

Table 2.9. Annual tuition fees in some private schools for the academic year 2019/2020

	The Sultan School	A'Soud Global School	Al Azaiba School	Salalah School	Indian School ²
School Type	Global	Global	Arabic/Bilingual	Arabic	International
KG	2690* (£5,558)	3,500–4,000 (£7,231–8,264)	980 (£2,025)	465 (£961)	553 (£1,142)
1	3610 (£7,459)	4500 (£9,297)	1370 (£2831)	635 (£1,312)	557 (£1,151)
2	3610 (£7,459)	4500 (£9,297)	1390 (£2,872)	635 (£1,312)	557 (£1,151)
3	3750 (£7,749)	4500 (£9,297)	1420 (£2,934)	635 (£1,312)	557 (£1,151)
4	3750 (£7,749)	4500 (£9,297)	1450 (£2,996)	635 (£1,312)	557 (£1,151)
5	3959 (£8,181)	5000 (£10,330)	1490 (£3,078)	670 (£1,384)	557 (£1,151)
6	3959 (£8,181)	5000 (£10,330)	1530 (£3,161)	670 (£1,384)	557 (£1,151)
7	4028 (£8,324)	5000 (£10,330)	1580 (£3,265)	670 (£1,384)	589 (£1,217)
8	4444 (£9,183)	6000 (£12,396)	1630 (£3,368)	670 (£1,384)	589 (£1,217)
9	4444 (£9,183)	6000 (£12,396)	1690 (£3,492)	670 (£1,384)	589 (£1,217)
10	IGCSE I 4860 (£10,042)	6000 (£12,396)		920 (£1,901)	625 (£1,291)
11	IGCSE II 4860 (£10,042)	7500 (£15,496)		975 (£2,008)	637 (£1,316)
12	IB I 5416 (£11,191)	7500 (£15,496)		1300 (£2,686)	733 (£1,515)
	IB II 5416 (£11,191)				733 (£1,515)

*All fees are in Omani rials; Fees do not include non-refundable registration fees, transportation, lunch and uniforms

Source: Compiled from schools' official websites (2019)

² Restricted access for expatriate children; Omani students are not allowed access to this school.

As can be seen, tuition fees differ significantly from one school to another depending on the curriculum implemented, quality of educational services provided and academic reputation (Al Abri, 2018). In general, affluent families choose to pay for their children to receive a better-quality education (Al Balushi *et al.*, 2009). However, bearing in mind that in 2011 the average Omani family size was 8.122, with an average monthly income of OMR 1,171 (approximately GBP 2,421), it could be assumed that average and below average income Omanis may not be able to afford private education. As a result, families with many children find themselves forced to select which of their children to send to private schools (often male children) and which to send to less expensive private or even public schools (often female children) (Selim, 2016). Indeed, this might explain the gender discrepancy in private education enrolment in the Gulf countries, where males constituted 58.2% of students in private schools in 2015/2016 (GCC Statistical Centre, 2019b)

The local media channels in Oman have been actively voicing the general rise in frustration among parents regarding the affordability of schooling, especially if schooling more than one child. For example, in 2013 the issue of increasing private school fees, which do not match the quality offered by most, was discussed with the undersecretary of the MoE for Curriculum in a television interview. When asked about the reasons for the high fees charged by private schools in Oman, he stated that the tuition fees in private schools were comparable to, if not lower than, those in neighbouring countries. He also asserted that the increases in fees were regulated by the MoE as schools were only allowed to raise their fees every three years and should not exceed 15% (Al-Harathi, 2013). However, there seems to be a shared belief that the current fees in most private schools are out of reach for average parents.³ The increase in Indian school fees in 2018 caused widespread concern among parents, most of whom were expatriates on relatively low wages (Times of Oman, 2018).

In addition, to tuition fees, the private education system faces the following challenges:

- There is a disparity between the development in quantity and quality of private schools and the quality of administrative and technical support available in the ministry, as well as the educational governorates.
- Most rented school buildings are inadequate as they do not match the standards to which international schools aspire.
- Omani teachers are reluctant to work in private schools due to the low pay compared to government schools.

³ See, for example, the discussion concerning the high tuition fees in Muscat in the most popular Omani e-forum, Sablat Oman, initiated by parents on 13 July 2016 (<https://avb.s-oman.net/showthread.php?t=2795139>).

- There are higher concentrations of high-quality private schools in certain regions.
- Private schools are emerging that aim for short-term profit at the expense of educational quality.

The Education Council (2014)

2.7 Summary

This chapter has presented an overview of the development of the education system in Oman. The main features of the public and private systems have been delineated. It has also discussed the main challenges facing public and private school systems in Oman. As noted, similar challenges also exist in countries within the MENA region. The next chapter presents a review of the relevant literature.

Chapter 3. Literature Review

3.1 Introduction

There is a considerable amount of research on public versus private education in different countries, with many trying to identify the determinants of quality education in the two sectors. This study, although referring to the wide international scope of research, will focus primarily on studies conducted in the developing world, particularly the MENA region, where countries share a number of cultural, economic and political characteristics. Most importantly, they seem to face similar educational challenges, such as high population growth leading to a young population structure (Tosun and Yilmaz, 2010) and low educational quality, as indicated by TIMSS results (Bouhlila, 2011). As Oman is classified as both a developing and MENA country, it was thought that exploring the quality of education and educational provision in government and private sectors in the developing world and the MENA region would be highly relevant.

As stated in the previous chapters, there seems to be a lack of empirical research on public versus private schools in the Omani context, despite recorded differences in academic achievement and the government's orientation towards increasing the role of the private sector to help compensate for the deficiencies of the public system in terms of quality and finance. In this regard, reviewing the relevant literature helps contextualize the study and inform on the methodological approaches previously employed to investigate the characteristics of the two systems.

This chapter is divided into two main sections. The first section discusses the development of school effectiveness research (SER) with a specific focus on developing countries, while the second section explores the literature on public versus private education.

3.2 Section one: School effectiveness

As established in previous chapters, this study aims to examine the effectiveness of the two school systems currently operating in Oman: government and private. It was primarily triggered by two main drivers: i) the low level of government school outcomes as established by national and international indicators and ii) the official and widely held perception among the public that private schools offer better quality education than government schools, a perception which lacks empirical validation.

A great amount of the literature conducted on public and private schools in different parts of the world shows that private school students outperform those in public school. The

superiority of private education, however, has been attributed to different factors. Some studies claim that it is due to the characteristics of students and therefore once socioeconomic factors are controlled for, the private school advantage disappears. Other studies, in contrast, argue that private schools are more effective than public schools (Dronkers and Robert, 2003).

The review of the school effectiveness literature undertaken for the study helped identify key school-level factors contributing to students' higher academic achievement in Omani private schools. This body of literature also provided useful insights in relation to designing the research methodology, as well as defining the research questions.

3.2.1 Definition of school effectiveness

There is a lack of consensus concerning what constitutes 'effectiveness'. Some scholars have looked at it from the 'input-output' perspective, while others prefer to adopt a systematic 'input-process-output' approach. Yet others seem to espouse the 'input-process-output' approach and combine it with the 'contextual' dimension. Recently, scholars have appeared to adopt an 'input-process-output-context' approach and link it to school improvements (Teddlie and Reynolds, 2000).

Cuttance (1985) views a school as effective if its pupils achieve 'a higher than average level when compared to an average school' (cited in Reynolds, 1985, p. 5). This definition seems relevant to this study as it implies that the effectiveness of a school cannot fully be understood unless comparisons are made between different schools. However, Cuttance's definition does not explain what constitutes 'average' performance.

In addition, connecting effectiveness to student achievement should be done with caution as part of students' high achievement could be attributed to factors not related to schools (Martin *et al.*, 2000). For example, students who come from wealthier, more educated families may be more prepared to learn than others, regardless of the school characteristics. Accordingly, studies of school effectiveness typically attempt to examine the impact of school features and practices and those related to students' background and abilities separately using appropriate statistical procedures (*ibid*).

Another definition was offered by Mortimore (1991, p. 216), namely that 'an effective school is one in which pupils progress further than might be expected from consideration of its intake'. This perception of effectiveness seems particularly appropriate as it accounts for 'progress', both cognitive and non-cognitive. Such an effect, however, can only be detected at the school level, not the student level. Individual students may vary in their progress based on

their unique individual differences. Miskel *et al.* 1983, p. 50) present a broader concept of the organizational effectiveness of school that is both multidimensional and time dependent, including the ‘quantity and quality of outputs, adaptability and participant attitudes such as job satisfaction’.

More recently, Scheerens (2013, p. 4) presented a more comprehensive definition of school effectiveness as ‘the level of goal attainment of a school’. He maintained that:

‘Although average achievement scores in core subjects, established at the end of a fixed program are the most probable “school effects”, alternative criteria like the responsiveness of the school to the community and the satisfaction of the teachers may also be considered.’

This definition seems more relevant to the purpose of this research as school effectiveness is examined using not only students’ mathematics achievement, but also the satisfaction of teachers, students and parents.

3.2.2 Development of school effectiveness research (SER)

The extent to which school resources influence students’ outcomes has been a matter of debate ever since the publication of the controversial Colman report (Coleman *et al.*, 1966), which investigated the effect of family, school and community on the educational achievement of American students. This study was undertaken to assess the equality of educational opportunities in the US among children of different race, colour, religion and national origin. The national random stratified sample of 150,000 respondents consisted of pupils in the third, sixth, ninth and twelfth grades, as well as teachers, school principals and district school superintendents. The data were drawn from test scores and responses to questionnaires. Regression analysis was employed to examine the effect of a number of factors on students’ test scores. The explanatory variables were grouped at the family level (socioeconomic and education), pupil level (attitudes, pupil body), school level (facilities and curriculum) and teacher level (attitudes and quality).

According to Gamoran and Long (2007), the Coleman report was expected to support the general assumption that the low academic achievement recorded by socioeconomically disadvantaged children was due to the lack of resources in their schools. Instead it was discovered that the effect of school resources on pupil learning outcomes was modest in comparison with the effect of the family background of the students.

A large body of literature has since emerged verifying or comparing this finding in many countries. Almost all subsequent relevant studies have aimed to identify whether school

factors matter and if they do, how and to what extent. One of the most widely cited works that challenged previous findings was Heyneman and Loxley (1983). Using data collected in the 1970s from 29 countries of different economic levels in Africa, Asia, Latin America and the Middle East, the authors showed instead that in low-income countries, school-level factors could account for a greater proportion of variance in student achievement than family socioeconomic status (SES), while conversely smaller SES effects with larger school effects occurred in less-developed nations. This phenomenon came to be known as the ‘HL effect’ and signalled the predominant effect of schools in developing countries.

The HL effect has received considerable attention in the literature and has been interrogated by many researchers using different data sets and methods. Baker *et al.* (2002) used TIMSS 1995 data for students from 36 countries representing a wide spectrum of economic levels to examine whether the HL effect found in data from the 1970s was still evident in the mid-1990s. Employing two modelling strategies, ordinary least square (OLS) (also used by Heyneman and Loxley, 1983) and hierarchical linear modelling (HLM), the results indicated that the relative effect of school resources and family background on achievement within nations was no longer associated with national income levels in the way originally described by the HL effect. In all the countries examined, family socioeconomic variables predicted more of students’ achievement than school resource variables. Baker *et al.* (2002) explained the vanishing HL effect based on international economic and social development, which resulted in increased funding of mass schooling, as well as growing interaction between school quality and family SES in both wealthy and less-wealthy nations. Many other studies have contributed to this debate, as will be demonstrated later in this chapter when discussing the effects of factors related to family, school, students and teachers.

According to Reynolds *et al.* (2016) research on school effectiveness has progressed through the following five chronological phases:

1. *The first phase* was triggered by the publication of the two most dominant studies conducted by Coleman *et al.* (1966) and Jencks *et al.* (1972), which established that school had limited effects compared with family background. Empirical studies have been conducted to verify these findings using multiple school-level factors. The first wave of research was subject to criticism, though, due to its conceptual and methodological limitations (Cuttance, 1985; Aitkin and Longford, 1986; Raudenbush and Bryk, 1986; Riddell, 1989). Using single-level models, in which data are usually analysed at the student level, ignores the multilevel structure of the data used and results in unrealistic

assumptions (Aitkin and Longford, 1986). Moreover, Riddell (1989) pointed to the arbitrary use of proportion of variance and whether the explained variance was a viable indication of the importance of the different predictors. She claimed that much of the variance not explained (up to 60% or more) might be attributed to between school variance; however, it is not possible to determine this due to the limits of a single-level model. Riddle went to the extent of questioning the validity of Heyneman and Loxley's (1983) findings, as she argued that the limited significant impact of SES compared to school variables in developing countries could be interpreted as being due the fact that school factors are easier to measure, in addition to the lack of reliable measurements of socioeconomic factors available in developing countries.

2. *The second phase* started in the mid-1980s, when a more refined wave of research emerged, acknowledging the shortcomings of the previous studies and trying to pay more attention to process variables by employing complex models of students' achievement as opposed to focusing on physical inputs as in the previous production function model. More importantly, there was greater interest in examining not only the extent to which these variables affected students' performance, but also how these factors (material and non-material) might interact and their impact on students' outcomes (Lockheed and Komenan, 1989). This phase was distinct in that it employed multilevel models, facilitated by advancements in statistical software. This allowed aggregated data to be analysed simultaneously at different levels (student, class, school, district, etc.). Applying multilevel modelling also enabled researchers to explore the effect of explanatory variables at each level. Typically, multilevel reanalyses of data sets, previously analysed using single-level models, produced much more conservative estimates of differential effectiveness. It can be assumed that this was largely because of the greater control multilevel models provided over the sources of variation (Riddell, 1989).
3. *The third phase* began in the early 1990s. In this phase there was more interest in exploring the reasons why some school factors had different impacts in terms of school processes, for example in the studies of Sammons *et al.* (1997a) and Scheerens and Bosker (1997). It was during this phase that educational models of school effectiveness were developed, especially acknowledging the multilevel structure of the educational system, such as those proposed by Creemers (1994) and Scheerens (1992).
4. *The fourth phase* began in the mid- to late 1990s. This phase saw the internationalization of the school effectiveness field, merging school effectiveness with school improvement.

Studies in this phase of educational effectiveness research were expected to identify ways of enhancing learning at the individual, group, school, national and international levels. Large-scale studies were conducted in different parts of the world using secondary analyses of data from international comparative assessments, such as TIMSS, PIRLS and PISA, to test and develop comprehensive multilevel educational effectiveness models (Kyriakides, 2006). Data from these international assessment programmes stimulated the emergence of a new research area focused on effectiveness at the system level (Scheerens, 2013). This was achieved through comparative studies that investigated the ways in which country-level characteristics of educational policies varied between countries using system-level variables.

In this stage, researchers started to move away from predominantly quantitative analysis to more mixed-method studies (Reynolds *et al.*, 2016). The rapid growth in international research, however, had a negative impact on SER, limiting opportunities to learn from itself and other fields given the proliferation of geographically and intellectually diverse research on school effectiveness.

5. *The fifth phase* started in the late 2000s. In this stage, a more dynamic perspective on SER emerged, taking the perspective that it comprised a set of relationships with different levels of processes which interact within the educational system to achieve variable outcomes. As a result, newer forms of statistical procedures, such as structural equation modelling (SEM), were used to account for the direct and indirect relationships between educational variables and students' outcomes. According to Kyriakides (2006), the development of dynamic models of educational effectiveness could help establish links between educational effectiveness research and improvement practices in two ways. First, models could provide schools with tools for self-evaluation and improvement. Second, large-scale evaluations could be conducted based on the assumptions of the models to identify areas of weakness in an educational system, thus informing policymakers of the most relevant interventions needed to enhance effectiveness.

A large body of literature on school effectiveness has emerged to contribute to the ongoing school versus family background debate, especially in developed countries, with less research carried out in the developing world (Lockheed and Komenan, 1989). Although much can be learned from international studies on school effectiveness, there is growing recognition that the results of such studies are unlikely to be transferable to other contexts. For example, in a study of the effect of teaching quality on students' achievement in two African countries,

Lockheed and Komenan (1989) highlighted the importance of contextuality in international comparisons, arguing that evidence of school effects varies from one country to another. Likewise, Riddell *et al.* (1994, cited by Barber *et al.*, 1997, p. 87) emphasized the impact of contextual factors, such as national and local policy and the SES context, in case studies of Scottish schools. Indeed, comparative studies using international data (e.g. International Education Agency [IEA] data) found that variables related to family and schools operate differently across countries, as put succinctly by Martin *et al.* (2000, p. 11):

‘It is clear that the way student home background relates to student achievement, and the way the school system moderates or magnifies this relationship, are closely linked to societal and school organizational factors unique to each country, and any cross-national analytic efforts should take this into account.’

Kyriakides (2006, p. 516) warns of the ‘simplistic “transplantation” of knowledge from one educational system to another without any detailed acknowledgement in the educational policy debate as to the possible context specificity of apparently “effective” policies in the original societies utilizing them’. He, therefore, calls for more comparative studies as variation by national context forces the development of more context-specific explanations of educational effectiveness than the present associations that are generated within countries.

Given the importance of contextual factors, the next section focuses on SER conducted in developing countries, as such studies will be of more relevance to the Omani context.

3.2.3 School effectiveness research (SER) in developing countries

In the 1990s, research on school effectiveness in the Western world reached a point of saturation. As a result, new interest emerged in applying this accumulation of knowledge in the countries of the third (developing) world (Jansen, 1995). Thus, many studies were dedicated to exploring factors that might affect children’s outcomes in the developing world (Heyneman and Loxley, 1983; Fuller, 1986; Riddell, 1989; Heyneman, 1997; Lee *et al.*, 2005; Bouhlila, 2015). Initially SER was introduced to the developing world through international funding and donor agencies, international research bodies and postgraduate students conducting research in developing countries. Among these are the studies conducted or sponsored by the IEA (Martin *et al.*, 2000; Nilsen and Gustafsson, 2016) and the World Bank (Fuller, 1986; Lockheed and Longford, 1989; Haddad *et al.*, 1990; Fuller and Clarke, 1994). Most of these reviews and studies concluded that when family background is held constant, school variables have a significant effect on outcomes. Indeed, in most cases, the effect of the school is greater than family background. The striking fact about the transnational exchange of knowledge from the first (industrialized) to the third (developing) world though was the

replication of Anglo-American research in the developing world despite the contextual differences (Jansen, 1995). Most of the early research used a 'production-function' approach that examined the effectiveness of a list of materials and material inputs in influencing student outcomes (Lockheed and Longford, 1989).

The most common finding of SER was that the *school did matter*, even more than external factors such as SES, so the notion that school matters was widely used in the literature and was adopted by policymakers (Murnane, 1981; Mortimore, 1995; Luyten *et al.*, 2005). This trend triggered an interest in research aimed at identifying the factors that might lead to high achievement in schools. The assumption was that once the indicators of effectiveness had been identified, the findings could be replicated or transferred to other schools across countries regardless of their different contexts (Edmonds, 1979; Clark *et al.*, 1984; Jansen, 1995).

According to Jansen (1995), the development of SER in developing countries went through three distinctive phases. The first phase represented the first generation of studies, which started in the early 1970s. By the 1980s, a total of 40 national studies had been conducted in spite of limited resources. These studies were largely informed by economic production function theory and focused on determining the relationship between educational inputs and outcomes. They typically replicated the methodologies of the Coleman Report, with an emphasis on multivariate analysis of large-scale national survey datasets which aimed to link determinants such as school buildings, teacher characteristics and resources to students' outcomes. As with studies conducted in the US around the same period, this first wave of SER findings was consistent with those in the West, as they established that home backgrounds had a significant influence on students' achievement. However, the studies were criticized for being designed and funded primarily in the US and then imposed on newly independent developing countries, particularly in Latin America.

In the 1980s, a second wave of SER emerged, most of which was funded by the World Bank. Studies in this phase were characterized by using more sophisticated statistical techniques. Unlike the findings of the first-wave research, studies in this stage found that after controlling for students' background variables, academic achievement in developing countries was affected by the quality of the schools attended, unlike the situation in developed countries where the effect of school quality was eclipsed by the students' family background (Heyneman and Loxley, 1983; Fuller, 1986; Vulliamy, 1987). The main interest in research at

this time was to identify which school factors would most influence achievement, so that educational investment should be directed towards such factors.

The third wave of research was able to overcome the methodological weaknesses of previous studies due to developments in computer software. Using multilevel modelling, researchers were able to analyse data at different levels simultaneously (Riddell, 1989). Thus, the methodological emphasis shifted to study designs that aimed to develop more precise estimates of school effectiveness in which data were analysed not only at the student level, but at the classroom and school levels. It was argued that using more sophisticated techniques could bridge the gap between large-scale studies that employed the production function approach and the findings of smaller scale contextualized studies that focused on educational processes and instructional effectiveness. However, Jansen (1995) claimed that unlike previous generations of research in developing countries, multilevel studies were not considered a funding priority for development organizations such as the World Bank. This was in spite of the reality that the new focus on this methodology in industrialized countries was yielding more complex and realistic estimates of school effectiveness. Thus, studies aiming to achieve the explanatory richness of multi-level modelling in developing country contexts remained limited to a few individual researchers. Riddell (1997) therefore warned that this third wave of promising research was at risk of not being fully explored.

In a different vein, there was a call to employ mixed methods to address the incompatibility inherent in SER. Mixed methods were not just considered as the merging of two distinct paradigms initiating a new trend in educational effectiveness research, but rather a third and distinctive paradigm in its own right (Johnson and Onwuegbuzie, 2004). In this respect, channelling funding towards large-scale mixed-method studies posed a serious challenge and such studies have remained relatively limited to developing country contexts (Teddlie and Reynolds, 2000).

As far as the MENA region and Arab countries in particular are concerned, SER is still in its infancy due to the paucity of empirical studies in the region. This might have been due, in part, to the lack of large-scale surveys that could provide meaningful quantitative data on school effectiveness, a challenge that has hampered the development of SER in developing countries in general according to Lockheed and Longford (1989). However, the availability of data from large-scale international comparative assessments, such as TIMSS, PIRLS and PISA, have enabled the emergence of a new research design using more rigorous multilevel techniques. A large number of studies have been conducted in different developing countries

to determine the factors that contribute to students' achievement in mathematics, science and reading at the family, student, teacher, classroom, school and contextual levels. For example, in the MENA region, a number of cross-country comparative studies on school effectiveness have been conducted (Bouhlila, 2011; Salehi-Isfahani *et al.*, 2014; Bouhlila, 2015).

3.2.4 Determinants of school effectiveness

In general, SER attempts to answer the following central questions:

1. Does a specific school have an impact on student achievement, independent of family background?
2. What are the unique school characteristics that account for the difference?
3. Do certain schools affect certain type of students differently?

(Lockheed and Longford, 1989, p. 1).

In early research on school effectiveness, the emphasis was on the conditions that might enhance schooling and output measures, mostly students' outcomes, which were predominantly represented by standardized scores in mathematics, science and reading (Miskel *et al.*, 1983). Many researchers argued against this stand and stressed that using student achievement in basic skills as the only criterion for judging school performance constituted a narrow indicator of effectiveness (Coe and Fitz-Gibbon, 1998; Slee *et al.*, 1998). Hanushek (1986) also maintained that while test scores are highly valued by educators, policymakers and parents, they are unable to capture the different aspects of the schooling process. Moreover, students' attainment in tests is not necessarily an appropriate indicator of their success in life outside school. School effectiveness should not be judged based on mere outputs; other factors, such as classroom interaction, student participation rates and attitudes towards learning, should be considered. In addition, Luyten *et al.* (2005) questioned the appropriateness of standardized tests as a measure of school effectiveness. They argued that such tests were designed to test the cognitive abilities of students, hence failing to incorporate broader national goals, such as personal development and citizenship. Most importantly, while achievement may be measured at a certain point in time, education is a cumulative process; that is, inputs that might have an effect on current test scores may have been applied at some point in the past (Hanushek, 1986).

Lingard *et al.* (1998) also agreed that using surveys and focusing on a small set of indicators would not necessary help explain the dynamics of the school process and its effect on

outcomes. They, therefore, called for incorporating more in-depth qualitative methods in SER studies as narrow quantitative indicators seemed to be inadequate in accounting for the various aspects of schooling. In addition, Scheerens and Bosker (1997) argued that applying qualitative methods to explore the processes that occur within schools could help develop hypotheses to be tested in large-scale research, particularly concerning factors that make some schools more effective than others. Qualitative studies, however, are also subject to criticism. Purkey and Smith (1983, p. 427), for example, described the new trend for qualitative research as ‘weak in many respects, most notably in its tendency to present narrow, often simplistic, recipes for school improvement derived from non-experimental data’.

Moreover, one of the limitations of SER is its tendency to focus on the relationship between school factors and student achievement while failing to acknowledge the limits of what students can achieve through schooling (Hargreaves, 1994). To respond to this criticism, many studies have attempted to incorporate home, teacher and school influences in joint studies, as it has been realized that neither level can be understood fully without considering the other (Creemers *et al.*, 2010).

It is clear that the term ‘effectiveness’ is used differently by authors in different contexts as evidenced in the literature. Some authors have made an attempt to cluster the literature on school effectiveness based on its focus (Purkey and Smith, 1983; Ralph and Fennessey, 1983; Clark *et al.*, 1984). Clark *et al.* (1984, p. 42) distinguished two types of inquiry:

- 1) Literature on ‘instructionally effective schools’ (IES), focusing on student achievement as a measure of effectiveness. Research in this category aimed to investigate whether students’ outcomes might be affected by altering resources and processes in the school.
- 2) Literature on ‘school improvement’ (SI), focusing on innovation processes adopted by schools. The focus of this type of research is on whether and how a school can change.

Adams (1993), in contrast, identified six effectiveness-related concepts derived from international research. His focus was on the terms of educational quality:

- 1) Quality as resource inputs (textbooks, teacher qualifications, teacher/student ratio).
- 2) Quality as outcome/outputs (academic achievement as measured by test scores, income, progression/pass rates).
- 3) Quality as process (teacher-student interaction, student participation, engagement in learning).

- 4) Quality as content (contemporary content, coverage of the basics).
- 5) Quality as reputation (general public perception, historic image).
- 6) Quality as value added (influence on the overall development of the student).

In the last few decades, the school effectiveness domain has been expanded to encompass ‘educational effectiveness research’, reflecting the orientation of conducting comprehensive studies that examine the interaction between factors at the school, teacher and student levels and their contribution to students’ achievement, both cognitive and non-cognitive (Van Damme *et al.*, 2006; Creemers *et al.*, 2010). Researchers, practitioners and policymakers have shown interest in assessing the performance of students, teachers and educational programmes to produce a checklist of indicators that measure school effectiveness, irrespective of the context. In early research, Edmonds (1979) identified the following five characteristics of effective schools: strong administrative leadership, high expectations of students’ achievement, a safe and orderly school climate, an emphasis on students’ acquisition of basic skills and frequent assessment of student achievement. It is worth noting, though, that this five-factor model was derived from research applied mainly in schools with considerable numbers of students from working-class families and representing ethnic minorities (Van Damme *et al.*, 2006).

However, Edmonds’ (1979) list seems to have survived the test of time, as other researchers have added other correlates. Teddlie and Reynolds (2000), for example, expanded the determinants and the emphasis on basic skill acquisition to focus upon learning and a safe and orderly climate as part of a positive school culture. They also added involving parents, generating effective teaching, professional development for staff and involving students. Lezotte (1991) contended that there are seven correlates that contribute to school effectiveness: a clear school mission, high expectations of success, instructional leadership, opportunities to learn and time on task, a safe and orderly environment, positive home–school relations and frequent monitoring of students’ progress.

3.2.5 Limitations of school effectiveness research (SER)

The early wave of SER was subject to extensive criticism for its theoretical and methodological limitations. Many methodological considerations were expressed, specifically in relation to methods of data collection and the procedures used in data analysis (Luyten *et al.*, 2005). A fundamental criticism was the misapplication of a single-level model for a reality that is clearly hierarchical (Raudenbush and Bryk, 1986; Riddell, 1989; Luyten *et al.*,

2005), which consequently yields misleading results, as claimed by Cronbach (1976) who stated that:

‘The majority of studies of educational effect ... have collected and analyzed data in ways that conceal more than they reveal. The established methods have generated false conclusions in many studies.’ (cited in Raudenbush and Bryk, 1986, p. 1)

During the past few decades, however, considerable progress has been made in educational effectiveness research due to the methodological advances that have resulted from the availability of advanced software enabling the analysis of multilevel data (Goldstein, 2003). As far as theoretical aspects are concerned, however, a number of limitations can still be identified. For instance, there is a shortage of rational models upon which theories can be built (Thrupp, 2001; Creemers, 2005; Kyriakides, 2006). As a result, most research is concerned with establishing statistical relationships between variables, rather than generating or testing theories which could explain relationships and help establish strategies to improve educational effectiveness (Creemers, 2002).

Another limitation is that most studies focus on students’ outcomes, particularly in language and mathematics, as measures of effectiveness, hence neglecting other elements of the curriculum as well as other meta-cognitive skills (Campbell *et al.*, 2003). This focus on cognitive abilities has consequently narrowed the scope of educational research, restricting school learning to comparable elements of academic skills (Coe and Fitz-Gibbon, 1998; Lingard *et al.*, 1998; Slee *et al.*, 1998). Creemers (2005), however, argues that these criticisms can be countered by referring to the large number of studies that have used multiple measures of school outcomes. Most importantly, most of these studies have also revealed an association between the effectiveness of cognitive outcomes and various domains of schooling (Kyriakides, 2005). Furthermore, the criteria upon which school effectiveness is measured depend on the educational and political goals within each context.

Another important limitation of educational research is related to its limited contribution to school improvement, which is, as Creemers (2002) claimed, a result of an existing tension between the two fields. He emphasized that school improvement does not constitute a mere application of knowledge based on educational effectiveness research; rather it also requires research on the relationship between the ultimate goals (e.g. students’ performance) and the aims of the improvement policy.

One of the common criticisms of SER is the claim of causality (Vulliamy, 1987). That is, many studies claim that certain factors cause higher performance when in fact these variables

may be a result of school success (Jansen, 1995). Scheerens (1992, p. 67) accused SER of 'fishing for correlations' without explaining why some students, classes and school-related characteristics affect students' achievement. In addition to the methodological and theoretical limitations, SER has also been criticized for its political–ideological focus. Luyten *et al.* (2005) claim that SER has been thought to be ideologically influenced by political agendas due to the close relations between researchers and policymakers. SER has, therefore, been accused of reflecting governmental concerns rather than scientific considerations.

Most of the aforementioned criticisms have been acknowledged by SER researchers. Scheerens (1992, p. 73) observed that 'school effectiveness research is a difficult and complicated type of study in which one can almost always find something to criticize'.

3.2.6 Stakeholders' perspectives on school effectiveness

In general, organizational effectiveness research has been handicapped by the desire to produce a single set of criteria regarding effectiveness in any organization. Connolly *et al.* (1980) argued that the definition of effectiveness, however, differs amongst individuals or groups that may be able to influence the activities of an organization and hence could form evaluations of its performance; these they refer to as 'constituencies'. To take into account the perspectives of the different 'constituencies', they proposed a multi-constituency view of effectiveness to accommodate for the multiple views of effectiveness that might be proposed by the different stakeholders in an organization. While measurement of school effectiveness has been dominated by outcome indicators, there has been growing recognition of stakeholders' perspectives as among the measures of school effectiveness. Clark *et al.* (1980, p. 467), for example, viewed school success 'as positive changes in any one, or a combination, of the following four variables: 1) student achievement, 2) student attitudes toward the school or themselves as learners, 3) teacher attitudes toward the school or students as learners, 4) community/parent attitudes towards the school'. Reynolds *et al.* (1996) also maintained that school effectiveness depends on people and the resources available. The importance of involving school stakeholders stems from the fact that what educators perceive to be important outcomes of schooling may differ from the views of pupils, parents, governors, the local community, the government or the media (Stoll and Hopkins, 1996). Coleman (1998) also called for collaboration between parents, students and teachers and called this 'the power of three'.

In a study of what school effectiveness means to different stakeholders, Gaziel (1996) interviewed 64 students, teachers and principals. He found that parents viewed effectiveness

in terms of students' outcomes, while students emphasized teaching skills. Teachers perceived effectiveness to relate to diffusing values among students and principals linked effectiveness to the school's ability to raise funds from different sources to meet its needs.

A similar study was conducted by Al Ahbabi (2019) to identify the characteristics of effective schools from the perspectives of principals, teachers, students and parents in Abu Dhabi, the UAE. This study used mixed methods (a survey and informal field observations) to collect data from a sample of 46 principals, 136 teachers, 142 students and 138 parents. The results showed that school parties had different perspectives on what the school should be doing. Unlike Gaziel's (1996) findings, parents in Abu Dhabi did not define school effectiveness as higher academic success; rather, they were more concerned with the school's role in preparing students for future employment. Moreover, the parents and students did not regard academic achievement as a connotation of effectiveness as they thought that an effective school was one which helped foster Islamic values. The discrepancies in the perceptions of stakeholders regarding effectiveness indicate that the context of the study may have an impact on the values that underpin the ways in which schools are led and operated. Furthermore, since different constituencies evaluate effectiveness based on their own perspectives, it can be assumed that all constituencies cannot be satisfied simultaneously (Tsui, 1990). Not only do different stakeholders have differing perceptions about what makes an effective school, Heckman (1993) also argued that principals, students and teachers have a strong influence on each other and on the school culture. Aggarwal-Gupta (2010) developed a multiple stakeholder model using effective input indicators as indicated in the literature. The model included students, teachers and principals in addition to parents, administrators and the community as they may indirectly influence school effectiveness.

It is evident though that of the three main stakeholders, students have been the group least considered. Therefore, there has been a call to consider students' voice in school improvement and effectiveness research (Soohoo, 1993; Thomas *et al.*, 2000; Fullan, 2001; Wood, 2003; Wood, 2011). Fullan (2001) maintains that although students are considered the main beneficiaries of educational reform, they are seldom involved in the process of change. By failing to involve students in school research, a rich and authentic source of information is missed, as pointed out by Soohoo (1993, p. 390).

The rationale for including students' views and perceptions in research is based on the belief that students are 'closer to the ground' and they deserve to be listened to as they could offer unique perspectives in the construction of knowledge about schools (Wood, 2011). Moreover,

it is important that students' voices are heard because 'they are key stakeholders in education, and the key targets of policy changes' (Wood, 2003, p. 365). Although adults seldom view students as potential participants in a change process (Fullan, 2001), researchers have found that students, given the responsibility to evaluate their schools as learners, take this task seriously (Sooahoo, 1993).

Previous researchers have noted that only with multiple indicators can we build up a coherent picture of a school's effectiveness. Therefore, there has been growing interest in employing students' views for a number of purposes: first, to inform on and stimulate school improvement processes by providing evidence of pupils' views related to the school culture and ethos, as well as feeding directly into school planning and development; second, to provide additional methods for measuring students' outcomes that are central to the overall aims of schooling and can feed into evaluations of a school's effectiveness (Thomas *et al.*, 2000).

Despite the progress that has been made in looking at students as participants in their education in research since the 1980s, 'too little has actually happened to enhance the role of students as members of the school as an organization' (Fullan, 2001, p. 151). Acknowledging the role and impact of stakeholders in the educational process, this study intends to take into account the views of teachers, students and parents on the effectiveness of their schools. The reason for including these particular groups is that they are considered the first three core components of the educational system in Oman, as highlighted in Figure 3.1.

The government is also a key stakeholder in the educational system, especially in Oman, considering the central role of the MoE in making decisions related to the different aspects of the educational process in public and private schools alike (Al Abri 2017). However, exploring the views of government officials in government and private schooling was beyond the scope of this study for a number of reasons. First, while acknowledging the role of the government in providing administrative and technical control in the school, official administrators work on the periphery of the school system, as can be seen in Figure 3.1. That is, although they may be responsible for the flow of resources and may be the ones who provide the vision for the school, they may not be involved in the day-to-day functioning of the school, unlike teachers and students.

In addition, the Omani educational system has been evaluated in a number of studies conducted by MoE experts in collaboration with other international organizations (World Bank, 2012; The New Zealand Education Consortium, 2013). Most of these official studies

and reports have evaluated the impact of the reforms and policies implemented by the MoE on school efficiency and effectiveness. However, little attention has been directed to the other stakeholders targeted by the reforms, such as students and parents, or those responsible for implementing changes, such as teachers and administrators. As Fullan and Miles (1992) argue, all large-scale change is implemented locally and the only way that change happens is through the effective daily implementation by principals, teachers, parents and students. Since they play a crucial role in the implementation of reform, it is important to explore their experiences in the process and obtain their opinions of the change, which is what this study attempts to achieve.

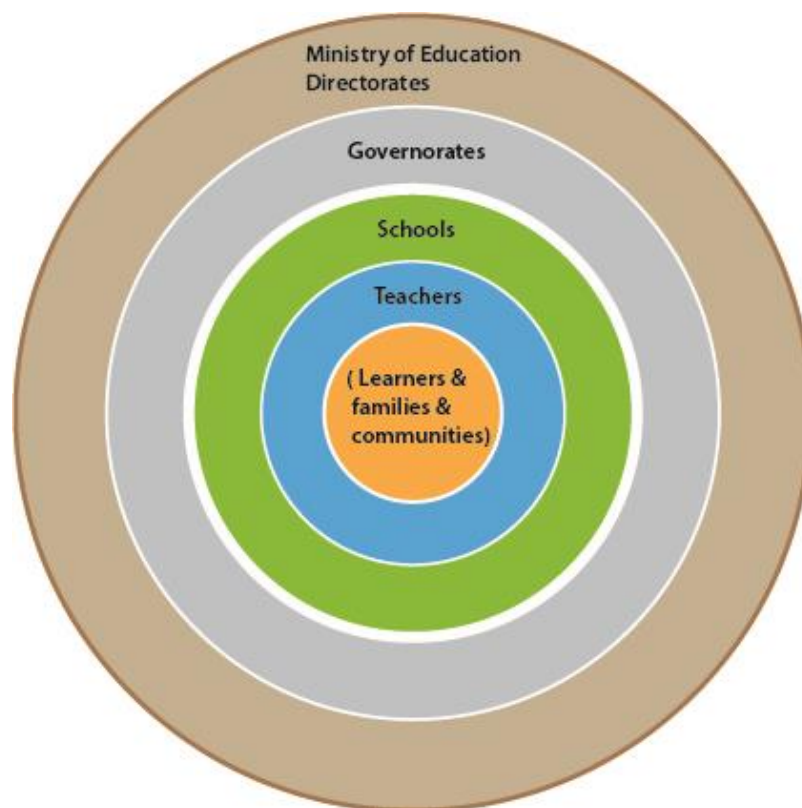


Figure 3.1. The main components of the Omani educational system
Source: The New Zealand Education Consortium (2013)

In addition to exploring the perspectives of students, teachers and parents, some school inputs, such as management, resources and supervision, are also examined in relation to students' academic achievement.

3.2.7 Summary

A number of conclusions can be drawn from the review of available studies in the field of school effectiveness. First, most studies have been criticized for being predominantly

quantitative and drawing heavily on examining physical inputs to education, such as class size, number of books and teachers' salaries and qualifications, as they were constructed based upon the production function perspective (Lockheed and Komenan, 1989). Second, the diversity of findings in these studies can be attributed to differences in the variables examined, as well as the types of data and methods of analysis used. Third, there seems to be agreement that school does matter. What makes a school more effective, however, has proven to be far from a clear-cut matter, as there seems to be a lack of consensus among researchers regarding the determinants of school effectiveness. To complicate the matter still further, findings on the impact of factors at the different levels (family, student, classroom, school) differ from one context to another.

This study, although not claiming to present a completely different perspective from existing empirical studies on school effectiveness, aimed to use a more robust methodological approach to data sourcing and analysis. Quantitative and qualitative data were collected from different sources so as to have a more comprehensive picture. In addition, this study takes into account the views of the stakeholders in the school system to explore how they view the effectiveness of their schools. By so doing, this study attempts to make use of an under-utilized resource (Fullan, 2001), as well as taking into account underlying contextual factors that might otherwise be overlooked.

Since the main aim of this research is to compare government and private schooling, the next section explores the literature on the effectiveness of public versus private schools with a specific focus on studies conducted in MENA countries. It also examines the main inputs indicated in the literature that contribute to differences in students' achievement between the two school types.

3.3 Section two: Government versus private schools

The previous section reviewed the historical development of SER. It also explored the methodological and theoretical approaches employed in SER and their limitations. This section further explores the first two research questions by examining the role of school type, particularly the effectiveness of private schooling, in affecting academic performance. Focusing on empirical evidence, the literature on students' learning achievement in private schools in the international and MENA contexts is discussed.

3.3.1 International literature on the effectiveness of private schools

There has been increasing private sector intervention in education and there are several reasons for this. The first is the excess demand for public education, which cannot be met by

the public sector. This is particularly relevant to countries in Asia, Africa and Latin America, where the public sector is unable to absorb the number of students at school age. The second reason for the increase in demand for private schools is the often low quality of public education, which may induce parents to search for alternatives even if it entails a financial burden (Jimenez *et al.*, 1995; Riddell, 1997). In some contexts, there is also a demand for private schools that satisfy particular preferences in terms of educational content, such as religious schools (Dronkers and Robert, 2008a).

There seems to be a common assumption that private schools are more effective in enhancing students' outcomes based on a significant amount of research in many parts of the world. The relative impact of private schools compared to public schools is referred to as the 'private school effect', defined by Somers *et al.* (2004, p. 2) as 'the difference between public and private school outcomes, net of students' socioeconomic status and other factors pertaining to their family background'.

Prior research comparing the effect of public and private schools on students' achievement in both developed and developing countries has reported mixed findings. Many studies have established that private school students outperform their counterparts in government schools in different countries, such as the US (Coleman *et al.*, 1982; Coulson, 2009), Australia (Williams and Carpenter, 1991), Nigeria (Adefeso-Olateju, 2013; Adeyemi, 2014), Indonesia (Bedi and Garg, 2000) and Brazil (Stern, 2015). Others have found no differences at all between the two systems (Al Muqwash, 2000; Alimi *et al.*, 2012).

According to Williams and Carpenter (1991, p. 3), there are two plausible explanations for the differences between the two educational sectors: (i) selective socioeconomic recruitment, which suggests that the difference has to do with what students bring to school rather than what they find there; (ii) the quality of education offered at the school level. Williams and Carpenter (1991) describe these two aspects as the 'quality education' argument versus the 'selective-socioeconomic-recruitment' argument. Hofman *et al.* (1996, p. 367) criticized studies reporting a private school advantage in Western countries for failing to take into consideration the different characteristics of students in the two types of school caused by the selective enrolment of students in private schools. Consequently, many studies have since attempted to control for home background to avoid selection bias when assessing the effect of private schools. However, in many cases, private school advantages are found to persist. Examples of such studies include, inter alia, Jimenez *et al.* (1995) in Colombia, the Dominican Republic, the Philippines, Thailand and Tanzania, Tooley *et al.* (2011) in Nigeria

and India and Bashir (1994) and Kingdon (1996) in India. Other studies have argued that private school superiority decreases or disappears after holding students' background variables constant. For example, Coleman *et al.*'s (1982) study of private Catholic secondary schools and public schools in the US found that students in Catholic schools had higher overall academic achievement than those in public schools and that this advantage was most obvious for lower-SES students. However, a reanalysis of Coleman *et al.*'s data by Raudenbush and Bryk (1986), using a multilevel model, found no significant variation between school type after including the effect of school-level SES.

In a comparative study of the effectiveness of public and private schools in Colombia and Tanzania, Cox and Jimenez (1990) found that private schools outperformed public schools despite discrepancies between student and school characteristics in the two countries. In Colombia, teachers' salaries were higher in public schools and the teacher–student ratio was lower. However, private school students achieved higher in aptitude tests. In Tanzania, the situation was different as teachers' salaries in public schools were lower than in private schools and public schools were considered elite as they only accepted high-achieving students. Consequently, public schools had a lower teacher–student ratio and higher achievement scores in aptitude tests. The common feature in both countries was that private school students came from families with higher incomes and higher levels of parent education. It should be noted, though, that Cox and Jimenez (1990) based their study only on achievement and aptitude tests, omitting other important factors such as school management, teachers' characteristics and students' attitudes, which might have had an effect on the findings had they been taken into consideration.

In another study, Lubienski and Lubienski (2006) used National Assessment of Educational Progress (NAEP) data from 2003 to compare students' mathematics achievement in public, private and charter schools in the United States. They found that without controlling for students' background, private schools presented higher achievement than public schools. However, after controlling for variables related to the students' background, such as SES, ethnicity, limited English proficiency and gender, as well as school location, the apparent advantage of the private school effect disappeared and in most cases was even reversed. Likewise, using NAEP 2003 data to compare public and private schools' performance using hierarchical linear modelling, Braun *et al.* (2006) found that students in private schools scored significantly higher in grades 4 and 8 on both mathematics and reading. However, after controlling for select student and school variables, the difference between the two school types was reduced across grades and subjects. Moreover, the average for grade 4 mathematics

became significantly higher in public schools than in private schools based on the adjusted school mean, while no differences existed between public and private schools for 8th grade mathematics or 4th grade reading achievement.

Dronkers and Robert (2003) used PISA reading and mathematics data from 2000 from 19 OECD (Organisation for Economic Co-operation and Development) countries to study the effectiveness of three school types: public, private government-dependent and private. The researchers then used multilevel modelling to explore the influence of different variables on students' test scores (dependent variable). They employed different levels to control for students' and family socioeconomic and demographic factors, the attitudinal characteristics of students, teaching and learning conditions and school climate. Initially, when students' test scores were added to the equation without controlling for any variables, the results showed that private schools had the highest scores, followed by private government-dependent schools. As other variables were entered in subsequent models, the findings indicated that private government-dependent schools achieved higher scores than public schools when student and family characteristics were controlled for. They attributed this higher effectiveness to the better school climate in private government-dependent schools as the learning and teaching variables did not contribute to the difference in effectiveness. They also found that private schools outperformed the other school types. However, when students and family background were controlled for, private schools became less effective than public schools. This low performance could not be explained by teaching and learning characteristics or school climate variables. The authors concluded that the only explanation for their initial superiority was the higher social composition of their students.

Previous studies have differed significantly in the methodologies and data used, but the findings have appeared to be quite similar. Recent studies from India have employed stringent statistical procedures taking account of the hierarchical structure of the data. They also make it possible to take account of unobserved characteristics of students, such as innate ability, motivation and family background, to capture the causal private school effect. For example, Bashir (1994) used hierarchical linear modelling to examine the effectiveness and efficiency of private schools. The study used mathematics and reading assessment data for 2,735 grade 4 students in 113 government, private aided and unaided schools in the state of Tamil Nadu, India. The study found that after controlling for student background characteristics, the unaided schools outperformed the other two school types, with government schools presenting the lowest achievement. In terms of efficiency, aided schools were found to be more cost-effective, while unaided schools were less effective than public schools. Kingdon's

(1996) study of public and private schools in Uttar Pradesh, India, revealed that when students' background variables and the self-selection effect were held constant, private school students outperformed their counterparts in public schools, although only in mathematics and not in reading.

Much evidence has also come from a range of developing countries. In Nigeria, Adefeso-Olateju (2013) investigated the effectiveness of public and private schools using a mixed-methods approach to compare the two systems using students' outcomes in mathematics and English, in addition to survey data related to students, teachers and head-teachers and individual interviews with teachers and head teachers. The analysis, using OLS regression revealed that holding home background factors constant, private schools outperformed public schools in both mathematics and English. It transpired that private schools were more effective in terms of school leadership and autonomy, teacher accountability and motivation, as well as school resource utilization. Similar evidence was found by Aslam (2009) in Pakistan and Rose (2007) in Bangladesh.

More recently, there has been increasing interest in studying the phenomenon of the mushrooming of private schools, whether registered or unregistered, serving low-income families in many countries in South Asia and sub-Saharan Africa. In addition to their contribution in providing access to education in poor contexts, where public education is unavailable (Tooley, 2017), there seems to be significant evidence that private schools are more effective than public schools. For example, Tooley and Dixon's (2006) comparative study on the effectiveness of low-cost private schools in India, Nigeria and Ghana found a private school effect in all three countries after controlling for student intake. Similar findings have been established by many other studies conducted in various contexts, such as the work of Tooley *et al.* (2010), Tooley and Dixon (2007), Aggarwal (2000) and Tooley *et al.* (2011).

The availability of international assessment data has allowed the emergence of international comparisons between school types across countries around the world. Some of these studies have found inconsistencies in the effects of school types across and within education systems, suggesting that such effects are likely to be context-dependent. Rutkowski and Rutkowski (2009) used TIMSS mathematics data from 2003 to examine differences in the effects of school type. Their findings supported previous findings of private school academic advantage. Two other studies, Wößmann (2003) and Fuchs and Wößmann (2007), used data from TIMSS and PISA, respectively, in an attempt to explain international variations in student performance in the two assessments. Although the focus of these studies was not explicitly on

the difference in educational outcomes between private and public schools, both studies discovered higher achievement in private schools.

In addition to the advantages conferred by private schools in terms of cognitive aspects and cost-efficiency, a study by Bedi and Garg (2000) found that private school graduates performed better in the labour market in Indonesia. They examined the earnings of a sample of 1,194 individuals who completed all their secondary education in one school type: public, private non-religious, private Islamic, or private Christian. Controlling for selection bias, the results showed a 75% private non-religious school earnings advantage. Likewise, Kingdon (1996) also found a positive private school effect on labour market earnings.

As mentioned earlier, policymakers' argument for private sector intervention in education rests on the assumption that private schools offer a better quality of education and a market that provides a choice of schools for parents (Lubienski and Lubienski, 2013; Pianta and Ansari, 2018). However, several issues should be taken into account when interpreting results concerning private school advantage. First, it is very simplistic to assume that family-related factors are independent of school-related factors. There is ample evidence to support the view that the more affluent a family, the higher the likelihood that they will send their children to relatively more expensive private schools with similar peers, better facilities and more qualified teachers. Moreover, higher educated parents with higher incomes tend to have higher expectations for their children and can afford to select schools that can help them achieve their goals. These family variables (income, education and expectations) have an impact on students' motivation, attitudes and achievement (Martin and Mullis, 2013). Furthermore, students from higher socioeconomic backgrounds might improve the social composition of the school population. Unlike government school students, these students are more likely to receive better teaching and learning experiences due to lower levels of non-academic disturbance. As such, comparative studies should take these factors into account when investigating the private school effect.

The second consideration is the deliberate school choice practised with regard to private schools. This system creates a community of shared values as parents, teachers and students of deliberately selected schools tend to have higher expectations of each other. This promotes shared values concerning what the school delivers and how teachers, students and parents relate to each other (Dronkers and Roberts, 2008b).

The third consideration is related to the wide variation in private schools in different contexts. Factors such as the curriculum and the auspices under which schools operate, from

internationally branded educational institutions to local small units, as well as management type, teacher characteristics and school and class size, can vary from one private school type to another. Evidence also suggests that the location of the school (urban or rural) may have different consequences for enrolment and student composition (Carpenter *et al.*, 2016). In Oman, for example, private schools are divided into three types: monolingual, bilingual and global. Each type has different characteristics in terms of resources, medium of instruction, curriculum, teacher characteristics and tuition fees (see 2.6.1).

Making a clear distinction between government schools on the one hand and all these different types of private schools on the other is sometimes difficult considering the blurred boundaries between them. To illustrate, monolingual (or Arabic) private schools are very similar to public schools as they apply the same curriculum as the government schools, except for English language. In this subject, schools can introduce their own syllabus upon approval by the MoE. In some cases, government schools are even better resourced and have more adequate premises than some of the monolingual private schools, which raises the question of why parents would choose to send their children to these private schools as they are not very different from the government sector in terms of curriculum and resources. According to a survey conducted by the National Centre for Statistics and Information (2016), the concentration on teaching English language in private schools is one of the most important criteria for parents' choice of private schools, which might be a plausible explanation for parents selecting Arabic private schools over free government schools. In addition, compared to other private school types, Arabic private schools are considered the most affordable for average Omani parents (see 2.6.3). However, due to the lack of empirical evidence regarding the effectiveness of the different categories of private schools in Oman, it is very difficult to draw any conclusions about the quality of education offered by each of them in comparison to government schools. The wide heterogeneity in the private sector, although beyond the scope of this study, should be taken into account when examining the quality of education.

The varied findings discussed above indicate the complexity involved in estimating private school effectiveness, especially within the context of methodological and contextual differences. The next section explores studies on private school effectiveness within the MENA region.

3.3.2 Private school effectiveness in the MENA region

The private provision of education varies significantly within the MENA region. In general, private enrolment at primary and secondary levels is lower than the world average for lower-middle income countries. However, in some countries, like Lebanon, private schools

outnumber government ones and in Jordan private education plays a substantial role in higher education compared to other countries in the developing world, such as Latin America and East Asia, where private sector intervention is considered premature, with private schools mainly catering for higher-income children (Akkari, 2004). In almost all the Arab countries, there has been a considerable success in providing universal education to children by the public system, especially at the primary level, indicating a progress towards the realization of the 'Education for All' index. On the other hand, as is the case in many other developing countries, the Arab countries have been urged by the World Bank to move towards privatization of education (Akkari, 2004). The contribution of the private schools has been limited in the Arab world in spite of all the political efforts primarily because they tend to target the middle and upper socioeconomic classes (Nabhani, 2003). Interestingly, the World Bank warns that the privatization policies initiated in many countries might lead to inequality and social segregation, with well-off students enjoying quality education while other children are deprived of any school choice (World Bank, 1998, 2012).

The dominant role of the public sector is usually justified on the basis of several arguments. For instance, if parents are unable to finance private education by borrowing, their educational investment in their children may be sub-optimal. A purely private system cannot function efficiently without perfect capital markets and capital market imperfections are likely to be severe in developing countries. It is also argued that universal education tends to have an equalizing effect on income distribution and may even compensate for differences in family background. If education is viewed as a normal good, higher-income parents will purchase more education for their children. Without public intervention, inequality may be passed on to each successive generation. Despite these arguments for a public presence, the increasing scarcity of public funds and growing evidence of the inefficiency of publicly provided education in the region (Heyneman, 1997, 2004; Chapman and Miric, 2009) calls for an examination of the dominant role of the state. Furthermore, the MENA region is characterized by inadequate research and development (R&D) in knowledge creation. It accounts for only one tenth of 1% of the world's R&D, less than any other region except sub-Saharan Africa (World Bank, 1998).

In GCC countries, some studies have attempted to track the performance of students from government and private schools over time to examine if the difference between the two sectors persists at the university level. Al Muqwashi's (2000) study in Saudi Arabia aimed to examine the difference in academic performance between university students who graduated from public and private schools and were accepted to university over the three years prior to

the study. The research was applied with 294 freshers, comparing their grade point average (GPA) and exam results in mathematics and statistics. The results showed no statistically significant difference in GPA or mathematics between public and private school graduates in general. However, comparing the results in terms of gender showed a statistically significant difference of 0.05 in the results for female students in mathematics, with public school graduates outperforming private school graduates. Likewise, male students who graduated from public schools outperformed their peers from private schools in statistics.

A similar study in Kuwait conducted by Alsuwaileh (2013) also found that private school students continued to outperform their counterparts from public schools at the university level. An analysis of the GPA of three cohorts of university graduates, comprising a total of 8,619 students, revealed that the academic attainment of those who had attended private schools was significantly higher than of those who went to public schools. The study attributed this to the better quality of education received in private schools. Based on data collected from students via a survey and individual interviews, the researcher concluded that the positive private school effect was a result of a number of factors, such as school leadership practices, the quality of teaching, aspects of assessment and feedback and parental involvement. Alsuwaileh (2013) did not statistically examine the impact of family background on students' performance. However, he claimed that socioeconomic factors did not affect private students' outcomes based on the assumption that the society in Kuwait has a homogeneous social structure. It is worth noting, though, that the same study found that the parents of private school students were significantly better educated and had a higher monthly income.

A previous study in Kuwait conducted by AlAzemi (1999) found contrasting results regarding the impact of SES. Although the study did not aim to compare public and private students, it found an impact of family background variables on students' achievement. AlAzemi (1999) analysed the outcomes and family background characteristics of 800 students in grade 12. The data were collected through school records (overall grade in national 12th grade examinations), questionnaire data collected from 800 students and interviews with 80 students and 78 parents. The findings established a positive relationship between students' outcomes and parents' level of education, parents' occupation and smaller family size. Parental involvement was also found to be associated with students' achievement.

Thus, a positive private school effect has been reported in many Arab countries. In Jordan, however, the difference between the two school systems was not as clear cut. Kharman (2005)

conducted a comparison between the two systems to identify their strengths and weaknesses. These results should be viewed with care, though, due to two major issues related to the design of the data collection method. First, the researcher used a single questionnaire to collect data from teachers, students and parents. The respondents were asked to respond to all items, some of which were irrelevant. To illustrate, parents and students were supposed to demonstrate their level of agreement with the following items: ‘Convenient opportunities are available for teachers to promote their professional growth’ and ‘Teachers are actually encouraged to research’. In addition, many items in the questionnaire were poorly worded. For instance, on a 5-point Likert scale, respondents were required to record their agreement/disagreement with the items ‘Computer services’, ‘Library services’ and ‘Theatre’, but there was no indication whether they were supposed to consider the availability or lack of availability of these facilities. These two concerns might have yielded inaccurate data, which in turn might well lead to ambiguity in the findings.

In Lebanon too, private school students tend to achieve higher in national and university entrance examinations than public school students, making the former more qualified to enter prestigious private universities. Nabhani (2003) conducted a field study in five private schools in Lebanon to examine how they prepared their students for higher education, both academically and socially. The researcher used a multiple case study design in which data were collected from students, teachers and principals using a variety of quantitative and qualitative methods. She concluded that the effectiveness of private schools resulted from the interrelationship between professional leadership and a positive school culture, well-defined standards, a shared vision, social cohesion and resources.

In general, educational systems in the MENA region are highly centralized, with the government assuming all key functions, such as funding, policymaking and service delivery (Galal *et al.*, 2009). A number of studies have been particularly interested in examining the management styles in public and private schools. For example, a study in Lebanon conducted by Najjar (2008) found significant differences between public and private schools. The management of private schools was more developed in terms of the following: autonomy in decision making, especially concerning teacher and student recruitment; accountability; use of technology; social and academic collaboration at school; parental involvement. The extent to which these findings are representative more widely is questionable, though, considering the limited number of schools examined in this study (two public and two private). In line with this, private school principals were found to be more competent in Jordan according to a study undertaken by Shatnawi (2015). The administrative and technical performance of principals

was evaluated based on feedback from teachers in all public and private schools in the Irbid Directorate. Data were collected from 538 teachers using a survey comprising 43 items. The results of *t*-tests showed a statistically significant difference between principals in public and private schools in favour of the latter. The researcher attributed this to the accountability procedures applied in the schools oriented to the private sector in which principals' performance is regularly followed up and evaluated by the school owners. A more recent study in Oman explored the challenges private school management faces in decision making (Al Abri, 2018). Unlike the findings of Najjar's study in Lebanon, private schools in Oman seemed to lack autonomy as their authority to make decisions was constrained by the regulations of the MoE, which had direct control of issues such as teacher recruitment and the curriculum (as discussed in Chapter Two).

Quality of educational services was the primary reason for parents to prefer private kindergartens and private Pakistani schools in Kuwait (Al-Shatti, 2011; Al-Shatti, 2015) and independent schools in Qatar (Cheema, 2015) and it is the main criteria for parents' school choice in Oman according to Al Balushi *et al* (2009).

In terms of quality of teaching, private schools have been found to adopt more advanced methods than public school teachers, who lack the methods that would develop their students' learning skills (Al-Duwaila, 2012). Dickson *et al.* (2015) conducted an interesting study in Abu Dhabi, the UAE, where teachers of science in both private and public schools are experienced English-speaking teachers (usually from Western countries). They found that there continued to be significant differences between the teachers in terms of motivation and teaching methods in favour of private schools, despite the similar circumstances of the two school types. Another study by McKinnon *et al.* (2013), also in Abu Dhabi, compared science teaching practices and resources in public and private schools. In their study, teachers in private schools reported enjoying their work more than those in public schools. In terms of teaching strategies, however, no statistically significant differences were detected between the two sectors. The findings of this study, though, should be considered with caution for two reasons. First, the sample size of teachers was relatively small (31 from public schools and 83 from private schools), which might have affected the statistical strength. Second, the teaching practices in the two sectors were compared solely based on teachers' self-report data, providing only a rough proxy of teaching quality. It would have been more informative had they incorporated these data with classroom observation or had they examined the data in the light of students' outcomes in both sectors.

As mentioned earlier, since the Coleman Report was published in 1966, there has been a plethora of research attempting to identify the influence of family background and school variables on student outcomes. The evidence has been mixed, based on methodological and contextual differences, with the majority of studies having been conducted using quantitative methods (Hanushek, 2008). The following section reviews international research pertaining to some key factors related to family background and students, teachers and schools that have been found to affect academic achievement.

3.3.3 Research findings concerning inputs likely to enhance student performance

When considering students' academic achievement, different determinants have been proposed in literature, some of which can be influenced by policy, such as school inputs and teacher characteristics, whereas others are not, such as family socio-economic background and student characteristics. Heyneman and Loxley (1983) argued that the impact of school and teacher characteristics was greater than family background in the low-income countries. However, in a review of 96 studies on the effects of school resources in developing countries, Hanushek (1995) claimed that school resources have no significant impact on students' achievement. This position was further supported by Badr *et al.* (2012), who examined TIMSS data in eight MENA countries and found that only a few school-related variables were significant and none had effects across countries, while student characteristics, including family background (e.g. parents' education, home resources) had a more significant impact on their results.

Impact of family background on achievement

There seems to be consensus in the literature concerning the impact of family SES on students' outcomes. The magnitude and strength of the relationship, however, seems to vary considerably across countries (Barone, 2006). Two important factors that determine the size of the relationship are: i) the unit of analysis, that is whether the study focuses on group-level data (schools, classes) or individual-level data (students); ii) the factors used to measure SES (Yang and Gustafsson, 2004). Factors such as school resources, community characteristics and student intake characteristics are likely to be more important at the group level, while at the individual level, the impact of the home environment and parents' characteristics can have more significant impact.

A number of indicators related to family wealth in TIMSS data have been reported to be effective in many studies, such as the number of books, parents' education, educational support at home and home possessions (Martin *et al.*, 2000; Konstantopoulos and Shen,

2016). Despite the stability of the home effect, there seem to be considerable variation in the magnitude of the effect across educational systems (Barone, 2006). This is largely due to the different definitions of SES in each of the contexts where the studies were conducted. That is, the extent to which each of these indicators represent the socioeconomic level of a family is likely to differ from one country to another due to cultural and economic differences. Owning a car, for example, can be considered a sign of wealth in some contexts where a minority of families can afford the expense. In other countries, where personal cars are the major means of transportation because public transportation is either very limited or does not exist, this may not be an indication of economic status.

Parents' level of education has been found to influence students' achievement in many studies. This has been attributed to parents' expectations, beliefs and behaviours. Well-educated parents tend to have higher expectations of their children's education, while parents with no or limited education appear to have lower or unrealistically high expectations of their children (Martin and Mullis, 2013). It could also be that educated parents are more able to provide emotional and academic support for their children at home (Koutsoulis and Campbell, 2001). Likewise, factors related to the home environment, such as the number of books and the availability of educational support, have been shown to have a strong positive impact on achievement.

A number of cross-national studies of achievement have supported the importance of family background factors. Analysing TIMSS mathematics and science data from 1995 for grade 8 students in 39 countries, Martin *et al.* (2000) aimed to identify the variables distinguishing high-achieving schools from low-achieving ones. They concluded that there was a positive relationship between the SES of students and their academic attainment. That is, students from higher achieving schools came from families with a greater number of books, study aids, possessions at home and higher parental education. In contrast, school-related factors were found to be inconsistently effective in most countries, although variables like class size, school size and location and instructional activities did explain the differences between high- and low-achieving schools in some countries. In a three-level hierarchical analysis of TIMSS data from 1995 for 36 countries, Baker *et al.* (2002), established that SES (represented by both parents' education and number of books) had a more significantly positive effect on students' achievement in mathematics and science than school resources in all the countries included in the study. A more recent analysis of TIMSS and PIRLS data from 2011 by Martin and Mullis (2013) investigated home and school characteristics associated with students' performance in reading, mathematics and science at grade 4. The findings showed that the

'home resources for learning' variable was the strongest predictor of students' outcomes and was significantly effective in both between- and within-school variance in almost all countries.

In line with this, Bouhlila (2015) analysed TIMSS data from 2007 to examine the effect of school resources versus family background on students' achievement in a number of countries in the MENA region. The study concluded that family background variables predicted more than 90% of the total variance in students' achievement, while school-related variables in almost all the countries under study had negligible effects. The massive effect of SES was attributed to development in the educational level of parents with well-paid jobs, reflected in the economic level of the family. In contrast, the minimal effect of school-level factors was due to inefficient allocation of educational resources and the centralization of the educational systems.

A growing body of research has shown that parental involvement in the schooling of children makes a significant difference to students' achievement (Epstein, 1992; Hofman *et al.*, 1996; Fan and Chen, 2001; Barnard, 2004; Lee and Bowen, 2006; Epstein, 2010) and students' behaviour (Sheldon and Epstein, 2002). According to Christenson and Anderson (2002), student learning is never a product of either schools or families alone. High parental involvement is considered an important characteristic of school effectiveness (Mortimore, 1995; Henderson, 1997). In addition, Epstein (2018) considers family engagement as a core competency of a good teacher. He argues that a teacher needs to understand family characteristics, students' experiences and the community outside the school and how to utilize all these resources to enhance students learning. In relation to school type, some studies have shown that private school parents tend to be more involved than their public school counterparts (Bryk *et al.*, 1993; Choy, 1997).

Parental involvement at school may include attending parent-teacher conferences, attending programmes featuring students and engaging in volunteering activities. Parental educational involvement at home may include providing help with homework, discussing the child's schoolwork and experiences at school and structuring home activities. In some contexts, however, parents' full participation in their children's schooling is constrained by social and economic factors (Harris and Goodall, 2008). In Abu Dhabi, which is undergoing comprehensive educational reform, it is hoped that parents will take an active role in the reform process. However, Stringer and Hourani (2013) found that there is still a common perception among parents that children's welfare and education are the responsibility of

schools. Also, there is still some confusion about who is responsible for initiating school–parent communication: principals, teachers, or parents.

Sirvani (2007) compared the mathematics achievement of students who received parental support with others who did not. It was found that students who were supported by their parents, including lower achieving students, outperformed their counterparts who did not. However, Caponera and Losito (2016) found that parental involvement was negatively related to student achievement in low SES schools in 4 out of 28 countries: Georgia, Hungary, New Zealand and Malaysia. They stated that a possible explanation for this was that schools tend to have stronger communication with parents of students with difficulties. Likewise, a negative association was found between parental involvement and students' mathematics achievement in South Africa by Winnaar *et al.* (2015).

Impact of students' characteristics on achievement

At the student level, there has been intensive investigation of the impact of personal characteristics, such as gender, age and ability, on academic performance. In relation to gender, several studies have indicated differences in cognitive outcomes between boys and girls. Boys have been found to outperform girls in subjects like mathematics, science and English (Aslam, 2009; Adefeso-Olateju, 2013; Konstantopoulos and Shen, 2016). This gender stratification has been attributed in part to cultural stereotypes, which might influence expectations, self-concept and life choices (Else-Quest *et al.*, 2010). In some studies, however, girls have been found to outperform boys in mathematics (Konstantopoulos and Shen, 2016), English (Adefeso-Olateju, 2013) and reading (Chiu and McBride-Chang, 2006).

The age of students has also been found to impact their outcomes. A considerable number of studies have shown that older students at the same grade tend to present lower achievement (Lockheed and Komenan, 1989; Bashir, 1994). In a study of the factors that contribute to low achievement in Spanish secondary schools, Díaz (2003) found that age has a significantly negative effect on students' achievement. Not only did academic outcomes decrease as students grew older, but their motivation and perception of social support also declined. Moreover, older age was also associated with repetition. However, in some developed countries, where there is small variation in age within grades, studies have shown that older students attain higher results than younger students (Puhani and Weber, 2008; Cascio and Schanzenbach, 2016). This has been explained by the greater confidence and knowledge older children might have. Other student characteristics have been found to exert an effect, whether

positive or negative, such as innate ability (Cox and Jimenez, 1990), poor health and malnutrition (Glewwe, 2005; Feinstein *et al.*, 2006).

Students' achievement has also been associated with psychological aspects, such as self-efficacy, attitudes and confidence. Shen (2002) undertook a study of the impact of students' self-perceptions on their academic achievement using TIMSS data from 1999 for grade 8 mathematics and science in 38 educational systems. A within-country analysis of the data established a positive relationship between students' achievement and three measures of their self-perception: how much they liked the two subjects, their self-perceived competence in the subjects and perceived easiness of the subjects. However, in a between-country analysis (the unit of analysis being the country), the findings were the opposite, i.e. there was a negative relationship between self-perceptions and achievement. The researcher attributed the discrepant findings to the cultural and social differences among the countries, which were inevitably reflected in individual students' attitudes and beliefs. For example, while people in some societies tend to have high self-regard, others in different societies tend to downgrade themselves due to religious beliefs or traditions.

A number of studies have examined the relationship between the cognitive and affective aspects of students' learning. Of the factors that have been examined and found to exert an effect, self-efficacy seems to have attracted specific attention. For example, it has been found that students' self-efficacy (confidence in learning) and self-concept (perception of one's capabilities) have positive effects on mathematics achievement (Pajares and Miller, 1994; Pajares, 1996; Ayotola and Adedeji, 2009). In a synthesis of over 800 meta-analyses, Hattie (2009) concluded that the correlations of self-concept, self-efficacy and persistence with achievement were very large. According to Hattie, of all the self-concept attributes, self-confidence had the most significant influence on achievement. The impact of self-efficacy and self-concept on achievement have also been established in other meta-analytic studies (Multon *et al.*, 1991; Valentine *et al.*, 2004).

Students' aspirations concerning higher education also have an effect on their achievement. In their analysis of mathematics and science TIMSS data from 1995 for grade 8 students, Martin *et al.* (2000) found that those in high-achieving schools more frequently reported aspirations to attend university than those in lower achieving schools.

Using TIMSS mathematics data from 2011 for students in South Africa, Winnaar *et al.* (2015) also found a positive association between students' attitudes and their test scores. Students who liked mathematics scored on average 16.57 points higher than those who did not like the

subject. Likewise, students who felt more confident in mathematics scored 18.8 points higher than those who said they were not confident. However, in a study of the relationship between Scottish students' attitudes towards their schools and their academic performance, Thomas *et al.* (2000) found a weak correlation between students' attitudes and their outcomes, suggesting that the school impact on the two dimensions is independent and that different measures of school effectiveness account for students' cognitive and non-cognitive aspects. This finding corresponds to previous research comparing students' results in the affective and cognitive domains (Mortimore, 1995; Sammons *et al.*, 1996).

Impact of school-related factors

The socioeconomic level of schools has been found to be an effective contributor to students' outcomes in many countries, as children from advantaged schools have been found to outperform those from less advantaged schools (Coleman *et al.*, 1966; Sirin, 2005; McConney and Perry, 2010; Schulz *et al.*, 2010; Winnaar *et al.*, 2015). However, using grade 8 mathematics data for 28 countries in TIMSS 2011, Caponera and Losito (2016) established that the effect of the SES of schools was more evident in countries with a bigger gap between rich and poor people.

A considerable number of empirical and meta-analytic studies have been conducted to identify the effect of school resources on students' outcomes, with inconsistent findings across different countries. Using TIMSS data for 1995, Martin *et al.* (2000) concluded that after controlling for student SES, school-related factors were less uniformly effective. Only a few school characteristics, such as school climate, class size, school location and teacher characteristics, were found to be associated with school achievement in some countries, suggesting that school variables work differently in different contexts and hence no common variables operate similarly across countries. Similar findings were identified by Martin and Mullis (2013) using TIMSS and PIRLS data from 2011. The two school variables found to be effective in explaining science performance in Norway using TIMSS 2007 and TIMSS 2011 data were 'schools are safe and orderly' and 'school support for academic success' (Nilsen and Gustafsson, 2014). School safety was also associated with higher mathematics and reading achievement (Milam *et al.*, 2010).

Some researchers, however, have found lower estimates of the effect of school input on academic achievement. Hanushek (1997) reviewed 397 studies of student outcomes and concluded that of the 91 studies estimating the impact of school facilities on achievement, only 9% established a statistically significant positive effect on achievement. Hanushek, in a

series of other widely cited studies (Hanushek, 1986, 1997, 1999), maintained this argument, namely that there is no strong or consistent relationship between school input and student performance. Hanushek's methods and conclusions, however, have been challenged on several grounds. Hedges and Greenwald (1996), for example, pointed out that the small number of statistically significant effects found was due to the small sample sizes in the study he examined. They maintained that when aggregated in a meta-analysis, different results were likely to be found. The meta-analysis carried out by Greenwald *et al.* (1996), in which they used significance testing and estimation of effect size, found a significant relation between school resources, such as class size, school size and teacher quality, and student achievement.

In Nigeria, school resources in private schools, such as facilities, instructional materials and availability of teachers, were found to have a stronger effect on student outcomes than family wealth (Adefeso-Olateju, 2013). However, Hægeland *et al.* (2005) examined the impact of school resources on student achievement in Norway using 16-year-old students' results in national tests in 11 subjects and after controlling for family background, the results showed that the quantity of resources, including facilities, instructional materials and teachers, had a positive but modest impact on students' achievement, while the quality of resources had no significant effect.

School management. In general, schools that enjoy autonomous, school-based management are more efficient in setting their goals, policies, action plans, budgets, work plans and recruiting (Cheng, 2013). James *et al.* (1996) examined the impact of school management on cost efficiency in public and private schools in 15 Indonesian provinces. This was measured through school-level expenditures, test scores and enrolment rates. The study found that management in private schools was more efficient than in public schools. This was attributed to the autonomy private schools enjoy in relation to budget and enrolment. Similarly, school autonomy was also found to have a positive impact on students' achievement in Hong Kong (Cheong Cheng and Mo Ching Mok, 2007), Indonesia (Bandur, 2012), the US (Cook, 2007) and Lebanon (Nabhani, 2003).

Public schools are hindered in their effectiveness by bureaucratic administration and an exclusive claim to public funds (Lubienski *et al.*, 2008). In the MENA region, where public schools are highly centralized, fewer opportunities are available to schools to offer incentives in the form of pay or housing to retain the best teachers and there is also less opportunity for parental involvement in terms of serving on school committees to select school personnel or

to review school finances. This in turn minimises the effect of school factors on students' outcomes compared to variables related to family background (Bouhlila, 2015).

Class size. One of the educational policies that has received considerable attention is reducing class sizes. Intuitively, smaller classes are expected to allow teachers to focus on individual students, reduce order and disciplinary issues and consequently increase learning outcomes (Krueger and Whitmore, 2001; Lubienski *et al.*, 2008; Konstantopoulos and Shen, 2016). However, conflicting findings on the influence of class size on students' outcomes have been reported by different researchers. An early meta-analytic review of 59 studies related to class size conducted by Smith and Glass (1980) and using a logarithmic model established that a positive effect of small classes on students' achievement. They concluded that a smaller class size has a positive effect on teachers' and students' attitudes and instruction. In addition, they ascertained that smaller class sizes are associated with a better classroom climate and individualized instruction. In contrast, based on a review of empirical studies in a number of developing countries, Fuller and Heyneman (1989) concluded that a reduction in class size, despite its high cost, seemed to yield little return in terms of students' achievement. The same conclusion was echoed by Odden (1990) in a review of previous research on the class size effect. He concluded that only when classes are reduced to tutoring levels (1–3 students) do improvements in achievement occur.

Findings from large-scale studies, however, seem to show diverse results. For instance, Wößmann and West (2006) examined the effect of class size on students' performance using TIMSS data from 2011 for 11 countries. Their findings were inconsistent, as they found substantial beneficial effects of smaller classes in Greece and Iceland, both countries performing below the international average, while interestingly class size was found to be ineffective in influencing results in Singapore, the highest performer in the study sample. Using TIMSS-R data for grade 8 students in Turkey and nine other European countries, Akyüz and Berberoğlu (2010) found class size had a positive and significant effect on achievement in Belgium (Flemish), Hungary, Italy, Lithuania and the Netherlands. That is, the bigger the class, the higher the results. These results were in line with a previous TIMSS analysis by Martin *et al.* (2000), which also established that in most of the 39 countries studied, students in bigger classes tended to achieve higher. The reason for this finding was attributed to the fact that weaker students are generally assigned to smaller classes. At the country level, more recent studies using TIMSS data, such as Breton (2014) in Colombia and Konstantopoulos and Shen (2016) in Cyprus, have found a positive impact of small classes on students' achievement.

Impact of teacher characteristics

Teachers are considered an important asset for economic and educational reasons, specifically in developing countries given the scarcity of educational resources and the high percentage of budget allocated to teachers' salaries (Avalos and Haddad, 1979). The important role of teacher effectiveness in relation to students' performance is one of the key findings from SER (Reynolds *et al.*, 2016). Several studies have established that teacher-related factors influence students' achievement in mathematics (e.g. Rivkin *et al.*, 2005; Akyüz and Berberoğlu, 2010; Winnaar *et al.*, 2015). In a synthesis of 147 studies on the education production function, Hanushek (1986) maintained that differences in public school quality were not attributable to variations in expenditure, class size or any other school variables. Rather, they resulted mainly from differences in teacher skills. Of all the teacher-related characteristics, such as education, experience, salary and teacher/student ratio, only teacher experience had a strong impact, with almost 30% of the estimated coefficients being statistically significant.

Using TIMSS data from 2003 for Dutch students, De Witte and Van Klaveren (2014) found that high test scores were associated with teaching styles emphasizing problem solving and homework. Likewise, Lee and Huh (2014) examined the effect of instructional strategies on mathematics achievement in the US using TIMSS data from 2007. They established that teaching strategies explained about 12% of students' results at the student level and 17% at the teacher level. Two strategies were found to be positively associated with students' outcomes: asking students to write equations to represent relationships and to determine their own procedures for problem solving. Caponera and Losito (2016), however, found inconsistent results across countries regarding the effect of teaching strategies in their analysis of TIMSS data for 28 countries from 2011. The results indicated that *Instruction to engage students in learning* was found to be positively associated with achievement in low-SES schools in four countries (Hungary, the Republic of Korea, New Zealand, Tunisia) and negatively associated with outcomes in two countries (Italy and Lithuania). *Confidence in teaching mathematics* was found to be positively associated with achievement in disadvantaged schools in four countries (England, Lebanon, Lithuania, Norway) and negatively in one country (Hungary).

In an IEA study, Blömeke *et al.* (2016) investigated the relationship between grade 4 students' achievement and the quality of their teachers using TIMSS data for 47 countries from 2011. Teacher experience was found to be a good predictor of students' mathematics achievement across most countries. That is, students with higher mathematics achievement were taught by more experienced teachers and teachers with more experience also reported

higher instructional quality. However, in some countries a negative relationship was found between teachers' experience and students' outcomes. Teachers' qualifications were also found to be associated with achievement in 12 countries, most in the Western Asia/Arabia region, although with only a moderate effect.

The years of work experience a teacher has is often associated positively with quality (Murnane and Phillips, 1981; Wayne and Youngs, 2003). Ridge (2009), however, found that girls in Dubai achieved significantly higher than boys, although they were taught by less experienced female teachers. With respect to the gender of teachers, the findings are inconsistent and the issue of any effect is still unresolved (Dee, 2006). There seems to be a need to conduct further research and in-depth analysis in the related field before concluding that the success of students is related to the gender of their teacher. Akyüz and Berberoğlu (2010) found that teachers' gender was significant for students TIMSS-R mathematics scores in four of the ten countries they analysed. That is, classes taught by male teachers in Turkey and the Czech Republic attained higher results than in Hungary and the Netherlands.

Positive relationships between teachers and students have been identified as one of the characteristics of an effective school (Mortimore, 1995), as these could affect students' cognitive and non-cognitive outcomes. Sammons *et al.* (1997a) maintained that teachers' relationships with their students could have a significant impact on their students' self-esteem, which is an important determinant of achievement. They argued that teachers could exert an influence through the ways in which they communicate with students, the extent to which students feel they are respected and understood and teachers' response to students' individual needs.

Conversely, according to Pomeroy (1999), students' lack of a positive relationship with their teachers was the most important factor affecting their ability to engage positively in their schools based on the views of 33 students who had been excluded from their schools. The study aimed to identify the aspects of students' schooling experiences that led them to exclusion. It was also documented that students preferred the teachers who took time to talk with them and listen to them (Cooper, 1993; Nieto, 1994).

Establishing a good teacher–student rapport has been found to influence students' outcomes. Teddlie and Stringfield (1993), for example, found that schools with better performance tended to have a friendly environment and better relations with families. Likewise, Hemmings (2000), argued that students' daily interaction with administrators and teachers play a significant role in determining the level of their academic attainment and the extent of their

educational and career aspirations. Moreover, positive relationships between students and teachers have been found to have a positive impact on academic outcomes.

In many countries, teacher salaries depend on their level of education and years of experience (Hanushek, 1997). However, research on the impact of teachers' salaries on achievement has shown mixed results (Lavy, 2002; Kingdon and Teal, 2007; Glewwe *et al.*, 2010). Cox and Jimenez (1990) found that teachers in private schools were paid less than those in public schools in Colombia, but not in Tanzania, where public school teachers enjoy higher salaries. They also found that teacher salaries were positively and strongly associated with students' outcomes in both countries. Kingdon and Teal (2007) found a positive relationship between teacher's pay and students' achievement in private schools, but not in government schools. They attributed this to the performance-related pay applied in private schools in India. That is, unlike government schools, in which teachers work on a permanent contract basis so that dismissal is very unlikely, wages in private schools are used as incentives to enhance teachers' motivation. The relationship between higher salaries and student achievement has often been attributed to two plausible interpretations. One is that higher wages attract better quality teachers. The second is derived from efficiency wage theory, such that higher wages increase teachers' motivation and effort, which is reflected positively in students' outcomes. An example of the first interpretation is provided by Wößmann and West (2006), who found the teacher–student ratio was lower in two low-performing countries, Greece and Iceland, than in some high-performing countries, such as Sweden. They attributed this to the different policies applied in these countries regarding teacher recruitment. That is, Greece and Iceland had relatively many but poorly paid teachers, while countries like Sweden had relatively few but well-paid teachers, which in turn contributed to students' higher achievement. This view was echoed by Ridge (2009), who stated that lower salaries offered to expatriate teachers in Emirati boys' schools tended to attract less qualified teachers, reflected negatively in boys' achievement.

Fuller and Heyneman (1989), however, found a lower estimate of the impact of teachers' salaries on students' performance. They maintained that although more than 95% of education budgets in the developing world were allocated to teachers' salaries, few empirical studies (5 out of the 14 they reviewed) showed a relationship between teachers' salaries and students' achievement. Likewise, Tooley and Dixon (2005), in their study of private schools serving the poor in India, Ghana, Nigeria and Kenya, found that although teachers were paid considerably less in unaided private schools, they were no less satisfied than their counterparts in government schools. Most importantly, students in the unaided private schools achieved

higher in three core subjects, including mathematics and English. A previous study in the US also found that public school teachers received higher salaries, were more qualified and experienced and had more opportunities to take part in professional development programmes. Nevertheless, private school teachers were more satisfied with their working conditions (Choy, 1997).

Establishing a positive relationship between teachers' financial benefits and students' achievement, however, does not necessarily connote causation, as it is difficult to determine if teachers are rewarded as their students' performance improve, or if higher incentives lead to better outcomes. In addition, there are many exogenous variables that should be taken into account when studying the relation between teachers' pay and students' outcomes, such as working conditions and the principals' authority to dismiss poorly performing teachers (Hanushek *et al.*, 2004).

Teacher job satisfaction

Teachers' job satisfaction refers to a teacher's affective relation to his or her teaching role and is a function of the perceived relationship between what one wants from teaching and what one perceives the role is offering (Zembylas and Papanastasiou, 2004). Generally speaking, job satisfaction can be measured qualitatively through satisfaction with external and intrinsic factors. The Herzberg (1968) model is globally used to identify the key qualitative components of job satisfaction:

- Motivator (intrinsic) factors, including achievement, recognition, the work itself, responsibility and growth or advancement.
- Hygiene (external) factors, such as dissatisfaction avoidance factors, including policies and administrative practices, supervision, interpersonal relationships, working conditions, salary and benefits, job security and status.

Research has examined several of these factors in an attempt to identify how they are related to teachers' satisfaction and the extent to which they contribute to improving working conditions. This is significant because it has been shown that when teachers are not satisfied with their working conditions, they are more likely to leave the profession (Hanushek *et al.*, 2004). In the US, Giacometti (2005) studied the factors affected the satisfaction and retention of 450 novice teachers. In all, 11% reported that they want to leave the profession. The study also found that the most significant factors determining whether teachers wanted to stay or

leave teaching were emotional (e.g. anxiety, joy, confidence, stress, burn out), followed by compensation and benefits and culture shock.

External factors, such as teachers' relationships with students and other teachers (Shann, 1998) and students' characteristics and achievement (Hanushek *et al.*, 2004), have been found to be associated with satisfaction. However, while intrinsic forces may motivate people to become teachers, extrinsic conditions such as salary can influence their satisfaction in their position and their desire to remain in teaching throughout their career.

Some aspects of school climate have been found to differ by school type. For instance, private school teachers tend to report more autonomy in their work, a greater sense of community within their schools and more support from their principals (Bryk *et al.*, 1993; Choy, 1997). In contrast, public high school teachers have reported greater absenteeism and poorer attitudes towards learning among their students (Choy, 1997).

Alzaboon *et al.* (2007) studied job satisfaction among teachers in the secondary stage in Jordan. The results from the 1,236 teachers studied showed that the mean scores for job satisfaction were medium for four aspects: teachers' evaluation of their job, the social dimension (societal appreciation and support), the school environment and supervision. The scores for job satisfaction were weak in two respects: administration and salaries and incentives. The study found no significant statistical differences between teachers' satisfaction and their continuity in the job due to gender and teaching load. However, more qualified and experienced teachers were significantly more satisfied. The researchers attributed this to the possibility that more experienced teachers had greater understanding of the conditions of their work and therefore were more satisfied. In addition, they might have acquired more effective methods of teaching and student management. Most importantly, salary and incentives increase with years of service, which might be another reason for their job satisfaction.

Ma and MacMillan (1999) studied the effect of teacher characteristics and work conditions on their job satisfaction. They analysed secondary data for 2,202 teachers in New Brunswick in Canada. A survey was used to elicit teachers' views of five school aspects: teachers and their students, school discipline, the academic and social environment, parental involvement and job satisfaction and autonomy. The results showed that female teachers were more satisfied in their role as teachers than male teachers. Working conditions, such as teaching competence, administrative control and organizational culture, had a positive impact on satisfaction

The age of teachers has also been found to influence teachers' satisfaction in some contexts. Sim's (1990) study on the factors associated with job satisfaction among teachers in Singapore established that non-graduates, older teachers and those with less heavy teaching loads had greater job satisfaction. The researcher claimed that younger teachers might be less satisfied because they had higher self-expectations regarding their profession. In contrast, older teachers would be more content and therefore tend to be more positive in their perceptions of working conditions and responsibilities.

In Oman, a study conducted by the New Zealand National Tertiary Education Consortium (2013) concluded that in general there was a lack of satisfaction among teachers due to the low salaries and financial benefits, the inadequacy of school resources, excessive workload, and the centralized administration of public schools. A number of studies have investigated levels of satisfaction among teachers in Saudi schools too. Al-Ghaith (2015) studied the level of organizational culture among managers of government secondary schools in Riyadh and the relationship with teachers' job satisfaction. She concluded that there was a correlation between the organizational characteristics of public school administrators' and teachers' job satisfaction. Another study conducted by Al Thubaiti and Al Anazi (2014) examined the factors influencing job satisfaction among teachers in Qurayat. Based on data collected from 307 teachers, they concluded that the factors contributing to teachers' satisfaction could be ordered as follows: school management, working environment, supervision, financial aspects, training and professional development. However, there were statistically significant differences in job satisfaction in relation to qualifications and experience, while no statistically significant difference was found based on the school level that the teachers taught. Al-Moaili's (2006) study aimed to explore teachers' views of the factors influencing their job satisfaction. A survey comprising 44 items was administered with 88 teachers in Damam, Saudi Arabia. The study identified the following factors as having the highest impact on teachers' satisfaction: parents' involvement; teachers being appointed to a lower grade than they deserved; administrative acknowledgment of parents' desires and requirements without consulting teachers; having lessons assigned at the end of the school day; having to teach subjects other than their own specialization; the distance between school and their hometown. The results also showed significant differences in the impact of such factors on job satisfaction based on the nationality of the teachers, with Saudi teachers more affected by job satisfaction than their non-Saudi counterparts. However, no statistically significant difference was found in relation to years of experience. The three studies in Saudi schools used surveys as the only measure of satisfaction.

With respect to government and private schools, Ghosh (2015) examined the job satisfaction of 200 teachers from both school types in Ranchi, India, using a 34-item scale. The findings showed no significant differences in job satisfaction between public and private school teachers. The same results were found in other studies, such as that of Akhtar *et al.* (2010) in Pakistan. However, Mehta (2012) conducted a study to identify whether perceptions of job satisfaction among teachers were affected by the type of school and gender. The findings indicated that government school teachers were more satisfied than private school teachers. The study showed no significant difference between male and female teachers. In Cyprus, Papanastasiou and Zembylas (2005) found that private kindergarten teachers were less satisfied with their salaries and working hours than public school teachers. However, they were more satisfied with the physical working environment in their schools. Teachers in public schools were also not satisfied with the promotion system in their schools.

Iqbal *et al.* (2016) examined the relationship between teachers' satisfaction levels and students' achievement by first measuring the job satisfaction of 322 secondary-school teachers in Faisalabad, Pakistan, and then exploring the relationship between 9th- and 10th-grade students' achievement scores as assessed by the Board of Intermediate and Secondary Education (BISE) and their teachers' job satisfaction using Pearson's *r*. The results revealed no significant correlation between students' performance and teachers' job satisfaction.

3.4 Summary and conclusion

The literature reviewed in this chapter reveals that there are several family, student, teacher and school factors that potentially have a bearing on academic attainment. Although significant relationships have been established between various factors, the evidence on school effectiveness is mixed, with the findings varying by context, sample and method. Nevertheless, unlike earlier studies of school effectiveness, there is consensus that school-related variables do have an influence on students' achievement. Besides the variables conventionally measured, it has been acknowledged that the impact of some home and school variables are context-bound.

In this chapter, some of the factors most researched have been highlighted. Although some other determinants have been shown to have an impact on students' outcomes, presenting and discussing an exhaustive list of variables is a nearly impossible task, as stated by Rivkin *et al.* (2005, p. 422):

‘Academic achievement at any point is a cumulative function of current and prior family, community, and school experiences. A study of the entire process would require

complete family, community, and school histories, and such data are rarely if ever available.’

Table 3.1 presents a summary of the findings of the literature reviewed related to the impact of family background and student, teacher and school characteristics on students’ outcomes. The first column lists the variables; the second column shows the studies that have found a positive impact; the third column indicates the studies showing a negative impact; the last column identifies the studies that found no correlation between the different variables and achievement. The main variables stated in this summary and the conclusions of this literature review, although crucial in guiding the analysis of data and the subsequent discussion of the findings overall, were particularly important in informing the analysis of the quantitative data aiming to address the following research question:

1. If a difference between school management types exists, what are the factors that contribute to this?

The analysis of available studies revealed two important points. First, most studies have been based on quantitative data. Second, the discrepancies in findings can be attributed in part to the differences in the types of data analysed, the variables included in the analysis and the methods employed in the analysis. This study, although not claiming to depart from the nature of most existing empirical research, intends to employ a more robust methodological procedure by using a mixed-methods approach. Most importantly, although a comparison will be conducted between the two systems based on mathematics test scores, this will not be the only or the most important determinant of school effectiveness. Rather, the effectiveness of public and private schools will be examined through the perspectives of the main stakeholders, or the beneficiaries, namely teachers, students and parents.

Table 3.1. Inputs found to affect students' achievement

School effectiveness determinants	+ Statistically significant	- No statistical significance	
Family background			
Parents' education	<ul style="list-style-type: none"> • Analysis of TIMSS data from 1995 in science and mathematics for 39 countries (Martin <i>et al.</i>, 2000) • Government secondary school students in Kuwait (AlAzemi, 1999) • Alderman <i>et al.</i> (2001) • Konstantopoulos and Shen (2016) 	<ul style="list-style-type: none"> • Private school mathematics outcomes (Adefeso-Olateju, 2013) 	
Number of books at home	<ul style="list-style-type: none"> • Martin <i>et al.</i> (2000) • In 39/47 countries using TIMSS 2011 data (Blömeke <i>et al.</i>, 2016) 		
Home educational support	<ul style="list-style-type: none"> • Martin and Mullis (2013) • Martin <i>et al.</i> (2000) 		
Home possessions	<ul style="list-style-type: none"> • Mathematics and English outcomes in private schools (Adefeso-Olateju, 2013) • Martin <i>et al.</i> (2000) • Konstantopoulos and Shen (2016) 		
Family size (large)		<ul style="list-style-type: none"> • Lower achievement among students from families with more than 5 members (AlAzemi, 1999b) • Private school achievement in English (Adefeso-Olateju, 2013) 	
Parental involvement	<ul style="list-style-type: none"> • Lee and Bowen (2006) • Hofman <i>et al.</i> (1996) • A positive but weak effect from parents' support at home; a stronger positive effect of parents' aspirations (Fan and Chen, 2001) 	<ul style="list-style-type: none"> • Caponera and Losito (2016) • Winnaar <i>et al.</i> (2015) 	
Student characteristics			
Gender (female)	<ul style="list-style-type: none"> • Adefeso-Olateju (2013) English language outcomes in private schools • Konstantopoulos and Shen (2016) grade 8 mathematics and science in TIMSS 2003 and 2007 in Cyprus • Cheema (2015, 2016) in Qatar • Farooq <i>et al.</i> (2011) 	<ul style="list-style-type: none"> • Aslam (2009) in private school mathematics outcomes and in reading and mathematics in public schools • Blömeke <i>et al.</i> (2016) mathematics in 28/47 countries TIMSS 2011 	<ul style="list-style-type: none"> • Ayotola and Adedeji (2009)
Age (older students)	<ul style="list-style-type: none"> • Bashir (1994) 	<ul style="list-style-type: none"> • Puhani and Weber (2008) 	

School effectiveness determinants	Statistically significant		No statistical significance
	+	-	
	<ul style="list-style-type: none"> • Lockheed and Komenan (1989) • Díaz (2003) 	<ul style="list-style-type: none"> • Cascio and Schanzenbach (2016) 	
Aspiration	<ul style="list-style-type: none"> • Martin <i>et al.</i> (2000) • Lockheed and Komenan (1989) 		
Attitudes/self-concept/confidence	<ul style="list-style-type: none"> • Koutsoulis and Campbell (2001) • Lockheed and Komenan (1989) • Ayotola and Adedeji (2009) • Pajares and Miller (1994) • Hattie (2009) • Multon <i>et al.</i> (1991) • Valentine <i>et al.</i> (2004) 		<ul style="list-style-type: none"> • Weak correlation between attitudes and achievement (Thomas <i>et al.</i>, 2000) • Mortimore (1995) • Sammons <i>et al.</i> (1996)
Poor health and malnutrition		<ul style="list-style-type: none"> • Feinstein <i>et al.</i> (2006) • Glewwe (2005) 	
Teacher characteristics			
Gender (male)	<ul style="list-style-type: none"> • Akyüz and Berberoğlu (2010) 		
Experience	<ul style="list-style-type: none"> • Hanushek (1986) • Blömeke <i>et al.</i> (2016) • Murnane and Phillips (1981) • Wayne and Youngs (2003) 	<ul style="list-style-type: none"> • Mathematics results in urban schools (Bashir, 1994) 	<ul style="list-style-type: none"> • Ridge (2009)
Qualifications			<ul style="list-style-type: none"> • Hægeland <i>et al.</i> (2005) • Bashir (1994)
Salary	<ul style="list-style-type: none"> • Private schools in Tanzania (Cox and Jimenez, 1990) • Kingdon and Teal (2007) • Muralidharan and Sundararaman (2011) 		<ul style="list-style-type: none"> • No effect in 9/13 studies (Fuller, 1986) • Effect found in 5/14 studies (Fuller and Heyneman, 1989) • Tooley and Dixon (2005)
Teaching quality	<ul style="list-style-type: none"> • De Witte and Van Klaveren (2014) • Lee and Huh (2014) 		<ul style="list-style-type: none"> • Caponera and Losito (2016) inconsistent results across countries using TIMSS 2011
Teacher–student relationship	<ul style="list-style-type: none"> • Sammons <i>et al.</i> (1997b) • Teddlie and Stringfield (1993) • Hemmings (2000) 		
School inputs			
School SES	<ul style="list-style-type: none"> • Only for fourth grade mathematics achievement in TIMSS 2003 and 2007 (Konstantopoulos and Shen, 2016) 		
Management	<ul style="list-style-type: none"> • Cheong Cheng and Mo Ching Mok (2007) 		

School effectiveness determinants	Statistically significant	No statistical significance
	+	-
	<ul style="list-style-type: none"> • Bandur (2012) • Cook (2007) • Private schools in Lebanon (Nabhani, 2003) 	
School facilities	<ul style="list-style-type: none"> • Greenwald <i>et al.</i> (1996) • In private schools (Adefeso-Olateju, 2013) • Positive but modest impact (Hægeland <i>et al.</i>, 2005) • Bashir (1994) 	<ul style="list-style-type: none"> • Hanushek (1997, 1999)
Class size (large)	<ul style="list-style-type: none"> • Private school students in Tanzania perform better in larger classes (Cox and Jimenez, 1990) • In 5/9 countries using TIMSS-R data (Akyüz and Berberoğlu, 2010) • In most of the 39 participating countries in TIMSS 1995 (Martin <i>et al.</i>, 2000) • Krueger (2000) 	<ul style="list-style-type: none"> • TIMSS 2007, grade 4 students in Colombia (Breton, 2014) • (Wößmann, 2003)
		<ul style="list-style-type: none"> • Only in 5/21 studies (Fuller and Heyneman, 1989) • Effective only when classes are reduced to 1–3 students per class (Odden, 1990) • Hattie (2005) • Only in 2/11 countries for TIMSS 2005 (Wößmann and West, 2006) • Grade 8 mathematics achievement (Konstantopoulos and Shen, 2016) • Cho <i>et al.</i> (2012) • No effect in 16/21 studies (Fuller, 1986)
School environment (safety, discipline, emphasis on academic success)	<ul style="list-style-type: none"> • TIMSS and PIRLS 2011 mathematics, science and reading data for grade 4 students in 37 participating countries (Martin and Mullis, 2013) • Norwegian data in TIMSS 2007 and 2011 (Nilsen and Gustafsson, 2014) • Increasing safety associated with a 16–22% increase in mathematics and reading achievement (Milam <i>et al.</i>, 2010) 	

Chapter 4. Methodology

4.1 Introduction

The last chapter presented a discussion of the relevant literature on school effectiveness in general and in relation to school type (public versus private) in particular. It is then important at this stage to develop a strategy, or as Bryman suggests ‘a general orientation to the conduct of social research’ (2012, p. 20). Denscombe (2009) emphasized the importance of having a well-defined research design that aims to do the following:

- 1) Describe the different components of the investigation (philosophy, strategy, methods).
- 2) Provide a rationale for adopting the research strategy in relation to the research questions.
- 3) Explain how the different components of the design fit together.

Thus, this chapter commences by describing the philosophical position guiding the study, i.e. post-positivism. The methodological approach used in this study was mixed methods, combining quantitative and qualitative aspects. A two-stage approach to data collection and analysis was employed, using a sequential explanatory design. The logic for choosing this particular design will be provided in this chapter, in addition to a description of the various research methods, sampling techniques, validity and reliability measures and how the data were collected and analysed to address the following research questions:

1. Is there any statistically significant difference between government and private school students’ academic performance in mathematics?
2. If a difference between school management types exists, what are the factors that contribute to this?
3. How satisfied are teachers in private and government schools?
4. How satisfied are students and parents in private and government schools?

After describing the research design, the methods used for data collection, sampling and analysis procedures, the chapter will conclude by defining the validity and reliability measures, as well as addressing ethical considerations.

4.2 Philosophical position

For researchers, determining their ontological, epistemological and methodological stances essentially entails answering the following three questions: 1) What is nature of reality? 2)

What is the relationship between the inquirer and the known? 3) How should the inquirer go about seeking knowledge? (Guba, 1990, p. 18). In other words, ontology ‘concerns the issue of what exists, or the fundamental nature of reality’ (Neuman, 2011, p. 92), whereas epistemology is about the researcher’s assumptions regarding knowledge or how we know what we claim we know (Cohen *et al.*, 2018). Methodology is related to ‘the science and study of methods and assumptions about the ways in which knowledge is produced’ (Grix, 2004, p. 32), while ‘methods’ is a specific term that refers to ‘procedures and activities for selecting, collecting, organizing and analysing data’ (Blaikie, 2010, p. 8).

In educational research, research in the social and human sciences has been underpinned by several philosophical assumptions, including two broadly competing philosophical views: positivism and interpretivism. These two approaches are considered binary poles, within and between which many different versions exist (Lincoln and Denzin, 2000; Grix, 2004; Neuman, 2011). The first position, positivism, is committed to a realist ontology, while interpretivism, reflecting scholars’ critical views of the application of natural science rules to the study of the social world, adopts a contrasting ontological position, namely relativism.

Realism assumes that there is a reality ‘out there’ awaiting discovery and asserts that reality can be established through careful observation (Blaikie, 2010, p. 93). In this regard, positivism is centred on the idea of using scientific methods to gain knowledge, as knowledge is valid only if it can be tested (Cohen *et al.*, 2018). Hence, positivism regards the observation and measurement of the properties of objects as crucial to the way in which we find out about social reality (Grix, 2004; Blaikie, 2010). Epistemologically, positivism takes an objective position, which claims that science is able to provide ‘the clearest possible ideal knowledge’ (Cohen *et al.*, 2018, p. 10).

In spite of its long prevalence and applicability in the field of natural sciences, the positivist perspective has been subject to criticism on many grounds. As far as the social sciences are concerned, positivists have been accused of failing to engage in the unique ability to interpret human experiences, as this is only possible through the realization that the social world is not an object of science (Pring, 2015). Unlike the natural sciences, which adopt a subject–object position in their field of study, the social sciences take a subject–subject stance based on the notion that the world is constructed of the meanings that subjects hold (Cohen *et al.*, 2018). The problem with positivist social research is that it views human behaviour as passive, determined and controlled, hence ignoring intention and individualism. Therefore, according

to Cohen *et al.* (2018), the findings of positivist social research tend to be artificial and usually have little significance for those concerned.

Interpretivism, in contrast, adopts a relativist ontological position, which argues that realities exist in the form of multiple constructions depending on their form and content for the person who holds them (Guba, 1990). An interpretivist, therefore, does not assume that the social world is ‘given’; rather it is ‘produced and reinforced by humans through action and interaction’ (Orlikowski and Baroudi, 1991, p. 14). Epistemologically, the interpretivist takes a subjective position, as this is the only way to access the constructions in the minds of respondents (Guba, 1990). The aim of research in this paradigm is to work with the people being studied to reach a mutual understanding (Neuman, 2011). Thus, meaning is negotiated, which implies that the ‘correct’ understanding or interpretation changes with our own changing perspectives and the different questions we tend to ask (Bernstein, 2011). This view that there are multiple interpretations, however, may lead to inconsistent and contradictory findings (Denscombe, 2009).

Interpretivists contend that the human sciences are different both in purpose and nature from the natural sciences (Schwandt, 2000). Interpretivists argue that what distinguishes social action from natural objects is that human actions are inherently meaningful. Thus, for researchers to understand a particular social phenomenon, they must comprehend the meaning behind that action (Schwandt, 2000). They use methods of data collection that allow the meanings behind the actions of the people under study to be revealed. Commonly used methods in interpretivist studies are interviews, both participant and non-participant observation and analysis of documents of all kinds. Because they tend not to include statistical analysis, however, interpretivist research has been accused of lack of rigour (Denscombe, 2009).

In the domain of social science and educational research, there has been considerable debate concerning which of multiple paradigms is optimal. The debate, which originally concerned the divide between ‘quantitative–qualitative’ paradigms, has since evolved into whether both positivist and interpretivist views can be accommodated. Although some scholars have continued to insist that the differences between these two paradigms are huge and irreconcilable (Guba, 1990; Orlikowski and Baroudi, 1991; Sale *et al.*, 2002), there have been many attempts to reconcile the differences and propose integrated approaches combining aspects of the two views (Lee, 1989; Creswell *et al.*, 2003; Teddlie and Tashakkori, 2003; Pring, 2015; Scott, 2005). Pring (2015) argues that the two paradigms constitute a false

dualism that should be rejected as they require the researcher to make an either/or choice between the two. He, cautions against adopting a priori either a quantitative or qualitative view of the world as this over-simplifies the real world, which is both complex and complicated. He maintains that the way in which research is conducted depends on its aims and social context, so that the participants can be both the object and the subject of the research.

As a result of dissatisfaction with positivism among the human sciences (Teddlie and Tashakkori, 2009; Siegel, 2013), as well as the apparent conflict between the main two approaches – positivism and interpretivism – a new approach emerged: post-positivism. Post-positivism is an approach that advocates methodological pluralism and is therefore placed along the continuum between positivism and interpretivism (Grix, 2004). It is considered a popular alternative for social researchers who believe that neither positivism nor interpretivism on their own provide a satisfactory philosophy to underpin their research (Denscombe, 2009).

This research is guided by a post-positivist approach, with critical realism as the ontological stance and modified objectivity as the epistemology. This philosophical approach is consistent with the belief that neither a positivist nor an interpretivist paradigm alone could address the research questions. The post-positivist perspective is thus optimal in achieving the aims of the research, not only because it allows objective investigation of a phenomenon through both quantitative and qualitative means of inquiry (Phillips and Burbules, 2000), but also because it avoids many of the inadequacies associated with the positivist and interpretivist positions (Clark, 1998).

4.2.1 Post-positivism: Epistemology and ontology

The term ‘post-positivism’ refers to thinking after and beyond positivism, challenging the traditional notion of the certainty and absoluteness of truth and knowledge (Denscombe, 2002) and recognizing that we cannot be ‘positive’ about our claims to knowledge when studying the behaviour and actions of humans (Creswell, 2003, p. 7). Furthermore, it abandons the exclusive preference for scientific methods as the only worthwhile means of discovering how the social world works and accepts that there are inevitably limits to how far social researchers can discover the ‘true reality’ of the social world in which they live (Denscombe, 2009).

Ontology

The ontological stance of post-positivism is critical realism, which assumes, like realism, that 'reality' exists. However, it moves away from a naïve realist position to the view that although a real world, driven by real natural causes exists, it is impossible for humans truly to perceive it with their imperfect sensory and intellectual capabilities (Guba, 1990, p. 20). Thus, for a critical realist, 'a belief that an independent reality exists does not commit one to the view that absolute knowledge of the way it works is possible' (Scott, 2005, p. 634). Moreover, critical realism believes in the fallibility of knowledge, namely that due to human limited intellect, one can never prove a theory or proposition (Teddlie and Tashakkori, 2009; Neuman, 2011). Indeed, due to human limitations, the evidence established is always fallible and imperfect; consequently, absolute truth can never be attained by human beings (Phillips and Burbules, 2000,) and because of these human limitations, inquirers need to be critical in their own work (Guba, 1990). Moreover, the post-positivist position adopts a pluralist view of multiple realities, rather than a single one. That is, similar to relativists, critical realists admit that different people in different societies hold different views about reality (Phillips, 1990), except these are now considered multiple perspectives, views or beliefs rather than realities (Phillips and Burbules, 2000). Unlike the relativist position that all these different, sometimes contradictory views are true, however, critical realists argue that there is at best one true view, whether or not a researcher can determine it at that moment (ibid).

The problems studied by post-positivists reflect a deterministic philosophy, according to which causes probably determine effects or outcomes (Creswell, 2009). Thus, they reflect a need to examine the causes that influence outcomes. However, social reality does not comprise a simple cause–effect relationship; critical realism holds that an effect is something that will probably happen, not something that will certainly happen. Likewise, a cause may have a potential impact, not necessarily a definite one. As such, a reality can exist, but it may not always be observable. Unlike positivism, then, critical realism admits that there are generative mechanisms that are not directly observable but account for regularities in natural and social settings (Bryman, 2012). This means that a researcher should not derive conclusions based solely on data that can be observed. In this regard, critical realism clearly differs from positivism and empiricism by questioning the assumption that carefully recorded observations and experiments can provide the necessary answers to understand social reality (Denscombe, 2002). Therefore, participants' perspectives are often also sought. Furthermore, as knowledge is tentative, hypotheses are not proved but are simply not rejected (Creswell, 2003; Denscombe, 2009).

Epistemology

Epistemologically, post-positivism recognises the absurdity of assuming that human inquirers can actually step out of a situation and fully detach themselves when conducting an inquiry. It therefore presents a modified objectivity, asserting that objectivity can only be achieved ‘reasonably closely’ and by striving to be as neutral as possible, by ‘coming clean’ about one’s own predispositions, maintaining the procedures consistent with the scholarly tradition applied in the field and subjecting every measure to the judgement of peers (Guba, 1990, p. 21). Post-positivism also emphasises the key role of evaluation criteria, such as internal and external validity (Lincoln and Denzin, 2000). To meet such criteria, in this thesis, my role and relationship with the research design are clarified. In addition, the study applied rigorous measures with regard to the quantitative and qualitative instruments to ensure reliability and internal and external validity such as, establishing construct validity using a thorough review of the literature, expert feedback, pilot testing and factor analysis of the quantitative instruments; establishing reliability and internal consistency using Cronbach’s alpha (α) correlation coefficient.

Methodology

Post-positivism rejects the dichotomy often associated with quantitative and qualitative paradigms (Clark, 1998) and instead advocates methodological pluralism (Phillips and Burbules, 2000). Hence, there is no such thing as ‘the correct method’; rather the methods to be used in a study, whether quantitative or qualitative, should be selected based on the research questions to be addressed, the objects to be studied and the aims of the study (Sayer, 1999). The use of multiple methods is believed to minimise bias and help capture as much reality as possible (Lincoln and Denzin, 2000). That is, if human senses and intellect cannot be relied on, it is crucial that the findings of an inquiry be derived from as many sources of data and methods as possible (Guba, 1990). Lincoln and Denzin (2000, p. 5) argue that different methods can be combined to make better sense of the findings of each. However, Hammersley and Atkinson (2007, p. 184) maintain that ‘one should not adopt a naively “optimistic” view that the aggregation of data from different sources will unproblematically add up to produce a more complete picture’. Post-positivism promotes the triangulation of qualitative and quantitative methods to examine the diversity of data obtained through different sources (Clark, 1998).

In line with this, the study used multiple sources to gather as much data as possible about the various aspects of school effectiveness from different angles. Furthermore, data drawn from different sources and using different methods (test scores, surveys, focus groups, semi-

structured interviews) were triangulated in an attempt to increase the accuracy of the findings. The use of multiple data sources in this study was also based on the following considerations. First, it aimed to ensure that the information obtained would be accurate and trustworthy. The use of different data sources was intended to allow triangulation of the findings. In this process, data produced by different data collection techniques are compared and thus it may be possible to assess the validity of inferences based on indicators and concepts by examining data related to the same concept, say parental involvement, drawn from student and teacher surveys and participants' views drawn from interviews and focus groups.

In this research, both quantitative and qualitative data (employed in two separate stages) have been incorporated to address the research questions. Statistical data are primarily used to answer the first two research questions, that is to identify if any statistically significant difference exists between public and private schools, and if so, those factors contributing to the academic advantage of one school type. The qualitative data, on the other hand, are used to explore the differences between the two systems from the perspectives of the main stakeholders: students, parents and teachers. They are used primarily to expand on, explain and triangulate the findings derived from the quantitative data.

4.3 Research methodology: Mixed-method research

This study employed a mixed-method research design to obtain quantitative and qualitative data with the aim of examining the differences and similarities between government and private school provision. Guided by the research questions, it was believed that neither qualitative nor quantitative methods alone could adequately cover the depth and scope of analysis required by the research questions. Indeed, for some researchers it is the research questions that decide and guide the use of mixed methods (Creswell, 2003; Erzberger and Kelle, 2003; Teddlie and Tashakkori, 2009; Bryman, 2012) as answering some questions will require numerical hard (quantitative) data, whereas answering others will require soft (qualitative) data. The first two questions in this research were answered primarily through the analysis of quantitative (TIMSS) data, whereas the third and fourth questions were addressed primarily through qualitative data obtained from interviews and focus groups. Using different methods of inquiry made it possible to capture different dimensions of reality (Sandelowski, 2000). In the final stage of analysis, both quantitative and qualitative methods were combined to complement each other and provide a more in-depth and holistic account of the phenomena examined, i.e. government and private school systems (Greene *et al.*, 1989; Tashakkori and Teddlie, 1998).

Whether mixed-method research should be considered a new paradigm is a matter of debate. Morgan (2007, p. 73) states that it is a ‘pragmatic approach that offers an effective alternative through its emphasis on the abductive-intersubjective-transferable aspects of our research’. Not only does this approach allow communication across methods and within research teams, but also between the researchers and the researched (Torrance, 2012). Researchers use mixed methods for many different reasons, but mainly to expand the breadth and scope of the research and to offset the weaknesses of either approach alone (Greene *et al.*, 1989; Creswell, 2003). In addition, it makes it possible to investigate more complex questions, collect richer data and produce stronger evidence than could be achieved by using a single method (Yin, 2009).

Another main reason for using a mixed-method approach is this particular study lay in the literature on school effectiveness. One of the limitations of SER identified was the adoption of a production function approach and hence heavy reliance on quantitative data, primarily test scores, as an indicator of school performance (see 3.2.5). Such an approach, although useful to identify relationships between different variables, fails to account for different aspects of schooling and, most importantly, cannot explain how and why associations between variables exist (Luyten *et al.*, 2005). Given that this study aimed to understand the factors that influence students’ academic performance in government and private schools, the educational production function seemed a plausible means of identifying the family background and school variables that influence outcomes. This approach was applied in the first phase of the research, which employed quantitative data to compare the two school types primarily in terms of students’ achievement in mathematics, as well as family, student and teacher characteristics. The factors most contributing to students’ achievement were identified using statistical analysis, but the quantitative data were not able to shed light on why some factors were more influential than others. Therefore, qualitative data were obtained from stakeholders to complement and explain the findings from the quantitative data. Qualitative data were also essential to study the processes occurring within schools, providing valuable information on the factors that make some schools more effective than others (Scheerens and Bosker, 1997; Thrupp, 2001).

A mixed-method approach was deemed essential for this study as it has various advantages, such as expanding the scope of investigation, making it possible to view the phenomenon from different robust perspectives. In addition, the use of both quantitative and qualitative methods creates a balance between the precision of quantitative data and richness of qualitative data and also helps prevent bias that may arise from the researcher’s

preconceptions (Guba, 1990). However, gathering data through different methods may generate discrepant accounts, which could call for further investigation (Torrance, 2012). Such discrepant accounts are regarded as interesting but perplexing findings that imply that the researcher's initial queries might have been inadequate and accordingly further data are required to seek additional interpretation (Mathison, 1988). Moreover, mixed-method studies tend to require the researcher to be competent in using qualitative and quantitative methods and they usually take longer to implement than single method studies.

4.3.1 Why use a mixed-method approach?

Greene *et al.* (1989) identified five main purposes for using a mixed-method approach: triangulation, complementarity, development, initiation and expansion. In this research, the mixed-method approach was used primarily for the following purposes: triangulation, complementarity, development and expansion.

Triangulation

Teddle and Tashakkori (2009, p. 27) defined triangulation as 'the combinations and comparisons of multiple data sources, data collection and analysis procedures, research methods, investigators, and inferences that occur at the end of the study'. According to Silverman (2010, p. 277), triangulation is 'the attempt to get the "true" fix of a situation by combining different ways of looking at it (method triangulation) or different findings (data triangulation)'.

Triangulation can serve a wide range of purposes, from the convergence of data, aimed primarily at validation, to divergence, aimed at gaining deep and complex understanding (Hesse-Biber, 2012). Greene *et al.* (1989) pointed out that triangulation can play a complementary role in research, making it possible to reveal different forms of understanding through different methods. Likewise, Neuman (2011) stated that the triangulation of methods yields richer and more comprehensive results than otherwise possible.

Kelle (2001) suggest three models of triangulation in which quantitative and qualitative data can be integrated: 1) Triangulation is used for mutual validation (validity model); 2) triangulation is used to integrate different perspectives to produce more comprehensive picture of the investigated phenomenon (complementarity model); and 3) triangulation is used to investigate a phenomenon using different methods (trigonometry model). This study employed all three types of triangulation. The first model is reflected by obtaining data using different methods (test scores, questionnaires, focus groups and interviews) in what is,

according to Denzin (1978, p. 304), a ‘complex process of playing each method off against the other so as to maximize the validity of field efforts’. Second, the findings obtained from quantitative and qualitative data were integrated to produce a more complete picture of the quality of education in government and private schools in Oman, Finally, different methods were employed to look at each aspect of school effectiveness to allow triangulation from different angles (e.g. teachers’ satisfaction was investigated using a survey and semi-structured interviews). It is important that the multiple methods are used to study the same problem (Patton, 2002) as mutual validation is only possible if the results relate to the same phenomenon because it is only then that these different results can be adequately interpreted as indicators of validity issues (Kelle, 2001).

Complementarity

Complementarity entails using quantitative and qualitative methods to explore different aspects of phenomena and thus yield more elaborate and enriched illustrative data (Greene *et al.*, 1989). In this research, each method was employed to assess different levels of the phenomena under investigation. To illustrate, quantitative methods mainly aimed to reveal the ‘what’ aspects in examining the differences between the two systems (e.g. academic achievement, teachers’ satisfaction), whereas the qualitative methods focused on the ‘why’ and ‘how’, based on the views of the participants. In other words, whereas the quantitative methods provided statistical indicators regarding the effectiveness of government and private schools and the variables that influenced their effectiveness, the qualitative methods aimed to explore and explain the differences and similarities between the two systems at a ‘higher level’ (Yin, 2009, p. 133), supporting critical explanation and verification of subsequent propositions.

Development

Development occurs when one method (either qualitative or quantitative) is implemented first and the results of the initial data analysis are then used in the sample selection, instrument development, or informing the analysis for the other method (Greene *et al.*, 1989). In this research, quantitative methods were implemented in the first phase and the results were then used to inform the development of the qualitative methods (interviews and focus groups). According to Creswell (2003), this design helps explain and interpret quantitative results by collecting follow-up in-depth qualitative data. The two types of methods are used to examine the same phenomenon from different perspectives. The quantitative results help tailor the subsequent in-depth individual and group interview instruments to follow up on any confusing or significant responses (Driscoll *et al.*, 2007).

Expansion

According to Greene *et al.* (1989), enhancing the results of research by using different methods for different parts of the study helps provide illustration, as well as expanding the scope and the breadth of the study. Qualitative data analysis may illustrate how patterns, identified based on quantitative data analysis, apply in particular cases. Thus, the use of one type of data analysis adds to the understanding gained from another. In this thesis, both methods have been integrated to add depth, breadth and richness to the interpretation of the results and give a fuller picture of the two educational systems than would be achieved using quantitative or qualitative approaches alone.

4.3.2 Application of mixed methods

When using mixed methods, researchers ‘need to be asking when each approach is most helpful and when and how they should be mixed or combined in their research studies’ (Johnson and Onwuegbuzie, 2004, p. 15). There are many ways in which quantitative and qualitative methods can be mixed in a single study. Tashakkori and Teddlie (1998) delineated around 40 mixed-method research designs in the literature. Of these, (Creswell *et al.*, 2003) identified the six most used, which included three sequential and three concurrent designs. Other researchers have also discussed examples of mixed-method designs in the literature (Greene *et al.*, 1989; Sandelowski, 2000; Creswell, 2009). However, there is no order of preferred designs. According to Caracelli (2006, p. 86), ‘it is precisely the flexibility to craft the best design options, including both qualitative and quantitative forms of evidence, for specific problems and questions that is the strength of mixed methods designs’.

There are certain criteria based upon which a certain mixed-method strategy is selected. Creswell (2003) identified four criteria related to the implementation and analysis of quantitative and qualitative data: implementation sequence, priority, integration and theoretical perspective. Taking these criteria into consideration, this research followed a sequential explanatory mixed-method design, such that the results of one method were used to inform the development of the other method. The development included sampling, implementation and measurement decisions (Greene *et al.*, 1989; Creswell, 2009). This particular design was characterized by the collection of quantitative data in the first phase, followed by the development of qualitative methods (based on the results of the quantitative data) in the second phase, which were then followed by the collection and analysis of the qualitative data (Creswell, 2009).

When deciding to use an explanatory sequential design, the researcher has to consider a number of methodological issues, such as the priority and weight assigned to quantitative and qualitative collection and design during the research process and the stages in which the quantitative and qualitative data are connected and how the results are integrated (Ivankova *et al.*, 2006). The post-positivist approach, underpinning this research, places particular emphasis on the quantitative data and focuses on strengthening the findings using qualitative data (Wildemuth, 1993). In this research, quantitative data were thus given more weight and the findings validated using qualitative data through the triangulation process.

The data were mixed in the intermediate stage, using the quantitative results to inform the qualitative data collection; thus, the two sets of data were separate yet connected. The rationale for this approach was that the quantitative data and their subsequent analysis would provide a general understanding of the research problem, while the qualitative data and their analysis would refine and explain the statistical results by exploring participants' views and interpretations in greater depth (Tashakkori and Teddlie, 1998; Ivankova *et al.*, 2006).

An important application of this design is to guide purposeful sampling. The results of one method can direct the researcher to the kind of participants to be recruited and the nature of information to be obtained in a later stage, for instance in the case of extreme or outlier cases that may result from the quantitative data. Follow-up interviews with the extreme cases may provide insights into why they diverge from the quantitative sample. Caracelli (2006) highlighted the applicability of this use of sequential design as it can increase confidence in and the explanatory power of quantitative data and allow better understanding of the quantitative outcomes. Instruments can also be used as elicitation devices concerning the targeted phenomena. For example, a researcher could use participants' responses in a survey to trigger feelings and thoughts in follow-up interviews. Participants could also be asked to offer reasons for their responses, potentially providing information on the content and construct validity of an instrument (Sandelowski, 2000). Some interesting or unexpected statistical findings in the first stage could be explored further through interviews and focus groups in a second phase of data collection. For example, a teachers' survey indicated that female teachers were more satisfied with their salaries than male teachers in both private and public schools. Clarification on this was sought from teachers during interviews. The quantitative and qualitative data were used separately but connected to overcome the weaknesses inherent in one approach through the strengths of the other (Creswell, 2003).

In this research, quantitative data were used to ascertain whether or not there were differences between public and private schools in terms of students' achievement in the 2015 TIMSS mathematics test. A job satisfaction survey was also employed to examine how satisfied teachers were with their jobs in the two sectors. The initial results of the two quantitative instruments were used to design follow-up one-to-one interview and focus group discussion protocols, conducted in the second phase. Teachers and students were interviewed to elaborate on and explain the quantitative results. The quantitative and qualitative results were integrated to provide a discussion of the outcomes of the study as a whole. Data obtained from quantitative and qualitative methods were triangulated to present a more comprehensive understanding of government and private school provision.

The main strength of this design is its straightforward nature. In addition, its clearly separate stages make it easy to implement, describe and report. It also provides a wider scope to explore and interpret quantitative data, especially when unexpected results emerge (Morse, 1991). However, the feasibility of resources and the length of time needed to conduct data collecting in both phases is considered a disadvantage of the sequential explanatory design (Ivankova *et al.*, 2006; Creswell, 2009).

To provide a better understanding of the sequential explanatory approach adopted in this study, Figure 4.1 presents a graphic model of the design, adapted from Ivankova *et al.* (2006). The model demonstrates the sequence of the data collection phases, the procedures of data collection and analysis and the expected products in each stage of the process. In addition, it shows the points at which the two sets of data were connected, as well as those at which the integration of results occurred.

As discussed earlier, the main advantages of this model were its ability to produce validated and substantiated results. In addition, data collection could be done in a shorter period of time than in other sequential designs (Creswell, 2003). However, studying a phenomenon by comparing the findings of two separate methods can be extremely challenging. In addition, it requires effort and expertise on the researcher's part to interpret the discrepancies that might result in the findings.

Sequential Explanatory Design

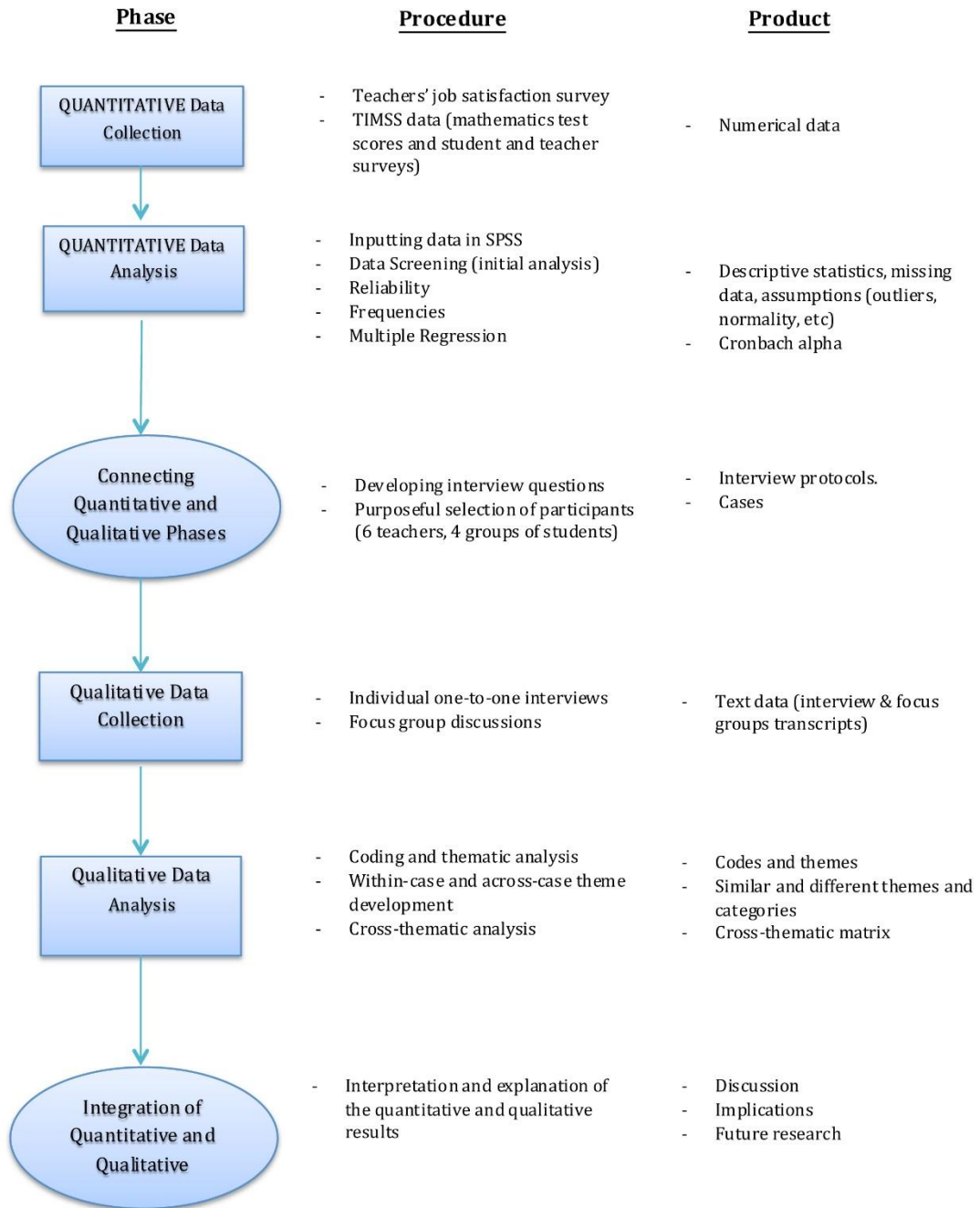


Figure 4.1. Sequential explanatory design (adapted from Ivankova *et al.*, 2006, p. 16)

4.4 Research instruments

Data were collected using various quantitative and qualitative instruments. The next sections describe these instruments, the reasons for their selection and their strengths and limitations.

4.4.1 TIMSS data

TIMSS is an international comparative study designed to measure trends in mathematics and science achievement in the fourth and eighth grades, as well as to collect information about educational contexts (such as students' schools, teachers and homes) that may be related to student achievement. TIMSS has been conducted by the International Association for the Evaluation of Educational Achievement (IEA) every four years since 1995. TIMSS comprises a quasi-longitudinal design, with the fourth-grade student cohort assessed again four years later in the eighth grade. Because it is an international study, TIMSS provides valuable benchmarking information on the performance of students in a country compared with students around the world.

The Sultanate of Oman has participated in three rounds of TIMSS, in 2007, 2011 and 2015. In 2015, 9,105 fourth graders and 8,883 eighth graders, representing different school types from all educational governorates in Oman, participated in the assessment. However, this study only used mathematics data for grade 8 students for a number of reasons, as described in the next sub-section.

Rationale for using grade 8 mathematics assessment data

Due to limitations of time and the complex nature of TIMSS data, it was decided that it would be more feasible to conduct an in-depth analysis of mathematics data for grade 8 students only rather than analysing a broader dataset.

Although TIMSS assessments provide data for both grades 4 and 8, this study only used data from grade 8 for a number of reasons related to the students, teachers and school systems. First, grade 4 students in the public sector study in cycle 1 mixed schools and are taught only by female teachers, while grade 8 students study in separate single-sex schools and are taught by teachers of their own gender (see section 2.4). Hence, grade 8 data are advantageous in that they enable exploration of the differences between the school systems for boys and girls, which would not be possible using grade 4 data. Second, as discussed in 4.3, the intention was to use a mixed-method approach obtaining qualitative data from students, teachers and parents to explain, complement and triangulate the quantitative data. It was considered that older students in cycle 2 would be more capable of expressing their views and opinions concerning their schools than those in cycle 1. In addition, as many students in private education tend to

change school at some point in their educational process (see 2.5.2), it was thought that those in cycle 2 would be better able to reflect on this phenomenon considering their longer school experience.

The primary reason for examining mathematics data in this study was that it is generally believed that mathematics is more influenced by school effects and less by family background than other subjects (Bryk *et al.*, 1993; Heyneman, 2005). In addition, attainment in mathematics has drawn particular attention from researchers in various countries because of the relatively low achievement level in this field compared to other subject areas, as evidenced by international studies such as TIMSS and PISA. In Oman, despite improvements in mathematics results since 2007, as indicated in Table 4.1, Omani students are still at the lower end of the international ranking. Moreover, mathematics results were significantly lower than science scores in the three TIMSS rounds in which Oman participated.

Table 4.1. Omani students' mathematics and science performance in TIMSS 2007, 2011 and 2015

		2007*	2011	2015
Mathematics	Grade 4		385	425
	Grade 8	372	366	403
Science	Grade 4		377	431
	Grade 8	423	420	455

*Grade 4 Omani students did not participate in TIMSS in 2007.

Finally, this study analysed grade 8 mathematics data to compare government and private school provision. The student data available represented the three educational systems operating in Oman under the supervision of the MoE: government, private and international. For the purposes of this study, however, only data from government and private schools were employed. International schools were excluded for the following reasons:

- The overarching aim of the study was to examine the effectiveness of government and private schools in Oman. As explained in 2.6.1, international schools have been established by expatriate communities for their children to learn their national curricula. These schools, although under the umbrella of the MoE, have freedom in terms of curriculum selection, teacher recruitment and financial management. Moreover, Omani students are generally not allowed to enrol in these schools. As such, although operating in Oman, it is believed that international schools do not represent the Omani educational system.

- In official government documents and educational research, the Omani educational system is often referred to as constituting government and private education only. Therefore, government initiatives have always been directed towards developing these two sectors exclusively. Moreover, unlike government and private schools, there is a scarcity of information regarding international schools in official MoE documents, especially statistical data.

TIMSS mathematics tests

The TIMSS assessments measure students’ knowledge and skills in mathematics and their ability to apply their knowledge in problem-solving situations. At each grade, students respond to multiple-choice and constructed-response items (or questions) designed to measure what they know and can do across specific content domains, as shown in Table 4.2.

Table 4.2. Content domains in TIMSS mathematics and science tests

	Domains	Mathematics
Grade 8	Content	Number Algebra Geometry Data and chance
	Cognitive	Knowing Applying Reasoning

Students’ knowledge and understanding of mathematics are assessed through a large range of questions. The eighth-grade assessment consists of 450 items (half in mathematics and half in science). Given this large pool of mathematics and science items at each grade level, however, it is too challenging to administer the items in their entirety to any individual student. Therefore, a matrix-sampling assessment design is adopted such that each student is given a single test booklet containing only a part of the entire assessment. The results for all of the booklets are then aggregated using item response theory (IRT) to provide results for the entire assessment. Multiple imputations – or plausible values – are used to derive reliable estimates of student performance on the assessment as a whole, even though each student responds to only a subset of the assessment items. Because each student proficiency estimate incorporates a random element, TIMSS 2015 followed the customary procedure of generating five estimates, or plausible values, for each student and using the variability among them as a measure of the imputation uncertainty, or error. To enhance the reliability of the student scores, the TIMSS scaling approach uses conditioning, a process in which student responses to the items are combined with information about students’ backgrounds (Foy and Yin, 2016).

Eventually, a range of five plausible values of scores in the mathematics test are provided for each student, in addition to an overall score drawn from these plausible values (Martin *et al.*, 2013). In this study, only the overall proficiency scores for mathematics were used in the analysis.

TIMSS achievement results are reported on a scale from 0 to 1000, with a fixed scale centre point of 500, also known as the ‘TIMSS scale average’. Students’ scores are also divided into four benchmarked achievement levels, advanced, high, intermediate and low, as shown in Table 4.3.

Table 4.3. TIMSS international benchmark levels

<i>Level</i>	Score range	Description of abilities associated with benchmark
<i>Advanced</i>	625 or above	Students can apply their understanding and knowledge in a variety of relatively complex situations and explain their reasoning.
<i>High</i>	550 to lower than 625	Students can apply their knowledge and understanding to solve problems.
<i>Intermediate</i>	475 to lower than 550	Students can apply basic mathematical knowledge in simple situations.
<i>Low</i>	400 to lower than 475	Students have some basic mathematical knowledge.
<i>Not reaching low benchmark*</i>	Below 400	This level is not described by TIMSS, but one can infer that it represents students who do not demonstrate basic skills in mathematics.

*This fifth level was added to account for students who performed below the ‘low’ international benchmark (i.e. below a score of 400).

Reliability (Cronbach’s alpha) is determined for each country by the TIMSS Data Processing Centre. According to Foy *et al.* (2016), the international median reliability for mathematics (the median of the reliability coefficients for all countries) was 0.83, while for Oman the mathematics reliability coefficient was 0.82, reflecting a high level of internal consistency.

TIMSS background questionnaires

An important purpose of TIMSS is to study the home, community, school and student factors associated with student achievement. The participating students, as well as their teachers and school principals, are required to complete questionnaires covering a wide array of information about the home and school contexts. The student questionnaires also elicit information related to attitudes toward learning mathematics. Each of the questionnaires takes approximately 15 to 30 minutes to complete (Martin *et al.*, 2013).

These data on the system structure, school organization, curriculum, teacher education and classroom practices reveal many pathways to teaching and learning. In particular, making

comparisons between countries and in relation to student achievement, the information gathered can provide insights into effective educational strategies for development and improvement (Hooper *et al.*, 2013). Based on the research questions, this study aimed to examine the effectiveness of government and private schools based on students' academic achievement and the satisfaction of teachers, students and parents. Furthermore, students' test scores were examined in relation to a number of specific factors: family socioeconomic status, the characteristics of students (gender, attitudes towards teachers, mathematics, schools), teachers (gender, qualification, experience, teaching strategies, challenges, satisfaction) and schools (class size, building, teaching resources). The aim was to identify the factors more likely to influence mathematics achievement in Omani schools. In the TIMSS data, detailed information on these aspects could be obtained from the survey datasets for students and teachers. Thus, survey data from school principals were not used initially because all the variables of interest were available in the student and teacher questionnaires and because the data files for principals (obtained from the MoE) could not be merged with the student and teacher data as there were no common variables with the other datasets.

TIMSS sampling procedure

A two-stage random sampling design was employed for the TIMSS assessment, sampling students in two stages, first by randomly selecting a school and then randomly selecting a class from within the school. Whole classes were selected rather than individual students from across the grade level because the students' results were associated with their overall instructional experiences and these are usually organized on a classroom basis. Sampling intact classes was also less likely to cause disruption to the school's day-to-day instruction than individual student sampling (LaRoche, 2016).

Within each participating country, TIMSS national coordinators had to define the national target population and apply the TIMSS sampling methods to achieve a nationally representative sample of schools and students. All schools with students enrolled in the target grade were eligible regardless of their type. In Oman, the Directorate General of Educational Assessment in the MoE recruited schools for the pilot study and the main study assessments, adapted the test items for use in Oman, supported participating schools in the administration of the tests during the implementation period of the main study (which took place from March to May 2015), marked all the assessments and questionnaire responses and was responsible for national data analysis and for writing the national report.

Stratification consists of arranging the schools in the target population into groups, or layers/strata, that share common characteristics, such as geographic region or school type, to ensure the proportional representation of different types of school in the sample. In Oman, schools were stratified based on their type and the educational governorate to which they belonged.

4.4.2 Job satisfaction questionnaire

Teachers are an important component of any educational system. Therefore, to explore the effectiveness of government and private schools, teachers' views had to be taken into consideration. The views of teachers in government and private sectors concerning different aspects of their schools (e.g. administration, students, resources, salary, etc.) would shed light on the strengths and weaknesses of the two systems. The teachers' survey aimed to answer the third research question, examining teachers' satisfaction with their schools. The relevant literature on job satisfaction was carefully reviewed and taken into consideration before and while the questionnaire was being developed. A questionnaire was deemed to be the best tool, being 'much more efficient in that it requires less time, is less expensive and permits collection of data from a much larger sample' (Gay, 1996, p. 255).

The development of the questionnaire made use of the teachers' job satisfaction survey developed by Alzaboon *et al.* (2007), which was used to measure teachers' job satisfaction in Jordanian secondary schools. This survey was used as a springboard when designing the questionnaire for this study. Although the original questionnaire could have been used, it was decided that some adaptation was needed to provide a better fit with the Omani context. Consequently, some items were deleted and other items and sections were added or merged. Moreover, the original questionnaire, comprising 63 items, was thought to be rather long; this might discourage participation and could possibly lead to withdrawal (Denscombe, 2010). A lengthy survey might be especially discouraging for teachers considering their workload and limited free time. Taking these considerations into account, the job satisfaction questionnaire used in this study was constructed as follows:

- **Demographic data:** teachers' gender, nationality, school type, age, qualifications, experience, school choice for their children and school type they preferred to work in. All these were either dichotomous or multiple-choice questions.
- **Open questions:**
 - Teachers were asked to justify their choice of a certain school type as a place of work.

- As parents, teachers were asked to justify their selection of a certain school type for their children.
- Teachers were asked to express their opinions concerning the MoE's proposal to have the private sector managing public schools.
- **Job satisfaction:** Teachers' satisfaction was measured using seven scales, each containing 7 items and measuring the teachers' responses on a 5-point Likert scale, ranging from strongly agree to strongly disagree. The areas explored were as follows:
 - School management
 - Supervisors and follow-up
 - Students (motivation, respect)
 - Work conditions (harmony, facilities, buildings)
 - Financial aspects (salary, incentives)
 - Being a teacher
 - Parental involvement

As can be seen, the questionnaire (provided in Appendix A) comprised mainly structured closed questions (multiple choice and scale ratings) which are easier than other question types for participants to answer and for researchers to code and analyse statistically (Neuman, 2011; Cohen *et al.*, 2018). Offering limited answers, however, has some disadvantages. For example, respondents' freedom to express their opinions may be inhibited as they are forced to select from predetermined and fixed options (Neuman, 2011). This can be overcome by including some open ended-questions, which have the added benefit of adding richness and depth as they might elicit 'the 'gems' of information that otherwise might not be caught in the questionnaire' (Cohen *et al.*, 2018, p. 475). Besides avoiding the limitations of the closed-question format, mixing the two types of questions also offers a change of pace and helps establish a rapport with participants (Neuman, 2011). In the teachers' survey, open questions were used for questions with numerous answer categories (e.g. years of experience in the current school, what jobs they undertake besides teaching, the subject they teach, etc.). Other probing open-ended questions were added, one to elicit participants' reasoning for their preferred management type and another to elicit their opinions on the ministry's orientation in terms of involving the private sector in government school management. Thus, rich and detailed answers were obtained, directed my attention to new and unanticipated dimensions concerning the issues examined. However, such questions require a longer response time, which can be intimidating for some participants (Neuman, 2011). Bearing this in mind, in this survey, only three open-ended questions were included. Moreover, unlike closed questions,

data resulting from open-ended questions may be difficult to handle. Cohen *et al.* (2018) point out that some researchers might be tempted to treat the qualitative data as numerical data, although they are not validly suited to aggregation. In this study, the data resulting from open-ended questions were considered and analysed as qualitative data.

4.4.3 Interviews

Semi-structured interviews were conducted with the teachers after conducting and undertaking initial analysis of the questionnaire. Thus, the qualitative data acquired from the interviews were used to verify and fill any gaps in the quantitative data obtained from the questionnaires as interviews make it possible to understand the world from the perspective of the participants depending on their prior experiences (Kvale, 1996). According to Gall *et al.* (2007), qualitative data play a discovery role, while quantitative data play a confirmatory role. In addition, using different methods for different parts of the research can provide illustration and expand the scope and the breadth of the study (Greene *et al.*, 1989).

There are different types of interview. First, there are structured interviews, associated with quantitative research, attempting to generate answers that can be coded through a set of fixed questions, the number of questions, wording and sequence being identical for all participants (Frankfort-Nachmias, 1996). Second, there are semi-structured interviews in which an 'interview guide' is used instead of fixed questions, outlining the main topics to be covered, but flexible regarding the phrasing of the questions and the order in which they are asked, as well as allowing the participants to lead the interaction in unanticipated directions (King, 2010, p. 35). The third type comprises the non-structured interview, in which the researcher does not follow an outline. Rather, there is only a set of prompts, or a single broad question, with the interviewees being encouraged to express their opinions (Bryman, 2012). Unstructured interviews were not considered for this study as such conversations with participants may yield incomparable data and this study was basically comparative in nature. Moreover, unstructured interviews require highly sophisticated interview skills compared to the other two types.

Semi-structured interviewing 'involves asking a series of structured questions and then probing more deeply with open-form questions to obtain additional information' (Gall *et al.*, 2007, p. 246). This type was particularly selected due to its flexibility and naturalness, as it allows the researcher to guide the discussion to focus on the topic of interest and at the same time allows the interviewee enough freedom to steer the conversation (Hakim, 2000). Such interviews also allow the researcher to clarify immediately responses to questions or any

ambiguities or vague replies and to probe the answers of the respondent, providing more complete information, which a questionnaire can never do (Crano and Brewer, 2002). Interviewing was also deemed to be more suitable than any other qualitative method because it is undertaken individually and therefore participants could provide their in-depth opinions and views without hesitation in a non-threatening atmosphere. The interviews were recorded and later transcribed.

The interview questions were constructed mainly to gather additional details concerning aspects addressed in the teachers' survey (see Appendix B2). There were also other questions that aimed to seek explanations of some interesting findings in the quantitative data. In addition to the main questions, probes and prompts were used to encourage participants to open up and provide more details (Braun and Clarke, 2013).

4.4.4 Focus groups

Students have always been viewed as the main beneficiaries of educational change. However, as discussed in 3.2.6, they have rarely been involved in the process of educational change (Fullan, 2001). This study argues that the voices of children should be heard as they are the key stakeholders in the education system and consequently are the targets of any policy change (Wood, 2003). Students, as established by previous researchers, are capable of evaluating the effectiveness of the school system (Soohee, 1993; Thomas *et al.*, 2000). Focus groups have been considered an appropriate approach for use with children, rather than surveys or individual interviews. While interviews provide more in-depth data than focus groups, they are time consuming. Surveys, on the other hand, may be economical in terms of time, but they tend to limit what respondents say with regard to their attitudes and experiences in comparison to what they might reveal in focus group discussions (Morgan, 1996). Some researchers have found this method useful to explore children's views on sensitive matters, especially in physiological research (Hoppe *et al.*, 1995; Fox *et al.*, 2007; Lyon, 2014). Most importantly, focus groups in particular seem especially appropriate with children because they are considered to be more 'naturalistic' than individual interviews and hence are a good tool to elicit opinions, feelings and attitudes in a relaxed atmosphere (Krueger, 2000; Stewart, 2007; Barbour, 2008).

Focus group discussions create a comfortable and stress-free environment in which 'the moderator is not in a position of power or influence' (Krueger, 2000, p. 9). According to Cohen *et al.* (2000, p. 287), group interviews with children are less intimidating than individual interviews. Therefore, this particular setting was appropriate with the children in

this study as it: i) avoided me, as the researcher, being seen as a source of authority or power; ii) elicited genuine answers rather than simple responses; iii) placed them with their peers, meaning that they were comfortable and not threatened; iv) was useful with inarticulate, hesitant and nervous children.

Employing focus groups for data collection has many advantages over other qualitative research methods. For example, this tool provides insights into complex behaviours and motivations through the interaction and this also provides valuable data on the extent of consensus and diversity among the group participants (Morgan and Krueger, 1993). In focus groups, the interaction among participants, enabling them to react to and build upon what others say, stimulates them to state feelings, beliefs and perceptions in a way that is not possible if interviewed individually (Stewart and Shamdasani, 1998; Gall *et al.*, 2007). In addition, focus groups produce a substantial amount of data in a short period of time that might not be obtained through an individual interview (Cohen *et al.*, 2000).

The aim of the discussion with students was to explore their opinions of their current schools. Focus groups were conducted with students in grades 11 and 12 (about 16–18 years old). This particular age group was selected based on the findings of the pilot study, in which a number of students of different ages were interviewed in groups. It was noticed that the students in the upper grades were more capable than younger students of reflecting on the different aspects of their school experience. They were also more articulate in describing their feelings and opinions. In contrast, younger students were more reluctant to express their views, especially about their teachers. This is understandable, bearing in mind the socially and culturally dictated respectable status of teachers, as a source of knowledge, especially for young children. Interviewing vulnerable groups like children requires particular skills and experience, as well as giving rise to various ethical considerations. Therefore, it is not recommended that researchers conduct interviews with vulnerable groups unless they have previous professional experience with them (Braun and Clarke, 2013). In my case, my experience as a teacher facilitated the implementation of the study, as I was familiar with and sensitive to the nature of students. In addition, the ethical requirements were considered fully, with the participants recruited through their gatekeepers, in this case school managers.

The main purposes of using the focus group method in this study were to: i) provide rich insights into students' feelings and attitudes regarding their schools; ii) provide a logical illustration of the results generated from the quantitative data in the first phase of the research;

iii) triangulate the findings obtained by the quantitative methods to help eliminate bias and enhance the validity of the study.

4.5 Research context

4.5.1 Research participants

A research population is defined by Bryman (2012, p. 187) as ‘the universe of units from which the sample is to be selected’. Since this study aimed to incorporate primary data collected from schools with TIMSS grade 8 mathematics assessment, the target population from which the sample was drawn consisted of all teachers and students enrolled in cycle 2 government and private schools in Muscat, the capital city of Oman over the period of study in 2018. The sampling strategy in this research was based on non-probability techniques, in which the aim ‘is not to generalize to a population but to obtain insights into a phenomenon, individuals, or events’ (Onwuegbuzie and Collins, 2007, p. 287).

In addition to using TIMSS data, which incorporate participants from the 11 governorates of Oman, those participating in the other quantitative and qualitative methods were drawn from the city of Muscat. Muscat was chosen for a number of reasons. First, it has the largest density of private education provision in Oman (see section 2.6), thus allowing more scope for selection from different private school types than might be available in other regions in the country. Second, the headquarters of the MoE, from which approval for access to schools must be obtained, are based in Muscat. The close proximity of the schools to the MoE’s different departments sped up the process of obtaining the necessary clearance to access the target schools and permitted more data to be gathered in the limited time available for field work than would otherwise have been possible. In addition, my familiarity with the place as a resident of Muscat and with people in the MoE as a former employee facilitated the field work, particularly, for example, coordination between the MoE departments concerned and the targeted government and private schools.

4.5.2 Access and ethical considerations

The entire study, including the empirical data collection process, was conducted in accordance with the ethical guidelines provided by the British Educational Research Association (BERA, 2011) ‘to reach an ethically acceptable position’ (p. 4). Therefore, prior to commencing the study, requisite ethical approval was obtained from Newcastle University. After that, official written permissions were obtained from the MoE in Oman to carry out this research in public and private schools, copies of which were sent directly to the principals of all the targeted schools in Muscat.

Ethical considerations were also taken into account prior to the implementation of the instruments. For example, all participants were given written information sheets explaining the aims of the study, what was expected from them and the potential risks and benefits of their participation (see Appendix C1). Most importantly, they were assured that they would remain anonymous and their identities would be protected and that all the information collected would be treated with high confidentiality. Participants who agreed to take part in the study were asked to sign a consent form (see Appendix C2). They were also informed of their right to withdraw from the study at any time without giving a reason.

With regards to the students, BERA, in accordance with Article 3 and 12 of the United Nations Conventions of the Rights of the Child, requires the researcher to take into account the best interest of the children and emphasizing that children should be facilitated to express their opinions and views in matters that affect their lives. BERA also emphasized that children should be facilitated to provide their informed consent, depending on their age and maturity (BERA, 2011). According to Greene and Hogan (2005), a 14-year-old child is able to make judgments and hence give informed consent, whereas in medical research, it is a common practice that children from 15-year-old onwards are required to sign a consent (Nicholson, 1968). In this research, all participants were over 16-year-old and were recruited through their school administrations. Prior to the study, every student was given an information sheet to read. Moreover, they were given the opportunity to ask questions and express their concerns to the researcher directly. After the presentation of written and verbal information about the research, a written consent form was obtained in person from those who were willing to participate to avoid any possible distress, children were given the option to opt out of the study at any point without given reasons. Moreover, the confidentiality and anonymity procedures were verbally explained to children.

There were no communication barriers during the data collection process. Almost all the participants were speakers of Arabic, also my first language. An English language version of the teachers' survey was distributed in private schools for non-Arabic speaking teachers. The surveys, interviews and focus group discussions were conducted at the premises of each participating school and during normal school hours. To assure the anonymity and confidentiality promised to respondents, only I had access to the completed questionnaires. I personally administered, collected and stored them securely. In addition, codes rather than names were used to identify the schools and personal names were not used in the data analysis template.

To prevent bias, none of the participants involved in the piloting of the instruments participated in the main study. It was agreed that information about the research findings would be provided on an opt-in basis and schools that requested access to the research findings would be provided a summary version of the data analysis chapters of this thesis.

4.5.3 Researcher's role

This research was conducted in Oman, the country where I was born and bred, which inevitably gave me an insider's perspective. Being a native researcher has a number of advantages, such as understanding the participants' culture, the ability to interact smoothly and previously established relationships with the group under study (Bonner and Tolhurst, 2002). In this research, the teachers may have felt encouraged to express their views more freely, viewing me as a fellow teacher rather than a complete stranger. Likewise, my former experience as a teacher facilitated the smooth implementation of the students' discussions as I was aware of the best ways to build a rapport with them and trigger their views and opinions.

My familiarity with the educational context, particularly government schools, was also beneficial in deciding which data instrument would be more practical to obtain data from stakeholders in schools. To illustrate, the decision to compare students' academic achievement using TIMSS data instead of applying other standardized tests was based on my own experience as a teacher and was further consolidated by advice from other fellow teachers, supervisors and officials in the MoE. That is, it was believed that applying researcher's own tests in schools might not reflect students' real cognitive abilities as it is very likely that students do not take the researchers' tests seriously because they do not contribute to their school grades. In addition, tests would require recruiting intact classes and would take no less than one hour, an arrangement that school administrations would probably not welcome.

Being an insider researcher, sharing the culture of the participants and familiar with the school system in Oman, minimized the time needed to establish common ground. However, this familiarity might have affected some of the research process negatively as some interviewees assumed that I was able to understand certain aspects of their school experiences without the need for further explanation from their side. For example, most of the participants used expressions like "*You know our society*", or "*as you know*". In such cases, I deliberately asked the participants to elaborate or explain what they meant in an attempt to apply the suggestion made by De Cruz and Jones (2004) to shift to an outsider status by asking critical questions about what is normally assumed.

In addition, there is concern that too much familiarity with the context may lead to a loss of objectivity, especially in terms of making prejudiced assumptions based on prior experiences. However, this was not inherently a problem for my study. First, with critical realism as the ontological stance, I believe in the fallibility of knowledge (Teddlie and Tashakkori, 2009); that is, due to human limitations, evidence established is always fallible and imperfect and consequently a claim of uncovering the absolute truth can never be made (Phillips and Burbules, 2000). Second, as a post-positivist, with a modified objective stance, I do not believe that researchers can actually detach themselves completely from their subjects of inquiry; rather, they should strive to be as neutral as possible (see 4.2.1). Being aware of that, I took a number of measures to ensure an unbiased position. For example, this study employed multiple sources of data collection and the data were obtained using pre-designed, well-structured questions. In addition, during the data collection, I limited my role to that of a non-participant observer and took a non-judgemental position with respect to the emerging data.

4.6 Research procedures

4.6.1 Pilot testing

Pilot testing functions as one technique for increasing the validity and reliability of research instruments by trying them out on a small representative sample of the targeted population (Cohen *et al.*, 2000). Such small-scale trials are very beneficial as a way of checking how well a proposed research design will work (Denscombe, 2009). De Vaus (2014) warns researchers against conducting studies without piloting their instruments as they might end up with irrelevant indicators. In this study, the teacher survey was piloted online, obtaining 200 responses from teachers in government and private schools from different regions in Oman (the results obtained were not included in the main study). The purpose of piloting was to obtain feedback from participants regarding the clarity of the items in terms of language and meaning, as well as comments on the order and the relevance of the items in each scale. Based on the feedback, some modifications were made. These included deleting some items or phrases that were considered inappropriate or irrelevant, re-phrasing some unclear items and adding other items to reflect some important aspects, until the tool acquired its final form. An advantage of pilot testing is that it helps to eliminate unnecessary questions (De Vaus, 2014). Since the length of the teachers' survey was a concern in the initial stages of development, piloting the survey helped identify items that could be deleted due to redundancy, ambiguity or irrelevance. Hence, the original 63-item questionnaire was eventually reduced to 42 items.

The interview protocols were also piloted prior to the commencement of the study to test the questions and gain some experience, as recommended by Bryman (2012) and Silverman (2015). As a result, I learned to avoid leading questions and to maintain focus when asking questions and not get diverted to irrelevant areas of interest. In addition, piloting made it possible to test the efficiency of the recording device and check the quality of the audio recordings; this drew my attention to the importance of using two recording devices in case one failed to function, an incident that occurred during piloting.

4.6.2 School sampling

I obtained a list of all the government and private cycle 2 schools in Muscat from the MoE. Six private and six public schools were randomly selected by choosing schools from each list, starting with number 10, then selecting number 20, then 30 and so forth. Although the schools were initially selected based on a random sampling procedure, the final selection was opportunistic as only the schools whose principals agreed to participate in the study were eventually included. In the case of rejection, the school was replaced with another with the same characteristics. As presented in Table 4.4, the final sample comprised 13 schools (6 government and 7 private).

Table 4.4. Characteristics of participating schools

School and management type	Gender of students	Total number of students	Total number of teachers	Curriculum followed
P1	Mixed	1006	69	Monolingual, bilingual
P2	Mixed	335	57	Bilingual
P3	Mixed	510	48	IGCSE
P4	Mixed	405	41	Bilingual
P5	Mixed	275	39	National curriculum
P6	Mixed	1308	124	Bilingual
P7	Mixed	1169	107	Bilingual
G1	Male	1253	83	National curriculum
G2	Male	1060	76	National curriculum
G3	Male	596	49	National curriculum
G4	Female	1180	87	National curriculum
G5	Female	1163	83	National curriculum
G6	Female	839	87	National curriculum

Having chosen the schools in which to conduct the study, I moved on to the second stage: determining the target samples within each school.

4.6.3 Teacher sampling

Teachers from the selected schools detailed in Table 4.4 were purposively sampled for quantitative and qualitative data collection. Job satisfaction surveys were distributed in all the

selected schools based on the number of teachers in each school. Teachers' survey data were collected from 353 teachers: 215 from public schools and 138 from private schools. The surveys were handed to the school administrative staff, who were responsible for their distribution and collection, usually on a different day. It is worth noting that low response rates were a problem, especially in private schools, despite the letter sent to schools explaining the aim of the research and the significance of participants' contributions.

A number of teachers were then selected for semi-structured, in-depth, one-to-one interviews. Recruiting teachers for both types of data collection was done through their school administration. Teacher sampling for the interviews was also based on self-selection. As presented in Table 4.5, four teachers from government schools and three from private schools were interviewed. The teacher participants in private schools had previous experience in the government sector and this added more depth as they were able to reflect on both systems. The teachers from government schools were all parents of children, some in private schools. This enriched the discussion, as they were able to reflect on the two school types from different perspectives.

Table 4.5. Characteristics of interview participants

School type	Interviewee code	Gender	Nationality	Qualification	Subject	Experience
Government	GOV1M	Male	Omani	Bachelor's	Geography	17 years
	GOV2F	Female	Omani	Master's	Mathematics	18 years
	GOV3F	Female	Omani	Bachelor's	English	20 years
	GOV4F	Female	Omani	Bachelor's	English	19 years
Private	PRV1M	Male	Non-Omani	Bachelor's	Physics	40 years
	PRV2M	Male	Non-Omani	Bachelor's	Biology	36 years
	PRV3F	Female	Non-Omani	Bachelor's	English	23 years

During implementation, ethical guidelines were strictly followed. Copies of the consent form and the research information sheet were attached to every questionnaire to ensure that participants were aware of the aims of the study, their potential contribution, their right to withdraw and most importantly the guaranteed confidentiality and anonymity of the data. Interviewees were also handed an information sheet and required to sign a consent form upon agreement.

4.6.4 Student sampling

According to Rubin and Rubin (1995), research participants in qualitative research need to be knowledgeable about the topic being explored, willing to talk about the topic and represent a range of perspectives to give the research balance and depth. To satisfy these criteria,

opportunistic samples of students were obtained by seeking those willing to take part in the study through the administrative offices of the schools.

In each school type, two focus groups were conducted with students at grades 11 and 12 (approximately 16 and 17 years of age). The number of participants in each year group ranged from four to six, with a total sample of 19 students, as can be seen in Table 4.6. The number of participants in each discussion group varied depending on the number of volunteers in each school.

Table 4.6. Number and gender of participants in focus group discussions

School type	Focus group	Number of participants	Gender		Participant codes
			Male	Female	
Government	FG1	5	0	5	FG1:F1–FG1:F5
	FG2	4	4	0	FG2:M1–FG2:M4
Private	FG3	4	2	2	FG3:M1–FG3:F4
	FG4	6	4	2	FG4:M1–FG4:F6
Total	4	19	10	9	

4.6.5 Administering the semi-structured interviews

I conducted all the interviews to ensure consistency across the dataset. The times and locations of the interviews were determined based on the convenience of the participants, often during a teacher’s free period during the school day. Prior to the interview, each participant was asked to read the information sheet and consent form. They were also given the opportunity to ask questions related to the research. To build a rapport with the participants, the interviews began with an explanation of the topic and they were asked about their background, for example ‘How long have you been working in this school?’ All the interviews were audio-recorded with the participants’ permission on two digital voice recorders. All participants agreed to be interviewed, except for one teacher in a private school who was reluctant to take part at the beginning, thinking that I represented the MoE. However, he later voluntarily approached me, expressing his willingness to be interviewed after being reassured that this was an independent study and he would remain anonymous.

An interview guide was used, but there was the flexibility to reorder, modify, add or delete questions to respond to the flow of conversation (Stewart and Shamdasani, 1998; Braun and Clarke, 2013). Interviews in the government schools lasted 35 to 56 minutes, while those in private schools lasted 19.5 to 38 minutes. The difference in duration was because all the teachers interviewed in government schools were also the parents of children in private

schools, so they were interested in discussing their experiences and views regarding both types of school as teachers and parents.

4.6.6 Administering the focus groups

I conducted all the focus groups and they all took place at the schools. The time and venue were determined by the school administration. The students were also recruited through the school administration and participants were selected on a voluntary basis. Being self-nominated ensured that they had something to say and were comfortable sharing their opinions and views (Fallon and Brown, 2002). Interestingly, all the students who volunteered to participate had experienced both types of schooling, which called for spontaneous modification of the discussion guide to encourage comparisons between their previous school and the current one. This added even more richness to the data as each of them provided a comparative reflection on the two school types and stated which one they preferred based on their own experience.

Prior to the focus groups, the participants were guided through the aims of the research, their rights and what was expected from them. Their anonymity and the confidentiality of all information were stressed: they were assured that their identity and school names would never be revealed or mentioned and that the information would never be shared with the schools and would only be used for the purposes of the research. Most importantly, the students were informed that they had the right to withdraw their participation and to discontinue the interview at any time without consequence. All the students agreed to participate and be recorded and signed consent forms.

The discussion was conducted in a stress-free atmosphere and the students seemed to be at ease. For my convenience, the interview guide was divided into sections with main questions, supported by some words and phrases that could work as probes. The questions were intentionally limited to allow scope for group interaction and individual participation (Morgan, 1995). The students' views were elicited in the following main areas:

- School management
- Teaching quality
- Teacher–student relationship
- School resources
- School–home relationship

General questions on background information were asked at the beginning to make the students comfortable and thus build rapport with them, which is crucial as it determines the quality of data obtained (Jones, 2005). In addition, using specific questions first may reduce the richness of the information obtained (Stewart and Shamdasani, 1998).

In general, I was aware of my role as a moderator, asking straightforward questions, listening carefully and keeping the conversation on track and – most importantly – making sure that all participants had the opportunity to participate (Krueger, 2000).

4.7 Data analysis procedures

4.7.1 Quantitative data analysis

Quantitative data collection and analysis were conducted during the first stage of the sequential mixed-method process. The quantitative data were obtained through the following sources i) TIMSS 2015 assessment which comprised mathematics test scores and student and teacher survey data; ii) the teachers' job satisfaction survey. In addition to answering the first three research questions (see 4.1), the data obtained from these instruments provided additional knowledge needed to design appropriate questions for the interviews and focus groups. Although both datasets were analysed in SPSS software, each underwent a different preparation process. In addition, different statistical tests were applied to each to answer the research questions, as will be explained in the following sections.

TIMSS data

Almost the entire TIMSS raw database is available from the IEA for download online through the TIMSS & PIRLS International Study Center website. In addition, restricted use data are available through the IEA upon request. The Oman database, although available online, did not distinguish between school type. Upon email enquiry, I was informed that nor was this information available in the restricted-use data and I was advised to contact the National Research Coordinator in Oman, i.e. the MoE, to obtain it. Consequently, I addressed the General Directorate of Educational Assessment in the MoE and received data for the 8,883 participating students in three SPSS files (student, teacher and school). For the purposes of this study, the student and teacher sub-datasets were merged using the students' ID as a common variable in both files. The merge resulted in a large dataset with 1,196 variables, some of which were not relevant for the study. Therefore, prior to analysis, the dataset was checked and cleaned. That is, irrelevant variables, such as those related to science, were excluded. This reduced the number of variables from 1,196 to 256.

Initial descriptive analysis revealed large amounts of missing data due to nonresponse, i.e. respondents do not answer all the items in the survey (Groves *et al.*, 2009). This is a common problem in largescale survey research (McKnight *et al.*, 2007) and can reduce estimation efficiency, complicate data analysis and bias results (Peugh and Enders, 2004). Although many statistical procedures are available to address missing data, researchers have to be aware of their limitations and their implications for the results. Traditional ad hoc methods include the following: i) listwise deletion, in which cases with missing data are completely excluded from the analysis; ii) pairwise deletion, in which cases are only removed if they are missing data necessary for a specific analysis; iii) replacing missing data with the mean value. The first two approaches could mean losing some valuable information that the deleted cases could have provided. In addition, deletion can cause significant attrition in the total effective sample size (Cheema, 2014). However, Pallant (2005) and Field (2009) warn that the method of substituting missing values with the variable mean should never be used if there are many missing values as this can severely distort the results. Rules of thumb suggest that listwise deletion is acceptable for missing rates of up to 10% (Bennett, 2001; Stevens, 2016). However, in the TIMSS data for Oman, more than 30% of data were missing for parents' education, for example, making listwise deletion and replacing the missing data with the mean value untenable.

More sophisticated techniques, such as maximum likelihood (ML) estimation and multiple imputation (MI), were also considered, as they have been considered to produce more robust estimates to replace missing values. The main advantage of such procedures are that they can produce unbiased parameter estimates for MCAR data or missing at random (MAR) data, i.e. the probability of missing data for a variable is not related to the value of that variable (*ibid*). However, missing values due to non-response (as was the case in this study) cannot be remedied by value imputation, which introduces an additional layer of error in parameter estimation because such imputed data, however precisely imputed, are unlikely to provide an exact match with the missing information (Stevens, 2002; Cheema, 2014). In addition, when using MI, there is the potential for conflict between the imputation model and the analytic model, mainly because the latter may contain variables not included in the imputation model (Allison, 2012). Another disadvantage of MI is that it is a rather complex procedure, involving many steps with choices that the researcher might find difficult to determine (*ibid*).

The ML procedure, in contrast, avoids a lack of compatibility between the imputation model and the analytic model because it estimates model parameters for the missing data using all the variables in the analytic model (Allison, 2012). A disadvantage of this procedure,

however, is that it requires specialized software, such as LISREL, SAS or Mplus (Stevens, 2016). Although ML was considered for this study, it was beyond my scope of research expertise and learning to use new software, such as SAS, was impractical given the limited time available.

Therefore, I decided to only use cases with as complete data as possible to maintain the authenticity and precision of the data, even if that meant that a proportion of the dataset would be lost. After excluding cases with incomplete data, a total of 4,558 participants remained, of whom were from government schools and 342 from private schools. Of the remaining government school cases, a random sample⁴ of 350 cases was drawn using SPSS version 25 and retain the entire sample from private schools. This led to a final sample of 692 students: 350 from government schools and 342 from private schools.

A very important step before commencing quantitative data analysis is to check the assumptions of parametric data in order to decide which statistical tests are appropriate (Field, 2009). Most parametric tests, for instance, require that the following assumptions are met: normally distributed data, homogeneity of variance, interval data and independence. As far as the TIMSS data were concerned, no violations of these assumptions were detected as the data were normally distributed with no outliers as assessed by boxplot inspection (see Appendix D). As such, parametric tests were employed for the inferential analysis of the data, disaggregated and comparing the students' data based on school type to answer the first research question. Moreover, the variables related to students, teachers and schools were further examined to determine any significant associations between the students' test scores and other factors. Initially, a chi-squared test was employed to explore if there were any associations between school type and other categorical variables, such as family possessions and parents' qualifications. Cramér's V was also used to provide an estimate of the strength of the association between variables. To test if there were any significant differences between the means of students' test scores in each school type in relation to specific factors, other tests were conducted, such as an independent sample *t*-test for dichotomous independent variables like gender and one-way analysis of variance (ANOVA) for independent variables with more than two groups like parents' levels of education. Finally, hierarchical linear regression models were developed using an array of home, teacher and school-level variables associated with students' achievement to address the second research question, that is to explore factors influential in explaining students' achievement in mathematics.

⁴ Random selection means that each participant in the population has an equal and independent chance of being selected (Kumar, 2005).

Finally, as the data still contained a large number of variables (many likely to be correlated with each other and potentially leading to erratic or spurious results), it was deemed necessary to reduce the data using a data reduction strategy based on a rotated principal factor analysis, as described later.

Teachers' job satisfaction survey

All surveys were initially transcribed by coding them manually according to school type and number (e.g. G1, G2, ..., P1, P2, etc.). The data were then entered into and analysed in SPSS. To obtain comparative figures, I divided the data into different categories according to the scales upon which the questionnaire was built, namely: personal information, school management, supervision and follow-up, students, working conditions, financial aspects, teachers' evaluation of their profession and parental involvement.

The questionnaire data were also entered into and analysed in SPSS. The variables entered into the SPSS program were categorized according to specific characteristics (name, label, value, missing data, etc.). Each variable was given a code and these codes were used to find matching responses and the sources of the data and to identify different responses obtained from the participants. To illustrate, for a teacher's highest qualification, 1 represented 'diploma', 2 represented 'Bachelor's degree', 3 was 'Master's degree', etc. For all the other themes, a pre-coded 5-point Likert scale was employed, with 0 representing 'strongly disagree' and 4 'strongly agree'. The coding process also assigned each numerical code a value, indicating the number of responses for each code. The coded responses were then kept in the form of a database, grouped as 'similar' and 'different' responses gathered from government and private school participants; this then made it possible to make accurate comparisons. Before starting the analysis, the data were carefully cleaned and checked, looking for any errors.

To produce comparative census data, descriptive analysis was conducted in SPSS (frequencies were used for categorical variables and descriptive analysis was used for continuous variables for both private and government school systems to obtain numeric results: percentage, maximum, minimum, mean, etc.). To determine which tests would be most appropriate for this analysis, the data were checked for outliers, normality and homogeneity of variance. The results showed the following:

- Outliers were detected in all the scales except for 'financial aspects', as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box.

- The assumption of normality for all scales was not satisfied for either government and private groups as assessed by the Shapiro-Wilk's test ($p < .05$), except for 'parental involvement' ($p > .05$), (see Appendix E for the full results)

These findings established that the data were not normally distributed and accordingly non-parametric tests should be used (Field, 2009). Therefore, non-parametric procedures were employed to determine if there were any differences in means between the different groups of teachers in the government and private schools based on the scales of job satisfaction. The procedures used were the Mann–Whitney U test in the case of two independent variables (e.g. gender) and the Kruskal–Wallis H test in the case of three or more independent variables (e.g. qualifications: diploma, Bachelor's degree, Master's degree, PhD).

4.7.2 Qualitative data analysis

The audio data from the interviews and focus group discussions were transcribed. Initially, I tried to use Dragon software, speech-recognition software that can instantly convert voice or audio files into written text. As almost all the qualitative data were in Arabic, however, this software was of no great help as it required listening to the interviewees' words in Arabic, translating into English and then dictating to the software, which was supposed to make the conversion to text. The performance of the software was slow and inaccurate, but may have been affected by my pronunciation, not being a native English speaker. I therefore decided to transcribe the interviews manually.

Having transcribed the interview data myself, I translated them from Arabic to English, which had the added advantage of gaining familiarity with the data. To validate the process of translation and transcription, fellow Arabic-speaking PhD candidates at Newcastle University were asked to listen to two randomly selected audio recordings (with names and references deleted) and then read and comment on the translated and transcribed hard copies.

The interview data were analysed manually by identifying matching key words, themes and sentences that were commonly used by the participants (reflecting their shared views, attitudes, behaviours, thoughts and beliefs). Using computer-assisted data analysis software, such as NVivo, was initially considered due to its suggested benefits, such as efficiency and systematic management of data (Ezzy, 2002), as well as with a view to enhancing the rigour and speed of data analysis (Seale, 2017). However, it was deemed not practical for this study as the data were collected in Arabic and NVivo does not support right-to-left languages. Although there are advantages in terms of speed of analysis, a substantial amount of time is required to learn how to use such programs fully, especially for new researchers (Froggatt,

2001; Ezzy, 2002). Moreover, some researchers argue that using software to analyse data can distance or even alienate researchers from their data (Webb, 1999; Stroh, 2000).

The data were analysed employed thematic analysis, a method defined by Braun and Clarke (2006, p. 79) as follows:

‘...a method for identifying, analysing and reporting patterns (themes) within data. It minimally organizes and describes your data set in (rich) detail. However, frequently it goes further than this, and interprets various aspects of the research topic.’

The goal of thematic analysis is to identify codes, the smallest units of analysis that represent interesting aspects in the data. The codes are then used to construct broader patterns of analysis or themes that address the research or say something about an issue. This is much more than simply summarizing the data; good thematic analysis identifies and interprets the key features in the data, guided by – but restricted to – the research questions.

Themes can be derived inductively from the data and/or deductively using the researcher’s prior theoretical understanding of the phenomenon under study; in the former case, the questions in the interview guide usually provide the basis for theme generation (Ryan and Bernard, 2003). The analysis in this study involved elements of both methods, as the themes were linked to the data as well as the research questions. Braun and Clarke (2006) distinguished between two levels of analysis: semantic and latent. A semantic approach focuses on the explicit meaning of the data, with themes identified based on the surface meaning of the data; a latent approach goes beyond the explicit meaning of the data and attempts to examine the underlying assumptions and ideas. This study adopted the latent approach as it explored the reasons behind participants’ language; thus, the analysis presented is not a mere descriptive account of what the participants said, but is a theorized, interpretive analysis.

In this study, the thematic analysis followed the six-step guide suggested by Braun and Clarke (2006). The steps are described in detail below.

1. Becoming familiar with the data

Prior to commencing the qualitative analysis, I had some initial knowledge and thoughts about the content of the data as I had conducted all the interviews and focus groups. In addition, I transcribed and later translated the data myself and went through it several times. This immersion in the data through the collection and transcribing process, which involved repeated reading of the transcripts, made me familiar with all aspects of the qualitative data. At this early stage, general notes and impressions were formulated and recorded.

2. Generating initial codes

After familiarization, I organized the data into meaningful groups or codes. Although I initially approached the data with specific questions in mind, reading and re-reading the transcripts revealed a list of codes that represented interesting or/and unexpected aspects of the different types of schools, such as the impact of the Omanization policy on teachers' satisfaction in private schools. The coding process was performed systematically across the entire data set, identifying codes by highlighting patterns and writing notes on the transcribed texts (see Appendix F). After that, coded extracts were copied from individual transcripts and gathered in separate files to give an overall conceptualization of the data patterns and relationships between them.

3. Searching for themes

In this phase, the codes were combined into broader themes. Visual representations were helpful in identifying the relationships between different codes and themes. At the end of this phase, there was a large set of candidate themes and sub-themes with representative extracts of data at each level. Figure 4.2 shows an example of a thematic map representing part of the analysis. It illustrates thinking about the relationships between different codes and different levels of themes.

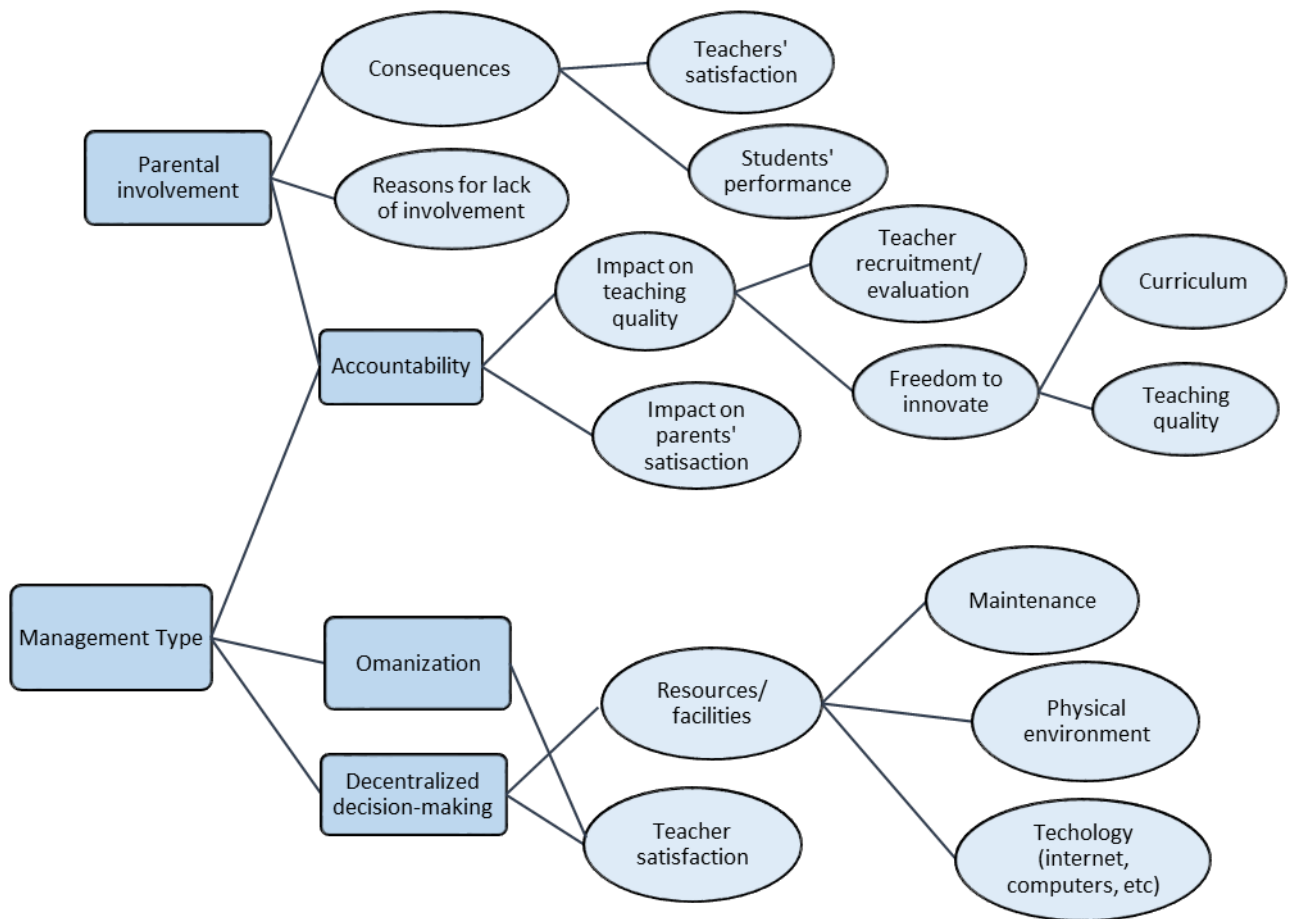


Figure 4.2. An example of a thematic map used in qualitative analysis

4. Reviewing themes

The themes extracted in the previous stage were then re-examined to decide whether they need to be combined, separated or discarded. The themes were reviewed at two levels: the coded data extracts and the entire data set. To review the previous coding process and examine the validity of the candidate themes in relation to the whole data set, a Word file was created for each theme comprising the relevant respondents' inputs. This process took the form of a table containing the names of themes, the codes or sub-themes under them, a brief description of the participants, their input and my own remarks. This analytical procedure was partially based on Silverman's (2010) principle of using appropriate tabulation to add some structure to the data. An example of this analytic process is shown in Table 4.7.

Table 4.7. Example of the theme review process

Themes	Codes	Participant's Background	Quotation	Researcher's Notes
Parental Involvement	Reasons for parental involvement in private schools	(GOV1M) Male parent/ teacher in Government	'...parents care because they pay. They look for outcomes, so like I paid money, I wait, I follow-up and I ask'	Participant has children in public and private schools
	Using technology to involve parents		'The communication with parents is very different. There they have an application and we follow-up daily in every lesson what they learned etc, and every teacher has to write an update there'	
	Accountability towards parents		'In private schools the parent is the quality monitor'	

This process entailed going through the entire data set again to check if the themes accurately reflected the meanings found in the data. Re-reading the data also made it possible to identify additional codes within themes that might have been missed in previous stages.

5. Defining and naming themes

In this stage, the final themes were defined and given their eventual names. The refinement process involved identifying sub-themes essential to give structure to complex themes. Based on the resulting codes, the analysis focused on the common themes shared by the participants across different school types. Therefore, common themes were given precedence in this study. Initial analysis of the data resulted in 10 themes. These themes were then refined and reduced to 7 themes to avoid redundancy, as can be seen in Figure 4.3.

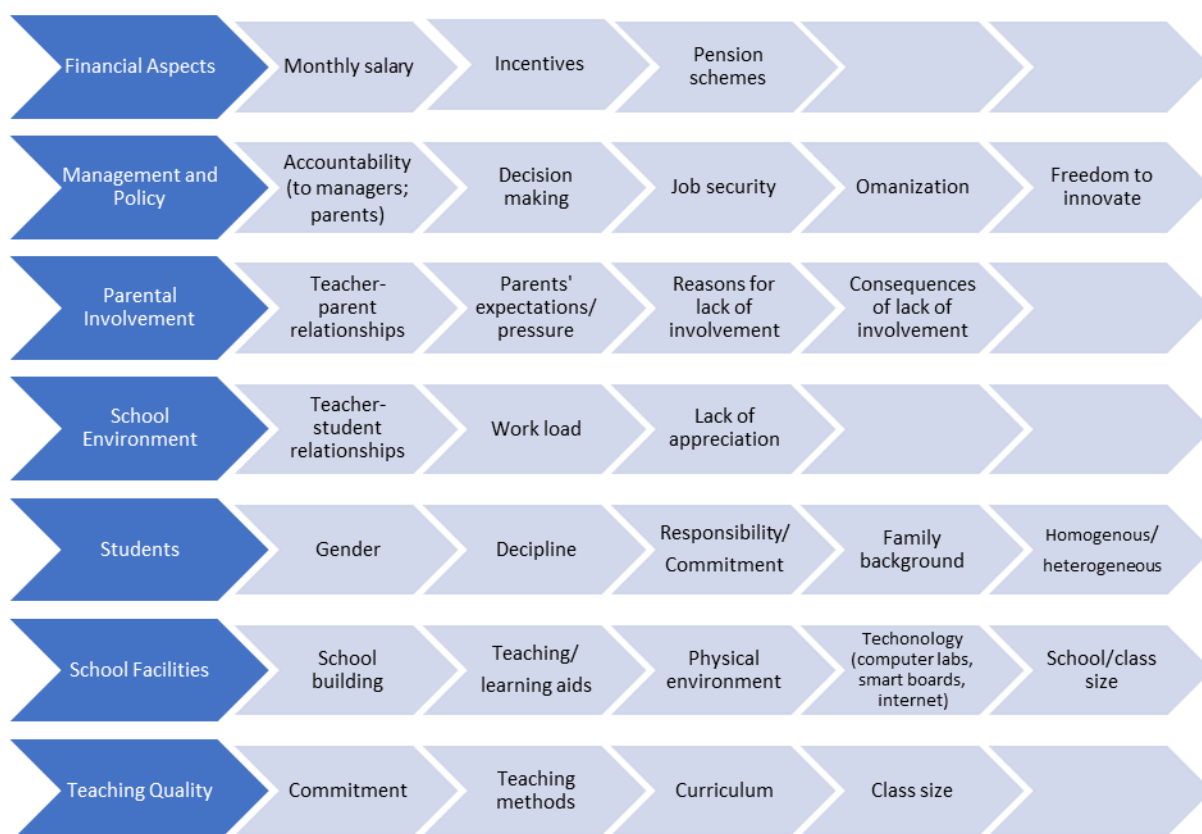


Figure 4.3. Emergent themes and sub-themes from the data

6. Producing the report

This final stage involves writing up the final thematic analysis to tell the story of the data and convince the reader of the validity and reliability of the analysis conducted. The discussion of each theme was linked to the research questions and existing literature using my interpretation and illustrative extracts.

One of the advantages of thematic analysis is its flexibility as a method, being compatible with various epistemological and methodological approaches (Braun and Clarke, 2006). In addition, according to Flick (2014), this method is particularly suitable for comparative studies as any commonalities or differences are demonstrated on the basis of the distribution of codes and categories across the groups studied. Since the main purpose in this research was to contrast one component of information with another, frequent regularities in the data were identified to group similar phrases and relationships between patterns, themes and common sequences. The categories were then organized according to the research questions. The findings from the qualitative data were then linked to the quantitative data obtained from the student and teacher surveys for the purposes of triangulation, complementarity and expansion (as described in 4.3.1). In the reporting of findings, quotes have also been used when

appropriate to elaborate on the statistical results in order to expand the scope of the analysis. These quotes portray a picture of the participant's experiences in each school type.

4.8 Validity and reliability

Validity and reliability are the cornerstones for evaluating a research design. In the social sciences, researchers tend to set out analytical distinctions between validity and reliability. According to Denscombe (2009), for example, validity is related to the quality of the data, whereas reliability is related to the quality of the methods. Bryman (2012, p. 173), however, argues that they are related to one another, as 'validity presumes reliability'. Whether viewed as two distinct or related measures, there seems to be agreement that once a measure has been developed, the researcher has to ascertain that it meets validity and reliability criteria. That is, it must measure the concepts it is designed to measure (validity) and the same results will be obtained if it is applied again (reliability) (De Vaus, 2014).

There are different ways of establishing the validity and reliability of a measure. Yin (2009, p. 40), for instance, offers an approximation of quantitative and qualitative validity and trustworthiness indicators. He identifies four main aspects that should be considered to establish and judge the quality of research: i) construct validity, ii) internal validity, iii) external validity and iv) reliability. Applying high standards of validity and reliability is important in research, especially for an objectivist researcher, for whom methods and conclusions must be examined for bias (Creswell, 2003). Therefore, the data collection methods were subjected to different types of validity and reliability measures prior to implementation.

4.8.1 Content and face validity

Content validity was assessed to determine whether the content of the questionnaire was appropriate and relevant to the research questions. Content validity measures the extent to which statements represent the issue they are supposed to measure as judged by the researcher and experts in the field (Kumar, 2005). To estimate the content validity of the teachers' survey, a thorough review of the literature was undertaken prior to its design. Once the survey had been developed, eight purposively chosen experts in education (including senior teachers, supervisors and teacher training specialists) were asked to review the draft survey to ensure it was consistent with the conceptual framework. Each reviewer independently reviewed the survey items and provided their detailed feedback.

Experts were also asked to evaluate the appearance of the questionnaire in terms of feasibility, readability, consistency of style and formatting and the clarity of the language used, aspects

known as face validity (DeVon *et al.*, 2007; Bryman, 2012). To determine the face validity of the survey, experts were asked to reflect on the clarity of wording, the likelihood that the targeted participants would be able to answer the questions and the layout of the questionnaire.

Modifications were then made based on their comments. Some ambiguity was found in a number of items; thus, the wording was changed to ensure that the language was simple and straightforward in order to minimise errors in responses. Some items concerning the senior teacher were added to the supervision section based on teachers' and supervisors' comments and the section heading was changed from 'Supervisors' to 'Supervision and follow-up'. Some redundant items were also deleted. Once modified, a copy of the questionnaire was again sent to the Technical Office for Studies and Development in the MoE to obtain official approval for its implementation in schools. The questionnaire was revised and some further amendments were recommended: the 'Not applicable' option in the scale was changed to 'Neutral' and 'Sex' in the background information was changed to 'Gender'. The questionnaire was designed in an attractive layout as a cramped page is uninviting and discouraging. After it had been finalized, approval was obtained and the survey was ready for administration.

The English version of the questionnaire was also given to my supervisors for feedback. Finally, all the comments were taken into account and consensus was reached on any required modifications. After this, the final drafts of the questionnaire and interview guide questions were subjected to pilot testing.

4.8.2 Construct validity

Construct validity refers to the degree to which the items in an instrument relate to the relevant theoretical construct (DeVon *et al.*, 2007; Bryman, 2012). Construct validity is a quantitative value rather than a qualitative distinction between 'valid' and 'invalid'. It concerns the extent to which the intended independent variable (construct) relates to the proxy independent variable (indicator) (Hunter and Schmidt, 1990). For example, in the job satisfaction survey, school management, supervision, relationship with students, work conditions, financial aspects, attitudes towards being a teacher and parental involvement were used as proxy indicators of job satisfaction. When an indicator consists of multiple items, factor analysis allows researchers to discover the factorial validity of the questions that make up each scale or construct (Dancey, 2014). It also helps examine the validity of the proposed constructs by establishing the contribution of each construct to the total variance. The total

variance is an indication of the degree of validity of the instrument: the greater the variance, the higher the validity (Kumar, 2005).

Construct validity is also attained through the use of multiple sources of evidence, as well as by establishing chains of evidence through making explicit links between the research questions, the data collected and the conclusions drawn. To ensure that the instruments in this research accurately represented the different aspects that they were intended to measure, a thorough review of the relevant literature was carried out before the preparation of the instruments, thus increasing the likelihood that they would cover all aspects of the research topic.

4.8.3 Reliability

Reliability, according to Cohen *et al.* (2000, p. 117), is ‘a synonym for consistency and replicability over time, over instrument, and over groups of respondents’. In other words, if a researcher conducts the same study following the same procedures as a previous researcher, they should reach the same conclusions; the aim is to reduce errors and biases in a study. Two common ways of measuring the reliability of a questionnaire are test–retest, in which the same instrument is administered at two points in time, and measuring internal consistency, which examines the extent to which the items in an instrument are consistent with each other or all working in the same direction (Punch, 2014). As described earlier, the items in the teachers’ job satisfaction questionnaire were designed to measure different underlying constructs. Each construct was represented by six questions. In this case, in which the items were used to form a scale, it was essential to check the internal consistency to determine the extent to which the items on the scale measured the same underlying dimension (DeVellis, 2003). To measure the reliability of the teachers’ survey, Cronbach's alpha was employed, this measure commonly being used with multiple Likert questions. A scale with a Cronbach’s alpha value of 0.7 or higher is considered to have good internal consistency (DeVellis, 2003; Kline, 2011).

As can be seen from the results in table 4.7, all the scales presented high levels of internal consistency: Cronbach’s alpha was .874 for school management (6 items), .883 for supervision and follow-up (6 items), .865 for parental involvement (5 items), .818 for work conditions (5 items) and .870 for financial aspects (5 items). Two scales had moderate levels of consistency: .758 for relationship with students (5 items) and .731 for being a teacher (5 items). No substantial increases in alpha values for any of the scales could have been achieved by eliminating more items. The results demonstrate an acceptable and satisfactory level of reliability.

Table 4.8. Cronbach's alpha reliability analysis

Scale	No. of items	Cronbach's alpha	Mean	Variance	Std. Dev.
School management	6	.874	17.35	19.004	4.359
Supervision and follow-up	6	.883	18.19	16.773	4.095
Students	5	.758	15.63	6.418	2.533
Work conditions	5	.818	14.20	15.702	3.963
Financial aspects	5	.870	9.12	23.771	4.876
Being a teacher	5	.731	14.07	18.984	4.357
Parental involvement	5	.865	11.42	18.244	4.271

Different measures were also implemented to achieve reliability in the qualitative data, such as pilot testing the interview and focus group questions, as well as recording the accounts of participants verbatim to guarantee accurate transcription of the qualitative data (Silverman, 2015). Silverman (2015) also argued for establishing the inter-rater reliability of the data to enhance the reliability of interviews. Thus, after the data had been transcribed, the transcriptions and audio tapes were given to a fellow Arabic-speaking researcher to compare the analysis. In addition, the reliability of the study was enhanced through documenting the procedures followed during the different stages of the research, as detailed in this chapter. The processes of data collection and data analysis have thus been thoroughly described and documented to allow any future replication of the study.

4.9 Summary

This chapter contains a discussion of certain key issues related to data collection and analysis. It has described the philosophical assumptions underpinning the research and how these influenced the selection and implementation of research methods, both for data collection and analysis. The mixed-method approach has been justified and the data collection instruments, their strengths and limitations outlined. The procedures for sampling and analysis have also been delineated, as well as the measures followed to meet validity and reliability criteria. The study findings are set out in the next three chapters: Chapters 5, 6 and 7.

Chapter 5. Students' Achievement in Government and Private Schools

5.1 Introduction

The analysis presented in this chapter represents the final stage in the sequential explanatory design adopted in this research, as explained in Chapter 4 (4.3.2). In this chapter the quantitative and qualitative data, collected in two separate stages, are integrated in the analysis and interpretation of results to address the research questions. As such, participants' views and opinions obtained from the focus groups and individual interviews will be used to triangulate, expand on and complement the statistical results obtained from the TIMSS data.

The TIMSS data used in this study comprise three main components: mathematics scores, students' survey data and teachers' survey data. Accordingly, the chapter will be divided into three main sections. The first two sections will set out the descriptive and inferential analysis of the student and teacher data in relation to mathematics achievement. That is, variables related to students, teachers and schools (derived from the student and teacher surveys) will be examined to determine if there are any significant associations between students' test scores and other factors. To achieve this, several statistical procedures were employed, such as chi-squared tests, an independent samples t-test and one-way ANOVA.

The third section presents the procedure and findings of the hierarchical multiple regression models, which were developed using an array of home, teacher and school-level variables to identify the factors more likely influence students' mathematics achievement in Omani government and private schools. When applicable, qualitative data will be employed to explain and validate the statistical results. The analysis of TIMSS data presented in this chapter aims to answer the following research questions:

RQ2. Are there any differences between public and private schools in terms of academic performance?

RQ3. If a difference between school management types exists, what are the factors that contribute to this?

Furthermore, the interpretation of the findings provided in this chapter aims to develop an overall understanding of the effectiveness of government and private schools in terms of academic achievement. In addition, it offers insights into the differences between the two sectors in relation to the characteristics of the children in each school type, the quality of teachers and school facilities.

This chapter leads into the following two chapters, which address the remaining two research questions. Chapter 6 will present the findings of the teachers' job satisfaction survey to answer the third research question. Statistical findings will also be integrated with the views of teachers obtained through semi-structured interviews. Students' and parents' feelings and opinions in government and private schools will then be presented and discussed in Chapter 7 in light of the findings derived from the quantitative data (TIMSS and teachers' survey). This integration will provide a more comprehensive picture of the educational system than examining the findings separately.

5.2 Students' characteristics

In this section the main characteristics of the participating students from government and private schools will be presented. Each of the features will briefly be described to enable comparison between the different sectors.

5.2.1 Gender

The students' sample comprised 692 participants: 350 students from government schools and 342 from private schools. As can be seen from Table 5.1, there were more female students than male from government schools (46% male and 54% female), while the number of male students in private schools was almost twice the number of females (64.3% and 35.7% respectively, $p < 0.001$).

Table 5.1. Participants by gender and school type

Gender	Government		Private		Total	
	N	%	N	%	N	%
Male	161	46	220	64.3	381	55
Female	189	54	122	35.7	311	45
Totals	350	100	342	100	692	100

These results are quite similar to those obtained from official MoE statistical data as they show a higher number of male students registered in private schools (see 2.5), indicating that there might be an orientation for Omani families to enrol their male children in private school, a phenomenon found in other developing countries, such as Kuwait (Al Shatti, 2015). While, on the face of it, one might conclude that this suggests the prioritization of boys' education in some families, a more plausible explanation in the case of Oman is low achievement among males compared to females. That is, parents might choose to send children who are struggling with their studies, mostly boys, to private schools, assuming that they will receive better quality education or more focused teaching. This was confirmed by two male private school teachers. For example, one stated that:

‘The 10% of students who are not willing to work hard in government schools will eventually come to private schools thinking that they might achieve higher grades.’ (PRV1M)

5.2.2 Socioeconomic characteristics

An exploration of a number of family socioeconomic indicators provides insights into the characteristics of the beneficiaries of government and private schools. Table 5.2 demonstrates the relationship between school type and six family background variables, including mothers’ and fathers’ education, home possessions in terms of study support facilities, number of books at home and number of digital devices available at home.

Table 5.2. Characteristics of students’ households by school type

Item	Government %	Private %	Total %	χ^2	df	Cramér's V
Mother's level of education						
Primary or lower secondary	47.1	23.5	37.1	58.705**	4	.373**
Secondary	23.1	16.2	20.2			
Post-secondary, but not university	14.5	12.3	13.5			
Bachelor's or equivalent	10.7	25.7	17.1			
Postgraduate degree	4.5	22.3	12.1			
Father's level of education						
Primary or lower secondary	38.4	16.5	28.5	56.559**	4	.362**
Secondary	14.8	10.8	13.0			
Post-secondary but not university	18.1	9.8	14.4			
Bachelor's or equivalent	19.0	32.0	24.8			
Postgraduate degree	9.7	30.9	19.3			
Home study support						
Own room	41.8	58.9	53.1	20.199**	1	.171**
Study desk	54.2	78.0	65.7	42.343**	1	.251**
Own computer or tablet	69.1	76.9	73.0	5.279*	1	.087*
Shared computer or tablet	64.1	70.0	67.0	2.735	1	.63
Internet connection	68.8	88.2	78.4	38.339**	1	.236**
No. of books at home						
< 25	54.6	46.8	50.7	4.420	2	.080
26–100	27.3	30.7	29.0			
> 100	18.1	22.5	20.3			
Entertainment						
Own mobile phone	51.9	75.8	53.3	42.496**	1	.249**
Gaming system	54.4	78.6	66.5	44.892**	1	.256**
No. of digital information devices at home						
< 4	17.3%	7.3%	12.4%	21.239**	2	.176
4–6	43.2%	39.6%	41.4%			
> 10	39.5%	53.1%	46.2%			

Notes: * $p < 0.05$, ** $p < 0.01$

The table shows that parents in private schools are more highly educated than their counterparts in government schools. Indeed, 47.1% of mothers and 38.4% of fathers in government schools have either no schooling or primary or lower secondary education compared with 23.5% of mothers and 16.5% of fathers in private schools. Moreover, 48% of

mothers and 62.9% of fathers in private schools possess graduate and postgraduate degrees. In government schools, however, there are considerably fewer parents with similar qualification (15.2% of mothers and 28.7% of fathers). Interestingly, mothers in both school types appear to be less educated than fathers. To illustrate, 37% of mothers in both types combined have lower than secondary education compared to 28% of fathers. Similarly, 35% of mothers have graduate or postgraduate degrees while 47.3% of fathers have such qualifications. This might be attributed to social factors, as it is more expected (and accepted) that women will quit their educational path and stay at home to take care of their families.

To investigate the existence of any association between school type and parents' qualifications, a chi-squared test was conducted. In addition, to measure the strength of the association in the chi-squared procedure (if any), two measurements of effect size were used: phi (ϕ), when two dichotomous variables were examined and Cramér's V for variables with more than two categories.⁵ As can be seen in Table 5.2, there is a statistically significant association between school type and parents' level of education for mothers ($\chi^2(4) = 58.705, p = .001$) or for fathers ($\chi^2(8) = 56.559, p = .001$). The association between school type and mother's level of education is moderately strong (Cramér's V = .373), but weak for fathers' educational level (Cramér's V = .362).

The results also show that students in private schools generally have significantly more home study resources than their counterparts in government schools. As can be seen, the results of the chi-squared test of independence between school type and possession of all home study resources indicates a statistically significant, but small association for school type, as indicated by Cramér's V, except for having a shared computer or tablet, for which no statistically significant association is detected.

As for the number of books available at home, which is considered an important indicator of SES (Martin *et al.*, 2000; Sirin, 2005), again the results show that there is a difference, albeit not large, between the two sectors in favour of private school students. The chi-squared results show no association between the number of books students have at home and their school type.

As far as other home possessions are concerned, more than half of the students in private schools have more than 10 digital information devices at home compared to only 39.5% of students in government schools. Moreover, the majority of students in private schools have

⁵ The values in both tests range between 0 and 1, with a value of 0 indicating no association and a value of 1 indicating complete association. The guidelines suggested by Cohen (1988) were followed in interpreting the results, namely that 0.1 indicates a small association, 0.3 is medium and 0.5 is a large association.

their own mobile phone (75.8%) and gaming system (78.6%), whereas only half do so in government schools. A small association was found between school type and the number of digital information devices at home, suggesting that possessing any of these devices has a small relationship with the student being in a government or a private school.

In summary, it appears that students in private schools in generally come from higher educated families, which might suggest that better educated parents prefer to send their children to private schools. Families in private schools seem to be more affluent, as indicated by the number of home possessions they have, and therefore can afford to send their children to fee-paying schools.

5.3 Student achievement by school type

An independent samples t-test was run to determine if there was a statistically significant difference in mathematics scores between students in government and private schools.⁶ The results in Table 5.3 show that private school students scored higher ($M = 462.6$) than students in government schools ($M = 403.2$). This difference was statistically significant ($t(690) = -8.469, p < .001$).

Table 5.3. Independent samples t-test of students' achievement by school type

	N	Mean	SD	t	df	Sig.	Mean difference
Government	350	403.2	90.38	-8.469	690	.000	-59.4
Private	342	462.6	94.05				

5.3.1 Student achievement against TIMSS International Benchmarks

Looking at students' test results in more detail, based on the TIMSS International Benchmarks for achievement, it can be observed from Table 5.4 that Omani students' achievement in general is below intermediate. However, comparing students from the two school types, it is evident that the results of those in private schools are better than those in government schools. The majority of students in government schools, for example, fall in the two lowest categories (79.3%), compared to 53.3% in private schools. More students in private schools (18.2%) scored high and advanced results than in government schools (5.5%). These results indicate that the majority of students in government and private schools had not acquired the basic cognitive skills in mathematics according to the TIMSS description of abilities (see Table 4.3).

⁶ There were no outliers as assessed by boxplot analysis; the data were normally distributed for each group based on the Shapiro–Wilk test ($p > .05$). The assumption of homogeneity of variances was met according to Levene's test for equality of variances ($p = .224$).

The chi-squared test of independence indicates a statistically significant association between school type and test score levels ($\chi^2(4) = 67.510, p < .001$), an association that is moderately strong (Cramér's $V = .315$). This result further confirms the findings of the t -test in the previous section.

Table 5.4. Students' results in different school types based on TIMSS International Benchmarks

Score levels	Government		Private		Total		Pearson's χ^2	df	Cramér's V
	N	%	N	%	N	%			
Advanced ≥ 625	1	0.3	7	2.1	8	1.2	67.510**	4	.315
High 550–624	18	5.2	54	16.1	72	10.4			
Intermediate 475–549	52	15.2	96	28.6	148	21.8			
Low 400–474	97	28.3	95	28.3	192	38.1			
< 400	175	51.0	84	25.0	259	38.1			
Total	343	100.0	336	100.0	1024	100.0			

5.4 Student achievement by gender

In the TIMSS 2015 international data, Oman is reported to have the highest gender discrepancy in mathematics achievement of the 47 participating countries, with girls outperforming boys by 32 points. Moreover, data obtained from the MoE show that about one in three students in both public and private education, 70% of whom are boys, leave school without the secondary school diploma, either because they fail the exam or because they leave school early without taking it (MoE, 2017).

A closer examination of boys' and girls' achievement in mathematics in government and private schools shows that there are achievement differences in favour of girls in the two school types. The largest gender gap is found between boys and girls in government schools, with a mean difference of 32. The results of an independent-samples t -test⁷ established that this difference between boys and girls in government schools was statistically significant ($t(348) = -3.363, p = .001$). Girls in private schools also scored 17.43 higher than boys; however, this was not statistically significant ($t(340) = -1.646, p = .101$). Among all students, the highest average score was 474 and this was achieved by girls in private schools.

⁷ There were no outliers in the data based on boxplot analysis. The mathematics scores for the genders at each level were normally distributed based on the Shapiro–Wilk test ($p > .05$) and there was homogeneity of variance according to the Levene test for equality of variances ($p > .05$).

Table 5.5. An independent *t*-test of students' achievement by gender

<i>School Type</i>	<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>Sig</i>	<i>Mean Difference</i>
<i>Government</i>	Male	161	385.86	96.09	-3.363	348	.001	-32.13
	Female	189	417.99	82.64				
<i>Private</i>	Male	220	456.37	95.55	-1.646	340	.101	-17.43
	Female	122	473.80	90.60				

The above results establish that the gender achievement gap is a phenomenon in Omani schools, especially in the government sector. Although some researchers attribute this to differences in the instructional quality boys and girls receive in their schools, with girls being taught mainly by local female teachers while boys are taught mostly by expatriate male teachers (Ridge, 2009; Chapman *et al.*, 2014), the causes of this discrepancy are not clear. However, in Oman, this could also be attributed to some social and political factors, such as employment policies that prefer boys, guaranteeing them places in some almost entirely male-dominant sectors (e.g. the military and police), which results in reducing boys' sense that education is important as a requirement for job attainment and success. The difference between boys and girls was also mentioned by some of the teachers interviewed from both school types. A male teacher in a government school attributed girls outperforming boys to their personal characteristics, as well as their teachers' commitment:

'Girls are more committed, hard-working and competitive. Female teachers are more committed and have more sense of responsibility towards their students. Simply put, education in girls' schools is taken seriously by both teachers and students.' (GOV1M)

Conversely, boys were described by a female teacher as follows:

'Boys tend to be more careless and also dependent on the teachers and parents, but girls are more independent. They are more creative and competitive with their colleagues.' (GOV4F)

5.5 Teacher characteristics

Table 5.6 presents an overview of the characteristics of mathematics teachers based on their responses to the survey questions. As can be seen, the numbers of male and female teachers in government schools are almost equal, which is expected because of the single-sex school system in the government sector, while the majority of teachers in private co-education schools are male (69%).

Most of the teachers in government schools (82.8%) are aged 30–49, whereas most of the teachers in private schools are younger, with 70% aged 25–39. The relatively small

percentage of young teachers in government schools (23.7% under 30 years old) might be an indication of the lack of interest among Omani youth in joining the teaching profession. This finding corresponds with the data published by the Education Council (2017b), which reported a consistent decrease in the number of Omani teachers employed in government schools. The report added that due to the shortage of supply of teachers in some subjects, more expatriate teachers are being recruited to meet the requirements.

In terms of experience, the patterns appear to be similar in the two sectors as most of the teachers are clustered in the first three categories (1–15 years). Less than 10% have more than 20 years of experience and there are no teachers over 60 years of age in government schools. This is because many Omani teachers tend to apply for early retirement after completing 20 years of service (Education Council, 2017b).

Omani teachers with a Bachelor's degree in education are eligible to be recruited to government schools. Therefore, the vast majority of teachers (92%) in government schools hold a Bachelor's degree or equivalent. On the other hand, because holding a postgraduate degree in government schools does not necessarily result in any financial benefits, only 7.4% of teachers have higher degrees. In contrast, the owners of private schools, who are responsible for recruiting teachers, seem to be keener to recruit more qualified teachers as almost 40% of teachers in the private sector hold postgraduate degrees.

Table 5.6. Characteristics of mathematics teachers

Item	Government		Private		Total		Mean	<i>t</i>	df	Sig.
	N	%	N	%	N	%				
Females	189	54.5	106	31.0	295	42.8	422.3	2.473*	687	.014
Males	158	45.5	236	69.0	394	57.2	440.7			
<i>Years of experience</i>								F	df	Sig.
1–5	62	18.1	88	26.0	150	22.1	439.4	.763	4, 675	.549
6–10	127	37.1	96	28.4	223	32.8	425.7			
11–15	76	22.2	70	20.7	146	21.5	435.0			
16–20	43	12.6	34	10.1	77	11.3	444.3			
> 20	34	9.9	50	14.8	84	12.4	430.8			
<i>Age</i>										
< 25	5	1.4	0	0.0	5	0.7	466.5	2.552*	5, 685	.027
25–29	78	22.3	107	31.3	185	26.8	443.3			
30–39	211	60.5	132	38.6	343	49.6	424.8			
40–49	36	10.3	65	19.0	101	14.6	445.6			
50–59	19	5.4	22	6.4	41	5.9	401.4			
≥ 60	0.0	0.0	16	4.7	16	2.3	461.6			
<i>Qualification</i>										
Below university degree	2	.6	25	7.3	27	3.9	462.7	2.662	2, 689	.071
Bachelor's or equivalent	322	92.0	181	52.9	503	72.7	427.9			
Postgraduate degree	26	7.4	136	39.8	162	23.4	441.9			

Further statistical tests were conducted to determine if teachers' characteristics might have any influence on students' achievement. For example, an independent-samples t-test was run to determine if there were differences in mathematics mean scores between students who were taught by male and female teachers. The results indicated a higher mean score for students with male teachers ($M = 440.7$) than for those with female teachers ($M = 422.3$). This difference was statistically significant ($t(687) = 2.473, p = .014$).

Moreover, one-way ANOVA was performed to explore if students' mean scores differed based on their teachers' years of experience, age and qualifications. The results showed no statistically significant differences in scores between students in relation to teachers' years of experience ($F(4, 675) = .763, p = .549$). Likewise, no statistically significant difference was found between students' mean scores based on their teachers' qualifications ($F(2, 689) = 2.662, p = .071$).

As for age, the statistics show differences in mean scores between the age groups, with the highest mean scores being for students taught by teachers under 25 (466.5) and 60 years or above (461.6). However, these differences were not statistically significant ($F(5, 685) = 2.662, p = .027$).

5.6 Regression analysis

As stated in 5.3, the results indicated a statistically significant difference between the test scores for government and private schools, with private students outperforming their counterparts in government schools. It was clear that further quantitative analysis would be required to investigate the factors contribute to the superiority of private schools in the Omani context satisfactorily in response to the second research question. To achieve this, a hierarchical multiple regression (HMR) analysis was carried out for each school type. It was also considered that it would be interesting to identify the factors affecting students' performance in government schools in comparison to their peers in the private sector. Therefore, a similar regression analysis was also performed for government schools.

HMR was used for a number of reasons. First, the TIMSS data are multi-level in nature, with data derived from different sources and representing different components of the school system (students, family, teachers, schools). At each level, TIMSS data contain many variables that could be examined as independent sets or in relation to other variables or sets of variables at other levels. Second, unlike other regression procedures, HMR makes it possible to compare multiple regression models to determine the increase in variation explained by the addition of a single variable or set of variables. To illustrate, when a set of independent variables is added, one can calculate the unique *added* variation in the dependent variable, R^2 , explained. HMR not only calculates the change in R^2 caused by the added variables, but also determines whether the increase is statistically significant or not.

5.6.1 Variables included in the regression analysis

Mathematics scores drawn from the five plausible values obtained through the IRT methodology were used as the dependent variable and regressed against a host of control variables based on the literature reviewed. The independent variables, derived from the students' and teachers' questionnaires, were divided into levels. First, socioeconomic variables were entered, given the strong impact of family background on students' achievement in TIMSS data as established by many studies (Martin *et al.*, 2000; Akyüz and Berberoğlu, 2010). Family background was represented by the following indicators: home educational resources (a composite construct of parents' education, number of books at home, educational support) and number of digital devices at home. Second, variables related to student characteristics (gender and attitudes towards mathematics learning and school) were added. Third, teacher-level variables were added, such as teacher quality, which was one of the main reasons for students' and parents' school choice, as well as teachers' gender, qualifications, experience, challenges, teaching methods and satisfaction, to assess their

impact on students' performance. Finally, school-level variables were entered, including class size, parental involvement, school building and teaching resources. Each set of variables was entered into the regression equation in steps (or blocks), with each independent variable being assessed in terms of what it added to the prediction of the dependent variable, after the previous variables had been controlled for.

The independent variables included in the analysis were selected as they were found in the literature to be good indicators of students' performance. Different types of independent variable are used depending on the availability of data on the variables of interest. Thus, the variables used in this study were: i) index values available in TIMSS data, created using the IRT scaling method such that students' responses were placed on a scale with a mean of 10 and a standard deviation of 2 across all countries; ii) researcher-driven variables using factor scores resulting from principal component analysis (PCA) of certain items as explained in section 5.6.1.4. This procedure was applied only when the measures of interest were either not available in TIMSS data or presented under the same item root in the TIMSS questionnaire (e.g. parental involvement was combined with other variables under the index 'schools' emphasis on academic success' in TIMSS data); iii) individual items in teachers' and students' surveys, such as gender, teachers' experience and qualifications. The following sections describe the variables at each level in greater detail.

Family background variables

The students' questionnaire contained a number of questions about family background, such as parents' level of education, number of books at home and home possessions, such as a computer, tablet, desk, own room, internet connection, mobile phone, etc. The following variables from the TIMSS data were used as indices of SES:

HomeResorcSCL: A general index created by TIMSS based on students' responses concerning their parents' educational level, the number of books at home and the amount of home study support (internet connection and own room – both, either, none).

DigitalDevices: Students' answers to an individual question concerning how many digital devices they had at home (including mobile phones, TV sets, computers, etc). The students had to select from an answer in a range from 'none' to 'more than 10' devices. The values were then grouped into three categories: 1 = 3 or fewer devices; 2 = 4–10 devices; 3 = more than 10 devices. Dummies were created for categories 2 and 3 to be used in the regression.

Student-related variables

The following variables derived from student and teacher questionnaires were used in the analyses; they are found in the literature to be good indicators of student performance in mathematics. All of the scales used at the student level were constructed by TIMSS using the IRT scaling method. Using IRT partial credit scaling, student responses were placed on a scale constructed so that the mean scale score across all countries was 10 and the standard deviation was 2 (Martin *et al.*, 2016). The scale was as follows:

- Students like learning mathematics (*StLikeMathSCL*): This scale was created based on students' degree of agreement with nine items concerning students' interests and positive attitudes towards mathematics, for example 'I enjoy learning mathematics', in Q17.
- Students' views on whether teaching in their mathematics lessons is engaging (*EngagTeachMathSCL*): This scale was created based on students' degree of agreement with 10 statements in Q18, such as 'I know what my teacher expects me to do'.
- Students' confidence in mathematics (*StConfndntMathSCL*): This scale was created based on students' degree of agreement with nine statements, such as 'I usually do well in mathematics', in Q19.
- Students value mathematics (*StValueMathSCL*): This scale was created based on students' degree of agreement with nine statements concerning students' motivation to learn mathematics, such as 'I think learning mathematics will help me in my daily life', in Q20.
- Students' sense of belonging to school (*StBelongingSCL*): This scale was created based on students' degree of agreement with seven statements in Q15, such as 'I like being in school'. Students responses to the items were recorded on a 4-point scale ranging from 'agree a lot' to 'disagree a lot'.

In addition to the aforementioned scales, a dummy variable for students' gender was included in the regression (female = 1 and male = 0).

Teacher-related variables

The teacher-related variables used in the analysis included teachers' gender (dummy variable: 1 = female; 0 = male), qualification (dummy variable: teacher qualification 1 = postgraduate

degree; teacher qualification 2 = Bachelor's or equivalent) and experience (scale of number of years). In addition, the following TIMSS-constructed scales were used:

- Challenges facing teachers (*TchrChallengeSCL*): This scale was created based on teachers' degree of agreement with eight statements in Q11 such as 'There are too many students in my classes'. Teachers had to select a response on a 4-point scale from 'agree a lot' to 'disagree a lot'.
- Teaching limited by student needs (*StdNeedsLimitSCL*): This scale was created based on teachers' responses to six statements concerning students' needs that might limit their teaching in the classroom, such as 'Students lacking prerequisite knowledge or skills'. Students' responses were recorded on a 3-level scale: 'not at all', 'to some extent', 'a lot'.
- Teacher job satisfaction (*TchrJobSatSCL*): This scale was created based on how often teachers responded positively to seven statements in Q10, such as 'I am content with my profession as a teacher'.

In addition to the aforementioned variables, a latent construct related to teaching strategies was used. This measure was constructed when items related to school characteristics were analysed using PCA, as explained later in this chapter.

School-related variables

PCA with varimax rotation was applied to some variables, such that relevant items were clustered into groups to produce distinct components. For this analysis, the criteria used for the selection of components were as follows: the component must exceed eigenvalues of 1; the component loadings must exceed .40, based on Stevens (2002); items must load primarily on one component; inspection of the scree plot test, as well as interpretability, must be met as criteria for factor retention. After PCA, the scales were assembled by writing computed statements for the items that satisfied the criteria listed previously. Factor scores were extracted using a regression method in which factor scores were standardized to a mean of zero and a standard deviation of the distribution of factor scores (by factor) of 1.

In all, 24 items related to the school environment (school emphasis on academic success, school conditions and resources, parental involvement and teaching strategies) were subjected to PCA with varimax rotation. However, two items were excluded as they did not contribute to a simple factor structure and failed to meet the criterion of interpretability. The analysis of

the remaining 22 items revealed five components that had eigenvalues greater than one.⁸ The four-component solution was also confirmed by the scree plot (see Appendix G) and accounted for 63.9% of the total variance. The five components could be interpreted as follows:

- *School emphasis on academic success (EMPHS_SCS)*: This scale contained 6 items and was related to a school's management and teachers' emphasis on academic success, such as 'Teachers' understanding of the school curricular goal'.
- *Parental involvement (PARENT_INVO)*: This scale included 5 items for which teachers rated parental involvement on a 5-point scale from 'very high' to 'very low'.
- *Teaching resources (TEACH_RSRC)*: This scale included 4 items indicating the availability of adequate teaching resources, i.e. sufficient resources, support, available materials and adequate classrooms.
- *School building (SCHL_BUILD)*: This scale included 3 items indicating the adequacy of the school building (building needs repair, maintenance, workspaces): all items related to teaching resources and school buildings were negatively formulated and therefore responses were reverse coded prior to PCA analysis.
- *Teaching strategies (TEACH_STRTGY)*: This scale included 4 items related to the teaching strategies teachers used in mathematics classes. All the strategies represented an interactive child-centred approach.

Table 5.7 demonstrates the factor loading and commonalities of the items in each component.

⁸ The overall Kaiser–Meyer–Olkin (KMO) measure was .774, with a classification of 'middling' according to Kaiser (1974) and individual KMO measures all greater than 0.6. Bartlett's test of sphericity was $\chi^2(231) = 11782.265$, $p < .001$, indicating that the data were likely amenable to factor analysis.

Table 5.7. Principal component analysis (PCA) for items related to school characteristics

Item	Component					Commonality
	1	2	3	4	5	
Teachers' success in implementing curricula	.759					.654
Teachers' understanding of curricular goals	.758					.698
Teachers' ability to inspire students	.754					.652
Clarity of school objectives	.754					.708
Classroom discussions	.632					.452
Relating lessons to daily life	.416					.320
Parental pressure		.822				.713
Parental expectations		.821				.760
Parental involvement		.692				.680
Parental support		.594				.682
Parental commitment		.587				.607
Inadequate technological resources			.894			.841
Inadequate support for using technology			.853			.799
Materials unavailable			.686			.636
Classrooms not cleaned			.487			.362
Building needs repair				.879		.821
Maintenance work needed				.748		.755
Inadequate workspace				.716		.615
Encouraging students to express ideas					.755	.643
Asking students to explain their answers					.726	.554
Asking students to decide on their problem-solving procedures					.705	.549
Asking students to complete challenging exercises					.639	.559

5.7 Regression results

The data for each school type were subjected to separate regression analyses with variables divided into blocks and gradually entered into the regression model. As can be seen throughout the discussion in the following sections, for each school type different variables appeared to contribute to the students' mathematics results. The results for each school type are described separately in the following sections.

5.7.1 Factors affecting students' achievement in government schools

As can be seen from Table 5.8, the full model with SES, students', teachers' and school characteristics predicting students' mathematics achievement (Model 4) was not statistically significant ($R^2 = .245$, $F(21, 300) = 4.627$, $p < .101$). The addition of students' characteristics to the prediction of mathematics scores (Model 2) led to a statistically significant increase ($R^2 = .216$, $F(9, 312) = 9.551$, $p < .001$). The addition of teacher characteristics to the prediction of mathematics scores (Model 3), however, did not lead to a statistically significant increase ($R^2 = .225$, $F(17, 304) = 5.191$, $p < .897$).

In government schools, the first model showed that only the home educational resources index made a significantly positive contribution to mathematics scores. However, this effect disappeared when students' characteristics were added to the second model, which indicates

that students' characteristics had more impact on test scores than SES. This result was expected, though, as almost all the students in government schools come from similar economic and social backgrounds. In terms of students' characteristics, it is evident that factors related to students' motivation and attitudes towards learning mathematics have a significant effect on students' scores. Both 'students' confidence in mathematics' and 'students value maths' factors had a significantly positive impact on achievement and this effect held in the next two models, even after teacher- and school-related variables were added. It is interesting, though, that students' sense of belonging to schools reflected negatively on their scores. That is, the stronger the students' sense of belonging to the school, the lower the marks they achieved.

As indicated earlier, none of the variables related to teachers' characteristics contributed to student's achievement. Moreover, of all the variables at the school level, only the school building had a significant impact on mathematics scores. However, unexpectedly, an adequate school building seemed to have a negative influence on achievement.

Table 5.8. Factors affecting mathematics achievement in government schools

Variables	Dependent Variable: Mathematics Average Test Score											
	1 SES			2 SES + Students			3 SES + Students + Teachers			4 SES + Student + Teacher + School		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Home educational resources/SCL	7.96*	3.07	.149	4.72	2.88	.088	5.25	2.94	.098	4.98	2.944	.093
Number of digital devices (> 10)	28.91	15.18	.155	16.54	14.04	.089	16.53	14.23	.088	12.60	14.326	.067
Number of digital devices (4–10)	27.90	14.52	.152	15.59	13.43	.085	16.41	13.69	.089	11.84	13.756	.064
Student gender = female				25.80**	9.36	.141	15.91	28.52	.087	19.76	28.600	.108
Students like maths/SCL				4.53	4.24	.084	4.46	4.30	.083	3.92	4.307	.073
Engaging teaching/SCL				-7.34	3.94	-.133	-7.34	4.01	-.133	-6.97	4.009	-.126
Students' confident in maths/SCL				13.94**	3.26	.283	13.73**	3.34	.278	13.32**	3.329	.270
Students value maths/SCL				10.24**	3.35	.213	10.62**	3.42	.221	12.10**	3.448	.251
Students' sense of school belonging/SCL				-7.54*	2.93	-.155	-8.00**	3.02	-.165	-8.17**	3.031	-.168
Teacher gender = female							9.123	28.52	.050	.268	28.78	.001
T/qualification = postgraduate degree							71.358	61.98	.205	68.20	61.72	.196
T/qualification = Bachelor's or equivalent							69.84	59.76	.208	78.99	59.76	.236
Teacher experience							-.154	.717	-.011	-.156	.726	-.011
Challenges facing teachers/SCL							-.093	2.96	-.002	.797	3.10	.016
Teaching limited by student needs/SCL							-1.829	2.33	-.044	-2.67	2.37	-.064
Interactive strategies							-4.451	6.82	-.036	-4.20	7.02	-.034
Teachers job satisfaction/SCL							-1.381	2.86	-.028	-2.88	2.96	-.059
Class size = above the mean										-11.48	10.66	-.062
High parental involvement										12.97	11.38	.071
Teaching resources										3.90	4.96	.047
School building										-14.87*	5.84	-.152
(Constant)	305.21	28.73		183.25	40.79		146.42	85.09		154.14	87.15	
R^2	.045			.216			.225			.245		
Change in R^2	.045**			.171**			.009			.020		
F	4.99**			9.55**			5.19**			4.63**		

* $p < 0.05$, ** $p < 0.01$

5.7.2 Factors affecting students' achievement in private schools

As indicated in Table 5.10, the full model (Model 4), incorporating SES, students', teachers' and school characteristics to predict students' mathematics achievement, was not statistically significant ($R^2 = .409$, $F(21, 298) = 9.805$, $p < .135$). The addition of students' characteristics to the prediction of mathematics scores (Model 2) led to a statistically significant increase ($R^2 = .176$, $F(9, 310) = 7.374$, $p < .001$). The addition of teachers' characteristics to the prediction of mathematics scores (Model 3) also led to a statistically significant increase ($R^2 = .395$, $F(17, 302) = 11.576$, $p < .001$).

The three variables representing students' SES in the first model contributed positively to students' achievement. However, the effect of the home educational resources index disappeared after teacher-related variables were added in Model 3, while the positive strong effect of the other factors persisted. The significant positive impact of family background comes as no surprise, considering that private school students come from more affluent and wealthier families compared to their counterparts in government schools (see 5.5.2). At the student level, only students' confidence had a statistically significantly positive impact on their scores. As for those in government schools, the students' confidence effect did not disappear after the addition of other variables in Models 3 and 4.

Regarding teacher-related variables, teacher experience had a positive impact on achievement. On the other hand, the challenges facing teachers seemed to have a significantly negative impact on their students' performance. Two unexpected results concerned interactive teaching and teacher job satisfaction. Both scales affected students' scores negatively. Similarly, students taught by female teachers appeared to have significantly lower grades than those taught by male teachers, but this effect disappeared in the fourth model after school-level factors were entered. In the final model, none of the school variables had a significant impact on students' achievement.

In the literature there are consistent reports that the seemingly positive attainment of private school students should be interpreted with caution, as a considerable amount of research attributes the academic advantage of private school students to their families' socioeconomic level, not to the school system (Cox and Jimenez, 1990; Hanushek and Woessmann, 2010). In this study, the TIMSS results established an advantage for private schools over government schools as the students had significantly higher mathematics scores, shown earlier in this chapter. In addition, it is now evident, based on the regression analysis, that family socioeconomic factors have a significant impact on students' achievement. Bearing this in

mind, it was considered interesting to examine if private school superiority would still hold if socioeconomic factors were held constant. To examine this, further analysis was conducted using a procedure called ‘intent to treat’ (ITT), which enables calculation of the difference, or slope, in score means between government and private schools, controlling for SES factors, using the following equation:

$$Y_{is} = \beta_0 + \beta_1 \text{Schtype}_i + \beta_2 X_i + \varepsilon_{is}$$

where Y_{is} represents the mathematics test score for student i in subject s . The regression includes a vector that controls for family background characteristics, X_i , listed above. The primary coefficient of interest is β_1 , which provides an unbiased estimate of the causal impact of the school choice on test scores.

The same SES indicators used in the regression models above were controlled for in this analysis. The results, as shown in Table 5.9, indicate that there is still a statistically significant difference in the mathematics test scores for government and private students even after holding family background factors constant, with a mean difference of 47.45.

Table 5.9. Difference in mathematics scores between government and private schools after controlling for SES variables

	Government school mean	Private school mean	Difference (estimated impact)	Effect size (Cohen’s d)	<i>p</i> -value of estimate
Mathematics	403.21	450.66	47.45	0.49	0.001

Overall $SD = 96.81$

Effect size = difference/ SD

Hence, it can be concluded that private school students outperform government students even when controlling for family background. The result has a modest to moderately significant ($p < 0.001$) effect size (0.49). It can be concluded that students’ higher attainment in private school cannot be attributed to their families’ advantaged status; rather, it could be explained by student characteristics and teacher characteristics, or to other school-related variables that were not included in this study.

Table 5.10. Factors affecting mathematics achievement in private schools

Variable	Dependent Variable: Mathematics Average Test Score											
	1 SES			2 SES + Students			3 SES + Students + Teachers			4 SES + Student + Teacher + School		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Home educational resources/SCL	10.41**	2.99	.198	8.23**	2.91	.156	3.84	2.63	.073	4.60	2.64	.087
Number of digital devices (more than 10)	45.23**	20.23	.239	45.28*	19.37	.240	45.34**	16.89	.240	41.31*	16.89	.219
Number of digital devices (4-10)	56.66*	20.18	.294	49.00*	19.33	.254	39.51*	17.06	.205	34.22*	17.10	.178
Student gender = female				15.86	10.76	.079	13.28	10.42	.066	16.16	10.51	.080
Students like maths/SCL				-2.16	4.08	-.042	-4.81	3.58	-.094	-4.09	3.59	-.080
Engaging teaching/SCL				-5.58	3.28	-.111	-2.29	2.94	-.046	-1.74	2.98	-.035
Students' confident in maths/SCL				18.55**	3.50	.354	16.17**	3.07	.309	16.63**	3.11	.317
Students value maths/SCL				-3.41	3.19	-.064	-1.85	2.85	-.035	-2.39	2.84	-.045
Students' sense of school belonging/SCL				3.79	3.12	.073	5.15	2.76	.099	4.43	2.79	.085
Teacher gender = female							-23.54*	11.35	-.116	-23.06	12.93	-.114
T/qualification = postgraduate degree							4.56	18.12	.024	24.53	22.46	.128
T/qualification = Bachelor's or equivalent							-31.42	19.08	-.166	-11.61	20.76	-.061
Teacher experience							1.31*	.659	.105	1.97**	.749	.158
Challenges facing teachers/SCL							-15.02**	2.60	.377	-18.85**	3.36	.473
Teaching limited by student needs/SCL							-.921	3.08	-.019	-2.10	3.31	-.044
Interactive strategies							-22.79**	4.85	-.261	-23.61**	5.18	-.270
Teachers job satisfaction/SCL							-12.26**	3.84	-.192	-10.17*	3.98	-.159
Class size = above the mean										11.23	13.74	.059
High parental involvement										96.25	52.88	.113
Teaching resources										-16.28	9.07	-.152
School building										-5.11	9.56	-.040
(Constant)	309.79	33.16		214.86	52.73		237.05	62.88		52.25	101.13	
R^2	.068			.176			.395			.409		
Change in R^2	.068**			.108**			.218**			.014		
F	7.69**			7.37**			11.58**			9.81**		

* $p < 0.05$, ** $p < 0.01$

5.10 Conclusion

To summarise, the findings from analysis of the TIMSS data established that private school students outperform students in government schools. The superiority of private schools in mathematics test scores persists even after controlling for SES variables. The findings also indicate that the achievement of government school students is significantly influenced by factors related to students' attitudes and interest in mathematics. In contrast, students' achievement in private schools is mostly affected by variables related to family background and teachers' characteristics, whereas school-related factors, such as class size, teaching resources, school building and parental involvement have no significant effect on their scores. In both school types, students' confidence in mathematics has a significantly positive influence on mathematics results.

Ultimately, it is worth noting that although private schools are shown to be more effective in imparting learning than government schools, due to unobserved factors at play, the coefficient for private schools represents the upper bound of the true private school effect. If students with higher values for unobserved factors, such as prior achievement or ambition, are more likely to join private schools, the private school coefficient in these models will be upwardly biased because they will 'pick up' the effect of these 'unobservables', which positively affect achievement. Similarly, there are school-system related factors, such as the curriculum, school location and size, which are not included in this analysis. Thus, this study does not claim to have found the true causal private school effect; the regression analysis, however, with its rich controls for family, student, teacher and school characteristics, gives a tighter upper bound to the private school effect than is available from a comparison of raw achievement scores for public and private school students.

Chapter 6. Teachers' Job Satisfaction

6.1 Introduction

This chapter discusses the findings of the teachers' job satisfaction survey and analysis of the subsequent data gathered through semi-structured interviews with six teachers (three from government schools and three from private schools) to answer the following research question:

- Is there a difference in job satisfaction between teachers in government and private schools?

The purpose of the survey was to investigate whether there were any differences between government and private schools in terms of job satisfaction. To answer the question, the analysis of quantitative and qualitative data was linked to triangulate the findings and provide complementary information. While the survey data were analysed using non-parametric tests through SPSS version 25.0, the qualitative data obtained from open questions in the survey and semi-structured interviews were manually analysed, as discussed in Chapter 4.

Triangulation is of great importance to attain internal validity and the questionnaires and the semi-structured interviews were designed to facilitate this. The questionnaires and semi-structured interviews were constructed to gather data regarding teachers' feelings and opinions on different aspects of their schools, as well as to provide background information about the teachers in the two school types, e.g. age, nationality, qualifications, experience, etc. The questions in the interviews were designed to gather in-depth information about the same aspects addressed in the survey. In addition, specific questions were asked to investigate interesting or unexpected statistical findings, such as exploring the reasons for around 31% of teachers in government schools sending their children to private schools.

Taking into consideration the comparative nature of the study, the descriptive statistics related to teachers in government and private schools will be presented first. The second part of the chapter will present the findings from the factor analysis, which used promax rotation and a principal axis factoring (PAF) procedure and was conducted to confirm the dimensions of the questionnaire. The factor analysis confirmed the original dimensions of the questionnaire: school management, supervision and follow-up, students' motivation and performance, work conditions, being a teacher and parental involvement. Factor scores were then used in further inferential analysis, in which data were disaggregated based on school type and when relevant into more specific factors, such as gender, experience, qualifications, etc.

6.2 Demographic and background characteristics

A total of 353 teachers participated in the survey, 215 from government and 138 from private schools. The first part of the questionnaire gathered demographic data, including gender, nationality, qualifications and experience, to provide some background information. Table 6.1 shows the frequencies and percentages for teachers' background characteristics based on school type.

As shown in the table, teachers from public schools represent 60% of the total participants. This is due to the difference in school sizes between government and private schools. Most of the private schools involved in the study had a smaller number of students and consequently fewer teachers than government schools (see 4.6.2). In addition, there was a high level of non-response from private schools, which reduced the sample size.

Almost half the participants in each school type were female (47% in government and 50% in private). All private schools in the sample were co-educational, with both boys and girls being taught by both male and female teachers in the same school. In the government sector, in contrast, there are separate schools for each gender, with boys taught by male teachers and girls by female teachers.

In terms of nationality, the two school types seem to differ significantly. While 80.5% of teachers in government schools were Omani, almost 96% of teachers in private schools were non-Omani. As expected, a chi-squared test for association established a statistically significant large association between nationality and school type ($\chi^2(3) = 194.830^{**}$, $p < .001$, $\phi = .743$). This could be related to Omanis' orientation to working in the public sector, which is one of the issues contributing to labour market imbalances and hence is considered one of the major challenges facing economic growth in the GCC countries (Karoly 2010). The public sector is more attractive to nationals as it provides higher salaries, better pensions, longer tenure, less intensive working conditions and other benefits than jobs in the private sector.

Table 6.1. Characteristics of teachers by school type

Variable	Item	Public		Private		Total		χ^2	df	Cramér's V	ϕ
		N	%	N	%	N	%				
Participants		215	60.9	138	39.1						
Gender	Male	114	53.0	69	50.0	183	51.8	.308	1	.030	
	Female	101	47.0	69	50.0	170	48.2				
Nationality	Omani	173	80.5	6	4.3	179	50.7	194.830**	1		.743
	Non-Omani	42	19.5	132	95.7	174	49.3				
Age	21-30	30	14.0	17	12.3	47	13.3	11.291**	3		.179
	31-40	143	66.5	74	53.6	217	61.5				
	41-50	36	16.7	35	25.4	71	20.1				
	More than 50	6	2.8	12	8.7	18	5.1				
Qualification	Diploma	8	3.7	5	3.6	13	3.7	17.770**	3	.224	
	Bachelor	186	86.5	97	70.3	283	80.2				
	Masters	20	9.3	31	22.5	51	14.4				
	PhD	1	.5	5	3.6	6	1.7				
Experience	1-5	11	5.1	12	8.7	23	6.5	4.859	4	.117	
	6-10	72	33.5	35	25.4	107	30.3				
	11-15	61	28.4	41	29.7	102	28.9				
	16-20	49	22.8	30	21.7	79	22.4				
	More than 20	22	10.2	20	14.5	42	11.9				

* $p < 0.05$, ** $p < 0.01$

There is also a small association between school type and the age of teachers ($\chi^2(3) = 11.291^{**}$, $p < .001$, $\phi = .179$). Most of the teachers in public and private schools were aged between 31–40 years (66.5% and 53.6% respectively). There were significantly fewer teachers in the age groups 41–50 and over 50 in government schools (19.5% combined) than in private schools (34.1%). These findings correspond to those obtained in the TIMSS data (see 5.5) and could be attributed to the phenomenon of lack of teacher retention in government schools, where experienced teachers tend either to apply for early retirement or quit teaching due to a number of factors, such as the intensive workload, lack of appreciation, insufficient salary and lack of incentives (Al Lawati, 2014).

In terms of qualifications, a statistically significant association was detected between teacher qualifications and school type ($\chi^2(3) = 17.770^{**}$, $p < .001$). The association was small (Cramér's $V = .224$). As can be seen in the table, the majority of teachers in both public and private schools had a Bachelor's degree, which is the minimum requirement for teacher recruitment in almost all subjects and teaching levels in both government schools and private schools, the latter being under the supervision of the MoE. However, there were considerably more teachers with Master's degrees and PhDs in private schools (26%) than government schools (10.3%). Again, these findings are in line with those found in the TIMSS data (see 5.5).

The data also show that most teachers in both government and private schools had between 6 and 15 years of experience (61.9% of government teachers and 55.1% of private teachers). However, no statistically significant association was detected between years of experience and school type, as indicated by the chi-squared test of association.

6.3 Inferential analysis

Each of the scales will be examined separately in this section to assess any differences between the school types. This will be done through comparing factor scores for each of the scales obtained through applying PAF to all the items of the questionnaire, as will be explained in the next section.

Moreover, to determine which test should be used, the data were tested for outliers, normality and homogeneity of variance. Based on the results, the data failed the assumptions of parametric testing⁹ (see Appendix E). Hence, non-parametric tests were used to determine if

⁹ No outliers were detected in the data except for 'financial aspects', as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. Moreover, the data were not normally distributed in all scales according to the Shapiro–Wilk test ($p < .05$), except for 'parental involvement' ($p > .05$).

there were any differences between public and private schools in the different scales, namely the Mann–Whitney U test as an alternative to the independent-samples *t*-test and the Kruskal–Wallis H test as an alternative to one-way ANOVA.

6.3.1 Factor analysis

As described in Chapter 4 (section 4.4.2), the teachers' job satisfaction survey was divided into seven sections or sub-scales, each comprising 6 items. The scales were as follows: school management, supervision and follow-up, teacher–student relationship, work conditions, being a teacher and parental involvement. Teachers' responses were measured on a 5-point Likert scale with 4 representing 'strongly agree' and 0 'strongly disagree'. After the survey had been implemented, factor analysis using PAF was conducted to confirm the dimensions and identify any other possible underlying dimensions that might be associated with different patterns in the participants' responses.

Initially, the factorability of the 42 items was examined using several widely recognized criteria. First, it was observed that there was a correlation of .3 for all the items with at least one other item, suggesting reasonable factorability. Second, the Kaiser–Meyer–Olkin measure of sampling adequacy was .886, a 'great' classification according to Kaiser (1974). Moreover, Bartlett's test of sphericity was significant ($\chi^2(861) = 6679.935, p < .0001$). The diagonals of the anti-image correlation matrix were also all over .5. Finally, all the commonalities, except for two, were above .3, further confirming that each item shared some common variance with other items. Given these overall indicators, factor analysis was deemed suitable for use with all the items.

PAF revealed nine factors that had eigenvalues greater than 1 and these explained 27.1%, 7.6%, 6.7%, 5.1% and 4.6%, 4.3%, 3.7%, 2.8% and 2.6% of the total variance, respectively. Visual inspection of the scree plot, however, indicated that seven components should be retained (Cattell, 1966). In addition, a seven-component solution, which explained 59% of the total variance, met the interpretability criterion. As such, seven components were retained

Data were also skewed and kurtotic for one or both groups, except for parental involvement with a skewness of -.224 (standard error = .167) and kurtosis of -.139 (standard error = .333) and for government with a skewness of .040 (standard error = .206) and kurtosis of -.584 (standard error = .410).

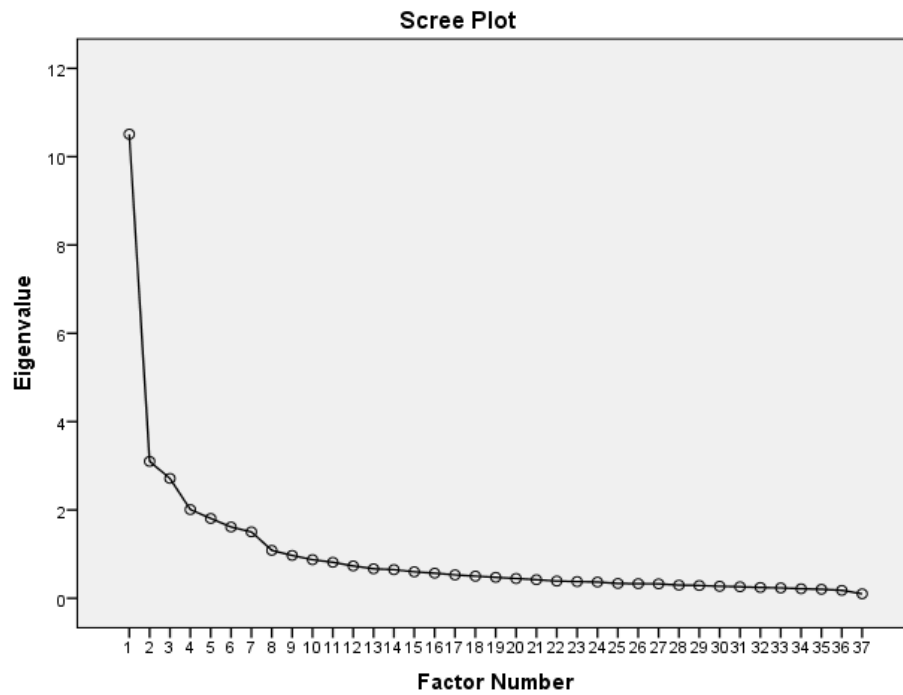


Figure 6.1. Scree plot indicating eigenvalues and factors resulting from PAF on items related to the job satisfaction survey

A total of five items were eliminated because they did not contribute to a simple factor structure and failed to meet the minimum criterion of having a primary factor loading of .4 or above (Stevens, 2016). The five excluded items were: considering transfer to another job, laws and regulations urge respect for teachers, students are motivated, parents are partners and satisfied with workload. For the final stage, PAF analysis of the remaining 37 items was conducted using promax rotation, with seven factors explaining 62.8% of the variance. The rotated solution exhibited a simple structure. All items in this analysis had primary loadings over .4.

The interpretation of the data was consistent with the job satisfaction aspects the questionnaire was originally designed to measure, with the 6 items confirming strong loadings for school management on Component 1 and supervision and follow-up on Component 2, while 5 items loaded for financial aspects, parental involvement, being a teacher, work conditions and teachers' relationship with students.

Table 6.2. Factor loadings and commonalities based on promax rotated, principal axis factoring (PAF) analysis of variables in the job satisfaction survey

Item	Factors							Commonalities
	1	2	3	4	5	6	7	
Considering teachers' suggestions	.793							.589
Allowing different working styles	.771							.595
Appreciation of management	.766							.574
Fair and transparent management	.761							.614
Involvement in plans and projects	.618							.458
Cooperation in dealing with students' behaviour	.566							.474
Providing useful experience		.866						.718
Helping to overcome difficulties		.795						.650
Helping in lesson plan design		.788						.543
Enhancing teaching performance		.754						.633
Respecting opinions		.670						.574
Writing appraisals fairly		.529						.464
Salary suits the effort			.927					.837
Satisfied with salary			.907					.825
Work provides financial stability			.706					.505
Salary is high compared to government			.654					.470
Satisfied with incentives			.594					.445
Parents provide information about children's needs and interests				.823				.677
Parents contact teachers about students' learning problems				.794				.627
Parents ask for activities for children				.746				.619
Parents help with homework				.642				.525
Parents attend meetings				.477				.441
Satisfied for choosing teaching					.883			.722
Teaching provides inner tranquillity					.748			.595
Excited about work					.688			.552
Encouraging students to become teachers					.608			.477
Receiving respect and appreciation of society					.403			.152
Availability of new technology						.847		.620
Adequate school premises						.837		.639
Enough rooms in school						.642		.566
Adequate class size						.572		.379
Harmony and cooperation in school						.423		.447
Teachers can control student behaviour							.756	.526
Teachers can motivate students							.678	.533
Students respect teachers							.657	.404
Teachers can use different strategies							.631	.506
Teachers satisfied with students' levels							.446	.294
Eigenvalues	10.509	3.100	2.713	2.008	1.807	1.614	1.503	
% variance	28.403	8.378	7.331	5.426	4.885	4.361	4.061	

Note. Factor loadings < .4 are suppressed.

6.3.2 Teachers' job satisfaction by school type

As an alternative to the *t*-test for independent samples, a Mann–Whitney U test was run to determine if there were differences between public and private school teachers with regard to the different scales of job satisfaction.¹

Table 6.3. Teachers' job satisfaction in relation to school type

	School type	Mean rank	Median	Mann–Whitney U	Z-score	Asymp. Sig. (2-tailed)
<i>School management</i>	Government	189.57	3.0	12.13**	-2.90	.004
	Private	157.41	2.8			
<i>Supervision</i>	Government	168.12	3.0	16.56	1.94	.053
	Private	189.50	3.0			
<i>Students</i>	Government	174.07	3.0	15.47	.682	.495
	Private	181.57	3.0			
<i>Work conditions</i>	Government	147.16	2.8	21.25**	6.89	.000
	Private	223.49	3.2			
<i>Financial aspects</i>	Government	183.77	2.0	13.60	-1.32	.184
	Private	168.01	1.6			
<i>Parental involvement</i>	Government	167.62	2.2	16.93*	2.25	.025
	Private	192.17	2.4			
<i>Being a teacher</i>	Government	165.12	2.8	17.39**	2.74	.006
	Private	195.50	3.0			

As indicated by the results shown in the table, there is no statistically significant difference between government and private teachers' job satisfaction in aspects related to *Supervision* ($U = 16.56$, $z = 1.94$, $p = .053$), *Students* ($U = 15.47$, $z = .682$, $p = .495$) or *Financial aspects* ($U = 13.60$, $z = -1.32$, $p = .184$). Thus, there is not enough evidence to conclude that teachers' job satisfaction with regard to these aspects is influenced by the type of school in which they work.

On the other hand, government school teachers were significantly more satisfied about their *School management* than private school teachers (*Median* 3.0 vs 2.8; $U = 12.13$, $z = -2.90$, $p = .004$) whereas private school teachers were more satisfied than those in public schools about their: *Work conditions* (*Median* 3.2 vs 2.8; $U = 21.25$, $z = 6.89$, $p < .001$), *Parental involvement* (*Median* 2.4 vs 2.2; $U = 16.93$, $z = 2.25$, $p = .025$) and *Being a teacher* (*Median* 3.0 vs 2.8; $U = 17.39$, $z = 2.74$, $p = .006$).

¹ Rather than comparing the means of two groups, as in the case of the *t*-test, the Mann–Whitney U test compares medians. It converts the scores on the continuous variable to ranks across the two groups. It then evaluates whether the ranks for the two groups differ significantly. As the scores are converted to ranks, the actual distribution of the scores does not matter (Pallant, 2005).

Looking at the results above, it is worth reflecting on two rather unexpected findings related to financial aspects and teachers' attitudes towards their profession or 'being a teacher'. As is evident from the table, no significant difference was found between teachers in government and private schools regarding the financial benefits related to their work, despite the discrepancy in the salary of teachers in the two sectors in favour of government schools. In addition, being paid less with a higher workload, as many teachers reported in the open question in the survey, it was expected that teachers in private schools would be less happy about 'being a teacher'. However, the results above indicate the opposite.

To validate the results, it seemed interesting to explore the two systems from a different perspective: teachers' nationality. As indicated earlier, in this study almost 96% of the teachers in private schools were non-Omanis, while 80.5% of teachers in government schools were Omanis. It is safe to say, then, that the majority of non-Omani participants represent private schools, while almost all Omanis represent government schools (about 4% of Omanis only work in private schools). Hence, when investigating satisfaction level by nationality, one would expect similar results as for those based on school type.

6.3.3 Teachers' job satisfaction by nationality

The results show a significant difference in job satisfaction between teachers for all scales based on their nationality, except that related to their *Students*. Omani teachers were significantly more satisfied with *School management* ($Mdn = 3.0$ vs 2.8 , $U = 12.78$, $z = -2.93$, $p = .003$) and *Financial aspects* ($Mdn = 2.0$ vs 1.6 , $U = 13.62$, $z = -2.03$, $p = .009$), while non-Omanis were more satisfied with *Supervision* ($Mdn = 3.0$ vs 2.6 , $U = 17.36$, $z = 1.98$, $p = .048$), *Work conditions* ($Mdn = 3.2$ vs 2.6 , $U = 22.23$, $z = 6.98$, $p < .001$), *Parental involvement* ($Mdn = 2.4$ vs 2.2 , $U = 17.91$, $z = 2.45$, $p = .014$) and *Being a teacher* ($Mdn = 3.0$ vs 2.8 , $U = 18.63$, $z = 3.20$, $p = .001$).

Table 6.4. Teachers' job satisfaction in relation to nationality

	Nationality	Mean rank	Median	Mann-Whitney U	Z-score	Asymp. Sig. (2-tailed)
<i>School management</i>	Omani	192.6	3.0	12.78**	-2.93	.003
	Non-Omani	160.9	2.8			
<i>Supervision</i>	Omani	165.9	2.6	17.36*	1.98	.048
	Non-Omani	187.3	3.0			
<i>Students</i>	Omani	168.3	3.0	16.93	1.53	.104
	Non-Omani	185.9	3.0			
<i>Work conditions</i>	Omani	142.3	2.6	22.23**	6.98	.000
	Non-Omani	212.7	3.2			
<i>Financial aspects</i>	Omani	190.9	2.0	13.62**	-2.03	.009
	Non-Omani	162.7	1.6			
<i>Parental involvement</i>	Omani	163.4	2.2	17.91*	2.45	.014
	Non-Omani	191.0	2.4			
<i>Being a teacher</i>	Omani	154.0	2.8	18.63**	3.20	.001
	Non-Omani	200.7	3.0			

Comparison of the job satisfaction of Omani and non-Omani teachers showed results consistent with the school type comparison in the previous section (Table 6.3) for five scales: school management, students, work conditions, parental involvement and being a teacher. However, whereas there was no significant difference in terms of financial aspects between government and private teachers, Omani teachers reported being significantly more satisfied with their salaries than their non-Omani counterparts, as can be seen in Table 6.4.

This result seems more in line with the views of teachers elicited from the interview discussions and open questions in the survey, as financial benefits were raised as the primary justification for 80% of the teachers who chose to work in government schools when they were asked which school management type they would prefer and why (Q.16 and Q.17 in the teachers' survey). Most teachers from both public and private schools stated that the public sector offers higher salaries and better financial benefits, such as incentives and pension schemes, which according to many teachers provide a sense of 'job security'. A teacher from a government school reported:

'In our country, government institutions offer a stable income, so one would feel safe as far as the salary is concerned, which means that there is more job security than in the private sector.'

Another teacher from a private school confirmed:

'The Ministry of Education provides good and high compensation and they have a well-established financial system, so the salary is on time and they are fairly clear and fair in paying incentives.'

Moreover, the results showed that government and Omani teachers were more satisfied with their school management than those in private sector. Analysis of teachers' responses to the open question in the survey confirmed this result, as working for government schools according to many teachers provided more 'job security' compared with the private sector. Teachers linked this to the higher financial benefits (salary, incentives and pension), as well as the rules and regulations applied in the government and private sectors regarding teacher recruitment, especially in relation to non-Omani teachers.

Teachers' feedback indicated that non-Omani teachers had a feeling of job insecurity irrespective of the type of school they worked for. To illustrate, having worked in the public sector, some non-Omani teachers expressed their dissatisfaction with the Omanization policy implemented in government schools, which meant their contracts were terminated and they

were replaced by new Omani teacher graduates. A teacher currently employed in a private school who had worked in two government schools before his contract was terminated expressed his disappointment:

‘... you teach in a school and you work hard, and then a trainee teacher from the university who came to be trained by you, eventually he asks to be appointed in the school and I got transferred. This happened to me twice. I was transferred from (school name) then I was transferred from (school name), then I resigned...’ (PRV2M)

Another teacher with over 30 years of experience in the government sector as a teacher and a supervisor criticized the MoE’s policy to replace ‘experienced’ teachers with novice teachers just because they were Omanis:

‘They should at least leave one (teacher) with experience so that other teachers can refer to him when they face any obstacle in their teaching.’ (PRV2M)

As a result, non-Omani teachers stated that they worked in private schools simply because they had no other option: ‘We had no option to work in government schools, being non-Omanis’ and ‘I had no other options: working in a private school or going back to my country’.

6.3.4 Teachers’ job satisfaction by gender

The results of the non-parametric Mann–Whitney U test showed no statistically significant differences in median scores between male and female teachers in terms of *School management*, *Supervision*, *Students* and *Work conditions*. However, the satisfaction of female teachers was statistically significantly higher than that of male teachers in relation to *Financial aspects* ($Mdn = 2.0$ vs 1.6 ; $U = 17.59$, $z = 2.13$, $p = .033$), *Parental involvement* ($Mdn = 2.4$ vs 2.2 ; $U = 18.49$, $z = 3.07$, $p = .002$) and *Being a teacher* ($Mdn = 3.0$ vs 2.8 ; $U = 18.61$, $z = 3.19$, $p = .001$).

Table 6.5. Teachers’ job satisfaction in relation to gender

	Gender	Mean rank	Median	Mann–Whitney U	Z-score	Asymp. Sig. (2-tailed)																																																								
<i>School management</i>	Male	170.1	3.0	16.82	1.33	.184																																																								
	Female	184.5	3.0				<i>Supervision</i>	Male	174.0	3.0	15.93	0.49	.626	Female	179.2	3.0	<i>Students</i>	Male	174.7	3.0	15.98	0.45	.656	Female	179.5	3.0	<i>Work conditions</i>	Male	179.6	2.8	15.08	0.49	.622	Female	174.2	3.0	<i>Financial aspects</i>	Male	165.9	1.6	17.59	2.13*	.033	Female	189.0	2.0	<i>Parental involvement</i>	Male	160.9	2.2	18.49	3.07**	.002	Female	194.3	2.4	<i>Being a teacher</i>	Male	160.3	2.8	18.61	3.19**
<i>Supervision</i>	Male	174.0	3.0	15.93	0.49	.626																																																								
	Female	179.2	3.0				<i>Students</i>	Male	174.7	3.0	15.98	0.45	.656	Female	179.5	3.0	<i>Work conditions</i>	Male	179.6	2.8	15.08	0.49	.622	Female	174.2	3.0	<i>Financial aspects</i>	Male	165.9	1.6	17.59	2.13*	.033	Female	189.0	2.0	<i>Parental involvement</i>	Male	160.9	2.2	18.49	3.07**	.002	Female	194.3	2.4	<i>Being a teacher</i>	Male	160.3	2.8	18.61	3.19**	.001	Female	194.9	3.0						
<i>Students</i>	Male	174.7	3.0	15.98	0.45	.656																																																								
	Female	179.5	3.0				<i>Work conditions</i>	Male	179.6	2.8	15.08	0.49	.622	Female	174.2	3.0	<i>Financial aspects</i>	Male	165.9	1.6	17.59	2.13*	.033	Female	189.0	2.0	<i>Parental involvement</i>	Male	160.9	2.2	18.49	3.07**	.002	Female	194.3	2.4	<i>Being a teacher</i>	Male	160.3	2.8	18.61	3.19**	.001	Female	194.9	3.0																
<i>Work conditions</i>	Male	179.6	2.8	15.08	0.49	.622																																																								
	Female	174.2	3.0				<i>Financial aspects</i>	Male	165.9	1.6	17.59	2.13*	.033	Female	189.0	2.0	<i>Parental involvement</i>	Male	160.9	2.2	18.49	3.07**	.002	Female	194.3	2.4	<i>Being a teacher</i>	Male	160.3	2.8	18.61	3.19**	.001	Female	194.9	3.0																										
<i>Financial aspects</i>	Male	165.9	1.6	17.59	2.13*	.033																																																								
	Female	189.0	2.0				<i>Parental involvement</i>	Male	160.9	2.2	18.49	3.07**	.002	Female	194.3	2.4	<i>Being a teacher</i>	Male	160.3	2.8	18.61	3.19**	.001	Female	194.9	3.0																																				
<i>Parental involvement</i>	Male	160.9	2.2	18.49	3.07**	.002																																																								
	Female	194.3	2.4				<i>Being a teacher</i>	Male	160.3	2.8	18.61	3.19**	.001	Female	194.9	3.0																																														
<i>Being a teacher</i>	Male	160.3	2.8	18.61	3.19**	.001																																																								
	Female	194.9	3.0																																																											

As can be noted from the results shown in Table 6.5, female teachers were more satisfied than male teachers in three areas: *Financial aspects*, *Parental involvement* and *Being a teacher*. This could be attributed to the fact that teaching as a profession is one of the most favoured job options for women in Oman due to aspects related to family and social pressures, as well as attractive work conditions, including high salaries and long holidays (Albelushi, 2004). The lower satisfaction among males with their salaries could also be attributed to differences in social expectations, which place more financial responsibilities on men. That is, men are usually responsible for providing for the family as breadwinners, whereas women, although becoming more involved due to social and economic developments, could still choose not to work. This was put by a female teacher from a government school as follows:

‘...in our society, men are responsible for supporting their families financially. Most of the ladies spend their salaries on themselves and their needs and they don’t have to spend that much on the house or their children’s school fees and the children’s needs. All of that is on the father’s shoulders.’ (GOV4F)

Being single-sex workplaces, government schools provide a preferred work environment for women, especially for those from conservative families, as stated by an Omani female teacher:

‘I like government schools because female students study in separate schools from grade 5 onwards. Also, the work environment at school doesn’t involve mixing with men, except for supervisors sometimes. It’s very convenient for me.’

6.3.5 Teachers’ job satisfaction based on their qualifications

Participants were classified into three groups based on their qualifications: diploma ($N = 13$), Bachelor’s ($N = 283$) and higher qualification ($N = 57$). The non-parametric Kruskal–Wallis H test was run to determine if there were differences in job satisfaction scores between the three groups. The distributions of job satisfaction scores were not similar for all groups, as assessed by visual inspection of a boxplot. The results indicated that teachers’ qualifications had no effect on their job satisfaction as no statistically significant difference was detected between the mean ranks of teachers based on their qualifications in any of the scales, as seen in Table 6.6.

Table 6.6. Teachers' job satisfaction in relation to qualifications

	Qualification	N	Mean rank	Kruskal–Wallis H	df	Asymp. Sig.
<i>School management</i>	Diploma	13	180.8	0.45	2	.797
	Bachelor	283	175.2			
	Postgraduate	57	185.0			
<i>Supervision</i>	Diploma	13	160.2	0.54	2	.763
	Bachelor	283	176.1			
	Postgraduate	57	182.4			
<i>Students</i>	Diploma	13	222.4	2.84	2	.242
	Bachelor	283	174.4			
	Postgraduate	57	179.8			
<i>Work conditions</i>	Diploma	13	181.1	1.94	2	.380
	Bachelor	283	173.4			
	Postgraduate	57	193.9			
<i>Financial aspects</i>	Diploma	13	225.2	3.58	2	.167
	Bachelor	283	173.3			
	Postgraduate	57	184.3			
<i>Being a teacher</i>	Diploma	13	165.9	2.62	2	.270
	Bachelor	283	173.5			
	Postgraduate	57	196.7			
<i>Parental involvement</i>	Diploma	13	191.7	1.05	2	.590
	Bachelor	283	174.3			
	Postgraduate	57	187.2			

6.3.6 Teachers' job satisfaction by age

The results of the Kruskal–Wallis H test showed that the mean ranks were statistically significantly different between the different age groups of teachers for two scales: *Supervision* ($\chi^2(3) = 9.92, p = .019$) and *Work conditions* ($\chi^2(3) = 17.06, p = .001$). Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure. A Bonferroni correction for multiple comparisons was made with statistical significance accepted at the $p < .0083$ level. In the *Supervision* scale, this post hoc analysis revealed statistically significant differences in satisfaction scores between the age groups 21–30 (211.91) and older than 50 (155.18) ($p = .018$). For the *Work conditions* scale, there were statistically significant differences between the age groups 31–40 (160.96) and 41–50 (204.55) ($p = .010$) and between teachers in the age range 31–40 (160.96) and those more than 50 years old (235.86) ($p = .016$).

Table 6.7. Teachers' job satisfaction in relation to age

	Age groups	N	Mean rank	Kruskal–Wallis H	df	Asymp. Sig.
<i>School management</i>	21–30	47	190.5	2.93	3	.403
	31–40	217	170.6			
	41–50	71	181.0			
	> 50	18	202.6			
<i>Supervision</i>	21–30	47	211.9	9.92*	3	.019
	31–40	217	173.8			
	41–50	70	155.2			
	> 50	18	199.1			
<i>Students</i>	21–30	47	214.8	7.69	3	.053
	31–40	217	169.8			
	41–50	71	175.2			
	> 50	18	172.5			
<i>Work conditions</i>	21–30	47	186.9	17.06**	3	.001
	31–40	217	161.0			
	41–50	71	204.6			
	> 50	18	235.9			
<i>Financial aspects</i>	21–30	47	167.7	1.22	3	.748
	31–40	217	176.4			
	41–50	71	179.6			
	> 50	18	198.1			
<i>Being a teacher</i>	21–30	47	202.3	7.73	3	.052
	31–40	217	166.7			
	41–50	71	182.2			
	> 50	18	214.4			
<i>Parental involvement</i>	21–30	47	196.7	5.04	3	.169
	31–40	217	168.7			
	41–50	71	181.6			
	> 50	18	208.0			

6.3.7 Teacher's job satisfaction by experience

Teachers' experience presented no effect on five of the satisfaction scales measured by the Kruskal–Wallis H test. However, there was a statistically significant effect of experience on *School management* ($\chi^2(4) = 9.87, p = .043$), with a post hoc test indicating a difference between teachers with 6–10 years of experience and those with over 20 years of experience ($p = .003$) and teachers with 11–15 years of experience and others with more than 20 years ($p = .045$). Years of experience also presented a significant effect on *Work conditions* ($\chi^2(4) = 10.14, p = .038$).

Table 6.8. Teachers' job satisfaction in relation to experience

	Years of experience	N	Mean rank	Kruskal–Wallis H	df	Asymp. Sig.
<i>School management</i>	1–5	23	146.4	9.87*	4	.043
	6–10	99	162.0			
	11–15	91	145.0			
	16–20	75	184.6			
	> 20	39	184.3			
<i>Supervision</i>	1–5	23	183.9	6.72	4	.152
	6–10	99	178.3			
	11–15	91	147.1			
	16–20	75	157.1			
	> 20	39	168.8			
<i>Financial aspects</i>	1–5	23	147.8	4.36	4	.359
	6–10	99	169.1			
	11–15	91	152.3			
	16–20	75	165.3			
	> 20	39	185.3			
<i>Parental involvement</i>	1–5	23	171.3	8.20	4	.084
	6–10	99	167.2			
	11–15	91	157.6			
	16–20	75	147.4			
	> 20	39	198.6			
<i>Being a teacher</i>	1–5	23	195.3	8.13	4	.087
	6–10	99	163.2			
	11–15	91	154.3			
	16–20	75	152.5			
	> 20	39	192.5			
<i>Work conditions</i>	1–5	23	174.9	10.14*	4	.038
	6–10	99	154.0			
	11–15	91	155.1			
	16–20	75	162.6			
	> 20	39	206.5			
<i>Students</i>	1–5	23	172.7	2.79	4	.593
	6–10	99	171.1			
	11–15	91	150.4			
	16–20	75	168.3			
	> 20	39	164.6			

6.4 Government versus private schools: What do teachers say?

Based on the analysis of the teachers' survey, their views concerning their schools were further explored through semi-structured interviews. Teachers were asked about their opinions regarding the different aspects related to their schools and teaching profession.

6.4.1 School management, policy and regulations

In spite of the initiatives implemented by the MoE to devolve decision making to the regional level, the Omani educational system is still generally characterized as centralized and hierarchical (ALNabhani, 2007; Al Abri, 2018). Unlike the public system, private schools are able to control many more decisions at the school level and hence they are theoretically free of the bureaucratic restrictions that hinder the efficiency of public schools (Lockheed and Jimenez, 1994). In Oman, however, the current MoE system applied in private schools is also

described as highly centralized and there seem to be constraints on decision making at the school level (Al Abri, 2018).

In Omani government schools, for instance, it is extremely difficult to dismiss incompetent Omani teachers once they are hired. This means that schools have to cope with poor teachers. Often, the only action schools can take is to assign such teachers to non-teaching jobs (Al Tobi, 2006). In private schools, teachers' recruitment is mainly the responsibility of the school owners, but still has to be approved by the MoE. Likewise, the termination of teacher service in the private sector has to go through the MoE according to Article (40) in the Regulatory Framework of Private Schools issued by Ministerial Decision (26/2006):

‘The owner of the (private) school has no right to terminate the contract of a member of the teaching or supervisory faculty without obtaining an approval from the concerned department at the MoE.’

As a result, one of the major differences between the two systems is that while private school teachers are still more likely to be subject to termination if any of their agreement terms are violated, teachers in government schools are not likely to be dismissed for any reason. As one of the teachers stated:

‘The rules are more strictly enforced in private schools. In government schools the regulations are only applied to expatriates, while Omanis will stay in the schools irrespective of their performance.’

This issue was reflected strongly in teachers' views regarding their preference for school type, as well as their opinions of their current schools. For example, some teachers stated that they preferred government schools because ‘there is no private sector control of teachers’. Another teacher expressed his fear of arbitrary dismissal by the school owner:

‘Government management treats you as a human being, acknowledges your existence, respects you. And therefore government school teachers deal with their management with no fear. No fear of being dismissed. In private schools, however, teachers belong to the owners of the school and the school principal.’ (PRV2M)

Many teachers used the term ‘job security’ to describe the guaranteed job position in government schools compared to private schools. As one of the government school teachers pointed out:

‘...teachers [in government schools] feel stable and secure, not like in the private sector, where schools can be shut and teachers discharged at any time.’

Because private schools are less centralized, teachers seem to believe that private schools are more disciplined and accountable, as school leaders are more able to enforce rules. Teachers

in government schools are viewed as less accountable to their school administrations, which explains teachers' lack of commitment. As an Omani female teacher in a government school claimed:

'Non-Omani (teachers) are more concerned about the interests of their students than Omani teachers. Teacher absenteeism and medical leave in government schools are much higher than in private schools. There do not seem to be any strict rules implemented in government schools and there is no follow-up from the relevant authorities.'

In the same vein, in public school, rules and regulations are dictated by the central authorities, leaving school principals with very little authority, either academically or administratively, which consequently affects school effectiveness. An Omani teacher attributed low teaching quality to the lack of accountability in government schools, which in turn is a result of the limited authority given to school principals:

'It all lies in the authority given to school principals. Here [the government] they are extremely limited and so are the authorities given to headteachers. While in private schools, if the principal is not satisfied with the performance of a member of staff, his contract might be terminated. This makes a difference. But when the principal knows that whatever actions he takes will have no effect, he will eventually become disappointed and choose to take no action.' (GOV1M)

Administrative practices differ significantly in the two sectors. That is, while principals in private schools have the authority to hire and fire, such authority granted to their counterparts in the government sector is very limited. These conditions might influence effectiveness. The two school types, however, not only differ administratively, but also in terms of the stronger informal relations between school management and teachers, which might in turn explain the better performance of teachers and students in the private sector (Donkers and Roberts, 2008b). That is, the deliberate school choice coupled with the social composition of students on the one hand and the autonomy of private schools on the other create an environment of shared values and strong social relationships such that parents, teachers and students have high expectations of each other. This unity of purpose results in a collective social identity (Sammons *et al.*, 1995). This might also result from the ability of private school principals to select their own staff, an autonomy that their counterparts in the government sector do not possess. The collective social identity binds the perspectives and missions of the managers and their employees and without this management loses the ability to achieve its aims (Hallinger, 2009).

This might explain why the decentralized management in private schools in this study had a direct impact on the satisfaction of participants. To illustrate, parents and teachers in private

schools reported that they were more involved in decision making in their schools. Indeed, studies have shown that distributed leadership, particularly involving teachers in decision making, can have a positive impact on students' academic achievement (Heck and Hallinger, 2009; Hulpia and Devos, 2010). That is, the more the teachers are involved, the more motivated they become to perform their pedagogical duties (Coleman and Glover, 2010). In Oman, an evaluative study by the New Zealand Education Consortium (2013) concluded that Omani teachers were generally unsatisfied and suggested the centralization of some functions to school principals to allow them to address issues affecting teachers' performance and satisfaction (e.g. recognition and resourcing) more directly and quickly.

6.4.2 Students

No statistically significant difference was detected in teachers' satisfaction with their students in relation to school type or nationality. This is interesting as the 'students' in each school type was one of the main aspects brought up by all the teachers interviewed. The three non-Omani, private school teachers, also former government teachers, preferred students in government schools to their current students in the private sector. They described private school students as careless, indulged and not well-behaved. A female teacher stated that:

'You are not even allowed to raise your voice to a student, touch them or talk to them or even punish them for not doing homework. Students' motivation is low, there is a kind of comfort and luxury and they are not willing to work hard... You always have to insist on them doing their homework.' (PRV3F)

With regard to students' behaviour, another teacher thought that students in private school had very low respect for their teachers. He attributed this to students coming from wealthy backgrounds (PRV2M). In contrast, students in government schools were considered to be more disciplined. As stated by another teacher, 'Discipline-wise, government is much better, although they have many behavioural issues, they behave in their schools in general' (PRV1M).

As discussed in 2.5.3, the superior academic achievement of female students is one of the main challenges facing the educational system in Oman (World Bank, 2012; Education Council, 2018). Although previous studies have discussed this phenomenon in relation to the public sector exclusively, the quantitative data in this study established a difference in mathematics scores in favour of girls in both the government and private sectors (although not statistically significant in private schools). Similarly, there seem to be agreement among teachers in both sectors that girls are more independent, committed and responsible than their male counterparts, as indicated by a female teacher:

‘Boys tend to be more careless and also dependent on the teachers and their parents, but the girls are more independent. They are more creative and competitive with their colleagues and others.’ (GOV4F)

A teacher in a private school shared the same perception of boys in her school, making a comparison between them and their female counterparts when she described motivation and performance:

‘For example, when you give them a task to do at home, it’s very difficult to get it back, especially for boys, girls are a little bit more willing, but the boys are very careless.’ (PRV2M)

Another government school teacher confirmed that girls are more self-motivated to learn than boys:

‘They were willing to do whatever we told them to do and they did it because they loved it. They wanted to participate. So, maybe male students, they don’t have that in their schools.’ (GOV2F)

This is a rather interesting and unexpected finding as most of the previous studies in Oman and other Arab countries have attributed this phenomenon to differences in teaching quality in boys’ and girls’ schools (Abdulmalik and Chapman, 1994), as well as the characteristics of teachers, such as gender and nationality (Ridge, 2009; Chapman *et al.*, 2014). In Oman, there seems to be a perception that male teachers are less motivated and committed than female teachers, which reflects negatively on their teaching performance and consequently their students’ achievement, as expressed by a female teacher in a government school:

‘I think it’s because of the guidance the female students get from their teachers at schools. Female teachers are very enthusiastic. They are dedicated to teaching and they are very creative and when they find a group of students who are willing to learn and work hard, they make the best of that. On the other hand, in boys’ schools, I’m not talking about all teachers, but there is a big number of male teachers who are not that dedicated. They just teach. They don’t inspire their students, while female teachers they do, they inspire their students. We had that relationship with our students.’ (GOV4F)

This perception was also confirmed by Chapman *et al.* (2014), who argued that Omani male teachers are less committed than female teachers and this explains the difference in academic achievement between boys and girls. The World Bank (2012) stated that the lack of commitment of some male teachers was because they joined the teaching profession due to the lack of alternatives. This implies that some of them were not keen on becoming teachers, unlike women, who might consider teaching an ideal career option for cultural and social reasons (Albelushi, 2004). This point was brought up by a teacher in a private school:

‘What I want to say is that there are teachers who have no desire to teach at all. They entered a College of Education because they had no other options, their school grades didn’t allow them to study anything else or because they wanted to guarantee a job, so they had a BA in education and became teachers. Not all teachers are the same, those who have the desire and are willing to teach are enthusiastic and could endure the pressure. There are others, as I told you, who hate teaching.’ (PRV1M)

However, the fact that female students in both sectors tend to work harder, based on teachers’ feedback, and achieve higher, based on TIMSS data, regardless of the significant differences between government and private schools, indicates that there might be other cultural or political reasons for this phenomenon in addition to factors related to teachers and schools. In Oman, thousands of jobs are exclusively offered to male school graduates in the military sectors. Unlike male students, who have more chances of finding a job after finishing school, girls are more likely to remain unemployed. Girls, therefore, find themselves compelled to work harder to qualify to enter higher education institutions. Indeed, a teacher in a private school stated that boys tend to be less responsible due to their belief that they are more likely to find a job in the public sector than girls, which, he claims, justifies the high level of male student drop-out, especially in government schools:

‘... but in government, those who don’t study they just don’t care and say “I’ll drop out”. It was like this and they used to drop out because they managed to find a job with their preparatory certificate, very good jobs, and with 1st secondary they used to work and get into the army with very high salaries, no problem, but nowadays, it is not the same. Now, there is no such thing, they can’t get a job with the preparatory certificate.’ (PRV1M)

6.4.3 Work conditions

The survey results showed that teachers in private schools were more satisfied with the conditions in their schools than teachers in government schools. School resources and facilities, as well as class size, were the most important aspects that affected teachers’ satisfaction with their schools based on teachers’ feedback.

School facilities

In general, private schools were considered to be better resourced than government schools. The government school buildings are constructed by the MoE. With regard to major maintenance and renovation of the building, the ministry allocates an annual capital budget to local educational authorities to ensure that the schools are kept in good conditions. Any minor maintenance work is the responsibility of the schools and is usually executed through the school’s annual budget provided by the MoE. However, an Omani teacher in a government

school argued that the annual budget allocated was insufficient considering the size and demands of the school. He described the situation in his school as follows:

‘We are behind in everything, we are towards the end of the first semester and until this very day there is a shortage of chairs for students... If you come in summer, you will witness students’ real suffering. ACs don’t work, there is no ventilation in classrooms. The annual budget of the school does not exceed 3000 rials, but you are talking about a school with more than 35 classrooms.’ (GOV1M)

There also seems to be a lack of teaching aids, as a female teacher in the government sector claimed:

‘Teachers in government schools have the same authority and freedom to adopt the appropriate methods of teaching, but they don’t have the adequate resources.’ (GOV2F)

In contrast, private school teachers were particularly satisfied with the advanced technological equipment available in their schools. As a male teacher said:

‘In every classroom there is a laptop and a projector. These facilities help us a lot in being creative and now teachers are even evaluated based on how they use technology and the internet, so one has to develop... Now there is a smartboard and we use markers, no white boards. This equipment is amazing.’ (PRV2M)

Another female private teacher added:

‘Here in this school I really feel that they are very advanced in technology. You have a laptop, a smart board, an internet connection and a projector, so I feel that all means of technology are available in every classroom.’ (PRV3F)

She compared this with her previous government school:

‘In government schools, these things might be available, but a bit more limited. I mean only in some classrooms, so that I need to move my students to another room to use the internet and at a specified time, only because not all the classrooms have the advantage of using the technology and the like. The government schools have the potential to be better, but up to now I don’t feel that they are better than private schools to be honest. They need more technology, they need to spend more money. They need a projector in every classroom, the internet, smartboards, laptops.’ (PRV3F)

With regard to the instructional aids, there seem to be a general perception that provision in government schools was very poor. A government school teacher described the acute lack of high-tech facilities in her school:

‘There are no facilities. You see the resources now. Is this a learning resource centre in a school with more than 1,300 students in the morning and more than 1,000 in the afternoon? And it’s almost empty, nothing here at all... Add to this that technology is not used. We don’t have visual materials.’ (GOV3F)

The difference in resource provision between the two sectors and the inadequate resource utilization in government schools implies that government school students, who may otherwise have had better chances of improving their learning outcomes, are deprived of the means to do so in the current circumstances. Moreover, the perception of resource provision might influence parental school choice (Adebayo, 2009).

Class size

In general, it is common practice for private schools to advertise smaller classes as an attractive feature of their schools. The qualitative findings show that teachers, students and parents are convinced that if the working conditions for teaching and learning appear optimal, it is common sense that academic benefits must follow. As seen in Chapter 3, however, there is ample research that ascertains the limited evidence of a class-size effect.

In Oman, it is a common belief that government schools tend to have bigger classes than private schools. The teachers were asked if having too many students in class was a challenge they faced in their schools. As shown in Table 6.9, teachers in government schools appeared to agree with this far more than their counterparts in private schools.

Table 6.9. Teachers' responses to the class size question

		Government	Private
		(%)	(%)
I have too many students in class	<i>Agree a lot</i>	37.7	19.9
	<i>Agree a little</i>	31.7	18.4
	<i>Disagree a little</i>	14.3	38.9
	<i>Disagree a lot</i>	16.3	22.8

Having too many students in class was stressed as an issue by almost all the teachers interviewed as it had implications for teachers' performance and workload, as well as their relationships with the students and their parents. According to one of the teachers, smaller class sizes result in more effective student–teacher interaction and this is one of the reasons for parents preferring private schools:

‘Students come here [private school] because they want to feel more comfortable. They can communicate with teachers in a better way because the number of students in the classroom is small; in this way, students can also work better with their friends in the classroom. In government schools, the number of students is larger; the relationship between them is weaker because of the large number. In addition, the students can't interact with the teacher. Why? Because the teacher is under constant pressure to complete the syllabus within the limited time available, so he doesn't have enough time to talk to individual students.’ (PRV1M)

This point was confirmed by a government teacher whose children studied at a private school:

‘The low numbers are another reason that makes a person go there [private school]. Limited numbers of students in classrooms and in the school, so when you go to ask about a student, almost all the school knows that you are the parent of this student because the overall number of students is a bit more than 100 and the number of students in the classrooms is at the most 12. Of course, the teacher could communicate with them. Here the teacher has 45 or 40, how could a teacher manage?’ (GOV1M)

Furthermore, class size was one of the main justifications presented by teachers who preferred working for private schools and it was connected to workload as ‘fewer students in classrooms means less workload’. In addition, ‘fewer students in classrooms [in private schools] enable teachers to perform their duties in the best way possible’.

6.4.4 Parental involvement

In the TIMSS data, teachers reported that parents in private schools were generally more involved in their children’s education than those in government schools. More than 60% of teachers in private schools stated that parents were highly involved in school activities compared with 24% in government schools. According to teachers, only 29.2% of parents were highly committed to ensuring that students were ready to learn in government schools, compared with 70.2% of highly committed parents in private schools. Parents in the two sectors also differ in their expectations of their children’s achievement. As can be seen in Table 6-10, the majority of parents in private schools (92.7%) had high expectations of their children, whereas only 45.3% of parents had high expectations in government schools. As a result, parents of those in private schools are more supportive (61.7%), putting high pressure (high and very high) on the schools to maintain high academic standards (61.1% in private). Parents in government schools offer less support, with only 32% highly supportive parents. As a result, teachers stated that parents in government schools barely put any pressure on schools to maintain high standards. These results go in line with other previous studies which showed that private school parents tend to be more involved than those in government schools (Bryk *et al.*, 1993; Choy, 1997). As discussed in Chapter 3, the review of related literature has shown an association between parental involvement and students’ achievement (Epstein, 1992; Hofman *et al.*, 1996; Barnard, 2004; Lee and Bowen, 2006; Epstein, 2010; Fan and Williams, 2010). Parental expectation and aspiration were also found to have a positive impact on academic performance of children by some researchers (Fan and Chen, 2001; Jeynes, 2011). In the Omani context, the difference in the parental involvement levels in the two school types may as well contribute to the explanation of why private school students outperform those in the government sector.

Table 6.10. Teachers' responses to parental involvement levels in government and private schools

Item		Government	Private
		(%)	(%)
Parental involvement in school activities	<i>Very high</i>	5.4	20.5
	<i>High</i>	18.6	39.8
	<i>Medium</i>	44.4	39.8
	<i>Low</i>	24.6	0.0
	<i>Very low</i>	6.9	0.0
Parental commitment to ensuring that students are ready to learn	<i>Very high</i>	2.6	7.0
	<i>High</i>	26.6	63.2
	<i>Medium</i>	39.7	22.2
	<i>Low</i>	24.6	7.6
	<i>Very low</i>	6.6	0.0
Parents' expectations of students' achievement	<i>Very high</i>	8.3	46.8
	<i>High</i>	37.0	45.9
	<i>Medium</i>	36.4	7.3
	<i>Low</i>	15.2	0.0
	<i>Very low</i>	3.2	0.0
Parental support for students' achievement	<i>Very high</i>	6.3	6.1
	<i>High</i>	25.7	57.3
	<i>Medium</i>	40.6	35.4
	<i>Low</i>	22.3	1.2
	<i>Very low</i>	5.1	0.0
Parental pressure for the school to maintain high academic standards	<i>Very high</i>	1.7	16.7
	<i>High</i>	17.5	44.4
	<i>Medium</i>	38.1	32.5
	<i>Low</i>	33.5	6.4
	<i>Very low</i>	9.2	0.0

In line with this, the qualitative data show that teachers in private schools are more satisfied with parental involvement than those in government schools. Parents in private schools have stronger communication with their children's schools. Moreover, private schools seem to be more accountable and responsive to parents' needs. A teacher in a government school emphasized the parents' role in holding the school accountable for teachers' performance. In this respect, he compared his experience as a teacher in a government school and as a parent of children in private school:

'In private schools, parents are like inspectors, they ensure quality. Here [in government schools] parents' role does not exist. I could confidently say that if I was absent for a week, no parent would show up at school to ask why. To prove it, we had teachers in this same school, years ago, who almost never came to work to the extent that they had to be dismissed. It was very rare that a parent came to ask 'where is this teacher?' and I'm talking about a core subject, science I mean. In private schooling, if one (teacher) is absent for one day, we get a message from the school saying that he was sick, otherwise parents would go to complain.' (GOV1M)

Another teacher in a government schools pointed out that parents are not interested in communicating with teachers regarding their children's performance, even when schools organise events that aim to involve them:

'I teach two classes here, I am sure that no more than 15 (parents) know that I teach their children. I have more than 70 students and if 15 parents know that this subject is taught by me, then thank God.'

Moreover, parents in government schools appear to be unwilling to take part in school events, meetings and gatherings:

'There was an open day dedicated only to receiving parents. We all waited. But in total we had less than 200 parents and we have 1,380 students. Teachers did not attend classes and were there only to receive parents. I personally received 5 parents, although I told every student to ask their parents to come, especially those with low performance. I wanted to sit with him (the parent) to explain to him that it was important that you work with your son.' (GOV1F)

A teacher in a private school explained that parents in private schools are more involved as '... parents care because they pay. They look for outcomes, so like I paid money, I wait, I follow up and I ask' (PRV1M).

Another teacher in a government school attributed the interaction between school and parents in private schools to the limited number of students compared to government schools:

'Private schools communicate with parents because they have a smaller number of students. Say I have 200 students, if 4 are absent, I could easily pick up the phone and call the parents to ask about absent students. Here I have more than 1,000 students, if 100 are absent, for example, who has the time to call all their parents?' (GOV3F)

In line with this, it seems that there is a mutual understanding in the private sector that parents have the right as fee-payers to hold schools accountable, while schools are supposed to be responsive to parents' demands. This might be a plausible justification for parents' involvement in private schools, as indicated by a non-Omani private school teacher:

'We have a very good relationship; there is cooperation. And they understand the levels of the students and they listen to me and respond and when we discuss something about a student, they try to work on it at home. Parents in private schools are stricter. They feel that their children are here because they pay money and they require you to pay full attention to them.' (PRV3F)

She compared this with parents in government schools, where she worked previously:

'In government schools maybe you don't see the parents a lot. It's very rare that parents come asking about their daughter. But in private schools, parents are always following up with you and if you don't update them about their son or daughter, they will ask you 'why didn't you tell me?' They always follow up.'

Another male teacher in the private sector compared parental involvement in the two school types based on his own experience:

‘... parents in government schools, I could say, 1% only care to meet teachers. They don’t show up in government schools. Here [private schools] they come, not always, but they do come. For example, we hold a meeting every month with parents and they come and ask what the parent wants. They want their children to get good results. That’s their primary interest.’ (PRV1M)

6.4.5 Being a teacher

On this scale, which was meant to measure teachers’ level of satisfaction with being a teacher, private, non-Omani teachers seemed to be more satisfied than government/Omani teachers. Similarly, female teachers were found to have more positive attitudes towards their teaching profession than male teachers.

Irrespective of the high national rates of graduate unemployment, the public sector, particularly teaching, remains very attractive to Omanis, especially women (Albelushi, 2004; The World Bank, 2012). However, Al Tobi (2006) is of the view that there is weakness in newly employed teachers due to their comparative lack of professional capacity. He addressed this phenomenon, examining the teachers’ recruitment policy in Oman and finding that almost half of the 496 novice teachers surveyed wished to leave teaching for another profession because they felt that their contracts with the MoE were violated. A World Bank report also asserted that the quality of some newly graduate teachers was a major concern for school principals, especially in areas related to teaching skills, English language and subject knowledge. The report pointed out that many student teachers were not keen to join the teaching profession and that they only did so due to the lack of alternatives (World Bank, 2012). A point that was mentioned by a private school teacher in his description of teachers’ performance in government schools was as follows:

‘... what I want to say is that there are teachers who have no desire to teach at all. They entered the college of education because they had no other options, their school grades didn’t allow them to study anything else or because they wanted to have a guaranteed job, so they got a BA in education and became teachers. Not all teachers are the same, those who have the desire and are willing to teach are enthusiastic and can endure the pressure. There are others, as I told you, who hate teaching.’ (PRV1M)

6.5 Public or private: Which school type do teachers choose for their own children?

Teachers were asked if they had any children of school age and if so, in which type of school they studied. Of the 66% government school teachers with school-aged children, 23.2% had children studying in private schools, while 7.7% had children enrolled in both public and private schools.

Table 6.11. Teachers' responses to questions related to their children's schooling

School type	Do you have children of school age?		Which school type do they study in?			
		Frequency	%	Frequency	%	
<i>Government</i>	No	73	34.0	Government	98	69.0
	Yes	142	66.0	Private	33	23.2
				Both	11	7.7
<i>Private</i>	No	59	42.8	Government	31	39.2
	Yes	79	57.2	Private	45	57.0
				Both	3	3.8

The findings were further investigated in a second stage in which teachers were interviewed as I was interested in identify the reasons for teachers in government schools preferring private education for their children and whether their work in government schools influenced their choice. A male teacher whose children all studied at private schools declared that his work in a government school was the main reason for sending his children to private schools:

‘It’s because of everything really, the teachers, the curriculum and the facilities. There are no resources here [government schools]. This school has two shifts: morning and afternoon. The study time is very short and the teachers rush in teaching the syllabus.’ (GOV1M)

Another government teacher maintained that teachers in government schools choose to send their children to private schools because they are aware of the deficiencies in the educational system in their schools:

‘Another thing that I find really tragic and can’t tolerate is that teachers, supervisors and educators in our society who work in government schools send their own children to private schools because they know what government schools are lacking, they know the situation there, they know the reality, that there are a lot of problems there and they cannot put their children in such environment, so they run away to private schools. That is really tragic, but there is nothing to be done.’ (GOV4F)

6.6 Teachers' thoughts on private sector involvement in managing public schools

Teachers were asked about their opinions of the MoE's drive to have the private sector manage some government schools. In general, 29% of the teachers were against this proposal, while 41.5% were in favour. The remaining 29.5% were neutral, mainly because they did not have enough information about the project.

Most of the teachers who supported this partnership between the government and the private sector thought that it would enhance the quality of education in Oman through collaboration and competitiveness. For example, teachers thought that ‘government schools will benefit from private sector experience in management’, ‘it will enhance the way of teaching in public

schools' and 'it will help to integrate new techniques of learning'. Others said that 'schools will compete to improve their services and educational outcomes'.

The justifications presented by the teachers who opposed the MoE's proposal pointed to mistrust in the intentions of the private sector intervention in education, as many teachers viewed the private sector as profit oriented. Hence, there is a fear that 'education will become business'. Another teacher believed that by allowing the private sector to manage education, 'there will be a conflict of interest, primarily because private schools are owned by private individuals, whose main aim, more often, is profit and not quality'. A number of teachers voiced their concern regarding the equity implications of such a decision, as they thought that 'this will lead to privatization of education and will eventually threaten parents with limited income'. Another teacher feared that 'education fees will be too expensive, poor people will not be able to afford them' and 'education will be only for the rich'. Pertaining to the issue of equity and fairness, a teacher emphasized that:

'... before handing the schools over to private sector, there must be a comprehensive study of the financial and social feasibility of the project, transparency must be ensured and a qualified government entity must be set up to supervise school management.'

6.7 Conclusion

This chapter has presented the findings of the analysis of quantitative data obtained through the teachers' survey and qualitative data gathered through open questions in the survey and semi-structured interviews to compare job satisfaction levels among teachers in government and private schools. The findings of the quantitative data analysis showed that private school teachers were statistically significantly more satisfied with their work conditions, parental involvement and their work as teachers, while government teachers were more satisfied with their school management. Based on nationality, non-Omani teachers were generally more satisfied than Omani teachers, as they had higher satisfaction levels in aspects related to supervisors, work conditions, students, parental involvement and being a teacher. Omani teachers, in contrast, were more satisfied with their school management as well as financial aspects. Job satisfaction levels were also investigated based on other factors, such as teachers' gender, qualification and years of experience. The most important factors contributing to teachers' satisfaction in government schools, as shown by qualitative data analysis, were those related to financial aspects and school management, while private school teachers recounted that their schools had better resources and facilities, smaller class sizes, lower workloads and higher parental involvement. The next chapter addresses the fourth research question, presenting students' and parents' perspectives on their schools.

Chapter 7. Students' and Parents' Perspectives

7.1 Introduction

This chapter concludes the analysis of this study, addressing the fourth research question:

- How satisfied are students and parents with government and private schools?

The question is addressed through analysing data from multiple sources: i) focus groups with students; ii) interviews with teachers (those who have children at schools); iii) teacher's/parents' responses to open question in the survey in the first quantitative phase. The qualitative data are discussed with reference to the relevant statistical data from the previous two chapters. The analysis explores the perceptions of students and parents concerning their current schools and the factors that may motivate them to select a particular school type over another. In so doing, this study gives voice to the main users of the educational services: parents and students. The views of these stakeholders also provide contextualization of the private school effect, which is difficult to capture using survey data and hence is lacking in most robust studies of private school effectiveness, as discussed in Chapter 3.

The analysis in this chapter is presented based on the main themes that emerged from the students' and parents' data. These themes are as follows: teachers, school resources, class size, parental involvement, curriculum and tuition fees.

7.2 Students' and parents' satisfaction with their schools

The qualitative data obtained from students and parents in both private and public schools indicated that in general they preferred private school provision for different reasons. It was evident, for example, that parents' main criteria for preferring private schools were academic achievement and the curriculum. Students, on the other hand, were more concerned about the teacher–student relationship and school resources, which were more adequately provided in the private sector. In other words, parents were interested in the final output or 'the end', while students cared more about the process or 'the means to the end'. In the next subsections, the main factors that influence students' and parents' satisfaction will be presented.

7.2.1 Satisfaction with teachers

As stated in Chapter 2, the findings of the national survey on the quality of private schools conducted by the National Centre for Statistics and Information indicated that the quality of education and curriculum was the first reason for parents' preferring private schools over government schools as reported by 58% of parents (National Centre for Statistics and

Information, 2016). In line with this, the quality of teachers and the curriculum were the themes most emphasized in students' and parents' discussions and constituted the primary determinants for school selection and school shift. When asked about his criteria for school selection, an Omani father whose children study in private schools said:

'The most important one is the curriculum. I also care about teachers and their efficiency. To be honest, even where the teachers come from, because teachers from some countries are known to be strong in one subject, but not that good in other subjects, especially English. They have to be native speakers.' (GOV1M)

For some parents, it is not only the quality of teachers that matters, but also their nationality. An Omani mother of three children in private schools affirmed that she also preferred native English speakers:

'The quality of the teaching faculty is of a high standard, most importantly they come from the same country where the curriculum was adopted. Most of them are native speakers of English.' (GOV Teacher/Mother)

Another parent stated that she selected a certain government school for her children because it had better quality teachers and management:

'I know most of the teachers there and how hard they work with the students. And I know the principal as well. She is a very dedicated educator.'

Some parents were more interested in the teachers' emphasis on academic success:

'I mean that teachers there care a lot about students' performance, academic performance.'

Others' main interest was in the teaching methods:

'They work very hard to provide the students with a lot of activities to enhance their independent learning and improve literacy.'

Students, on the other hand, valued having good relationships with their teachers and it seemed that this aspect was more fulfilled in private schools than in government schools. A student in a private school said:

'The school is good really and the teachers are easy to get along with and I could go to them if I have a problem or something and they even tell me: "If you want us to explain to you again and a thousand times, it's OK". This is what I like here.' (FG4:F6)

Another student confirmed this, saying 'The teachers are understanding and you can go to them any time if you need help'.

Establishing a good rapport with teachers was even a reason for a student to select her current private school:

‘I went to meet teachers for grade 10 and I felt they were very kind. I felt comfortable with them. That’s why I told my family I want to go to this school.’

Likewise, another student switched from a government school to a private school because of the teachers:

‘...most teachers were not easily approachable. I was facing difficulties in science and mathematics and did not feel comfortable going and asking for extra help.’

Interestingly, feedback from students revealed that some went to private schools because the teachers there were less strict than those in government schools, so they were more generous with grades, as stated by a student:

‘I came here because in government schools the teachers are a bit too tough, especially in grades. Here they are more tolerant and teachers try to give us grades. But there, no, it depends on the grade you get in the exam and they wouldn’t change it.’ (FG3:F3)

Giving help to get higher grades was considered a form of ‘help’ by another student:

‘The reason I came here from the government school was that the teachers and students were irresponsible. And my grades too, they were lower there. The teachers didn’t care to help students there [government schools], but here they help us a lot.’ (FG3:4)

Students’ perception of teachers being more lenient in private schools was also brought up by the teachers interviewed from private schools. A teacher confirmed that some students do indeed move from government to private schools for this reason:

‘...but most of them [private school students], if not all, are those who I wouldn’t say failed, but rather those who could not cope in government schools. They come to private schools saying “I’ll study with my money, so I will pass and get good grades”.’ (PRV2M)

The qualitative data show that both students and parents believe that teachers are an essential aspect of school effectiveness. As seen, it was thought that a positive relationship with teachers could affect students’ academic performance, primarily through encouraging learning and enhancing motivation. Thus, students and parents valued private schools as they appeared to promote good teacher–student relationships in addition to teachers’ emphasis on academic achievement.

7.2.2 Satisfaction with school resources

As was the case with satisfaction with teachers, school resources appeared to be an important determinant of satisfaction for both students and parents. Both parents and students agreed

that resources and facilities were more adequate in private schools. A student in a private school described the facilities in his school compared to his previous government school as follows:

‘...the classrooms here all have projectors and smart boards, so all these can be used to help us understand our lessons. The teacher can bring his laptop and connect it to the projector to explain the lesson. But in government schools, they don’t have all this, so it was a bit difficult to deliver the lessons to students, but here if you don’t understand something you can go back to the video to help you understand. So there are more different ways of teaching.’ (FG4:M3)

In contrast, almost all the students were unhappy with the physical environment in government schools. Specifically, a student from a government school complained:

‘The classrooms are very dirty and we are required to clean and tidy them every day. And the desks are in a very bad shape. I don’t feel comfortable using them at all.’

According to another student:

‘Many desks in my classroom are broken and some are full of scratches and scribbles from previous years. And when we complain, they ask us to clean them up. How can we fix them if they were broken?’

Regarding the physical conditions of classrooms in government schools and the lack of maintenance, a student said:

‘There is a crack in the wall and the ceiling of the classroom always leaks when it rains. But the schools seem to be more interested in decorating offices and classes with charts. They want everything to look beautiful from the outside, but they don’t care about repairing the damage.’

A student even criticized the allocation of financial resources in the school:

‘Where does the money go? The money that comes from the government. They use it for decoration, not to provide better classrooms and resources.’

The lack of facilities in government schools, such as instructional aids, implies that students are required to provide various materials themselves, which places financial pressure on families, as one of the students elaborated:

‘In private schools, when we needed a poster or a chart for a certain lesson, the teacher provided us with a chart board and the student only had to write, draw or paint, in the school, sometimes during the lesson. Here [in a government school] the student has to go home and tell her family to buy the board, buy markers, buy paints, because there is no other way. The students work with each other to make the materials we need for different subjects. Here every student has to do that ... so of course these materials cost a lot of money.’ (FG1:F4)

Some students in government schools complained about the meals provided to them in the school canteen in terms of quality, quantity and services. As stated by one student:

‘You have to fight to be able to get something to eat in the canteen. There is no queue here, you see. It has happened many times that I’ve had my scarf pulled off by students in the crowd in front of the canteen.’

Another student stated:

‘... and if you’re late, you don’t find anything left to buy. That is why I bring my lunch from home.’

A student who had studied in a private school previously made a comparison in this regard:

‘In the private school, the canteen was very big and organized, with tables and chairs for eating. There was a section for each grade and students had to line up in queues.’

The lack of facilities in government schools was also pointed out by a female parent whose children study in government schools:

‘There are some initiatives in government schools to provide their students with gyms and shades where students could spend time during breaks. But still, that is only in a few schools where there are teachers and administrative staff who are willing to develop and improve. In many other schools, all of these things are still missing.’

The availability of resources in the private sector was viewed as one of the reasons for students’ academic superiority. As a father claimed:

‘There is absolutely no comparison between private and government schools. You can’t bring a student from a private school and compare it to a student level in a government school. Students in private schools are provided with huge resources, even those students who have no desire to study will be encouraged to excel.’ (GOV1M)

7.2.3 Class size

The official statistical records establish a significant difference in class size between government and private schools in Oman. For grades 5–10, for example, the average class size in government schools is 28 students, while in private schools it is only 14 students (The Education Council, 2017b). The class size issue was highlighted by both students and parents as a major advantage in private schools. Fourteen out of the nineteen students interviewed mentioned the number of students when they described the different aspects of schools. Indeed, this indicates the importance of this factor for Omani students when evaluating a school system. To illustrate, the presence of a large number of students places extra pressure on teachers, as explained by a student who shifted to a private school:

‘Here [in private school], classes are smaller, so teachers can concentrate on all students. In government schools there is a lot of pressure, above 35 students in each class, so there is a lot of pressure on us and the teachers too. It’s very difficult to convey the piece of information to each student or focus on each individual to check if they have understood. Here this is not the case, each class has 20 or 21 students, so the teacher can focus on the whole class.’ (FG3:M2)

Having too many students in government classes has implications for students’ performance as well as their relationships with their teachers, as one of the students who shifted to private school expressed, voicing his frustration with his previous government school:

‘... most teachers were not easy to get along with. For example, I was facing difficulties in science and maths. I don’t know how to explain, but I needed more... more explanation and I felt that there were many students in the class, 31, so I didn’t want to behave like I was putting more pressure on them, so I said I had better keep silent and study at home.’ (FG4:M2)

For parents, the number of students in the class seemed to be very important, to the extent that when a father had to transfer his children to a government school, his criterion was ‘a school with a smaller number of students’. As he explained:

‘Even when I transferred my two boys to a government school, I had to search for a school with a lower number of students and after a long search, I found a school in (name of a village far from the parent’s place of work and residence). I now have to pay for private transportation to drive them there and back every day.’

In relation to school size, the two following conclusions can be made based on participants’ opinions: i) classes in government schools are larger than those in private schools according to teachers, students and parents; ii) there is almost complete consensus that class size has an impact on teaching and learning quality, teacher–student relationships and teacher–parent relationships. As seen in Chapter 5, class size was considered a challenge for teachers in government schools. Furthermore, analysis of teachers’ job satisfaction data in Chapter 6 confirmed the negative influence of having too many students in class on teachers’ performance and communication with parents. Overall, a smaller class size is one of the reasons for parents, students and teachers selecting private schools.

7.2.4 Parental involvement

As seen in the analysis of TIMSS data in Chapter 5, parents in private schools tend to be more involved in their children’s education than those in government schools (see 5.6.5). This was also reflected in students’ and parents’ views, as they agreed that the communication between private schools and parents was more efficient than that between government schools and parents. Private schools seem to have established effective channels of communications with

parents using electronic platforms. Parents in private schools are able to follow up on their children's educational performance through mobile applications. As a father stated:

'The communication with parents is very different in private schools. There they have an application and we can follow up on a daily basis, in every lesson what our children have learned. Every teacher has to write an update there, so while I'm sitting here, I can open the application on my mobile phone and see what they studied today and what they will be studying this week.' (GOV1M)

A female student who move from a government to a private school echoed this, as follows:

'They try to make sure that parents are updated, that they know everything about their children. For example, if the student has an exam, they directly send it to the parent. They send a message. And if the student is absent, for example, they send a message instantly to inform the parents that your child is absent; even if the student misses a class. In a government school, they would hardly notice even if the student was absent for 10 days.' (FG3:F3)

Another student from a government school described her former private school efforts in communicating with parents as follows:

'In private schools, teacher-parent meetings are organized in the evenings, so that parents can attend, unlike here. They also have an application where they send parents detailed reports about students.' (FG1:F3)

The inconvenient meeting arrangements in government schools were also emphasized by a working mother:

'For me it's really hard because I work in Muscat and attending parents' meetings at 11 o'clock in the morning, for example, would be difficult, so I can't make it every time they call for a meeting.' (GOV4F)

Moreover, a student in a government school stated:

'In private schools, they encourage parents to go and ask about their children and there are incentives for students who ask their parents to come. But here [in government school] whether your parents come or not, it doesn't matter.' (FG1:F5)

Parents being more educated, according to a mother of children in private schools, is what makes parents more involved:

'Parents here are more educated. They invest in their children's education and they appreciate the value of learning. My success is when my child excels. I'm one of the people who doesn't care if my child gets a full mark. I care more that he understands the topics he studies.' (GOV3F)

Another parent stressed that investment in children's education for fee-paying parents in the private sector motivates them to be involved, saying 'They are investing in their children, so

they need to check on their investment'. Another mother added that as a parent of a child at a private school, she was not only involved in her child's education, but also in making decisions related to the school system:

'Parents have a crucial role in setting the system, as they are members of the school board, so the school cannot make any decision or apply any new rule without the approval of parents.' (GOV3F)

In summary, it can be concluded that parents and students are more content with the relationship that private schools are keen to establish with parents. Connecting this to teachers' perspectives regarding parental involvement in Chapter 6 (6.4.4), it can be seen that while teachers blame parents for their lack of participation in their children's schooling, parents here attribute the lack of school-home communication in the government sector to the school administration, as well as teachers. This mutual blame between teachers and parents is not a unique feature in the Omani context; it has also been found in other contexts (Mills and Gale, 2010; Stringer and Hourani, 2013).

7.2.5 Curriculum

The quality of the curriculum was mentioned by parents as a distinctive feature in private schools. The curriculum in government schools was criticized because 'it doesn't help the students to acquire the basic knowledge of basic subjects, not only mathematics and science' (GOV1M). In addition, the curriculum offered in government schools is not responsive to students' needs and does not provide students with the skills they need for everyday life, as stated by a parent:

'I think there is a lack of a link between the students' real life and the curriculum. There is no link. Our curriculum does not help the students or does not prepare students for real life. For example, they study the times table in maths. They learn it by heart, but when it comes to real situations, like when they go to a shop or a coffee shop, for example, I mean they are not able to make the calculations. I mean ... find out how much an item costs, for example.' (GOV4F)

In comparison, the curriculum in private schools is more rigorous and advanced as they tend to be in pace with modern educational theories:

'In private schools, they establish their academic programmes based on international standards. And they look at the latest approaches. For example, the findings of the latest research on educational methods and competencies that students at each level should acquire. But in our government schools, they have this syllabus that is outdated and I mean improvement and development take ages to get to the level of private schools.' (GOV4F)

The educational programmes in private schools are also designed to enhance autonomy, unlike those in government schools:

‘In private schools the students are encouraged and guided to be independent learners, to depend on themselves. They don’t even have that much homework to take home with them. But, on the other hand, in government schools, students are dependent. They are dependent on teachers to provide the information, to provide the solution to whatever problems they come across and they depend on their parents even to study for their exams or to do their homework if there is no-one to help them or to encourage them, to monitor them, they fail.’ (GOV2F)

Indeed, the curriculum was the primary criterion for a father who selected private schools for his children:

‘...the most important reason for my choice is the curriculum. It is important for me that the curriculum is intensive and rigorous.’ (GOV1M)

Despite parents’ satisfaction with private school academic programmes, it was found that some parents tended to move their children to government schools at the end of the cycle 2 level. Parents preferred their children to study for their general diploma (grades 11–12) in government schools, in which the syllabi are easier compared to those in private schools, so that they would be more likely to graduate with higher grades than their peers. Parents assumed that students who had been exposed to complex international curricula for more than half of their schooling would be more likely to find the national curriculum easier in comparison, so they would probably graduate from government high schools with high grades that would enable them to compete for a scholarship for entrance to a national or international university. This perception indicates that parents’ primary goal for their children is academic achievement – that is, for their children to acquire high grades – and they select their children’s school on that basis. A parent who transferred his son from a private to government school explained:

‘I did transfer my son to government school after he finished grade 7... because it is easier there. He is going to general secondary and unfortunately here (in Oman), they don’t distinguish between those who graduated from a bilingual school or any other. They only care about the final grade, how much he scores in science or in maths, regardless of the curriculum. In private schools, they have a more challenging international curriculum. In government schools, the books are easier, so he will get a good result and he will graduate with high grades. The competition will be easy in a government school.’ (GOV1M)

A student who moved from a private school to a government school when she was in grade 8 also stated:

‘The curriculum in the private school was too difficult for me, so I decided to come to a government school. I feel that the syllabus is much easier and I decided to study here until I finish school. It was very difficult to get high grades in grade 12 in private school with that curriculum.’ (FG1:F1)

Another parent/teacher justified shifting her son to a government school as follows:

‘The curriculum is more difficult there [private school] and it’s more competitive, so he might not achieve good grades in private schools. Even the exam questions here [in government school] are simpler and as a teacher, I try to avoid difficult questions, because they have different levels. Many students are low achievers, while in private schools, students’ levels are high, so the exams are more difficult. Therefore, when the student (her son) deals with questions designed by the MoE, they are very easy for him.’ (GOV3F)

7.2.6 Tuition fees

There seems to be broad consensus among parents regarding the tuition fees for private education, which are considered to be high. As described in Chapter 2 (2.5.3), the tuition fees for private schools are considered to be rather expensive by many Omani parents, especially in global schools which apply internationally accredited programmes. An average Omani family may not be able to enrol their children in private schools unless they have an extra source of income, as indicated by a teacher who was a father of three children in private schools:

‘Fees are too expensive. I am a teacher, but at the same time I have my own business, so my money comes mainly from my business and has nothing to do with teaching. If I were only a teacher, I wouldn’t be able to cover the tuition fees for one of my children. Private schools are only available to those who have money.’ (GOV1M)

In line with this, a mother of two children in government schools stated:

‘In terms of tuition fees, private schools are for people with high salaries. I can’t imagine that somebody whose salary is below 1,000 rials could be able to send their children to private school. Imagine if you have 3 or 4 or 5 children. I know a friend of mine who is a teacher and her husband is a lecturer at the university, so their monthly income combined is above 4000 [rials], but they have 4 children, all in private schools. Each child costs them 4000 rials a year. That is too much even if your salary is high. You have to consider the number of children you have. Can you afford to send all of them? And I know someone who sent one of his children only to private school and the others attend government schools.’ (GOV4)

In some cases, for example when families have many children, private school fees might not be affordable for all of them. Thus, a decision might have to be made concerning who attends private schools and who might be transferred to government schools. This phenomenon has also been reported in other GCC countries, where male children are usually sent to expensive

private schools (Selim, 2016). In this study, one of the students had to move to a government school simply because he was the eldest:

‘...so my siblings continued in private schools, but I couldn’t continue because I was the eldest, so they said it’s ok, you bear with us and when we are able financially, we will enrol you in private school again.’ (FG3:M1)

A father stated that he had to transfer his child from private school, but was not able to find a ‘good’ alternative government school and expressed the dilemma of his situation as follows:

‘I’ve been looking for such a long time, but I can’t seem to find a good government school even if it is far from home. Therefore, I’m thinking of taking him back to another Arabic private school. This problem has been bothering me for a while and my only option now is to go back to private school, but my only problem is the financial ability, like many other parents.’

The financial hardships faced by some families could affect their ability to fund their children’s education, which leaves them with no other choice but to send their children to free government schools. A mother said that she would prefer to send her children to private schools if she were able to afford it ‘because in many respects, private schools are better than government schools and that includes the teaching, curriculum, even the facilities provided by the school’.

7.3 Conclusion

In general, it seems that most of the parents and students interviewed preferred private schools for the following main reasons: teacher quality, class size, school resources and school emphasis on parental involvement. Private schools, for most of the participants, had better resources, had more positive teacher–student relationships and more effective means of involving parents in their children’s education. There was also an emphasis on the consequences of class size on students’ affective and cognitive aspects, as well the implications for teachers’ roles inside and outside the classroom. This was an unexpected result, corroborated by the teachers’ perceptions in Chapter 6.

In addition to the findings discussed above, two important, rather unexpected issues emerged from the qualitative data and need further analysis. The first issue concerns the shift from private to government schools at the end of Cycle 2 or the beginning of post basic education (grades 10–12), which is in line with the findings of the National Centre of Statistics and Information (2016) survey. The shift to government schools, according to parents and students is a strategy to guarantee higher grades in their general diploma certificate examinations. Having been taught in private schools using ‘internationally accredited’

programmes, usually until after Cycle 2, parents tend to shift their children to government schools where the curriculum and examinations are relatively easier, which makes the children better able to compete academically. However, the data obtained from teachers also revealed that there was a shift from government to private schools for various reasons. Teachers claimed that parents transfer their low-achieving children, 'who fail to cope' in government schools, to the private sector, hoping to find more individual care due to the smaller number of students in these schools. Considering the gender gap in academic achievement in favour of girls, this might explain the higher number of boys in private schools. The fact that the majority of students involved in the focus group discussions had at some point in their schooling shifted from one school type to the other might be an indication that school shift is a phenomenon that requires further investigation, particularly in relation to private school fees.

The second issue is private tuition, which Bray (2007) refers to as the 'shadow education system'. In Oman, private tuition is predominantly carried out by non-Omani teachers. In this study, all the teachers interviewed in government schools said that they worked as private tutors after school hours as a result of their relatively low pay. That is, private lessons provided them with additional income. According to those teachers, they provided private tuition services to government school students because their teachers do not have the time to cover the syllabus or to allocate time to assist individual students during the school day. This coincides with Bray's (2007) conclusion that private tuition in developing countries is used to teach aspects of the curriculum that are not covered in school.

Chapter 8. Discussion

8.1 Introduction

The primary aim of this study was to examine the effectiveness of public and private schools in Oman. To achieve this aim, which guided the study, a number of measures were implemented to determine the effectiveness of each school type. First, students' academic achievement was compared using TIMSS 2015 mathematics data for grade 8 students. Second, teachers' satisfaction was measured using a number of indicators, such as school management, supervision and follow-up, the teacher–student relationship, work conditions, financial aspects, teachers' attitudes towards their profession and parental involvement. Finally, school systems were evaluated based on students' and parents' views and opinions. The previous chapters have discussed the methods employed in this study, the relevant literature on school effectiveness, with a particular focus on public versus private school provision, as well as the results of quantitative and qualitative data analysis. This chapter is dedicated to discussion of the findings which emerged from the data.

The context of Oman provides a relevant setting for investigating the effectiveness of private schools bearing in mind the government's orientation to encouraging private sector investment in education through a wide range of financial and logistic subsidies. Private sector intervention is proposed as a means of enhancing the quality of educational outcomes and creating an alternative source of finance for education. Although the size of private sector education, compared with total enrolment, is still limited, it is growing steadily.

In general, four main findings emerged from the study. First, there is a statistically significant difference between government and private schools in favour of private schools. The advantage of private schools persisted even after controlling for family background variables. Second, students' self-concept, specifically their confidence in mathematics, appeared to have a significantly positive impact on their performance in both school types. Third, in general, teachers in private schools were more satisfied than those in government schools; however, teachers in both sectors preferred working for government schools because of the financial benefits. Fourth, both students and parents were more satisfied with the quality of education offered in private schools, mainly because of school resources, class sizes, parental involvement and the curriculum.

This study has addressed four research questions. The findings associated with each are discussed below and linked with the broader context of SER. The chapter also includes some

insights into conducting SER. Moreover, it presents the study's implications and limitations and indicates future research directions based on the findings.

8.2 Research question 1

Is there any statistically significant difference between government and private school students' academic performance in mathematics?

The first research question aimed to compare public and private schools in terms of academic achievement. As might be expected from the existing literature, the analysis of TIMSS 2015 mathematics data established that private school students significantly outperform their counterparts in government schools. As indicated in Chapter 5, the average score of private school students was 462.6, which was significantly higher than the average score of government school students at 403.2.

The findings also showed that students in Omani private schools came from families with higher SES as shown by the indicators for home possessions and parents' level of education (see 5.2.2). This finding comes as no great surprise considering previous discussions of the high tuition fees charged by private schools, which are generally unaffordable for Omani parents with average or below average earnings (see Chapter 2). The fact that students in private schools come from more privileged families, however, brings us face to face with the question: Is the private school positive effect a mere reflection of students' higher SES background?

As discussed in Chapter 3, there has been a suggestion from some researchers that the performance-related advantage of private schools is due to selective socioeconomic recruitment and hence it disappears once student background characteristics are accounted for (Cox and Jimenez, 1990). In the case of Oman, however, the results show that the difference between public and private schools does not disappear, even after controlling for family background variables. On the contrary, the private school advantage, although slightly reduced, appears to persist, with an estimated difference of 47.45. This result is in line with previous studies, such as those of Adefeso-Olateju (2013), Bashir (1994) and Kingdon (1996). However, it differs from other studies which found that the private school effect disappeared after SES variables were controlled, such as Braun *et al.* (2006) and Lubienski and Lubienski (2006).

This finding also corresponds with those of other studies conducted in other GCC countries, such as Al-Duwaila's (2012) research in Kuwait, which found that private students outperform

their peers in government schools in mathematics. However, one fundamental difference between the two studies is that academic achievement in Al-Duwaila's study was not based on a standardized test; rather, students' performance was measured through analysing students' test score records during the final term of the 2009/2010 school year. Moreover, it was not clear whether the tests used in the two systems were designed to measure the same cognitive abilities. In addition, unlike this research, the study in Kuwait did not take into account the students' socioeconomic background. The findings of this study are also in line with those of Cheema's (2015, 2016) research in Qatar, which found that after controlling for student background variables, private school students outperformed their counterparts in government schools in mathematics, reading and science (Cheema, 2015) and in literacy (Cheema, 2016).

8.3 Research question 2

If a difference between school management types exists, what are the factors that contribute to this?

As discussed in Chapter 2, there are two competing arguments regarding the reasons for the apparent government/private school differences in educational attainment: the quality of education versus selective socioeconomic recruitment (Williams and Carpenter, 1991). The quality of education explanation attributes the differences to school-related factors, such as the quality of teaching, parental involvement and school leadership. In contrast, the selective recruitment view claims that the strongest predictor of academic attainment, particularly in private schools, is the SES of the students' families and hence the private school advantage disappears once family background is controlled for (Cox and Jimenez, 1990). These competing views have been examined in this research by 1) determining the factors that affect students' achievement in government and private schools using hierarchical regression analyses and 2) exploring whether attending a private school provides a *net* benefit, over government schools, with regard to educational achievement if family socioeconomic factors are controlled for.

To determine which factors might contribute to the established academic advantage of private schools in this research, a hierarchical multiple regression was performed in which variables related to family, students, teachers and schools were entered in blocks to assess the effect of variables at each level. As seen in Chapter 5, family SES variables appeared to have a significantly positive impact on students' performance in private schools, but not in government schools. This strong impact of family background on students' performance has

been established by many previous studies, such as Martin *et al.* (2000), Yayan and Berberoglu (2004) and Martin *et al.* (2013), and is expected in the Omani context bearing in mind a number of factors, such as the contribution of the private sector, the geographic distribution of private schools and most importantly, the high annual tuition fees.

When evaluating the performance of schools, it is important to bear in mind the characteristics of each of the sectors. The government sector provides free education for all children of school age and caters for over 80% of Omani students. This has implications for the composition of the students, comprising children from different social and economic backgrounds. Access to education is guaranteed even to children in rural remote areas, where economic and educational opportunities are very limited compared to urban areas.

In contrast, private schools tend to be located in cities and semi-urban areas, where parents can afford the tuition fees, which differ significantly based on the type of private school – Arabic only, bilingual (Arabic and English), or internationally accredited programme. Even with the differences in costs, private schools are still considered unaffordable by below middle-income parents. This is probably one of the reasons for the limited and slow growth of private schools in Oman compared to other neighbouring countries and was clearly indicated by the parents' responses when they were asked which school type they would choose for their children if schools fees were paid for them through a scholarship or a voucher. All parents said they would select private schools for their children in that case, which indicates that tuition fees are the factor currently restricting parental choice.

Although a number of variables related to the family, student and teacher levels were found to be associated with student achievement, it should be stressed that these variables accounted for only a small percentage of the explained variance, while more than 60% of the total variance in students' mathematics achievement in private schools remained unexplained. This finding may be attributed to a number of limitations related to the data available, as well as the design of the TIMSS study. Acknowledging these limitations could aid in designing future comparative studies on educational effectiveness. To illustrate, most of the variance in student achievement was not explained, even after adding a large number of variables included in the TIMSS student and teacher questionnaires. This can be attributed to the fact that there are other factors that might have not been captured by the TIMSS study. Previous studies (Sammons *et al.*, 1997b; Kyriakides *et al.*, 2000) have established that aptitude variables, such as prior knowledge or intelligence, have significant effects upon student achievement and

therefore need to be taken into account in comparative evaluative studies. However, no measure of student aptitude was included in the TIMSS data.

It is also worth noting that a positive or a negative regression coefficient cannot be regarded uncritically as an indicator of cause and effect; rather, it should be interpreted in relation to the other components of the educational process. This does not imply that no inferences can be drawn from a regression analysis. However, it means that the results of statistical analysis should be supplemented with additional information from other sources to avoid bias. Hence, qualitative data were used in this research to validate and complement the statistical results.

The advantage of private schools established in the statistical analysis may have implications for the equity of access to quality education for Omani students, given that more than 80% of Omani students attend public schools. Furthermore, as seen in Chapter 2, there are discrepancies in the geographic distribution of private schools among the 11 educational governorates of Oman. To illustrate, while there are 242 schools in Muscat and 105 schools in Batinah North, there are only 12 schools in Buraimi, 3 in Musandam and 1 in Wusta. This implies that there is a lack of equal opportunities for private education provision, which may contribute to widening the educational disparities between urban and rural areas and between rich and poor. This concern has previously been raised by the World Bank in a joint report with the MoE (World Bank, 2012).

8.3.1 Student-related factors

Regression analysis showed that when controlling for family SES variables, 17.1% of variance in students' mathematics test scores in government schools and 10.8% in private schools was explained by students' characteristics. Female students were found to have higher grades than males in both school types; however, the impact was not statistically significant in private schools. In government schools, the regression results show a predicted increase in mathematics test scores for females that was 25.8 higher than for male students. This effect disappeared, however, after teachers' characteristics variables had been added, suggesting that the gender gap in mathematics achievement is more likely to be related to teaching quality. This agrees with previous other studies that attributed female academic superiority to a number of teacher-related factors, such as commitment, nationality, working conditions, qualification and salaries (Abdulmalik and Chapman, 1994; Ridge, 2009; Chapman *et al.*, 2014). This result also corroborates the qualitative findings in which the female performance advantage was attributed to their teachers, specifically female teachers, as one of the teachers explained:

‘I think it’s because of the guidance the female students get from their teachers at schools. Female teachers are very enthusiastic. They are dedicated to teaching and they are very creative and when they find a group of students who are willing to learn and work hard, they make the best of that. On the other hand, in boys’ schools, I’m not talking about all teachers, but there is a big number of male teachers who are not that dedicated.’ (GOV4F)

Of the variables related to students’ characteristics, students’ confidence in mathematics was the most important latent variable in explaining achievement in both school types. In addition to students’ confidence, the variable ‘students value mathematics’ appeared to have a significantly positive impact on outcomes in government schools. This finding was not a surprise considering the number of studies that have found a strong relationship between students’ self-concept and perception of their abilities and achievement (Pajares and Miller, 1994a; Abu-Hilal, 2000; Shen, 2002; Yayan and Berberoglu, 2004; Hattie, 2009). According to Multon *et al.* (1991), the relationship between self-concept – which includes worth, confidence and pride – and achievement is among the strongest of self-measures. This is expected, as what people believe they can do may well be a good predictor of what they can actually do (Hattie, 2009). In contrast, students who lack confidence in the skills they possess are not likely to engage in tasks in which those skills are required and they will employ less effort and persistence in the face of challenges (Pajares and Miller, 1994). The direct implication of this finding is that school practitioners should consider students’ beliefs about their capabilities as important predictors of their performance. Teachers should pay attention to students’ self-evaluation of their competence. It is not known at what point in their schooling these beliefs are formulated. Dweck and Leggett (1988) were rightly concerned that fixed entity views of ability are developed early and tend to last in the absence of intervention techniques.

Although this relationship does not reflect directionality, it can be assumed that the relationship between self-concept and achievement works in a reciprocal manner (Valentine *et al.*, 2004). That is, achievement is more likely to be enhanced when students possess high efficiency in learning and employ self-control over their own learning. There is also a chance that successful achievement reinforces students’ confidence. Indeed, Abu-Hilal (2000) tested a structural model for predicting the mathematics achievement of 394 students in the Al-Ain district, UAE, concluding that achievement significantly predicted self-concept. Using TIMSS 1999 data for 38 countries, Shen (2002) also established a positive relationship between students’ self-concept and their achievement in mathematics and science. There is also evidence that students’ negative attitudes, such as their perception of failure and incompetence, have a negative impact on their outcomes (Yayan and Berberoglu, 2004).

Although developing positive attitudes among students towards a subject is a desirable outcome in its own right, it is also clearly related to achievement. This suggests that by enhancing students' positive attitudes, there could be a reciprocal effect on achievement. If self-efficacy assessments were to begin early in a student's academic career, inaccurate perceptions could also be identified early and appropriate interventions undertaken. It might be difficult for teachers to change the levels of achievement of those who have low self-concept. It might be more fruitful to address these strategies prior to working on improving outcomes.

8.3.2 Teacher-related factors

Teachers' characteristics

Corroborating the literature from other developing countries, it was found that the traditional measures of teacher quality (teachers' years of experience and qualifications) did not have any statistically significant impact on students' achievement in government schools. In private schools, the quality of teachers was one of the important features as viewed by parents and students. The statistical findings also showed that private school teachers were more qualified than those in government schools. Regression analysis, however, indicated that the teacher-related model was not a significant predictor of students' test scores in government schools as none of the teachers' characteristics showed any significant effect on the dependent variable, i.e. mathematics results. Teachers' characteristics in private schools, however, significantly accounted for 21.8% of variance in mathematics test results. The qualitative data provided a plausible explanation for this difference in the teachers' effect in the two sectors, suggesting that factors such as teachers' accountability to school management in private schools, access to and use of instructional materials, as well as school culture, mediate and to a certain extent potentially determine the effectiveness of teachers in facilitating high achievement. Based on the literature reviewed, it can be assumed that teaching effectiveness is greatly limited if resources and adequate school conditions are not provided, which is more likely to be the case in Omani government schools, as was evident from teachers', students' and parents' feedback. In addition, teaching quality in private schools may be positively affected by parental pressure on school management to introduce innovation in teaching and learning methods (Levačić, 2009). In contrast, the centralized and bureaucratic system in public schools may constrain teachers' ability to innovate and – most importantly – schools' ability to reinforce accountability, a point that was emphasized by teachers in both sectors in this study. Moreover, there is a possibility that the private school management structure enhances the

ability to hire more qualified teachers than government schools, for which teacher recruitment is centralized in educational authorities.

Generally, there is considerable inconsistency in the literature regarding the impact of teachers' characteristics on students' academic output. Due to the different findings in previous research, in this study there was no strong assumption regarding the expected significance or direction of teacher-related variables, especially given the lack of empirical evidence in the Omani context. The data indicate, though, as is the case in many other production function studies in other countries, that teachers' experience and qualification' do not have a significant impact on students' achievement. Hanushek (2003), for instance, found no consistent association between teachers' experience and qualifications on the one hand and students' outcomes on the other. This failure to establish a relationship between teachers' characteristics, such as qualifications, experience and salaries, on the one hand and students' academic performance on the other goes against the popular perception of teachers being the main determinant of educational quality (Hanushek and Rivkin, 2004).

Teaching strategies

An interesting result was the negative effect of using interactive strategies in private schools. To measure the effect of teaching strategies, this study used a latent measure that included a number of variables related to child-centred strategies, such as asking students to express ideas and explain answers, to decide their own problem-solving procedures and to complete challenging exercises. The result was especially unexpected given the emphasis on a child-centred approach which has been at the heart of the educational reform implemented in Omani government schools since 1998.

This finding, though, is in line with that of Yayan and Berberoglu (2004), who found a negative relationship between child-centred classroom activities based on their analysis of TIMSS-R data for grade eight students in Turkey. Similar to this study, child-centred activities in their study were measured using a latent variable of a number of items based on students' responses to the kind of strategies used in their class. Interestingly, the study found a positive relationship between teacher-centred activities and students' achievement. The authors pointed out that the outcomes in TIMSS are not intended to assess competencies in student-centred activities; rather, they are designed to assess curricular learning outcomes. This point was further confirmed by Pelgrum and Plomp (2002), who also argued that using learner-centred approaches in mathematics may give teachers and students less time to focus

on the reproduction of facts and standard problems, which are measured by TIMSS, and this might explain the decline in students' scores.

Another plausible explanation of the negative impact of teaching strategies on students' output may be related to the self-reported nature of the data, as well as the types of constructs and variables used in TIMSS questionnaires (Caponera and Losito, 2016). In this study, teaching strategies were measured through teachers' self-report items, asking them to indicate their level of confidence in using a number of strategies: teachers' evaluation of their abilities will not necessarily reflect the quality of teaching in reality. The effect of teaching processes, therefore, may best be captured using a different method, namely observation of classroom practices, as suggested by Postlethwaite and Ross (1992).

8.3.3 School-related factors

Interestingly, none of the school resource variables showed any significant effect on mathematics achievement. This was unexpected in the Omani context given the emphasis found in the qualitative data on the private school advantage in terms of facilities and resources. This finding, however, resonates with the international body of SER, as many studies have found school resources not to be as major determinant of students' achievement. For example, Hanushek and Luque (2003) used TIMSS 1995 data for 37 countries to examine the impact of school resources on students' achievement. The study concluded that across the countries studied, the overall impact of resources on students' achievement was rather limited, even after controlling for family background. A similar result was found by other cross-country studies using TIMSS data (Wößmann, 2001, 2003).

The lack of effect of school resources could be attributed to limitations in the school measures used. The data related to school resources in this study were drawn from teachers' responses and it may be that their roles encouraged them to give socially desirable responses. Another plausible explanation is that there are interaction effects among school resource measures. For instance, class size may only influence students' academic achievement when teachers know how to make effective use of small class sizes. As such, the interaction between class size and teacher performance needs to be further examined.

The lack of a relationship between school resources and students' achievement in Oman could be justified by the fact that both private and government schools are to a great extent similarly resourced. One of the features of the implementation of the educational reform in 1998 was equipping schools with high-quality infrastructure and resources, including computer and science laboratories, as well as physical educational facilities, similar to those available in

most private schools. It was also noticed in school visits during the data collection process for the purposes of this study that there were no considerable differences in school buildings or resources between government schools on the one hand and Arabic and bilingual private schools on the other. However, there were considerable differences in resources between government schools and international private schools. Thus, it could be assumed that a significant school effect would have been detected had the comparison been conducted between government and international private schools.

Unexpectedly, class size did not show any significant impact on students' performance in private or government schools. This was an unexpected finding given the emphasis placed on class size by all participants in the qualitative data. Class size was a crucial aspect of comparison between public and private schools as indicated by the teachers, students and parents. In the literature, though, studies related to class size have produced inconsistent results, as discussed in Chapter 3. Interestingly, regression analysis showed that class size has a positive impact, albeit not significant, on test scores in private schools. This result is similar to those of Bedi and Garg (2000) and Cox and Jimenez (1990). In the first study, it was found that larger classes were associated with higher earnings for graduates from private schools, while the second study found that a higher teacher–student ratio led to higher cognitive achievement. This might be attributed to either the quality of students in classrooms or the quality of teachers. That is, it could be that schools apply a policy in which weaker students are taught separately in smaller classes. The other plausible explanation is that certain schools may have better qualified teachers who are capable of enhancing their students' performance even in large classes (Wößmann and West, 2006). Indeed, looking at the teachers' characteristics in Chapter 5 (5.5), private school teachers in this study were found to be more qualified than those in government schools, with 23.4% holding postgraduate degrees.

While the findings of this study do not imply that school resources are unimportant, they tend to be in line with Gray's (1990, p. 2013) view that 'adequate levels of resourcing ... seem to be necessary but not a sufficient condition for a school to be effective'. In the same vein, Hattie (2005) argues that given the limited evidence of the school size effect on students' achievement, the focus should shift away from costly interventions to reduce the number of students in classrooms towards considering other more contextually effective interventions. An apparent implication is that it may be a better policy to devote the limited resources available for education to employing more capable teachers rather than to reducing class sizes – moving more to the quality side of the quantity–quality trade-off in the hiring of teachers.

8.4 Research question 3

How satisfied are teachers in private and government schools?

Based on the findings from the quantitative data, teachers in government schools were significantly more satisfied with their school management, while private school teachers were significantly more satisfied with their work conditions and the involvement of parents in their schools. Private school teachers also showed more positive attitudes towards their work in teaching than their counterparts in public schools. The statistical results showed no significant differences between public and private school teachers regarding financial benefits, supervision or students.

When asked about their preferred management type, the majority of teachers stated that they would prefer to work in government schools. Job security emerged as the most important reason for teachers selecting the public sector. The higher financial benefits offered by the public sector were the most important factor attracting teachers to government schools. Such benefits include regular annual pay rises and the pension scheme. This finding was not a surprise as it is in line with many studies in the Gulf countries, which have established that citizens of those countries are generally more attracted to working in the government sector (Al-Asfour and Khan, 2013; Al-Nahdi, 2016). This has been attributed to the social contract between government and the employees and a strong emphasis on social welfare (Mellahi, 2007), which gives employees a sense of job security.

Most importantly, the findings of this study confirm those of the Educational Council in Oman, which has stated that low salaries in private schools discourage Omani graduates from applying to the private school sector. This, in turn, has been considered one of the challenges hindering the development of the private education sector in Oman (The Education Council, 2014). This appears to be a common phenomenon in Gulf countries. Al Kandary and Malek (2010) also found that 65.5% of the 800 students they surveyed in education colleges in Kuwait would refuse to work for private schools because of the low financial incentives, high work load and mixed culture (males and females) in private schools.

An important issue emerged concerning the large difference in monthly salary between public and private schools. It seemed that the lower salaries of expatriate private school teachers result in them seeking additional income through private tuition. It was reported that the majority of private school teachers offer private lessons after their school work, sometimes until late at night. Further investigation of the implications of this growing phenomenon is needed considering the potential impacts on teachers, students and families in Oman.

Female teachers were found to be more satisfied with their financial benefits, parental involvement and their work as teachers. In the Omani context, this is to be expected as teaching continues to be the most favoured option for females because of family pressures and social considerations (Albelushi, 2004). Factors such as immediate placement, attractive working conditions, high salaries and long holidays make teaching especially attractive to women who also have to commit to their role as mothers. The same result was found by Ma and MacMillan (1999) in Canada, where female teachers were found to be significantly more satisfied than male teachers. The authors explained the difference as being related to the underlying reasons for selecting teaching as a career. That is to say, while women consciously selected teaching, men were more likely to view teaching as an alternative. Despite the two different contexts, this might well apply to the Omani context. A non-Omani teacher in a private school succinctly described the situation in Omani government schools as follows:

‘What I want to say is that there are teachers who have no desire to teach at all. They entered the college of education because they had no other options; their school grades didn’t qualify them to study anything else or because they wanted a guaranteed job in government, so they acquired a Bachelor’s degree in education and became teachers although they hate teaching.’ (PRV1M)

Teachers also thought that the workload for teachers in private schools was much higher compared to government schools. This corresponds with a World Bank report that concluded the teacher workload in Omani government schools was low by international standards, as an Omani teacher was estimated to teach 12 hours per week or 436 hours per year compared with an average range of 663–805 hours per year in OECD countries (World Bank, 2012). Despite the relatively lower workload, teachers in government schools were significantly less satisfied with the working conditions in their schools. There is a plausible explanation for this in the qualitative data obtained from teachers, namely that government schools appeared to suffer from two main problems: lack of facilities and large class sizes. Many teachers expressed their dissatisfaction with the inadequacy of school buildings, which lack basic facilities such as air conditioning, drinking water and lighting. Besides, there is a seemingly acute shortage in terms of instructional materials as indicated by both teachers and students. Another significant challenge facing teachers in government schools is the large class size. Teachers argued that the large number of students in their classes affected their teaching quality, leaving them with insufficient time to focus on individual students’ needs. Moreover, teachers were not able to establish strong healthy relationships with the students and their parents due to time and resource constraints. This is in line with the findings of a report from the New Zealand National Tertiary Education Consortium (2013), which found that teachers in Omani

government schools were dissatisfied mainly because their schools lacked the resources needed for them to perform their jobs. Similar to this study, the report found that some teachers had to personally fund the resources they needed for their classes.

In spite of their low salaries and heavy workloads, teachers in private schools appeared to have more positive attitudes towards their teaching careers than their counterparts in government schools, which seems to be consistent with previous studies in other developing countries (Choy, 1997; Tooley and Dixon, 2005; McKinnon *et al.*, 2013). Furthermore, the findings from the parents' and students' data also suggest that the quality of teaching in private schools was perceived as being better than in government schools. It seems that contracted teachers in private schools have more positive attitudes and are more willing to put more effort into teaching than the permanent civil service teachers in government schools because private school teachers are on renewable contracts and thus face stronger accountability pressure than those in the public sector. The school-based management in private schools means that principals and/or school owners have greater authority to dismiss poorly performing teachers, unlike in government schools. In addition, teachers in the private sector are under pressure from parents, who in many schools have a say in their annual evaluations, as indicated by some of the teachers in this study. These accountability measures are clearly reflected positively in teachers' performance. Another explanation might lie in the working conditions in the private schools. Private school teachers appeared to have smaller class sizes, as well as better relationships with parents and their school management, as described by one of the teachers in the private sector:

‘The school management in private schools is closer and more responsive to teachers because private schools are not as big as government schools. Private school management communicates more efficiently with teachers. Those in management always support teachers and take their side. There’s no gap or distance between them at all. They have a strong relationship due to the many meetings, teacher–parent meetings. They always follow up. You feel they are always with you step by step.’

8.5 Research question 4

How satisfied are students and parents in private and government schools?

The analysis of students' and parents' perceptions of their schools indicates a preference for private schools. Based on parents' views, it seems that their main drive for selecting private schools was the school emphasis on academic success. Parents in particular attach great importance to their children's grades and thus, when given the choice, parents often choose to send their children to schools that are high in students' achievement parameters (Bauch, 2000). This finding is consistent with the work of Gaziel (1996), who found that parents in

Israeli schools also considered academic achievement to be the most important school goal. However, it differs from Watfah and Al Mutawaa's (2008) findings in Kuwait, where the main reason for parents enrolling their children in private schools was to enhance personal development, as well as develop their English. Another recent study in Kuwait also found that parents preferred Pakistani private schools, mainly because they use English as a medium of instruction (Al Shatti, 2015). In Jordan, the majority of parents prefer to send their children to private schools for different reasons (Kharman, 2005), with examination scores ranked in eighth place after parental involvement, English and French, facilities, school management, teacher quality and class size.

Interestingly, parents made less reference to teaching methods and the school environment, although both have a direct impact on students' achievement. This might be explained by the fact that parents are more concerned with the final outputs and less interested in the means or processes that lead to the final output. Moreover, it seems that parents evaluate schools primarily based on their ability to enhance students' academic achievement, especially at the post-basic education level. This emphasis on achievement justifies why some parents transfer their children from private to government schools in their final years of schooling: the curriculum is easier compared to private schools, so they can 'guarantee' higher grades, as indicated by some of the students interviewed in this study.

For parents, graduating from school with high grades guarantees their children an opportunity to pursue higher education and consequently obtain a good job in the future. This is particularly salient given the growing unemployment rates in Omani society. Parents seem to think that private schools are better able to help their children succeed in life, which further confirms Al-Shithani's (2005) argument that graduates from private schools, especially bilingual and international schools, have higher chances of being accepted to local and international universities, as well as securing jobs with higher salaries in the public or private sector, than students from public schools. In the same vein, in Kuwait, private schools have been found to be more successful in preparing their students for university (Alsuwaileh, 2013). Similar results were found in Lebanon by Nabhani (2003).

Students, on the other hand, placed the highest importance on the student–teacher relationship. Students appeared to want teachers to be human and listen to them. There seemed to be agreement that teachers in private schools were friendlier, more patient and understanding and more responsive to students' needs as described by the students. Government school teachers, in contrast, were too strict and were more distant from their

students. Most importantly, they lacked the time to focus on students' individual needs due to the large number of students in classes, as indicated by both teachers and students. Students also claimed that the lack of communication with their teachers had a negative impact on their academic performance as they did not feel comfortable asking for their teachers' help when they did not understand.

This focus on teacher–student communication by Omani students seems to concur with the findings of previous studies which established the effect of positive teacher–student relations on students' achievement (Teddlie and Stringfield, 1993), self-esteem (Sammons *et al.*, 1997a) and success in school (Pomeroy, 1999). According to the New Zealand Education Consortium's report (2013), the teacher-student relationship is one of the factors leading to school drop-out in Oman. Omani students believe that better communication with their teachers leads to enhanced academic achievement. This seems logical as the students are mostly exposed to their teachers during their school days. The findings of this study confirm that as the school is a place in which teachers and students live and exchange experiences, in addition to the conventional role of cognitive development, it contributes to students' affective development (Creemers, 2005). This emphasis on the affective aspects of the schooling experience is also corroborated in the findings from the TIMSS data, which showed that students self-concept, especially their confidence, has a significantly positive impact on their mathematics performance. This further confirms the importance of establishing a positive school climate to enhance students' academic and personal development.

Parental involvement was one of the most distinguishing aspects of private schools. All participants were more satisfied with the communication mechanisms applied in private schools to keep parents informed and in particular involve them in school decisions. Private schools seemed to have systems of communication with parents using a variety of means, such as regular parent–teacher meetings, telephone calls and messages, social media programs or specially-designed applications. Such systems did not exist in almost all the public schools included in this study, although two parents reported that their children's teachers used a mobile app (e.g. WhatsApp) to communicate with them. However, it was not clear if such initiatives were part of the school policy or solely individual teacher initiatives.

Most importantly, there seemed to be a polarized perception among parents and teachers regarding their roles and responsibilities in home–school communication, with each party blaming the other for students' low performance, as well as for the lack of communication between school and home. Parents, for instance, thought that government schools did not

provide enough channels or opportunities for parents to get involved in their children's schooling, while teachers reported that parents seldom attended parent-school meetings, indicating their lack of willingness to take part in their children's education. Teachers in public schools also emphasized that their heavy workloads and large classes left no time for them to keep in touch with parents. Parents felt that it was the responsibility of the school to initiate and promote the home-school relationship, whereas the teachers blamed parents for not showing up. This culture of blame between parents and teachers was also found in schools in Abu Dhabi (Stringer and Hourani, 2013), Kuwait (Almazeedi, 2009) and Australia (Mills and Gale, 2010). These studies found that parental involvement in school-based activities was limited. The studies also established that parents and schools expected the other party to initiate and promote the relationship.

In addition, parents in public schools felt that they were not involved in decision making and that their comments and views were more likely to be neglected by the school administration, unlike in private schools where 'the school cannot take any step or implement any new regulation without involving parents', as one of the mothers declared. The high parental involvement in private schools may be attributed to the characteristics of parents, namely their higher social, economic and educational level. In addition, private schools are more accountable to parents, being fee-payers, and are therefore keener to respond to parents' suggestions. Parents and school in the private sector view education as an investment requiring their mutual collaboration and follow-up, as put by a teacher/parent:

'To be honest, parents care because they pay. They look for outcomes, so like I paid money, I wait, I follow up and I ask. The school itself expects money from me, so they give me what I ask for in a way that matches their set plans and goals.'

Parental involvement has been assumed to be correlated with socioeconomic factors (Sammons *et al.*, 1997a). However, Epstein and Dauber (1991) emphasized the importance of teachers' attitudes and practices in understanding whether and how parents become knowledgeable and successful partners with schools in children's education. They ascertain that most parents need assistance to know how to become involved productively in their children's schooling. Therefore, it is very important that schools implement programmes to encourage families, especially those who would not become involved on their own, to be part of the school process.

8.6 Policy and educational implications

As established in this study, private school provision in Oman seems to provide better quality education at the cognitive and non-cognitive levels as determined by students' mathematics

achievement, as well as parents' and students' levels of satisfaction. The private school advantage, however, is currently only accessible for 15.3% of Omani students. As indicated in Chapter 2, for most Omani families private schools are not an option due to their high tuition fees (see 2.6.3). This confirms the concerns of the World Bank, which warns:

‘...private sector growth has mostly been driven by a small segment of schools charging high fees, which only children of the economic and political elite can afford, leaving little choice for children of less well-off households. This situation is socially risky and economically suboptimal, as it limits choices, creates a two-class generation of students and restricts bright students of poor families from high quality institutions.’ (World Bank, 2012, p. 196)

These considerations were also echoed by teachers, who were sceptical about expanding the role of the private sector in education. Indeed, many teachers feared that this might deprive the less advantaged families of good education (see 6.6). Furthermore, the concentration of private schools in large cities might even widen the social and economic disparities between urban and rural areas. Added to this is the privilege that private school graduates have in relation to access to higher education and better job opportunities (Al-Shidhani, 2005). This means that the government's policy for enhancing private sector provision should take into consideration the impact of such plans for the less privileged population. For policymakers, this suggests that future public-private partnership interventions in education should be planned carefully to be particularly sensitive to the needs of the most vulnerable. The current MoE's intention to outsource the management and operation of some government schools to private operators can be used to provide equitable access to quality private education, especially in rural areas. Another intervention that could be considered would be to introduce a voucher scheme, which could be directed specifically to the most underprivileged students.

In a similar vein, while it is recognized that the commercialization of education should be discouraged, the private sector should be induced to invest to provide access to quality education in the most equitable manner. To attain this, it is important that the role of the private sector be viewed as supplementary to that of the government and not a substitute. One way of fostering greater involvement from the private sector would be to shift the focus to performance indicators, applying measures for quality assurance in both private and government schools based on school effectiveness and efficiency. This however, would require moving towards the decentralization of government school management.

Another important policy implication is related to the Omanization of teachers in private schools. The findings of this study clearly indicate that the primary impediment to employing Omani teachers in private schools is the lower financial benefits. However, the growth in

private school numbers has promising potential to absorb a large number of unemployed Omani teacher graduates, especially since more than 80% of teachers in the private sector are currently non-Omani nationalities. Unfortunately, working in private schools will remain unattractive to Omanis until the payment gap between the two sectors is narrowed. That is, the private sector should be made equally attractive to Omani nationals by making the private and public sector benefits more comparable.

8.6.1 Accountability and school governance

One of the roles of the private sector in education is to provide learning opportunities to the public sector. It has been argued, for example by Lockheed and Jimenez (1994), that an effective way of improving the quality of public schools would be to draw lessons from the best practices of private management practices. In the context of Oman, the findings suggest that private schools are more accountable to fee-paying parents. The main observation from the analysis of the interview data was the high level of direct accountability of private school teachers to the principal and parents, which has a direct impact on teacher motivation and performance. The contrasting constraints on autonomy in government schools suggest that there is much to be learnt from the accountability mechanisms of the private sector. Attention should be paid to re-designing government school management to resemble the private school system, which features localized decision making and encouraging and valuing the parents' voice.

Despite previously implemented efforts to decentralise some functions and delegate them to schools from the Central Ministry, the reality indicates that development at the school level seems to be hindered by lack of autonomy. As seen, the limited authority of principals has direct implications for teachers' commitment, accountability and resourcing, which in turn affects students' performance on the one hand and parents' satisfaction on the other. An important implication of this finding is the need to devolve more decision-making authority to school principals. Giving principals greater control over the resourcing and management of their schools could enable them to address issues of teacher job dissatisfaction more quickly and directly, particularly in relation to working conditions. Furthermore, a more efficient school-based management system should allow more opportunities for student and parental involvement in decision making.

The availability and quality of school facilities were brought up as important aspects concerning teachers', students' and parents' satisfaction with private education. There was consensus that in comparison to the private sector, government schools were under-resourced.

This includes infrastructure, facilities and advanced technological equipment and teaching materials, in addition to delays in maintenance procedures. These challenges are reflected negatively in teachers' and students' performance, hindering them from fulfilling their potential. Although government schools are provided with a learning resource centre, which should be equipped with an internet connection and computers for students use, it appears that the facilities available are not sufficient, especially given the large numbers of students in government schools. In some schools, teachers claimed that most of the equipment available was old and out of order. It is therefore essential that the MoE provide financial support to develop the physical environment and ensure that teachers are provided with the necessary teaching aids in public schools. To illustrate, there is a need to increase the number of computers in schools and provide the technical support needed to ensure effective use of the resources available. It is only when the physical environment is adequately prepared that qualified teachers can be expected to be motivated to innovate. Providing schools with high-tech facilities will enhance students' knowledge and skills in information and communication technology. This is particularly important in Oman to ensure that Omani students, the potential workforce, are equipped with the necessary skills to be able to compete in the global market. It is also recommended that the annual funding allocated to school administrations be increased to cover on-going maintenance of their schools. Most importantly, principals should be granted more authority regarding the allocation of financial resources and contracting.

Class size was also identified as an influential factor for choosing private schools. Both parents and students perceived that having smaller numbers of students in classrooms would allow teachers to understand their students' needs and hence offer more customized tuition. This was also confirmed by the teachers, who firmly believed that having large numbers of students increased their workload and limited their potential to innovate. Most importantly, large class sizes in government schools were found to have a negative influence on teacher–student and teacher–parent relationships. As a consequence of these findings, there is a need to address the issue of over-crowded classrooms in the government sector by employing more teachers, building additional classrooms, or considering double shifts in some schools in over-populated areas.

8.6.2 School–home collaboration

The considerable focus on parental involvement by teachers and parents in both school types in this study consolidates previous research findings regarding the positive effect of home–school relations. Parental involvement clearly has implications for enhancing the level of accountability at the school and teacher levels, then reflected positively in cognitive and

affective outcomes in the view of the stakeholders involved. This finding suggests it is important for the MoE and school management to reconsider educational policies to enhance family involvement. It is recommended that school administrations empower parents, giving them some authority in decision-making roles, perhaps through a decentralized school management system. As for the school level, it would be useful for principals and teachers to include parents in successful collaborations through involving parents in committees to take decisions concerning their children's academic and personal development. Empowered parents feel more ownership for their children's education and can bring valuable perspectives because they understand their children's needs.

Conventional means of communication in government schools, such as teacher-parent meetings, do not seem to work. One of the impediments to parents' participation in school meetings was the inconvenient timing of such events, as indicated by parents and students. Among the effective ways of overcoming this challenge is to use technology, as most private schools do. Contacting parents through electronic platforms and mobile applications was reported by parents as an efficient method enabling them to establish active communication with schools without having to visit them physically.

Enhancing students' self-concept

Students' confidence in mathematics was found to be a strong predictor of achievement, irrespective of school type, which implies that special attention should be paid to students' attitudes towards their learning. Beliefs are also of concern to educators, as it is the expectations of others that form students' self-concept of their academic abilities and this in turn affects their academic performance. School and home should help students perceive themselves as achievers. A positive self-concept facilitates students' ability to learn. Teachers should pay as much attention to students' self-evaluations of their own competence as to what they can actually do. As students' self-concept, represented by what they think they can achieve in a particular subject, is inevitably influenced by their prior experiences and self-worth (Pajares and Miller, 1994), it is perhaps beneficial to assess students' perceptions of their abilities to identify any inaccurate perceptions and consequently undertake necessary interventions.

Students who lack confidence in a certain skill will be less engaged in tasks that require the use of that skill and will be more likely to give up when they face challenges. Mathematics is generally perceived as a difficult subject for Omani students, so it would be useful for teachers, educators and researchers to explore how and when beliefs about their abilities are

acquired, why they persevere and how they can be altered. One way of promoting students' confidence would be for teachers to establish positive and healthy relationships with their students. Part of schools' efforts to improve academic achievement should be directed to enhancing students' feelings of self-worth and competence, primarily through verbal persuasion techniques. This is also when the school-home relationship assumes high importance, as students' affective development entails complex processes in which teachers and administrators at school and parents at home must work together to adopt strategies to instil and enhance self-confidence.

Teacher-student relationships

It was found in this study that teacher-student relationships are an important determinant of school choice, especially for students. As indicated by students, establishing positive relationships with their teachers was crucial for their academic performance and their sense of belonging to school in general. It is therefore recommended that teachers pay specific attention to establishing a positive rapport with their students. Teachers should encourage students to express their thoughts. They should also listen to their students' views and encourage them to ask questions. The teacher-student relationship is fundamental in nurturing self-esteem and self-confidence and developing students' self-concept with regard to their academic abilities. It also creates a safe learning environment in which students feel comfortable asking questions, even those perceived as stupid or risky. A mutually respectful relationship between teachers and students can positively affect academic output through stimulating students' motivation.

8.7 Conclusion

In general, the findings of this study establish that students in private schools outperform their counterparts in government schools in mathematics, even when SES-related variables are held constant, suggesting a positive private school effect. Although the statistical analysis indicated no significant effect of school- or teacher-related factors on students' performance, the qualitative data obtained from teachers, students and parents established that private schools are better resourced and generally have better educated parents with higher SES who are more involved in their children's schooling than those in government schools. Although teachers in general would prefer to work in government schools because of the higher financial incentives, those in private schools were more satisfied with their work conditions, parental involvement and their work as teachers. A summary of the findings in relation to the research questions, together with the contributions of the study, its limitations and suggestions for future research, will be presented in the next chapter.

Chapter 9. Conclusion

9.1 Introduction

This chapter concludes the study. The findings of the study were presented in Chapters 5, 6 and 7. Both the quantitative and qualitative findings were discussed in Chapter 8. This concluding chapter begins by providing a summary of the main findings. Then, the contributions of the study are described, followed by the limitations and suggestions for future research.

9.2 Summary of the findings

As discussed in Chapter 3, there has been a proliferation of research on the effectiveness of private schools vis-à-vis public schools in the developed world and recently there has also been a growing body of research on the efficiency and effectiveness of private sector interventions in the developing world. However, to the best of my knowledge, there has been no comparative study investigating the two educational sectors in the Sultanate of Oman, despite the growing participation of the private sector in education. Hence, the main aim of this study was to compare the effectiveness of government and private schools in the Sultanate of Oman. More specifically, the study set out to answer the following research questions:

1. Is there any statistically significant difference between government and private school students' academic performance in mathematics?
2. If a difference between school management types exists, what are the factors that contribute to this?
3. How satisfied are teachers in private and government schools?
4. How satisfied are students and parents in private and government schools?

As indicated in Chapter 1, there is a widely held perception in Oman that private schools offer a better quality of education than government schools. In the literature, the term 'quality' has a variety of meanings. Adams (1993), for example, identified a number of factors usually used by educators to measure quality: school input and resources, reputation, process, content and outcomes. In contrast, Ruben (1995) defined educational quality following a consumer-based method. That is, he focused on the judgments, perspectives and satisfaction of non-academic participants, namely students, parents and employers. For the purposes of this particular study, a combination of factors was used to explore the quality of education offered by schools in the government and private sectors. These included students' academic outcomes

in addition to teachers' satisfaction and parents' and students' perspectives. This is in accordance with Chapman and Adams' (2002, p. 2) definition of the quality of education, which comprises 'full agreement among parents, teachers, administrators, and students' about what constitutes optimal performance and involvement in the education process.

The research questions were addressed using a mixed-method approach, specifically following a sequential explanatory design in which quantitative data were obtained in the first stage using TIMSS assessment and a teachers' job satisfaction survey, followed by gathering qualitative data teachers, students and parents in the second stage to complement, explain and triangulate the quantitative data.

The main finding of this study lay in confirming the public and official perception of private school advantage in Oman. That is, private school students were found to outperform their counterparts in government schools in mathematics. Moreover, although private school students came from more advantaged households, their mathematics scores were still significantly higher in private schools even when family background variables were controlled for. The findings from the qualitative data analysis also showed consensus that private schools offer better quality education for a number of reasons, most importantly those related to school management, resources, class size, teacher quality and parental involvement. According to teachers, students and parents, private schools are better resourced, with more adequate facilities and instructional materials. Teachers in private schools are more committed, understanding and responsive to parental needs. The management structure in private schools is more able to enforce accountability and enhance innovation than in government schools, where principals have very limited authority.

One of the most important factors driving satisfaction with private school performance is parental involvement. Private schools adopt more effective means of involving parents in their children's schooling. This is linked to the relatively smaller number of students enrolled in private schools in general and consequently smaller class sizes. One of the interesting results in this study is the significantly positive strong impact of variables related to students' attitudes towards mathematics and their test scores, especially their confidence and the extent to which they value learning mathematics.

It was also found among the teachers that despite their general satisfaction with their private schools, when given the choice, almost all would prefer to work for the government sector because of the financial advantages offered, which justifies young Omani teacher graduates' lack of interest in working for private schools.

Taken together, the findings of this study point to the advantage of private schools in terms of students' outcomes and the main stakeholders' satisfaction. In general, private education offers a more satisfactory quality of education compared to government schools, but only to those who can afford it. Access to private schools is not equal or equitable, in part because of the high fees, which could widen the inequity of access to good quality education between the wealthy and the poor, but also because of the unequal distribution of private schools between rural and urban societies in Oman. However, the findings of this research offer scope for collaboration in which the two sectors could learn from each other.

9.3 Contributions of the study

As indicated in Chapter 2, there is a pressing need to investigate the effectiveness of private schooling in Oman given the political emphasis on attracting more private investment in the educational field to provide an alternative to the deteriorating educational quality in government schools and find alternatives for public spending on education. This, coupled with the scarcity of empirical studies on private education in Oman particularly and the neighbouring Arab countries more widely, means that the findings of this study add to knowledge of school effectiveness and offer practical implications to decision-makers and educators in Oman, but that could well be applicable to other countries in the region.

Methodologically, this study is significant as it attempts to address a number of limitations in SER. One of the most significant weaknesses of educational effectiveness research stems from the heavy reliance on students' cognitive outcomes as the main indicator of school effectiveness, thereby neglecting other meta-cognitive skills (Campbell *et al.*, 2003; Creemers, 2005). This study has attempted to address this limitation by departing from the narrow scope adopted in previous studies, avoiding the reduction of school effectiveness to academic knowledge (Slee *et al.*, 1998). That is, the effectiveness of public and private schools is compared using multiple measures, based on different methods of data collection and analysis. To illustrate, although mathematics achievement was used as an indicator of school effectiveness in this research, other factors were also investigated, such as school management, parental involvement, resources and teacher quality. These measures were explored using qualitative data obtained from teachers, students and parents. The satisfaction of these stakeholders with their schools was itself considered an important determinant of school effectiveness. Indeed, Coleman (1998) argues that school performance should not be measured only by test scores, but also by a school's ability to cater for happier and more committed students and most importantly to prepare them for more productive lives.

This study is one of very few studies in Arab countries to have investigated the effectiveness of private schools beyond a simple comparison of students' achievement scores. Unlike similar studies in the region, which have tended to explore private schooling using either a quantitative production function approach or a qualitative exploratory study related to parental school choice, this research has adopted a mixed-method approach. Using a sample of TIMSS 2015 assessment data, drawn from a representative sample of government and private schools from all regions of Oman, empirical evidence of the relative effectiveness of private schools has been rigorously examined. Students' mathematics achievement data were matched with students' and teachers' background data gathered through TIMSS surveys. Using rich TIMSS data, the analysis was able to include a number of variables, some of which are not usually captured in other datasets. The statistical findings for private schooling achievement were also explored qualitatively. The mixed-method approach to this thesis provides a robustness to the findings that is uncommon in most studies of private school effectiveness in the MENA region. The significance of this study is that it incorporates a strong qualitative component within a traditional production function approach to provide in-depth insights into school performance and the interdependence of the different components of school processes.

Another main contribution of this study lies in giving a voice to stakeholders, especially students, who are usually silent in research despite being the main consumers of the educational process. As discussed in Chapter 3, there has been a call for SER to recognise stakeholders' perspectives when investigating school effectiveness. For instance, Clark *et al.* (1980) defined school success as the ability to make a change in one or more of the following variables: students' academic outcomes, students' attitudes towards themselves or their schools, teachers' attitudes towards their students or their schools and parents' attitudes towards schools. Exploring the perceptions of the main stakeholders in this study provided an insider perspective of what happens inside schools and classrooms, which could not be captured through statistical data.

9.4 Limitations and directions for future research

This study aims to offer a starting point upon which future research can build to uncover more valuable information about different educational systems in the region. However, some limitations should be noted. First, the findings of the regression analysis indicated that the models used explained only about 40% of the variation in students' mathematics achievement in private schools, suggesting that there could be other contributing factors that are not included in this study, such as data related to school principals, school size, the location of the school (urban/rural) and students' prior knowledge. Since full access to the TIMSS data was

not possible in this study, further research taking into account other aspects of the schooling process might reveal more about the private school advantage.

Second, the data used in the study were related to only one school year. Consequently, caution is needed in generalizing the influence of contextual factors on students' mathematics achievement. Other studies of students' performance across a number of TIMSS rounds might give a more comprehensive picture of what factors are associated with students' achievement. Such research, examining trend over time and aiming to identify factors explaining changes in achievement rather than identifying factors affecting achievement, would have important implications for educational policy, whether these factors lie at the student, class, school or curriculum level.

The findings should also be considered with caution given the diverse nature of private schools currently operating in Oman; they differ considerably in the quality of teaching and the calibre of teachers, the curriculum applied and the adequacy of school buildings, as well as the availability of resources. Accounting for the different types of private schools was beyond the scope of the study because the primary variable of interest – school type – in the TIMSS data does not provide sufficient information to distinguish between different types of private school. However, future studies using more detailed data on private schools could enhance knowledge of the educational system in Oman by distinguishing the effects of specific types of private schools on cognitive and/or non-cognitive outcomes.

Finally, while the findings of the study may be relevant to the neighbouring Gulf countries due to their common social, economic and educational circumstances as described in Chapter 2, the availability of international datasets, such as TIMSS and PIRLS, could suggest an important direction for future comparative research in the Arab region.

9.5 Summary

The main objective of this study was to examine the relative effectiveness of government and private schools in Oman. The findings of quantitative and qualitative data established a private school advantage. Not only did private schools performed higher in relation to students' academic achievement, but they were found to offer better working environment for teachers and more satisfying educational services for students and parents. Findings revealed that, compared to public schools, private schools had better infrastructure and facilities, smaller classrooms, and are more accountable and responsive to parents' needs. There also seemed to be a significant positive impact of the decentralized administration in private schools on the work conditions, resourcing and home-family collaboration.

The implications are that government efforts at school development should aim to develop the entire school system with a special focus on school administration, resources and teachers. In Oman, where the public funding of education is likely to become insufficient due to projected economic and demographic challenges, macro-level school reforms may not be practical. However, the findings of this study suggest that a pragmatic school governance structure is needed; that is, decision-making authority should be increasingly devolved to school administrations to enhance the use of resources, teacher motivation and students' outcomes. One way of benefiting from private sector practices would be to establish a constructive public-private partnership framework benefiting from the strengths of the two sectors in a systematic manner.

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Appendix A1: Teachers' job satisfaction survey (English Version)

Survey Number:

Please tick or circle only one option

All information you provide will remain confidential and will be used for research purposes only.					
A) Personal Information					
1) Your Region					
2) School Type in which you teach	(1) Public	(2) Private			
3) Your Gender	(1) Male	(2) Female			
4) Your Nationality	(1) Omani	(2) Non-Omani			
5) Your Age	(1) 21-30	(2) 31-40	(3) 41-50	(4) More than 50	
6) Your Highest Qualification	(1) Diploma	(2) Bacca laureate	(3) Masters	(4) PhD	
7) Years of Experience in total as a teacher	(1) 1-5	(2) 6-10	(3) 11-15	(4) 16-20	(5) More than 20
8) How many years have you been working in your current school?					
9) Level you currently teach	(1) Cycle 1	(2) Cycle 2	(3) Post Basic Education		
10) What subject(s) do you teach?					
11) Do you undertake any other employment other than being a teacher?	(1) Yes	(2) No			
12) If the answer to question 11 was yes what employment do you undertake?					
13) Do you have children at school age?	(1) Yes	(2) No			
14) Which type of school do they attend?	(1) Public	(2) Private			
15) Why did you select this particular school?					
16) In your opinion, do students in private schools outperform students in public schools?	(1) Yes	(0) No	(2) I don't know		
17) If given a choice, which type of school management would you prefer to work in?	(1) Public	(2) Private			
18) Please justify your answer in Q17.					
19) The Ministry of Education is	4 Strongly Agree	3 Agree	2 Neutral	1 Disagree	0 Strongly

considering a proposal to have private sector managing public schools. What do you think about that?					Disagree
20) Why do you think so?					
B) School Management	4 Strongly Agree	3 Agree	2 Neutral	1 Disagree	0 Strongly Disagree
1. The school management appreciates my efforts in teaching					
2. The school management involves me in preparing school plans and projects					
3. The management deals with all teachers in a fair, equal and transparent manner.					
4. The management allows me to use the working style that most suits me					
5. The management takes into consideration my suggestions to develop educational environment					
6. The administration cooperates with me in handling some students' behavioural issues					
C) Supervision and Follow-up	4 Strongly Agree	3 Agree	2 Neutral	1 Disagree	0 Strongly Disagree
1. The senior teacher contributes in enhancing my teaching performance					
2. The supervisor helps me to design my lesson plans with all its components.					
3. My supervisor provides me with useful experiences in the educational field					
4. The supervisor helps me to overcome difficulties I face during teaching process					
5. The supervisor respects my professional opinions					
6. My supervisor writes my appraisal reports in a fair way					
D) My Students	4 Strongly Agree	3 Agree	2 Neutral	1 Disagree	0 Strongly Disagree
1. Most students I teach are motivated to learn					
2. I receive respect from the students I teach					
3. I can control students' behaviour that might disrupt the delivery of					

my lessons					
4. I am able to motivate the students who do not care much about study					
5. I am able to implement different teaching strategies in classroom					
6. I feel satisfied about the academic level of my students.					
E) Working Conditions	4 Strongly Agree	3 Agree	2 Neutral	1 Disagree	0 Strongly Disagree
1. I think that school premises are adequately established to meet school building requirements					
2. There is an atmosphere of harmony and cooperation in the school					
3. I feel comfortable at school because there are enough rooms for teachers and administration staff					
4. I am satisfied regarding the availability of new technology at school					
5. The size of the class allows me to deliver my lessons in the best way					
6. I am satisfied with the workload I have at school					
F) Financial Aspects	4 Strongly Agree	3 Agree	2 Neutral	1 Disagree	0 Strongly Disagree
1. I am satisfied with my monthly salary					
2. My salary is suitable to the effort I spend at work					
3. The financial incentives I receive encourage me to work harder.					
4. My salary is considered high compared with other government workplaces					
5. I think that my job provides me with financial stability					
6. I could consider transfer to another career if I receive a good offer					
G) Being a Teacher	4 Strongly Agree	3 Agree	2 Neutral	1 Disagree	0 Strongly Disagree
1. I feel satisfied for choosing teaching as my profession					
2. I feel excited about my work most of the time					
3. I encourage my students to choose teaching profession as their future career					
4. I receive respect and appreciation from society being a teacher					

5. There are laws and regulations that urge to respect teaching profession					
6. Teaching profession provides me with inner tranquility					
H) Parental Involvement	4 Strongly Agree	3 Agree	2 Neutral	1 Disagree	0 Strongly Disagree
1. This school views parents as important partners					
2. Parents attend parent-teacher meetings					
3. Parents contact me when their children have problems in their learning					
4. Parents ask me for specific activities they can do at home with children					
5. Parents help their children with their homework					
6. Parents provide me with information about their children's needs, interests or talents.					

Thank you for your participation

Appendix A2: Teachers' job satisfaction survey (Arabic Version)

رقم الاستبانة:

رجاء ضع دائرة أو علامة (√) على خيار واحد فقط

جميع البيانات الواردة في الاستبانة سرية وتستخدم لأغراض الدراسة فقط				
أولاً: البيانات الشخصية:				
1. المنطقة التعليمية				
2. نوع المدرسة		(1) حكومية		(2) خاصة
3. النوع		(1) ذكر		(2) أنثى
4. الجنسية		(1) عماني		(2) جنسية أخرى
5. العمر		(1) 30-21		(2) 40-31
6. أعلى مؤهل علمي		(1) دبلوم		(2) بكالوريوس
7. عدد سنوات الخبرة		(1) 5-1		(2) 10-6
8. كم عدد سنوات عملك في المدرسة الحالية؟		(1) 10-6		(2) 15-11
9. الصفوف التي تدرسها		(1) حلقة أولى		(2) حلقة ثانية
10. ماهي المادة/المواد التي تدرسها؟		(1) حلقة أولى		(2) ما بعد التعليم الأساسي
11. هل تمارس أي عمل آخر بالإضافة إلى التدريس؟		(1) نعم		(2) لا
12. إذا كانت اجابتك على السؤال رقم (11) نعم، ماهو العمل الآخر؟		(1) حلقة أولى		(2) حلقة ثانية
13. هل لديك أطفال في سن المدرسة؟		(1) نعم		(2) لا
14. إذا كانت اجابتك على السؤال رقم (13) نعم، ما نوع المدرسة التي يدرسون بها؟		(1) حكومية		(2) خاصة
15. لماذا اخترت هذه المدرسة بالتحديد؟		(1) حكومية		(2) خاصة
16. في رأيك هل يتفوق طلاب المدارس الخاصة على أقرانهم في المدارس الحكومية؟		(1) نعم		(2) لا أعرف
17. إذا كان لديك الخيار، في أي نوع من المدارس تفضل العمل؟		(1) حكومية		(2) خاصة

					18. لماذا تفضل العمل في هذا القطاع بالتحديد؟
(٠) لا أوافق بشدة	(١) لا أوافق	(٢) محايد	(٣) أوافق	(٤) أوافق بشدة	19. تدرس وزارة التربية والتعليم حالياً مقترحاً لإمكانية قيام القطاع الخاص بإدارة بعض المدارس الحكومية، ما رأيك في هذا المقترح.
					20. الرجاء توضيح أسباب اجابتك على السؤال رقم (١٩)
(٠) لا أوافق مطلقاً	(١) لا أوافق	(٢) محايد	(٣) أوافق	(٤) أوافق بشدة	ثانياً: المعلم والإدارة
					1. تُقدر الإدارة الجهود التي أبدلها في العمل
					2. تُشركني الإدارة في وضع الخطط والمشاريع المدرسية
					3. تتعامل الإدارة مع جميع المعلمين بالمدرسة بعدالة ومساواة وشفافية
					4. تمنحني الإدارة فرصة انتقاء اسلوب العمل المناسب
					5. تأخذ الإدارة ببعض اقتراحاتي من أجل تطوير العمل التربوي
					6. تتعاون الإدارة معي في حل المشاكل السلوكية لدى بعض الطلبة
(٠) لا أوافق مطلقاً	(١) لا أوافق	(٢) محايد	(٣) أوافق	(٤) أوافق بشدة	ثالثاً: الإشراف والمتابعة
					1. يسهم المعلم الأول في تحسين أدائي المهني
					2. يساعدني المعلم الأول في اعداد خطة الدرس بجميع عناصرها
					3. يزودني المعلم الأول بالتجارب المفيدة في الميدان التربوي
					4. يساعدني المشرف في التغلب على الصعوبات التي تواجهني أثناء عملية

					التدريس
					5. يحترم المشرف آرائه ومبادراته التربوية
					6. يتسم المشرف بالعدالة عند وضع تقاريره الإشرافية
					رابعاً: المعلم والطلبة
(٠) لا أوافق مطلقاً	(١) لا أوافق	(٢) محايد	(٣) أوافق	(٤) أوافق بشدة	
					1. يتصف معظم الطلبة الذين أدرسهم بالدافعية للتعلم
					2. أحظى بالإحترام من الطلبة الذين أدرسهم
					3. يمكنني السيطرة على السلوكيات التي تعيق تقديم وشرح الدروس في الصف
					4. أمتلك القدرة على تحفيز الطلبة الذين لا يهتمون كثيراً بالدراسة في المدرسة
					5. لدي القدرة في تطبيق أساليب تدريس متعددة في الصف
					6. أشعر بالرضا من مستوى التحصيل الدراسي لطلابي
					خامساً: بيئة العمل
(٠) لا أوافق مطلقاً	(١) لا أوافق	(٢) محايد	(٣) أوافق	(٤) أوافق بشدة	
					1. أرى بأن مبنى المدرسة مهيباً للقيام بالعملية التعليمية
					2. يسود جو من التعاون والإتسجام بين العاملين في المدرسة
					3. أشعر بالإرتياح في المدرسة بسبب وجود غرف كافية للمعلمين والإداريين
					4. أشعر بالرضا عن مستوى التقنيات الحديثة المتوفرة في المدرسة
					5. تسمح لي الكثافة الطلابية داخل الفصل بأداء واجبي التدريسي على أكمل وجه
					6. أشعر بالرضا من حجم العمل الذي أؤديه في المدر

سادساً: الجانب الإقتصادي	(٤) أوافق بشدة	(٣) أوافق	(٢) محايد	(١) لا أوافق	(٠) لا أوافق مطلقاً
1. أشعر بالرضا عن الراتب الذي أتقاضاه شهرياً					
2. يتناسب راتبي مع الجهد الذي أبذله في عملي					
3. تشجعتني الحوافز المالية المرتبطة بعملتي على بذل المزيد من الجهد					
4. يعتبر الراتب الذي أتقاضاه مرتفعاً مقارنة بالمؤسسات الحكومية الأخرى					
5. يحقق لي عملي الإستقرار المادي					
6. يمكنني التفكير في الانتقال للعمل في وظيفة أخرى إذا تلتقيت عرضاً أفضل					
سابعاً: تقييم المعلم لمهنته	(٤) أوافق بشدة	(٣) أوافق	(٢) محايد	(١) لا أوافق	(٠) لا أوافق مطلقاً
1. أشعر بالرضا عن إختيار مهنة التعليم					
2. أكون متحمساً للعمل في معظم الأحيان					
3. أشجع طلبتي على إختيار مهنة التعليم كمهنة للمستقبل					
4. أحظى بالإحترام والتقدير في المجتمع المحلي لكوني معلم					
5. تحث الأنظمة والقوانين على احترام مهنة التعليم					
6. توفر مهنة التعليم الراحة النفسية لي					
ثامناً: مشاركة أولياء الأمور	(٤) أوافق بشدة	(٣) أوافق	(٢) محايد	(١) لا أوافق	(٠) لا أوافق مطلقاً
1. تعتبر المدرسة أولياء الأمور شركاء مهمين في العملية التعليمية					
2. يلتزم أولياء الأمور بحضور اجتماعات المعلمين وأولياء الأمور في المدرسة					
3. يتواصل أولياء الأمور معي عندما يواجه أولادهم مشاكل تتعلق بتعليمهم					
4. يسألني أولياء الأمور عن أنشطة					

					تعليمية يقومون بها مع أولادهم في المنزل
					5. يساعد أولياء الأمور أولادهم في أداء واجباتهم المدرسية
					6. يزودني أولياء الأمور بمعلومات تتعلق باحتياجات أولادهم واهتماماتهم ومواهبهم

Appendix B1: Student focus group guide



Interview Protocol: Students

Number of Interviewees	<input type="checkbox"/> Male	<input type="checkbox"/> Female
School Type	<input type="checkbox"/> Public	<input type="checkbox"/> Private
School Code		
Interviewer		
Date		
Time		
Venue		

Thank you for being willing to participate in this study. My name is Fathiya Al-Rahbi, a PhD student at the Newcastle university. This discussion is part of my research aims to investigate the differences and similarities between government and private education systems in Oman. Before we start, I would like to inform you that you have all the right to withdraw from the discussion at any time without having to give any reason. I would also like to assure you that your identity and that of your school will be never be disclosed. In addition, all the information you will give during this discussion will only be used by the researcher for the purpose of the research only. It will never be shared with your school administration or your teachers. The discussion is expected to last between 40 to 60 minutes, during which you can raise any question.

Background information

1. What grade are you in?
2. How long have you been in this school?
3. Have you studied in other schools before?
 - If Yes, government or private?
 - If Yes, what were the reasons for shifting from your previous school?
 - Who made the decision of school change?
 - Why did you decide to come to this particular school?

Quality of Teaching

1. How would you describe the quality of teaching at your school?
2. How would you describe the relationship between you and your teachers?
3. How do teachers cater for your needs?
4. What aspects would you wish to change in your school teachers?

Parental Involvement

1. Can you describe your parents' relationship with the school?
2. How does parental involvement affect your academic achievement?
3. Do you think there should be more/less parental involvement?

School Facilities/Environment

1. How do you describe the facilities in your school?
2. How easy is it to access/ use these facilities?
3. How does the availability/lack of facilities in your school?
4. What extra-curricular activities are available in your school?
5. Do you feel that your school provide a safe and disciplined environment that help you learn?
6. To what extent do you enjoy school? Why? Why Not?

School Management

1. Can you describe your school management?
2. How is your relationship with the school management?

Appendix B2: Teacher interview guide



Interview Protocol: Teachers

Interviewer		
Interviewee	<input type="checkbox"/> Male	<input type="checkbox"/> Female
School Type	<input type="checkbox"/> Public	<input type="checkbox"/> Private
School Code		
Date		
Time		
Venue		

A) Background Information

About You

1. What is your age?
3. How many years in total have you been working as a teacher?
4. How many years have you worked in this school as a teacher?
5. What is your nationality?

Your Education

6. What is your highest education level?
7. How many training courses do you attend per year?

Your work at school

9. How many lessons do you teach per week?
10. What is the average number of students in your classes?

B) Students

- 1) **Omani Students' results in international tests like TIMSS and PIRLS indicate that their performance is below the international standards.** What do you think might be the reason for that?
- 2) How do you describe students' academic performance in this school?
- 3) What do you do as a teacher to develop your students' academic achievement? What are the challenges?

C) Teaching Practice

1. What teaching techniques you use to enhance students' learning?
2. To what extent are you encouraged innovate in your teaching methods?
3. What type of support do you receive from the school/ MoE to enhance your teaching skills?

D) Curriculum

1. What do you think of the curriculum used in your schools?
2. Does the curriculum used suit students' needs and abilities?
3. To what extent are you encouraged to innovate in the syllabus you teach?

E) Relationship with Parents

1. How often do you communicate with parents? For what purposes?
2. Are you satisfied with the parents' role in their children's development?
3. In your opinion, what aspects do parents consider most important in their children's schools?

F) Job Satisfaction

4. What do you like most about your work in this school?
5. What do you dislike about your work in this school?
6. Have you ever thought of changing your profession? Why?
7. In general, how satisfied are you with your choice of being a teacher? Why?

G) Reflection on Teacher's survey results:

1. Statistics show that female teachers are more satisfied with their salaries than male teachers. Why is that you think?
2. Parents are more involved in girls' schools than boys' schools. What are the reasons?
3. Parents' were also more involved in private schools than government schools. Why is that you think?
4. Teachers in government schools were less happy about work as teachers than their counterparts in private although they receive higher salaries. Why is that you think?

Appendix B3: Transcription of a teacher/parent interview

Government school Omani female teacher/parent (GOV4F)

R: Oman participated in TIMSS, the International Mathematics and Science Studies, in 2007, 2011 and 2015. The results indicated that in general our results were below the international standards. What are the reasons in your opinion?

D: well, I think part of the problem is that the students were not well-prepared. The curriculum itself, it doesn't help the students to acquire the, I mean the basic knowledge of basic subjects, not only maths and science, even their own language for example, and in terms of that exam, I know from teachers that they prepared the students ahead by only 2 months or few weeks before the exam, so they gave them a lot of practice and gave them I mean mock exams just to prepare them for the test. And when it comes to real exam, the results show that the students do not have the knowledge. While if it was part of the curriculum itself, the students it will be common sense, it will be something that the students know for real, and not something that they practice for a while and then they get tested on it. So I think part of the problem is the curricular itself I think

F: Is this the only reason you think?

D: I think also the lack of link between the students' real life and curricular. There is no link. Our curricular do not help the students or do not prepare students for real life.

F: Could you elaborate please?

D: For example, they study the timetable in maths. They learn it by heart, but when it comes to real situation, like for example when they go to a shop or a coffee shop for example, I mean they are not able to make the calculations. I mean and find out how much an item cost for example, so I think that is also [art of the problem. And there is also one thing: the teachers, not the teachers only its I don't now may be the requirements of the curricular again t forces the teachers to force the students to do projects and research sometimes, research studies that are above their level and they accept, Ok when it comes to teachers evaluating students for example they don't appreciate the students' work and how much time and effort were given to that. They only care about the final product and I know as a parent that most of the parents take the project to a professional person to do it, to make it and they present it to the teachers and of course the most beautiful project, the well-organized, the perfect project of course will get the full marks and students who depended on themselves and prepared something that reflect their level, their learning, their, I mean, their attempt to use whatever resources available in their houses or in the school, they get compared with the students who come up with the perfect projects. It's the final product I mean. They don't look at the effort and the time the students spend and give to these projects.

F: Ok. On the other hand, TIMSS results also indicate a difference between public and private school results with private school students outperforming government students in both mathematics and science. What are the reasons in your opinion?

D: Well.. I think it's the program itself. I mean in private schools, they base their programs on international standards. And they look at the latest for example, the findings of the latest

research on educational methods and competencies that students at each level should acquire but on our government schools they have this syllable that is outdated and I mean the improvement and development takes ages to get to the level of private schools. Also part of the problem is that in private schools the students are encouraged and guided to be independent learners to depend on themselves. They don't even have that much homework to take home with them, but on the other hand in government schools, students are dependent. They are dependent on teachers to provide the information, to provide the solution to whatever problems they come across and they depend on their parents even to study for their exams or to do their homework if there is no one to help them or to encourage them, to monitor them, they fail. They just give up. But on the other hand, students in private schools, are independent learners, let's say it that way.

F: Another result from TIMSS is that girls tend to outperform boys in both mathematics and science and the difference is significant in government schools. What are the reasons for this gender gap you think?

D: I think it's because of the guidance the female students get from their teachers at schools. Female teachers are very enthusiastic. They are dedicated to teaching and they are very creative and when they find a group of students who are willing to learn and work hard, they make the best of that. On the other hand in boys schools, I'm not talking about all teachers, but there is a big number of male teachers who are not that dedicated. They just teach. They don't inspire their students, while female teachers they do, they inspire their students. We had that relationship with our students. They were willing to do whatever we tell them to do and they did it because they loved it. They wanted to participate. So maybe male students they don't have that in their schools.

F: So is it basically the teachers?

D: Yes, and also the students themselves I think. Boys tend to be more careless and also dependent on the teachers and their parents, but the girls are more independent. They are more creative and competitive with their colleagues and others. But boys, they don't even care if somebody gets more marks than them or get rewarded or something while girls they do care too much about that.

F: And why do you think is that? Why don't boys care?

D: I don't know. Maybe it's the way they are brought up. I mean they care about other things. For example, sport, video games and these sort of things. They care too much about these things than studying.

F: Very well. Now K, can you tell me what do you think about your children schools? I gather both children are in public schools?

D: Yes.

F: which grades are they?

D: my eldest, girl, is in grade 8 and my son is in grade 3.

F: Since they are in government schools, you didn't actually choose particular schools, did you?

D: No, I did choose. There is another school that is closer to our house, but I did not want my children to go to that school, so I sent them to another school. They even asked me to sign a

paper saying that they are not responsible for the transport. I agreed, I said that I will take them to school by myself or I send them by a private bus.

F: What made you prefer that particular school although it was far from your home?

D: Ok. I worked in that school for few months at the beginning of my career as a teacher trainer. I wanted to have an idea about grades 1 to 4, so I spent months in that school. Almost a year actually teaching different levels. and I know most of the teachers there and how hard they work with the students. And I know the principal as well. She is a very dedicated educator. They have different projects there and they take good care of the kids there. And on the other hand, the other school I heard many parents complaining about that school including my own sister. She wasn't happy about the teachers and the administration in that school, so that's why I chose the other school.

F: So are you saying that your selection was based on the teachers and school management.

D: Yes, the quality of teaching there.

F: What do you mean by quality of teaching?

D: I mean that teachers there care a lot about students' performance, academic performance. And their priority in grades 1 to 4 is literacy and independent learning. They work very hard to provide the students with a lot of activities to enhance their independent learning and improve literacy. I remember that my son when he finished grade 1 and moved to grade 2, he was reading fluently in Arabic. And because at that time they started with the Jolly phonics curriculum in most of the schools in Oman. Even his reading in English was really good. By the time he finished grade 2, he was able to read paragraphs and stories. The English teacher, for example, gave them short stories with a number of questions to answer and they bring them home and I could see that he was able to read and understand the stories and he was able to answer comprehension questions at this level while I remember when I was a teacher of grade 5, 6 and 7, there were students who were not able to recognize the letters; who couldn't read even simple words.

F: So you are referring to the curriculum as well?

D: Yes, there are some changes in the curriculum that I'm happy with but still it is a long way to improve the whole system. That is only one part of it.

F: To what extent do your children like their schools? Are they satisfied/ happy in their current schools?

D: Yes, I think they are happy. I mean with the attention they are given. For example, my boy was in the scouts and brownies and that added to his confidence. That was part of it, the school activities.; extra-curricular activities. That also add to their confidence and provide them with leadership skills and he is happy, really happy with the school and his teachers.

F: Your daughter is in a different school now?

D: Yes. She used to be in this school until grade 4 and was also happy. She is now in a school for grade 5 to 9. She is a teenager now and it depends on teacher's way of dealing with the girls. If the teacher is quick-tempered or if she is not that nice to them of course that means that she is a bad teacher regardless if she is doing a good job or not. You know how sensitive teenagers are. But they are some good teachers there that I personally know.

F: Do teachers consider your children's individual needs?

D: There are things that they need to consider like for example,, I mean some teachers are not that patient with the teenagers, so in my daughter's school for example I think they need more consideration of the type of students they have; these are teenagers. I remember my daughter once came home and said what silly activities they give us; what do think of us? Grade 1 children? And it was only because the teacher used an activity with them and it was the way she praised the winners, she might have distributed candies. But my daughter saw that as below her level now that she is being a teenager, she doesn't like candies and such things, so she wasn't happy with that. She wanted to be recognized and dealt with as a big girl. I think that understanding of the level or type of students they have at the school should be considered.

F: Does any of your children have to take private lessons at home?

D: No. Sometimes my daughter asks her father to help her with few things in mathematics and of course few things in English with me. I once sent her to a private teacher recommended by somebody, a relative; but she wasn't happy. Actually, I didn't feel Ok with doing that, but I wanted her to try if that can help her in maths, but she said that it didn't help.

F: How do you describe your relationship with your children's schools?

D: Regarding my daughter's school, I used to work there, and I was in contact with most of the teachers, so I was informed about everything instantly. But when she moved to this school, they have that system when they send text messages in case of emergencies; reminders of exam dates or events. Even in my son's school, there is a WhatsApp group for all the mothers and teachers of the same class.

F: And does this happen for students in the school or is it only in your son's class because of the teacher?

D: No, it's in the whole school, all classes in the school. And even in my nephew's school they have the same system. I think most of the government schools now they have the same system. They have that through the government portal, or they use WhatsApp groups and its very helpful. And one thing about that is very important. They established that when he was in grade 1. At the beginning it was basically to inform parents about homework and different issues like incidents in the classrooms, important matters related to curriculum, school event and so on. By the second semester of grade one, the teachers said that the students now should be independent, so we are not going to tell you about homework in the group. Rather, the students themselves should remember their homework and they should inform you. It was only if one of the parents wanted to ask, if her son was for example was absent or missed that class, then she could ask in the group. Otherwise the teachers did not give information about homework or projects. Students were responsible for that. And these groups continued every year.

F: And how does the school generally respond to parents' suggestions, comments or views?

D: they are very helpful. I remember that last year when they changed the maths and science to Cambridge curricular, it was a very big mess. The teachers weren't trained enough, weren't ready for the implementation for that curriculum. And the parents of course were lost in the midst of all that. They didn't know how to help their children in their studies, so the teachers were really happy to help. They sent us handouts, clarifications and they even invited us to

attend some workshops about this new curriculum, about the type of questions students are expected to answer, tasks they are expected to do in classrooms and the types of tests they will use. So they teachers have been helpful, respectful, and I can't recall any incident when they were rude or unhelpful to any of the parents inquiries or requirements.

F: Does this apply to your daughter's Cycle 2 school too?

D: The WhatsApp groups are used only in Cycle 1. In Cycle 2, they have a different system. They use text messages only as reminders of exam dates and if the student is absent that day they send a message to the parents to inform them because the parents leave the house to work before their children and so if the bus, for example, does not come for any reason or something happens, that is why messages are very useful; to inform the parents to check on the child. Messages are also sent to send invitations to school events or workshops.

F: So in general, are you happy with your involvement in your children's schools?

D: Yes, I think I am, but I am still not very happy with the curricular. There are still things that need changes. They need to be updated and to be more child-centred. The students are still very dependent on teachers and unless the teachers themselves initiate student-centred approach in their classrooms. So Again, it depends on the teacher.

F: Is child-centred philosophy applied in schools?

D: Not that much. Yes, the philosophy is there but the application is missing.

F: If you have the opportunity to choose between public and private schools with the private school fees paid for you through a scholarship or a voucher scheme, which school type would you prefer to send your children to?

D: Of course I will choose private schools.

F: Why is that?

D: Because in many aspects private schools are better than government schools and that include the teaching, curriculum, even the facilities provided by the school. In government schools, we are still discussing breakfast for our children which is unhealthy. There are some initiatives in government schools to provide their students with clothes, gyms and shades where students could spend time in breaks. But still that is only in few schools where there are teachers and administrations who are willing to develop and improve. In many other school, all of these things are still missing

F: So is it only the tuition fees that prevent you from sending your children to private schools?

D: Not only that. Even if we can pay for them, it's a long way to Muscat. All the good private schools are in the capital city of Muscat and I can't imagine my children having to get up before 5 o'clock to get ready to school and then that long drive to Muscat and they finish at 3 pm and it will take them an hour to reach home. So they will be at home by 4 or even 5 p.m. I couldn't tolerate that for my children. While if there were good private schools in my area with reasonable fees, then I don't mind. In terms of tuition fees, private schools are for people with high salaries. I can't imagine somebody whose salary is below 1000 rials who could be able to send his children. Imagine if you 3 or 4 or 5 children. I know a friend of mine who is a teacher and her husband is a lecturer at the university, so they salaries collectively are above 4000, but they have 4 children, all in private schools. Each child costs them 4000 rials a year.

That is too much even if your salary is high, you have to consider the number of children you have. Can you afford sending all of them? And I know someone who send one of his children only to private schools and the others attend government schools. Now if you think about it that is totally unfair. So the fees of the private schools are unreasonable. Another thing that I find really tragic and can't tolerate is that teachers, supervisors and educators in our society who work in government schools send their own children to private schools because they know what government schools are lacking, they know the situation there . they know the reality. That there are a lot pf problems there and they cannot put their children in such environment, so they run away to private schools. That is really tragic but there is nothing to do.

F: Teacher job satisfaction survey indicated that female teachers were more satisfied about their salaries than male teachers in government and private schools. Why do you think female teachers are happier with their salaries?

D: I think it is mainly because men in our society are responsible for supporting their families financially. Most of the ladies spend their salaries on themselves and their needs and they don't have to spend that much on the house or their children's school fees and the children's needs. All of that is on the father's shoulders. It's part of the father's responsibilities

F: Parents were more involved in girls' schools than boys schools. Why do you think?

D: I think because mothers feel more responsible for the children, so most of the time, you find that the ones who visit schools and ask about children's performance and are mostly the mothers. Fathers are usually not that involved. On the other hand, in boys schools, mothers don't feel comfortable going there because you know our society; it's part of the culture where you don't mix with men especially when the school is a male school, so mothers are reluctant to go and ask a group of men about her son for example. That becomes the father's responsibility and fathers are not that committed. They don't really care about asking about their children unless there is a problem and the school contacts them. One of the reasons is that I think most of the mothers who follow up their children are mothers who are housewives or work in the town itself. So for example for me it's really hard because I work in Muscat and attending parents meetings at 11 o'clock in the morning for example will be difficult for me, so I can't make it every time they call for a meeting. But if it was like in the past where I used to teach in a school in my town that would have been easier and the same applies to other parents especially fathers who usually work in other places far away from the towns where their children's schools are located. They find it difficult to come all the way from their offices to attend meetings at schools.

F: You mentioned that there are channels of communications with parents in government schools. However, I found out that there is more parental involvement in private schools compared with government ones. Why is that you think?

D: May be it is because their events and meetings are held in the afternoon or evenings where the parents are available and can attend or may be because they pay, so they want to know. They are investing on their children, so they need to check on their investment.

F: That's the end of the interview. Thank you very much for your time.

Appendix C1: Participants' information document

Investigator: Fathiya Al-Rahbi
P.O. Box 310, P.C 600.
Bidbid, Oman
Mobile: 99819966
F.H.S.Al-Rahbi2@newcastle.ac.uk

Supervisor: Prof. Pauline Dixon
Telephone: +44 (0) 191 208 5047
pauline.dixon@ncl.ac.uk

Information Form for Questionnaire Participants

Project Title: A Comparative Study between Public and Private School Provision in the Sultanate of Oman

Dear Participant

My name is Fathiya Al-Rahbi and I am currently a PhD candidate at Newcastle University, England. I am doing a comparative study between public and private school systems in Muscat from the perspectives of the main stakeholders, namely: parents, students, teachers, school principals and government officials. The study will compare between the two systems in terms of students' academic achievement and perspectives, teaching methodology, parents' preferences, teachers' job satisfaction, and official policies and regulations. Newcastle University has been involved in research work for decades and is committed to generating knowledge and understanding research that can be used with other researchers, government officials, and policy makers.

What is the study about?

This study aims to help us gain better understanding of the way public and private school provisions function in order to gain more knowledge of the strengths and weakness of each system. This will hopefully help enlighten decision makers when preparing policies with regards to public and private schools to ensure that all children, whether in public or private school, has an access to quality education. It will be a privilege for me to have you participate in this study. At the end of the study, I will contact you to discuss what we have found out.

Do I have to participate?

Participation in the study is completely voluntary. You are free to withdraw from the project at any time without given a reason.

What is involved in the study?

If you agree to participate you will have to fill in a questionnaire that aims to explore your opinion, feeling and satisfaction with the school system that you are currently involved in. The questionnaire will be straightforward and shall not take much of your time to complete. You do not have to write your name on the questionnaire, however, you will be kindly asked

to fill in some personal details as they will be significant for the study purpose. Please rest assured that all the information you provide will be made completely anonymous and will be used for research purposes only. The data generated from the questionnaire will be accessed only by the research team. We will not share this information with anybody else, in government or out of government.

What are the benefits of the study?

There are many benefits to the study. This involves helping improve education, providing quality education for all. No direct benefits to the children are expected from participation. However, others may benefit in the future from the information we find in this study, as the main benefit from the study will arise in the research results.

Who has reviewed this study?

This application has been reviewed by the School Research Ethics Committee and has been given a favourable ethical opinion for conduct. If you would like to take part in this study please fill in one of the consent forms and give it directly to the investigator.

Please keep the second copy of the Information Sheet/Consent Form for your own future reference. If you have any questions you can contact us at any time on the phone number or email at the top of Page 1.

What will happen to the results of this study?

The research findings might be published in academic journals. However, these findings will be on an aggregate level and will not feature information about any particular school/ teacher/ parent in any way. Your identity will not be identifiable from anything published.

Confidentiality: We will take the following steps to keep information about your confidential, and to protect it from unauthorised disclosure, tampering, or damage. All questionnaires will be given a code (e.g. numbers or letters). They will have no names and there will be no way of finding out who said what. All results will be used solely for the purpose of this study and will not be passed on to a third party or used for additional studies without your consent. Results will not be shared with other parties in government or outside. We need to protect who you are and the data you provide, so all the information will be kept on a computer that is protected.

Additionally, all results from the study are confidential, used only for the purpose of the research.

Finally, please note that participation is voluntary and that you are free to withdraw at any time, without giving a reason. You have the option of opting out of the study if you wish too. This includes immediately, before or during the study. If you have any other further questions about the study please contact me or the other research team members on the information provided above.

Thank you.

الباحثة: فتحية بنت حمد الرحبية

رقم التواصل: ٩٩٨١٩٩٦٦

البريد الإلكتروني: F.H.S.Al-Rahbi2@newcastle.ac.uk

المشرف على الدراسة: Prof. Pauline Dixon

البريد الإلكتروني: pauline.dixon@ncl.ac.uk

رقم التواصل: +44 (0) 191 208 5047

عنوان الدراسة: دراسة مقارنة بين التعليم الحكومي والخاص في سلطنة عمان

عزيزي المشارك:

اسمي فتحية الرحبي، طالبة دكتوراه في جامعة نيوكاسل بالمملكة المتحدة، وأنا حالياً بصدد جمع بيانات حول دراستي المتعلقة بالتعليم الحكومي والخاص في سلطنة عمان. وسوف تأخذ الدراسة في الإعتبار آراء المعلمين والطلاب وأولياء الأمور حول نظام التعليم الحكومي والخاص لما لهم من دور أساسي في العملية التعليمية.

وعليه فإن مشاركتك سيكون لها دور كبير في اعداد هذا البحث واثرائه، ولمساعدتي في اجراء هذا البحث يرجى منك تعبئة الاستبانة المرفقة، بكل شفافية ومصداقية وذلك للحصول على نتائج سليمة نستطيع من خلالها بلوغ الهدف الأساسي من هذا البحث العلمي، ولكم كل الشكر والتقدير على الوقت الذي ستخصصونه للإجابة على الأسئلة.

ستوفر لك هذه الاستمارة معلومات وافيه حول البحث ومشاركتك فيه، كما أنني على استعداد للإجابة على أي استفسار آخر لديك.

وختاماً أود التأكيد أن جميع المعلومات ستعامل بسرية تامة وسوف تستعمل لأغراض البحث العلمي فقط، علماً بأن أسماء الأشخاص والمدارس لن تذكر في سياق البحث، ولن يكون مطلوباً منك ذكر اسمك أو اسم مدرستك في أي مرحلة من مراحل الدراسة.

ما هو الهدف من هذه الدراسة؟

الهدف من هذه الدراسة هو جمع بيانات تتعلق بنظامي التعليم الحكومي والخاص لمعرفة أداء كل من النظامين وجوانب القوة والضعف في كل منهما، على أمل أن توفر الدراسة معلومات وتوصيات لصناع القرار للاسترشاد بها عند اعداد السياسات المتعلقة بالتعليم الحكومي والخاص بحيث يتمكن الطالب في المدارس الحكومية والخاصة من الحصول على تعليم ذو جودة عالية.

هل يجب علي المشاركة في هذه الدراسة؟

مشاركتك سيكون لها أثر كبير في اثناء الدراسة، غير أنك غير ملزم بالمشاركة إلا اذا رغبت في ذلك. كما أنه يمكنك الانسحاب متى ما قررت ذلك وبدون ابداء أسباب.

ما الذي تتضمنه مشاركتي في هذه الدراسة؟

في حال موافقتك على المشاركة ستقوم بالإجابة على الاستبيان المرفق والذي يهدف إلى التعرف على رأيك حول بعض الجوانب المتعلقة بالنظام التعليمي، يتسم الاستبيان بالوضوح وسوف تستغرق الاجابة عليه حوالي ١٠-١٥ دقيقة فقط. ونود التأكيد أن جميع المعلومات التي ستذكرها سوف تعامل بسرية تامة وبدون ذكر اسمك أو اسم مدرستك حيث أنه لن يكون

مطلوباً منك ذكر أي منهما. كما أن البيانات ستستخدم من قبل الباحثة فقط لأغراض البحث العلمي، ولن تقوم ادارات المدارس أو أي جهة حكومية أو غير حكومية أخرى بالإطلاع على البيانات.

اجراءات ضمان السرية:

سوف نقوم باتخاذ الإجراءات الآتية لضمان سرية البيانات وعدم تعرضها لسؤ الاستخدام أو التلّف:

- سيتم ترميز كل الاستبانات (تعيين أرقام أو حروف لكل استبانة)
- لن تحتوي الاستبانات على أي أسماء وبالتالي سوف يستحيل معرفة المشارك في كل استبانة
- كل النتائج سوف تستخدم لأغراض الدراسة فقط ولن يسمح لطرف ثالث بالإطلاع عليها
- سيتم الاحتفاظ بالبيانات في جهاز حاسب آلي مشفر في جامعة نيوكاسل بحيث لا يمكن استخدامها إلا من قبل الباحثة فقط

هل تمت مراجعة هذه الدراسة؟

لقد تمت مراجعة جوانب هذه الدراسة والموافقة عليها من قبل الجهات المختصة بجامعة نيوكاسل، وفي حال موافقتك على المشاركة في الدراسة يتوجب عليك التوقيع على استمارة الموافقة المرفقة وتسليمها للباحثة، كما أنه يحق لك طلب نسخة من هذه الاستمارة والاحتفاظ بها لتكون مرجعاً لك في المستقبل، أما إذا كان لديك أي استفسار حول الدراسة فبإمكانك التواصل مع الباحثة من خلال رقم الهاتف والبريد الإلكتروني المذكور في هذه الاستمارة.

شكراً جزيلاً على وقتك وحسن تعاونك.

Appendix C2: Participants' consent form



Consent form

Title of the study: A Comparative Study between Public and Private School Provision in Muscat, the Sultanate of Oman

I, the undersigned, confirm that (please tick box as appropriate):

1.	I understood the information about the project.	<input type="checkbox"/>
2.	I have been given the opportunity to ask questions about the project and my participation.	<input type="checkbox"/>
3.	I voluntarily agree to participate in the project.	<input type="checkbox"/>
4.	I understand I can withdraw at any time without giving reasons and that I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.	<input type="checkbox"/>
5.	The procedures regarding confidentiality have been explained (e.g. use of names, pseudonyms, anonymisation of data, etc.) to me.	<input type="checkbox"/>
6.	The use of the data in research, publications, sharing and archiving has been explained to me.	<input type="checkbox"/>
7.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	<input type="checkbox"/>
8.	I, along with the researcher, agree to sign and date this informed consent form.	<input type="checkbox"/>

Participant:

Signature of Participant

Date

Researcher:

Name of Researcher

Signature

Date

استمارة موافقة

عنوان الدراسة: دراسة مقارنة بين التعليم الحكومي والخاص في سلطنة عمان

أقر أنا الموقع أدناه بالآتي:

<input type="checkbox"/>	١ قرأت وفهمت المعلومات حول هذه الدراسة، وفقاً للبيانات المقدمة من الباحثة
<input type="checkbox"/>	٢ أتيت لي الفرصة لطرح الأسئلة حول الدراسة ومشاركتي بها
<input type="checkbox"/>	٣ أوافق على للمشاركة في هذه الدراسة بملء ارادتي
<input type="checkbox"/>	٤ أعلم أنني أستطيع الإنسحاب من المشاركة في هذه الدراسة في أي وقت دون إبداء أسباب، وأنني لن أتعرض للمساءلة حول أسباب انسحابي
<input type="checkbox"/>	٥ تم شرح الإجراءات المتعلقة بالسرية من قبل الباحثة (عدم استخدام الأسماء، الترميز، الخ)
<input type="checkbox"/>	٦ تم شرح طرق استخدام البيانات لأغراض البحث والنشر والمشاركة والأرشفة
<input type="checkbox"/>	٧ أدرك أن باحثين آخرين قد يطلعون على البيانات في حال موافقتهم على الحفاظ على السرية حسب الشروط الواردة في هذه الاستمارة
<input type="checkbox"/>	٨ أنا والباحثة نوافق على توقيع هذه الاستمارة في التاريخ الوارد أدناه

المشارك:

التاريخ

التوقيع

الباحثة:

التاريخ

التوقيع

Appendix C3: Ministry of Education's approval letter

Sultanate of Oman
Ministry of Education
Directorate General of Education Muscat Reg.
الرقم ١٠٤٣ م ١٢

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

سَلْطَنَةُ عُومَانِ
وَزَارَةُ التَّرْبِيَةِ وَالْقَلِيمِ
الْدِّيْرِيَّةِ الْعَامَّةِ لِلتَّرْبِيَةِ وَالْقَلِيمِ بِمُخَافَظَةِ مَسَقَطِ

التاريخ: ١٠/١٢/٢٠١٦
الموافق: ١٢/١٢/٢٠١٦

المحترمون
الافاضل/مدير ومديرات المدارس

السلام عليكم ورحمة الله وبركاته ،،،، وبعد:

الموضوع: تسهيل مهمة باحث للفاضلة/فتحية بنت حمد بن سليمان الرحبية

بالإشارة إلى الموضوع أعلاه ، وإلى خطاب المكب الفني للدراسات والتطوير رقم (٢٨١٧١٣٣٨٥٩٣) .
أود إفادتكم بأن المذكورة طالبة دراسات عليا دكتوراه في جامعة نيوكاسل بالمملكة المتحدة، تقوم بإجراء دراسة
بعنوان (دراسة مقارنة بين نظامي التعليم العام والخاص في مسقط في سلطنة عمان)، وترغب الدارسة في تطبيق
أداة الدراسة على عينة من المعلمين والمعلمات والطلبة والطالبات في مدارس الحلقة الثانية .
عليه نرجو التكرم بتسهيل مهمة الباحثة في تطبيق أدوات الدراسة وذلك وفق الإجراءات المعمول بها لديكم .

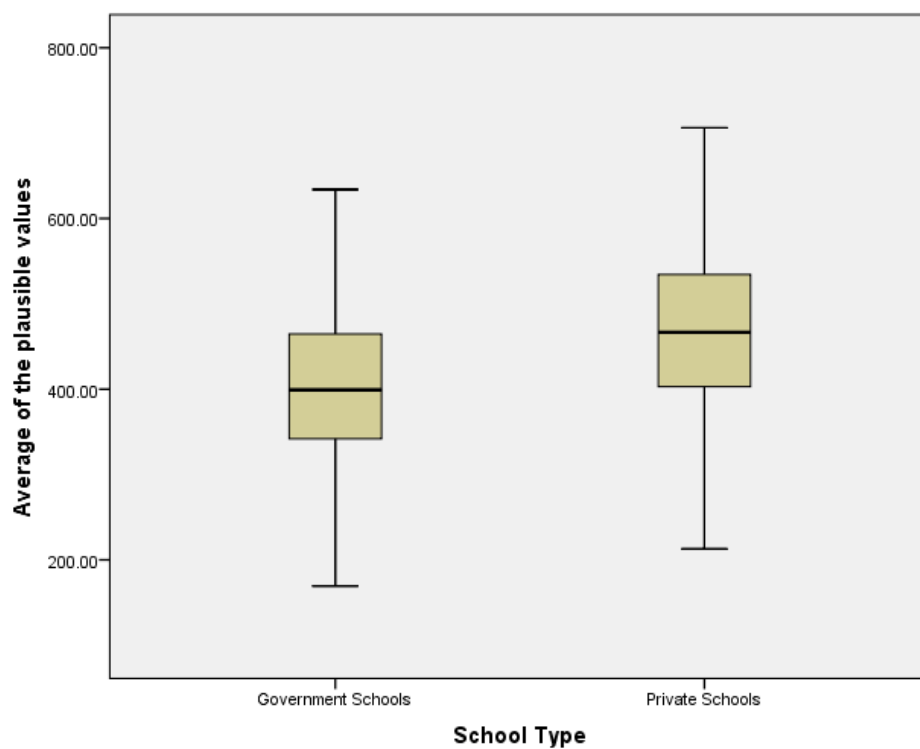
شاكرين لكم حسن تعاونكم
وتقبلوا فائق الاحترام والتقدير

علي بن محمد بن سليمان الشكيلي
مدير دائرة تنمية الموارد البشرية

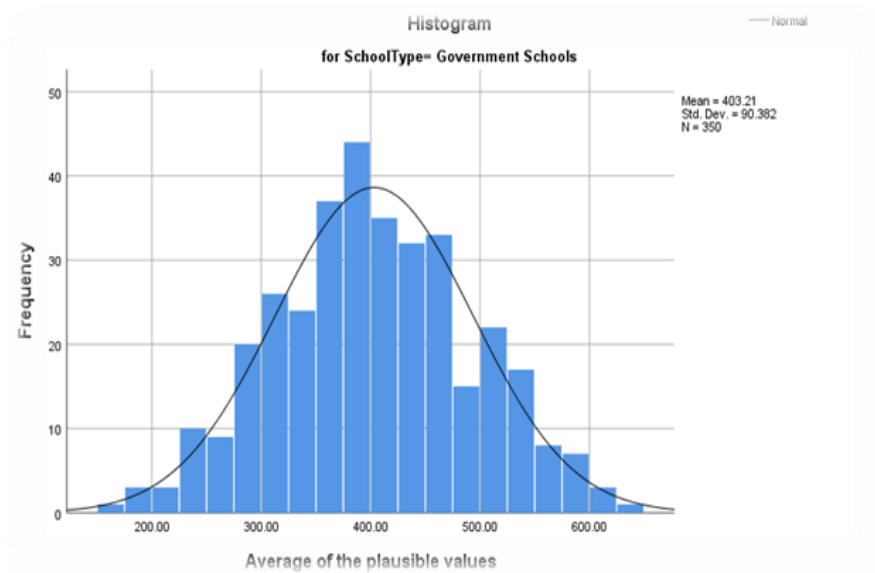
Appendix D: Exploratory analysis of TIMSS data

The table below shows that data were normally distributed as test scores for government and private schools with a skewness of .022 (standard error = 0.130) and kurtosis of -0.316 (standard error = 0.260) for government and a skewness of -.238 (standard error = .132) and kurtosis of -.463 (standard error = 0.263) for private schools.

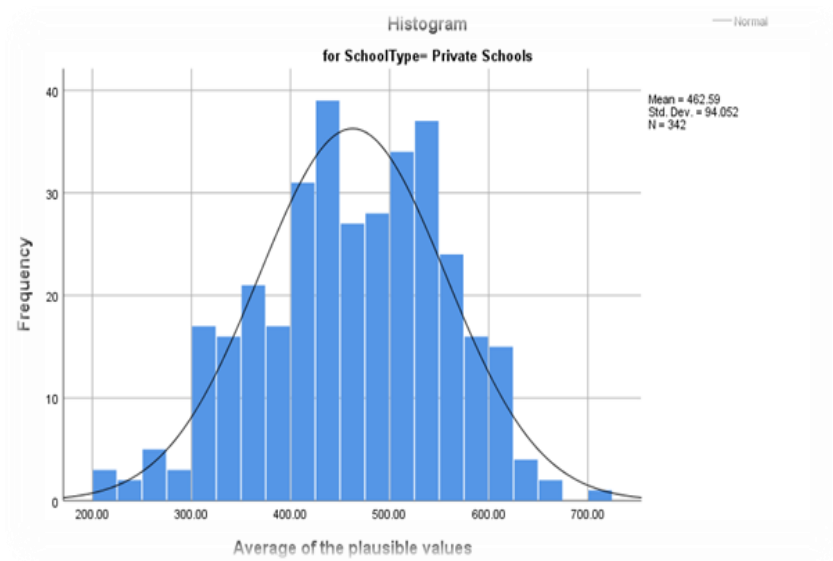
	N	Min	Max	Mean	S.D	Skewness	S. E of Skewness	Kurtosis	S.E of Kurtosis
Government Schools	350	169.34	633.98	403.2	90.38	.022	.130	-.316	.260
Private Schools	342	212.87	706.35	462.6	94.05	-.238	.132	-.463	.263



Boxplot of students test scores by school type.



The distribution of students' scores in government schools

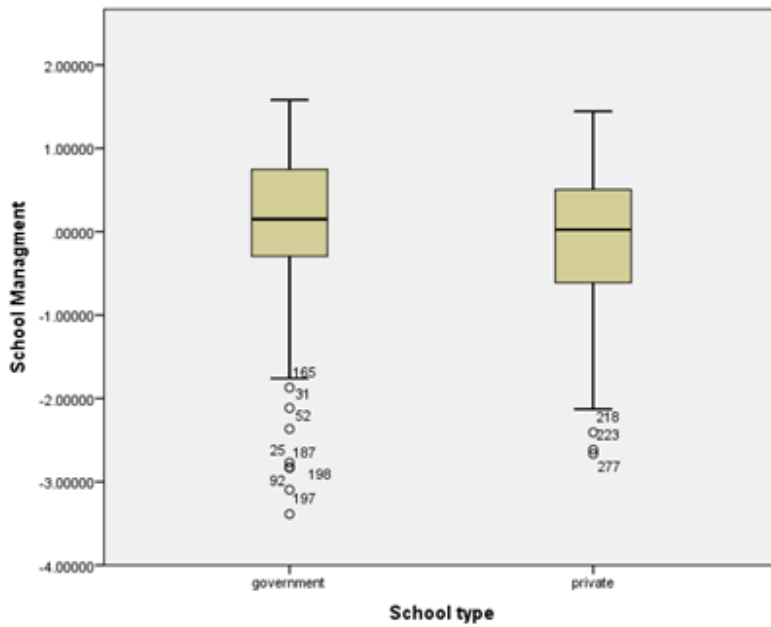
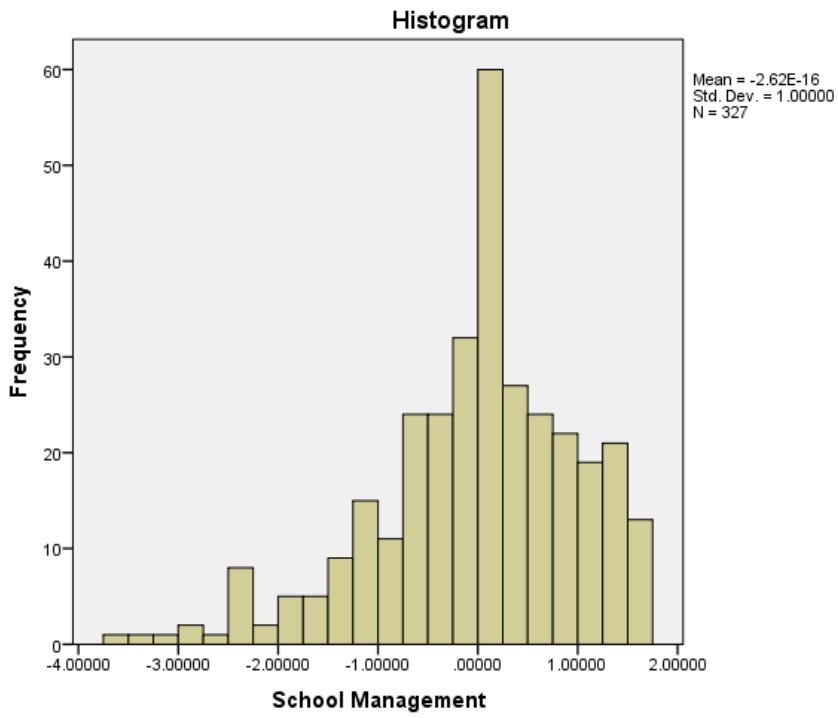


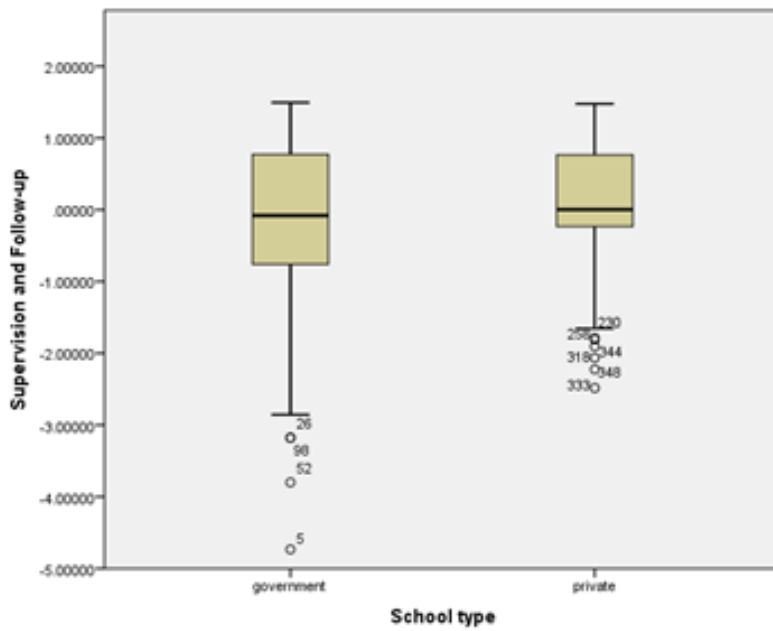
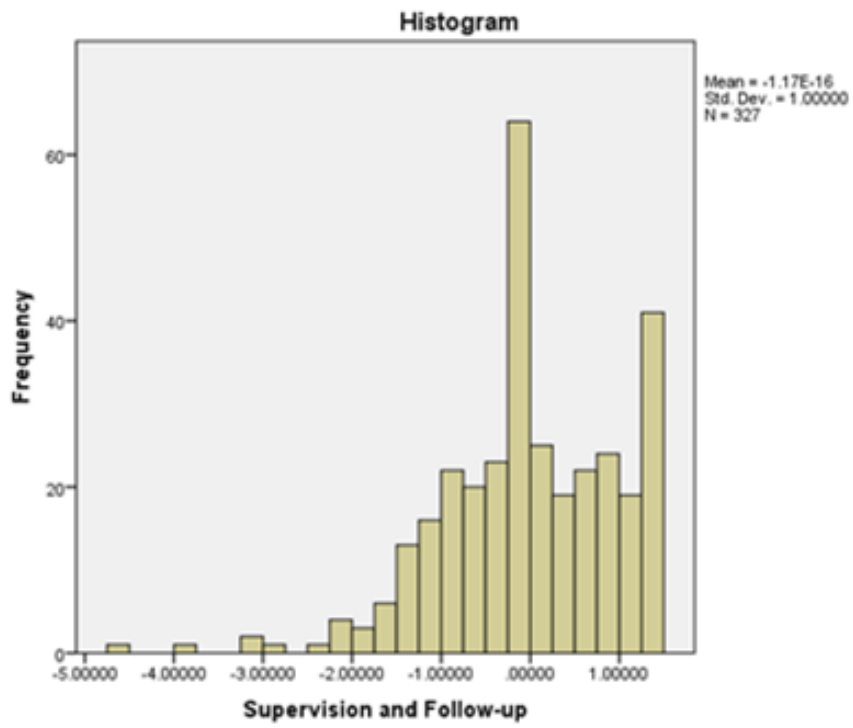
The distribution of students' scores in private schools

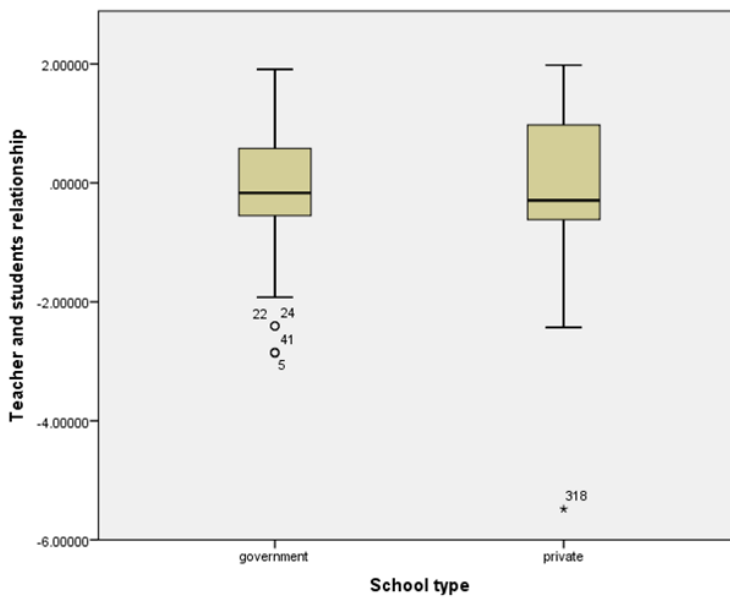
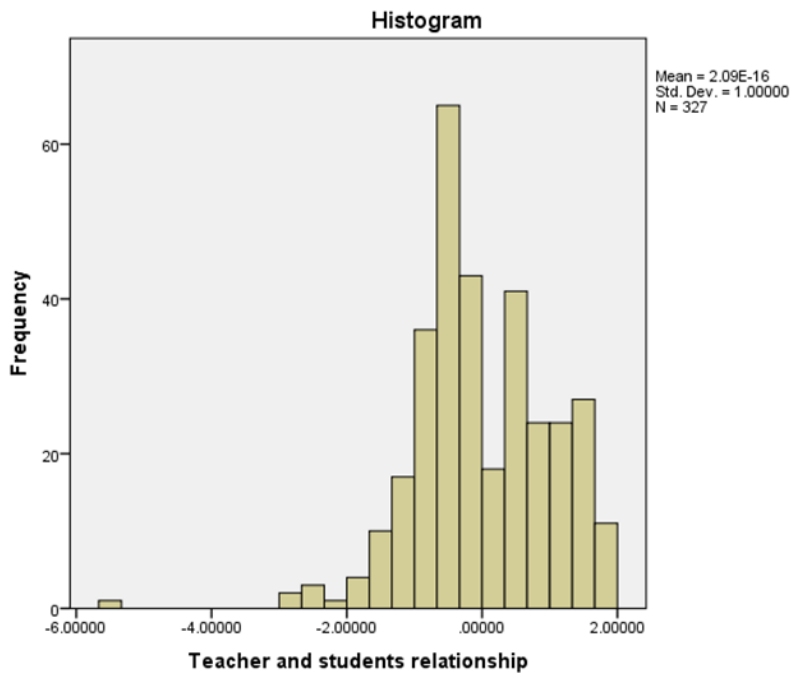
Appendix E: Exploratory analysis of job satisfaction survey data

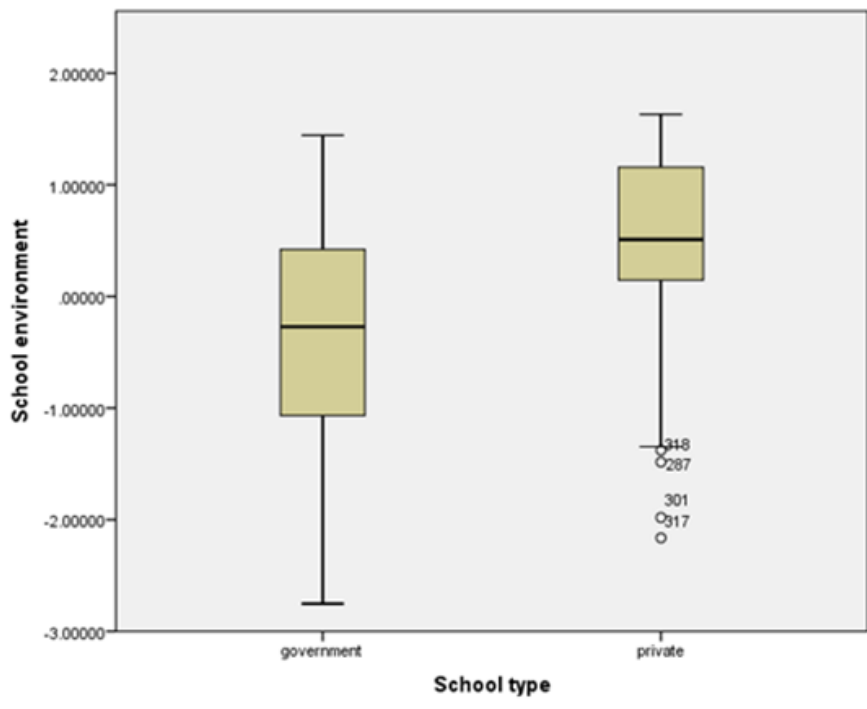
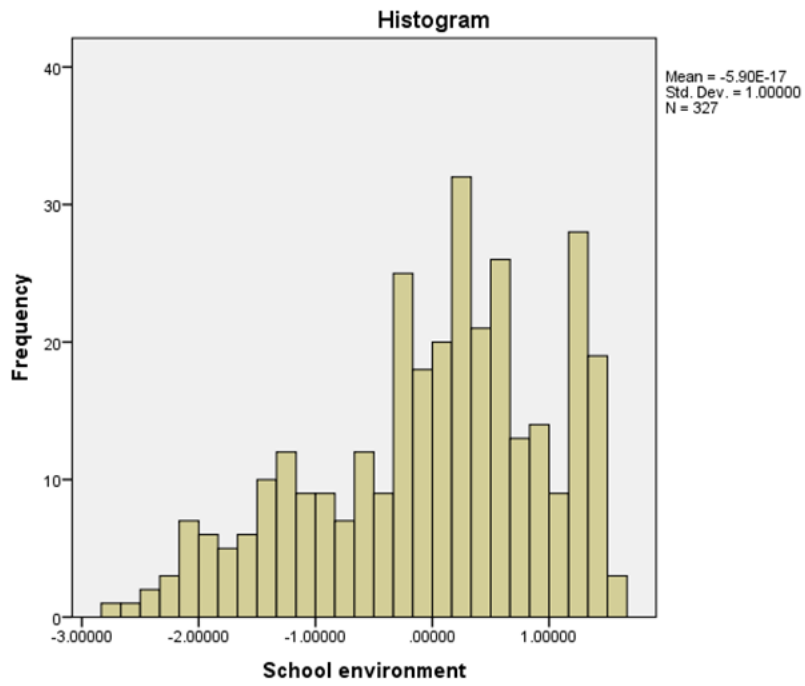
Tests of Normality

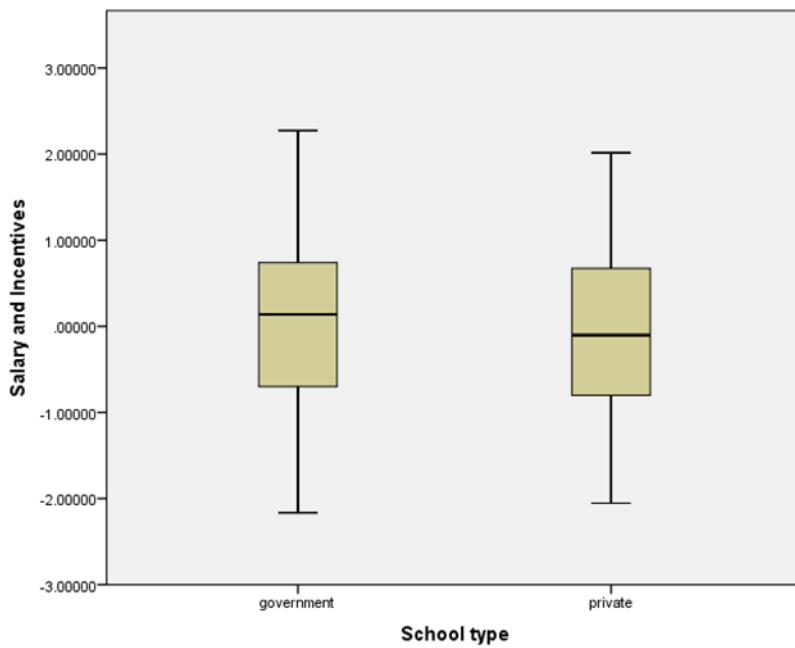
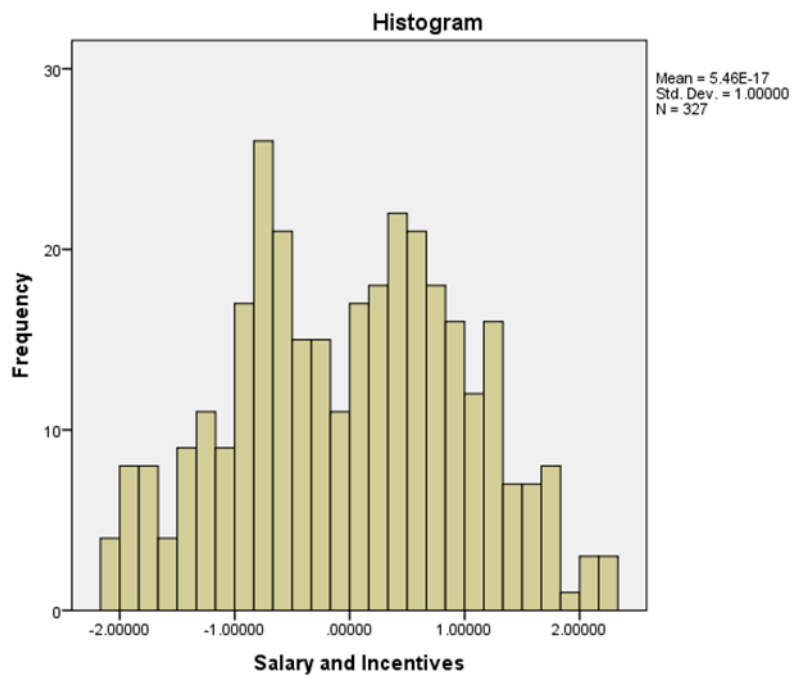
	School type	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
School Management	government	.115	214	.000	.936	214	.000
	private	.125	138	.000	.962	138	.001
Supervision and Follow-up	government	.078	214	.003	.939	214	.000
	private	.139	138	.000	.941	138	.000
Relationship with Students	government	.136	214	.000	.968	214	.000
	private	.158	138	.000	.921	138	.000
School Environment	government	.102	214	.000	.975	214	.001
	private	.137	138	.000	.900	138	.000
Financial Aspects	government	.062	214	.041	.980	214	.003
	private	.105	138	.001	.971	138	.005
Being a Teacher	government	.112	214	.000	.959	214	.000
	private	.100	138	.002	.960	138	.000
Parental Involvement	government	.060	214	.060	.985	214	.021
	private	.087	138	.012	.982	138	.062

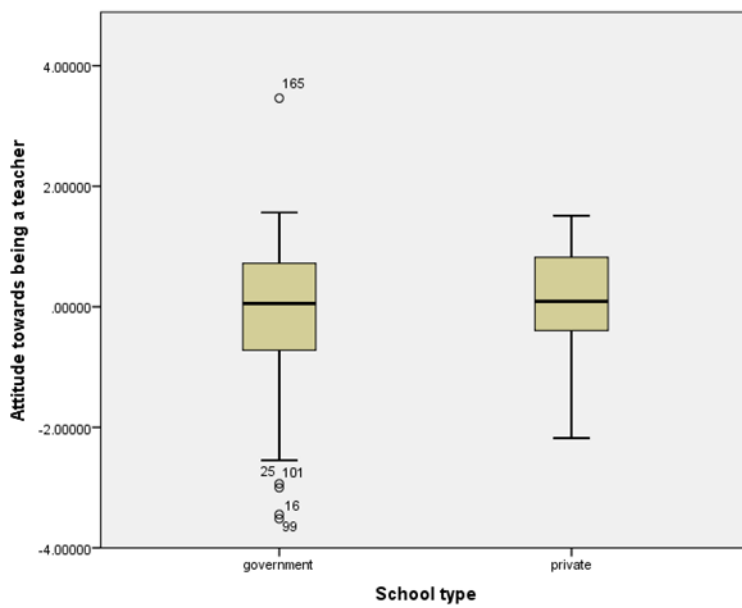
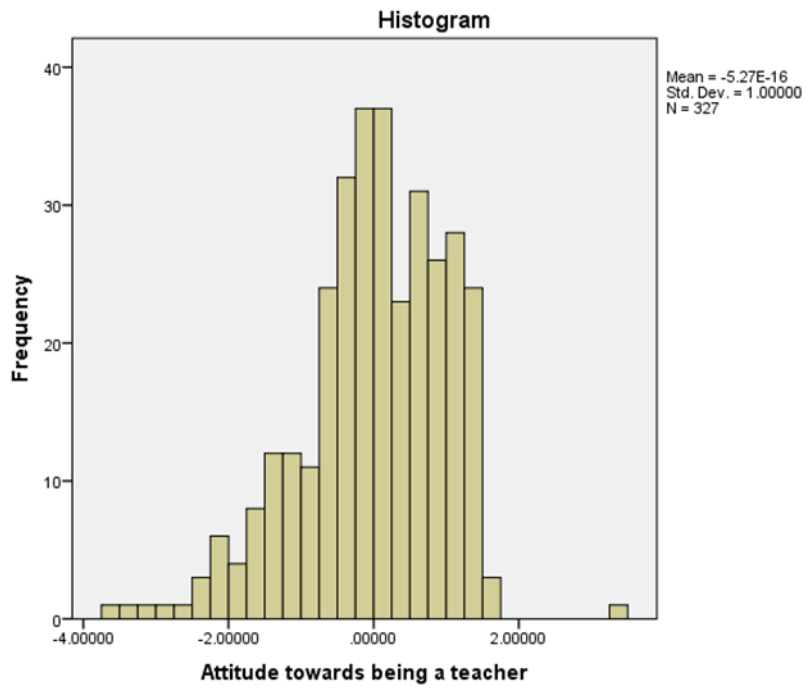


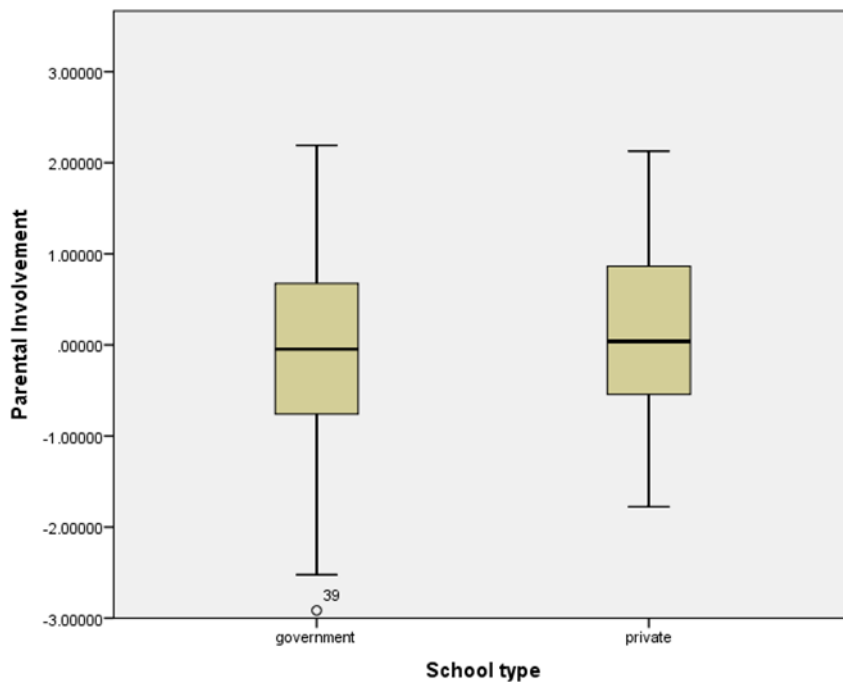
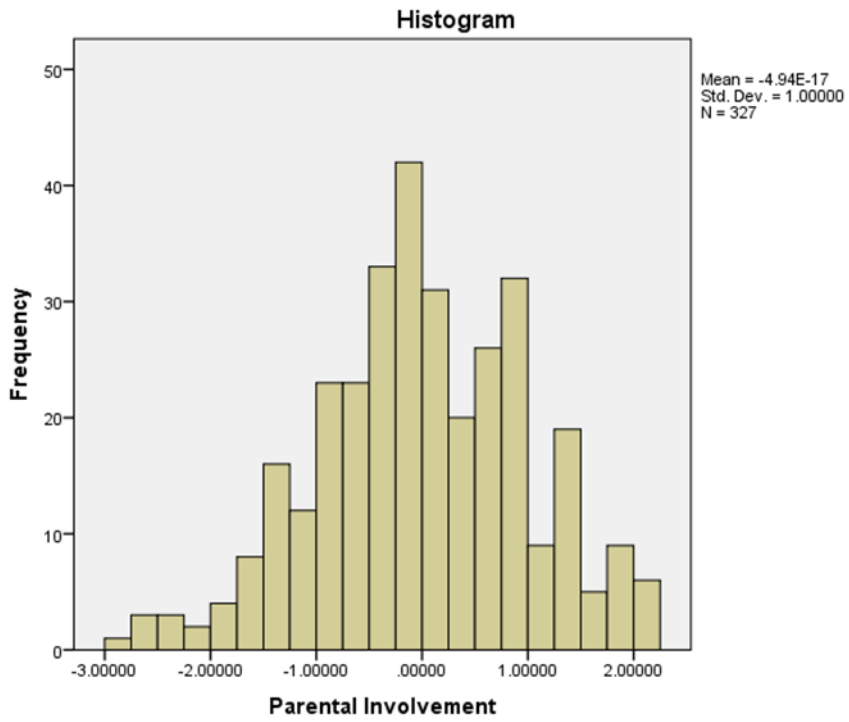












Appendix F: A sample analysis of a teacher's interview

It's like a project, if we could say that education here is a project, and I want to achieve success. My success is that my child excels. I'm one of the people who don't care if my child gets the full mark, 100. No, I care more that he understands the subjects he learned

Commented [A1]: Parent's definition of success

R: Do you think that your children in their current government schools have the same benefits they had in private schools?

P: No. of course not. Much less. But the idea is that school here became easier for their future. I mean if he could get 90s here, he won't be able to get it there with similar effort. The curriculum is more difficult there and it is more competitive there, so he might not achieve it there. Even questions here are simpler and I as a teacher must make questions as simple as possible, avoid difficult ones, because I have different levels, many are low, while there the levels are high, so questions are more difficult. Therefore, when the student (his son) deals with questions designed by MoE, they are very easy for him.

Commented [A2]: Curriculum

Commented [A3]: Students in Prv vs Gov

Commented [A4]: Why student transfer from private to government

Commented [A5]: Accountability to parents

Commented [A6]: Teacher Commitment/ Accountability, Decentralised decision making

In private schools Parent is the biggest supervisor. Here parents do not exist. I could confidently say that if I am absent for a week, no parent will show up at school to ask why. To prove it, we had teachers in this same school, years ago, who almost never came to work to the extent that they had to be dismissed. It was very rare when a parent came to ask 'where is this teacher?' and I'm talking about a core subject, science I mean. In private, if one (teacher) is absent for one day, we get a message from the school saying that he was sick, otherwise parents would go to complain. And usually when I call school to ask about an absent teacher, they tell me that you are not the first parent to call. So the parent there is like a quality monitor. I usually ask my children when they come back about they had studied.

Commented [A7]: Parental involvement

Commented [A8]: Parents hold school accountable

R: What are the reasons of this parental involvement in private school?

P: Private schools communicate with parents because they have less number of students. Say I have 200 students, if 4 are absent, I could easily pick up the phone and call the parents to ask about absent students. Here I have 1380, if 100 are absent for example, who has the time to call the parents of all of them. This is one thing. Second, there they take records of present students during morning assembly. Every teacher has around 12 students and in an eye blink, they could notice if one is missing. Here there are 40 students standing in each line, so until absents are reported to the administration of school, it is already the 3rd or 4th period, and it will be the end of the day until it is registered in the portal and send messages to parents.

Commented [A9]: Parental involvement

Commented [A10]: Class size impact on teacher-parent relationship

Commented [A11]: Using technology to communicate with parents

R: how about school management in government and private schools?

P: The issue is the authorities given to school principals. Here they are extremely limited, exactly like the restricted authorities of the headteacher. While in private schools, if the teacher is not satisfied about the performance of someone, his contract might be terminated. As I said before, it's the principle of reward and punishment does not exist here. If the principal had been granted the power to deduct the payment of the person who disappears without any acceptable excuse, or when he enters a classroom and find a teacher busy on his phone, and this happens, he could take an instant action. This would make a difference. But when the principal himself knows that whatever actions he takes will have no effect. So if the principal gets disappointed and chooses not take any actions. Likewise, a teacher who works very hard with the students, what would he get in return? After two three years he would start to decline. There it's not like that. At the end of each year, there is a ceremony where teachers are rewarded, not all teachers though. Parents are consulted. Like two days ago, I received a form, you fill it. Every teacher you have to evaluate as a parent, you say what you think about the teacher. They take into account the opinions of parents and the administration to decide who to honour, this make a difference. But if you give them (forms) here, I'm certain that the parent doesn't know. I teach two classes here, I am sure that may be 15 know me. I teach more than 70 students, and if 15 parents know that this subject is taught by me, then thank God. There is an open day dedicated only to receive parents. We all waited. But in total we had less than 200 parents and we have more than 1300 students. Teachers did not attend classes and were there only to receive parents. I personally received 5 parents although I told every student to ask their parents to come especially those with low performance. I wanted to sit with him (parent) to explain to him that it was important that you work with your son.

Commented [A12]: Centralized vs decentralized management/ Impact of management type on teacher performance

Commented [A13]: School management

Commented [A14]: Financial Aspect

Commented [A15]: Impact on teacher motivation

Commented [A16]: Parents role in evaluating teachers (Accountability)

Commented [A17]: How do parents evaluate teachers?

Commented [A18]: Teacher blaming parents

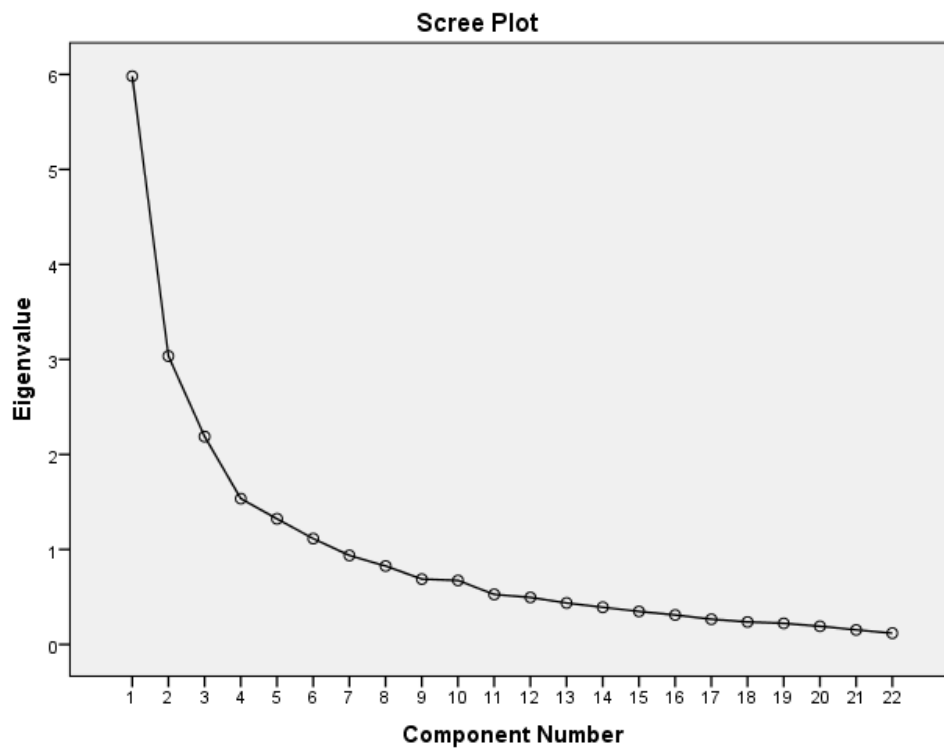
Commented [A19]: Parents don't attend meetings

Commented [A20]: Parental involvement

Appendix G: Principal component analysis of school- and teacher-related variables in TIMSS data

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.774
Bartlett's Test of Sphericity	Approx. Chi-Square	11782.265
	df	231
	Sig.	.000



Scree plot indicating eigenvalues and components resulting from PCA on items related to school environment.