
by

Research Student: Mr Ngung Chia Siew (MBA)
Project Supervisor: Dr. Gian Casimir (PhD)

A THESIS

Submitted to

Newcastle Business School
Faculty of Business and Law
The University of Newcastle Australia

In partial fulfillment of the requirements for the degree of

DOCTOR OF BUSINESS ADMINISTRATION
January 2013
Statement of Originality

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University’s Digital Repository**, subject to the provisions of the Copyright Act 1968.

**Unless an Embargo has been approved for a determined period.

Name: Ngung Chia Siew

Date: 24th January 2013
ACKNOWLEDGEMENTS

My heartfelt thanks go to Dr. Gian Casimir, my supervisor, who guided me with insightful expertise. During the entire research process, he provided the much needed perceptive counsel, and has been a mentor and coach to me in the true sense of the words. Dr. Casimir has gone the extra mile by painfully editing my work and tolerated my extra years taken to complete this thesis. His dedications in academic excellent and care for his students have set a benchmark that is difficult for anyone to match. Without his help, patient and encouragement, this dissertation could not have been written. There are, therefore, no words that can express my deepest gratitude to him and I shall forever be in debt for his selfless kindness.

I am also grateful for the moral support and constant encouragements from my friends in the University. Their persistency and positive attitude in the face of difficulties have provided me great motivational propulsion especially in the later years of my research.

I like also to thank my wife, for her faith in me and allowing me to be as ambitious as I wanted. Her immense support throughout this course has provided the foundation for this work.

Last, but not least, I hope the completion of this thesis will serve as a testimony for both my sons that persistent hard work is necessary to overcome adversity in order to achieve preset goals.
# Table of Contents

**ACKNOWLEDGEMENT** ...................................................................................................................... 3

**Abstract** ............................................................................................................................................... 9

**List of Figures** ................................................................................................................................. 11

**List of Tables** .................................................................................................................................. 12

**Glossary of Terms** ........................................................................................................................... 13

**Chapter One: Introduction**

1.1 Introduction ..................................................................................................................................... 14

1.2 Background to the research ............................................................................................................. 16

1.2.1 Service quality .......................................................................................................................... 16

1.2.2 Price satisfaction ........................................................................................................................ 18

1.2.3 Image rating ............................................................................................................................... 18

1.2.4 Overall satisfaction ................................................................................................................... 19

1.2.5 Repurchase intention ................................................................................................................ 20

1.2.6 Positive word of mouth ............................................................................................................ 20

1.3 Justification for the dissertation project ......................................................................................... 21

1.4 Research Questions and Hypotheses .............................................................................................. 22

1.5 Research Methodology .................................................................................................................. 23

1.6 Major Findings ............................................................................................................................... 23

1.7 Structure of the dissertation ........................................................................................................... 24

**Chapter Two: Literature Review**

2.1 Introduction ..................................................................................................................................... 25

2.2 The development of private education in Singapore ........................................................................ 26

2.3 Service quality ............................................................................................................................... 30
Chapter Three: Methodology

3.1 Introduction

3.2 The Research Questions and Conceptual Model

3.3 Research Philosophies and Paradigms

3.3.1 Reasons for Choosing the Epistemology Philosophy

3.3.2 Positivism and Interpretivism
Chapter Four: Data Analysis and Findings

4.1 Introduction ........................................................................................................ 106
  4.1.1 Demographic statistics ........................................................................... 106

4.2 Validity and Reliability Tests ........................................................................... 108
  4.2.1 The service quality construct .............................................................. 109
  4.2.2 The price satisfaction construct .......................................................... 111
  4.2.3 The image rating construct ................................................................ 112
  4.2.4 The overall satisfaction construct ....................................................... 113
  4.2.5 The repurchase intention construct ..................................................... 114
  4.2.6 The positive word of mouth construct ............................................... 115

4.3 Descriptive statistics of the key variables .................................................... 116

4.4 Hypothesis testing .......................................................................................... 122

4.5 Summary ........................................................................................................ 127

Chapter Five: Conclusions

5.1 Major Findings .................................................................................................. 129
  5.1.1 The relationships among service quality, overall satisfaction and
        repurchase intention ...................................................................................... 129
  5.1.2 The relationships among price satisfaction, overall satisfaction and
        repurchase intention ...................................................................................... 131
  5.1.3 The relationships among image rating, overall satisfaction and repurchase
        intention ........................................................................................................ 132
  5.1.4 The relationships among overall satisfaction, repurchase intention and
        positive word of mouth ................................................................................ 133

5.2 Implications of the findings for practice ....................................................... 133
  5.2.1 The antecedents – service quality, price satisfaction and image rating.. 134
      5.2.1.1 Improving service quality .............................................................. 134
      5.2.1.2 Improving price satisfaction ....................................................... 136
      5.2.1.3 Improving image rating ............................................................... 137
  5.2.2 The mediators – overall satisfaction and repurchase intention .......... 138
5.2.2.1 Improving overall satisfaction ....................................................... 138
5.2.2.2 Improving repurchase intention ..................................................... 139
5.3 Implications of the findings for theory ........................................................ 139
  5.3.1 The mediators ......................................................................................... 140
  5.3.2 The measurement of service quality.................................................... 141
  5.3.3 The measurement of price satisfaction ................................................ 143
  5.3.4 The measurement of image rating ....................................................... 144
5.4 Limitations and Future Research ................................................................. 146
5.5 Summary and Concluding Remarks ........................................................... 146

REFERENCES ................................................................................................... 150

APPENDIX A (Questionnaire) ........................................................................... 183
APPENDIX B (Descriptive statistics for the demographic variables) ............. 195
APPENDIX C (Reliability and Validity Tests)...................................................... 199
APPENDIX D (Descriptive statistics for the key variables).............................. 216
APPENDIX E (Correlations among the key variables) .......................................... 222
APPENDIX F (Hypothesis 1) ............................................................................. 223
APPENDIX G (Hypothesis 2) ............................................................................. 226
APPENDIX H (Hypothesis 3) ............................................................................. 229
APPENDIX I (Hypothesis 4) .............................................................................. 232
ABSTRACT

The state is the primary provider of education in Singapore. The rise of the global knowledge economy, however, has generated an education industry that is worth about USD2.2 trillion per year globally. The Government of Singapore therefore revamped its higher-education sector so that Higher Private Education Organisations (HPEOs) can offer more flexible transnational education to attract fee-paying, overseas students and increase the education industry’s contribution to the national GDP.

The private-education industry is currently facing competition from more established markets such as the United States, United Kingdom and Australia. Locally, HPEOs need to upgrade their service standard in order to meet the stringent registration requirements imposed by Singapore’s regulators and, at the same time, compete with each other in a high-cost environment.

HPEOs therefore need to gain a better understanding of the relations among variables such as service quality, price satisfaction, image rating, overall satisfaction, repurchase intention and positive word of mouth. A better understanding will allow HPEOs to improve their marketing efforts in order to obtain competitive advantages.

Prior research only focused on the correlation of variables and failed to take into account the inter-relationship among two or more variables. The measurement of these variables is often dependent on geographical factors, types of services and types of stakeholders. It is therefore the objective of this study to examine the measurement and relationships among service quality, price satisfaction, image rating, overall satisfaction, repurchase intention and positive word of mouth in the context of HPEOs in Singapore.
A survey involving 554 participants from local HPEOs was conducted over a period of three years. Analysis of the data shows that attributes such as image rating and service quality are unique and HPEOs have to customize these attributes to meet the needs and wants of their students. This study found that service quality, price satisfaction, image rating, overall satisfaction, repurchase intention and positive word of mouth are all positively correlated. It was also found that some factors (e.g., overall satisfaction and repurchase intention) are mediators of the relationships between other variables.
List of Figures

Figure 2.1. Overall conceptual model 60
Figure 3.1. The filtration analogy of research methodology 64
Figure 3.2. An overview of the sampling techniques 79
Figure 3.3. An overview of the data collection methods 84
Figure 4.1. Frequency distribution of service quality 117
Figure 4.2. Frequency distribution of price satisfaction 118
Figure 4.3. Frequency distribution of image rating 119
Figure 4.4. Frequency distribution of overall satisfaction 120
Figure 4.5. Frequency distribution of repurchase intention 121
Figure 4.6. Frequency distribution of positive word of mouth 122
Figure 4.7. Conditions for full mediation 124
Figure 4.8. Conditions for partial mediation 124
Figure 4.9. Mediation findings for Hypothesis 1 125
Figure 4.10. Mediation findings for Hypothesis 2 126
Figure 4.11. Mediation findings for Hypothesis 3 126
Figure 4.12. Mediation findings for Hypothesis 4 127
Figure 5.1. Conceptual Model 149
List of Tables

Table 3.1. Recommended sample sizes 76
Table 4.1. Descriptive statistics of the demographic variables 107
Table 4.2. Factor analysis for service quality 109
Table 4.3. Factor analysis for price satisfaction 111
Table 4.4. Factor analysis for image rating 113
Table 4.5. Factor analysis for overall satisfaction 114
Table 4.6. Factor analysis for repurchase intention 114
Table 4.7. Factor analysis for positive word of mouth 115
Table 4.8. Descriptive statistics for the key variables 116
Table 4.9. Correlations among the key variables 123
Table 5.1. Results of validity and reliability test for service quality attributes 142
Table 5.2. Results of validity and reliability test for price satisfaction attributes 144
Table 5.3. Results of validity and reliability test for image rating attributes 145
## Glossary of Terms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HPEOs</td>
<td>Higher Private Education Organisations</td>
</tr>
<tr>
<td>ITE</td>
<td>Institute of Technical Education</td>
</tr>
<tr>
<td>PEOs</td>
<td>Private Education Organisations</td>
</tr>
<tr>
<td>PSLE</td>
<td>Primary School Leaving Examination</td>
</tr>
<tr>
<td>SOTA</td>
<td>School Of The Arts</td>
</tr>
<tr>
<td>SMU</td>
<td>Singapore Management University</td>
</tr>
</tbody>
</table>