TABLE OF CONTENTS

| DEDICATIO | N . | v |
|-------------------|---|----|
| TABLE OF CONTENTS | | |
| PREFACE | | xi |
| CHAPTER: | 1 | |
| THE LIN | NEAR MULTIOBJECTIVE PROJECT SELECTION | |
| PROBLI | EM | |
| 1.1 | Introduction | 1 |
| 1.2 | An Example from the Literature | 3 |
| 1.3 | Towards a More General Multiobjective Formulation | 7 |
| 1.4 | A Second Example | 9 |
| 1.5 | Summary and Conclusions | 11 |
| Refere | | 15 |
| CHAPTER 2 | | |
| EVALU. | ATING COMPETING INVESTMENTS | |
| 2.1 | Introduction | 19 |
| 2.2 | Adjusting for Time Alone | 19 |
| 2.3 | Adjusting for Time and Risk | 22 |
| 2.4 | Conclusions | 27 |
| Refere | | 30 |
| CHAPTER 3 | | |
| | NEAR PROJECT SELECTION PROBLEM: AN | |
| | NATIVE TO NET PRESENT VALUE | |
| 3.1 | Introduction | 31 |
| 3.2 | An Example | 32 |
| 3.3 | The Behavioral Implications of NPV | 33 |
| 3.4 | Multiple Objective Decision Methods | 35 |
| 3.5 | Conclusions | 38 |
| Refere | | 40 |
| CHAPTER 4 | | |
| | ING THE BEST SOLUTION IN A PROJECT SELECTION | NC |
| | EM WITH MULTIPLE OBJECTIVES | |
| 4.1 | Introduction | 41 |
| 4.2 | Some Early Approaches | 42 |
| 4.3 | A Matching and Grouping Approach | 46 |
| 4.4 | A Stochastic Screening Approach | 54 |
| 4.5 | Conclusions | 62 |
| Refere | nces | 64 |

| CHAPTER 5 | | |
|-----------|--|-----|
| EVALUAT | TING A PORTFOLIO OF PROJECT INVESTMENTS | |
| 5.1 | Introduction | 65 |
| 5.2 | Examples | 67 |
| 5.3 | Conclusions | 74 |
| Reference | ees | 76 |
| CHAPTER 6 | | |
| | ONAL STOCHASTIC DOMINANCE IN PROJECT | |
| PORTFOL | JO SELECTION | |
| 6.1 | Introduction | 77 |
| 6.2 | The Model | 78 |
| 6.3 | Summary and Conclusions | 89 |
| Reference | es | 93 |
| CHAPTER 7 | | |
| MEAN-GI | NI ANALYSIS IN PROJECT SELECTION | |
| 7.1 | Introduction | 95 |
| 7.2 | The Model | 101 |
| 7.3 | Conclusions | 114 |
| Reference | ces | 117 |
| CHAPTER 8 | | |
| | ING-BASED METHOD FOR GENERATING | |
| | IINATED SOLUTIONS IN STOCHASTIC MOMP | |
| PROBLEN | | |
| 8.1 | Introduction | 119 |
| 8.2 | Stochastic, Nondominated Solutions | 123 |
| 8.3 | Sampling Approaches to Solving MOMP Problems | 125 |
| 8.4 | Computational Issues | 126 |
| 8.5 | Summary and Conclusions | 134 |
| Append | | |
| | ple SAS Code | 135 |
| Referen | ces | 144 |
| CHAPTER 9 | | |
| | RACTIVE MULTIOBJECTIVE COMPLEX SEARCH F | OR |
| STOCHAS | STIC PROBLEMS | |
| 9.1 | Introduction | 147 |
| 9.2 | Direct Search Methods | 149 |
| 9.3 | Applying Complex Search to Multiobjective Mathema- | |
| | tical Programming.Problems | 152 |
| 9.4 | An Example of Multiobjective Complex Search | 155 |
| 9.5 | Conclusions | 158 |
| Referen | ces | 160 |

| CH | IAPIEK | LV | |
|-----|----------------|--|-----|
| | AN EVO | LUTIONARY ALGORITHM FOR PROJECT SELECTION | NC |
| | PROBLE | EMS BASED ON STOCHASTIC MULTIOBJECTIVE | |
| | LINEAR | LY CONSTRAINED OPTIMIZATION | |
| | 10.1 | Introduction | 163 |
| | 10.2 | Stochastic Multiobjective Linearly Constrained | |
| | | Programs | 164 |
| | 10.3 | Multiobjective Evolutionary-Based Algorithm | 166 |
| | 10.4 | Computational Examples | 174 |
| | 10.5 | Summary and Conclusions | 183 |
| | Appen | dix 10.1 | |
| | Inpu | t File for the Algorithm Parameters for the | |
| | SMOLCP Example | | |
| | Appen | dix 10.2 | |
| | Java | Program that Defines the First Objective Function in the | |
| | SMO | OLCP Example | 187 |
| | Refere | nces | 188 |
| INI | DEX | | 191 |