# TABLE OF CONTENTS

Dedication .............................................................................. II
Acknowledgement .................................................................... III
Abstract .................................................................................. V

## CHAPTER 1

### INTRODUCTION

1.1. Target Costing versus Traditional Cost Management .... 2
1.2. Comparison of Target Costing and Cost-plus Approaches ... 4
1.3. Target Costing in a Confrontational Environment ......... 4
1.4. The Origins of Target Costing ........................................ 8
1.5. An Overview of the Target Costing Approach ............... 10
1.6. Previous Literature on Target Costing ....................... 14
1.7. Behavioral Issues in Target Costing ............................. 15
   1.7.1. Behavioral Issues in Target Cost Determination Process 15
   1.7.2. Behavioral Issues in Target Cost Allocation Process ... 17
1.8. Motivation of the Study ............................................... 21
1.9. Structure of the Thesis ............................................... 22

## CHAPTER 2

### RESEARCH DESIGN AND METHODOLOGY

2.1. Sample ............................................................................ 25
2.2. Variables and their Categories used in Survey Research ... 29
2.3. Measurement Framework for Survey Research .............. 29
2.4. Research Design of the Experiment relating to the Effect of Tightness and Target Information Types on Cost-reduction Performance 31
2.5. Research Design of the Experiment relating to the Effect of Participation and Performance Evaluation Factors on Target Costing Performance 32
2.6. Statistical Methods Applied .......................................... 33
   2.6.1. In case of Laboratory Experiments ....................... 33
   2.6.2. In case of Questionnaire Survey ....................... 33
      2.6.2.1. Logistic regression model ......................... 35
      2.6.2.2. Comparative advantage of logistic regression ... 38
      2.6.2.3. When to choose logistic regression ............. 39
      2.6.2.4. Multicategory logit models ...................... 39
      2.6.2.5. Cumulative logit models for ordinal responses 41
      2.6.2.6. Proportional-odds model ....................... 42
CHAPTER 3
MOTIVATIONAL IMPACTS OF THE TYPE AND TIGHTNESS OF TARGET COST INFORMATION: A LABORATORY EXPERIMENT

3.1. Motivational Aspects of Target Costing
3.2. Research Issues
   3.2.1. Effect of Target Information Types on Cost-reduction Performance
   3.2.2. Effect of Target Cost Tightness on Cost-reduction Performance
3.3. Experimental Design
   3.3.1. Target-Information Types
   3.3.2. Information Tightness
   3.3.3. Real World Practice versus the Experiment
   3.3.4. Research Methodology
   3.3.5. Experimental Procedures
   3.3.6. Variables
      3.3.6.1. Types of target information
      3.3.6.2. Levels of tightness
   3.3.7. Statistical Method Applied
3.4. Formulation of Hypotheses
   3.4.1. Goal Specificity
   3.4.2. Goal Difficulty
   3.4.3. Goal Specificity and Difficulty
3.5. Tests of the Hypotheses
3.6. Conclusion

CHAPTER 4
EFFECTS OF THE TIGHTNESS OF TARGET PROFIT & COST ON TARGET COST ACHIEVEMENT: AN EMPIRICAL RESEARCH

4.1. Different Methods of Target Profit and Target Cost
   4.1.1. Target Profit Methods
   4.1.2. Target Cost Methods
4.2. Data and Statistical Framework
   4.2.1. Survey Administration
   4.2.2. Variable
   4.2.3. Statistical Model
4.3. Research Focus
4.4. Hypotheses Development
4.5. Analysis and Interpretation
   4.5.1. Criteria for Selecting the Model
   4.5.2. Results
   4.5.3. Analysis of the Results

4.6. Conclusion

CHAPTER 5

TARGET COSTING PERFORMANCE BASED ON ALTERNATIVE PARTICIPATION AND EVALUATION METHODS: A LABORATORY EXPERIMENT

5.1. Purpose of the Study

5.2. Target Costing and the Research Interests
   5.2.1. Meaning and Application of Target Costing
   5.2.2. The Research Interests in Target Costing
      5.2.2.1. Effect of participation in target cost setting on cost-reduction performance
      5.2.2.2. Effect of performance-evaluation method on cost-reduction performance
   5.2.3. Previous Studies on the Behavioral Approach to Cost Accounting

5.3. Experimental Design and Procedures
   5.3.1. Research Design
      5.3.1.1. Controllable Information
      5.3.1.2. Participation
   5.3.2. Research Methodology
      5.3.2.1. Experimental environment and work procedure
      5.3.2.2. Target cost-setting method
      5.3.2.3. Performance-evaluation method
   5.3.3. Comparison between Real World and the Experiment
   5.3.4. The job of Coordinator
   5.3.5. Total Target to be Achieved by Each Team

5.4. Hypotheses
   5.4.1. Cognitive Dissonance Theory
   5.4.2. Application of Cognitive Dissonance Theory to the Present Experiment
   5.4.3. Expectancy Theory Approach

5.5. Experimental Data
   5.5.1. Actual Performance of Each Member in Different Teams
   5.5.2. Changes in Average Performance in Team A
5.5.3. Changes in Average Performance in Team B 126
5.5.4. Comparison of Average Grade of Each Team at Each Trial 126
5.6. Analysis and Interpretation of Experimental Results 127
5.7. Conclusion 138

CHAPTER 6
EFFECTS OF BEHAVIORAL FACTORS IN TARGET COST ALLOCATION ON TARGET COST ACHIEVEMENT: A SURVEY RESEARCH 142

6.1. Research Method 143
6.2. Previous Literature and Theoretical Development 145
6.3. Results and Discussion 152
  6.3.1. Pairwise Relationship 152
  6.3.2. Combination Effects of Participation and Performance Evaluation Factors 153
6.4. Conclusion 159

CHAPTER 7
EFFECTS OF TARGET COST DETERMINATION AND BEHAVIORAL FACTORS IN ITS ALLOCATION ON TARGET COST ACHIEVEMENT: A SURVEY RESEARCH 161

7.1. Behavioral Factors in Target Cost Determination and Allocation Processes 163
  7.1.1. Effects of Target Cost Determination Methods on Cost-reduction Performance 163
  7.1.2. Effects of Target Cost Allocation on Cost-reduction Performance 166
7.2. Results and Discussion 169
  7.2.1. Combination Effects of the Factors in Target Cost Determination and Allocation Processes 169
7.3. Conclusion 173

CHAPTER 8
GENERAL CONCLUSIONS 174

Appendix to Chapter 2
Appendix-2-A: Questionnaire survey 178
Appendix-2-B: List of the companies responded 191

Appendix to Chapter 3
Sample Questions given to the students 192
Appendix to Chapter 4
Appendix 4-A: Questions used in this study 193
Appendix 4-B: Data showing the number of companies using each target profit and cost method at each level of target cost achievement 194
Appendix 4-C: Statistical issues 195

Appendix to Chapter 5
Appendix 5-A: Representative questions given to the students 199
Appendix 5-B: Actual performance of each member in different teams 201

References 204
LIST OF THE TABLES

Table 2-1. Industry classification for 146 organization providing survey data in November, 1996 26
Table 2-2. Cost-reduction process in setting product's target cost 32
Table 2-3. Decision-making process in setting target cost for parts 32
Table 3-1. Cost-reduction process in setting product target cost 48
Table 3-2. Actual performance ratio of all subjects 60
Table 3-3. Analysis of variance of the actual performance ratio of all subjects 60
Table 3-4. Average actual performance ratio of different groups 61
Table 3-5. Actual performance ratio of high-acceptance group 62
Table 3-6. Actual performance ratio of low-acceptance group 62
Table 3-7. Analysis of variance of high-acceptance group 62
Table 3-8. Analysis of variance of low-acceptance group 62
Table 4-1. List of the variables and their categories 77
Table 4-2. Degrees of tightness of different combinations of target profit and cost methods 80
Table 4-3. Estimates for the parameters in showing the effects of TC & TPI on TCAL 87
Table 4-4. Fit information of the models showing the effects of TC & TPI on TCAL 87
Table 4-5. Estimates for the parameters in showing the effects of TC & TP2 on TCAL 88
Table 4-6. Fit information of the models showing the effects of TC & TP2 on TCAL 88
Table 4-7. Estimates for the parameters in showing the effects of TC & TP3 on TCAL 89
Table 4-8. Fit information of the models showing the effects of TC & TP3 on TCAL 89
Table 5-1. Decision making process in setting target cost for parts 103
Table 5-2. Consonance and dissonance 118
Table 5-3. ANOVA applied to the actual number of correct answers in Team A 127
Table 5-4. ANOVA applied to the actual number of correct answers in Team B 127
Table 5-5. Average performance of Teams A and B 129
Table 5-6. Tukey's multiple comparison method 129
Table 5-7. Average of supportive and nonsupportive groups 130
Table 5-8. Average of nonparticipative and participative groups 131
Table 5-9. Average of controllable and uncontrollable groups 132
Table 5-10. Different levels of significance 133
Table 5-11. Learning effect as shown by average performance 136
Table 5-12. Cost reduction rate (CRR) of Teams A and B 136
Table 6-1. Consonance and dissonance when PAR is categorized into three levels 149
Table 6-2. Consonance and dissonance when PAR is categorized into two levels 149
Table 6-3. Single effects of PAR and PE on TCAL as explained in hypotheses 6-1 and 6-2 152
Table 6-4. Interaction effects of PAR (three categories) and PE on TCAL 154
Table 6-5. Interaction effects of PAR (two categories) and PE on TCAL 154
Table 7-1. Fit information of the models showing the effects of TC, PAR & PE on TCAL 170

LIST OF THE FIGURES

Figure 1-1. Sequence of price and cost determination 3
Figure 1-2. The survival zone 6
Figure 1-3. Life-cycle costs and cost commitment 8
Figure 1-4. Steps in the target costing process 12
Figure 1-5. The behavioral factors in target cost and determination and allocation processes 20
Figure 1-6. Overall structure of the thesis 24
Figure 2-1. Process of target costing system 28
Figure 3-1. Effects of target information type and tightness on the actual performance ratio of the high-acceptance group 63
Figure 3-2. Effects of target information type and tightness on the actual performance ratio of the low-acceptance group 64
Figure 4-1(a). Relationship between target profit and target cost 68
Figure 4-1(b). Selection process of target cost 69
Figure 4-2. Determination of target cost using sales price-based method 74
Figure 4-3. Determination of target cost using estimated cost-based method 75
Figure 4-4. Hypothetical relationships in three profit situations 86
Figure 5-1. Design process from the perspective of target costing 97
Figure 5-2. Expectancy model 120
Figure 5-3. Average performance of Team A in four trials 125
Figure 5-4. Changes in average performance per trial in Team A 125
Figure 5-5. Average performance of Team B in four trials 126
Figure 5-6. Changes in average performance per trial in Team B 126
Figure 6-1. Individual and interaction effects of the variables in target cost allocation process 156
Figure 7-1. Effects behavioral factors in target cost determination and allocation on target cost achievement 172