Durham University

Durham E-Theses

The determinants of wage differentials in a segmented labour market: A case study of the private sector in the Eastern Province of Saudia Arabia

Abdullah Ibrahim Bohaimed

How to cite:

Bohaimed, Abdullah Ibrahim (2003) The determinants of wage differentials in a segmented labour market: A case study of the private sector in the Eastern Province of Saudia Arabia. Doctoral thesis, Durham University.

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a https://etheses.durham.ac.uk/id/eprint/1917/ is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the full Durham E-Theses policy for further details.

Academic Support Office, The Palatine Centre, Durham University, Stockton Road, Durham, DH1 3LE
e-mail: e-theses.admin@durham.ac.uk Tel: +44 0191 334 6107
https://etheses.durham.ac.uk

In the name of Allah, the Most Merciful, Most Beneficent

The copyright of this thesis rests with the author.
No quotation from it should be published without
his prior written consent and information derived
from it should be acknowledged.

The Determinants of Wage Differentials in a Segmented Labour Market: A Case Study of the Private Sector in the Eastern Province of Saudi Arabia

By

Abdullah Ibrahim Bohaimed

B.SC. Accounting (Saudi Arabia)

M.Sc. Economics (USA, Western Illinois University)

M.Sc. Economics (USA, University of New Mexico)

Thesis Submitted for the Degree of Doctor of Philosophy in Economics

Faculty of Social Science

University of Durham

- 1 OCT 2003

May, 2003

Declaration

The work presented in this dissertation is entirely my own and was carried out between September 1999 and February 2003 at the University of Durham. This material has not been previously submitted to any other university for a degree or qualification.

Copyright

The copyright of this thesis rests with the author, Abdullah Ibrahim Bohaimed. No extract from it should be published without his prior written consent, and all information derived from it should be acknowledged.

Dedication

To the memory of my beloved father and brother (Abdullatiff)

I would also like to dedicate this work to my beloved mother, brothers and sisters for their unconditional love, care and unlimited support during all the years of my study.

I dedicate this work also to my beloved wife, who provided me with unlimited support in taking care of our family during my study, and who gave me the encouragement I needed to achieve my goal.

Lastly, I dedicate this work to my dearest three children Norah, Ibrahim and Al-Hanouf who suffered as a result of not spending sufficient time with them during the period of my research study.

Acknowledgements

In the name of Allah, Most Merciful, Most Gracious. All praise be to Allah, the lord of the universe for His blessings, without whose generosity I would not have completed this thesis.

First, I would like to express my deep appreciation and gratitude to my supervisor Professor Rodney Wilson, Professor of Economics, University of Durham, for the invaluable incentives, support and encouragement he provided during my study period. I would like to extend my gratitude to the faculty staff of the Department of Economics and the Institute of Middle Eastern and Islamic Studies for the interest they have shown in my work, and for their friendliness, and to the staff at the University Library and the ITS, who have been of very great assistance to me.

I gratefully acknowledge all of those who generously gave of their time and distributed the questionnaires. These include 50 Imam University students living in different cities, 24 teachers from the Commercial High Schools in Al-Hassa and Dammam, 20 helpers from the Saudi Electrical Company, 10 helpers from SABIC, Education Directors in Al-Hassa, other helpers from the Al-Hassa and Dammam branches of the Commercial and Industrial Council, and the Saudi Communication Company, and five branches of an Islamic teaching organisation.

I also acknowledge all the 330 respondents who took the troubles to complete the questionnaires and make suggestions, which were much appreciated.

My grateful thanks are also offered to the Imam University in Saudi Arabia, represented by the Business Department at Al-Hofuf Branch, who have offered me enormous support.

I would like to express my deep appreciation and gratitude to Dr. Dorothy Middleton, University of Durham for her advice and continuous support of this thesis.

Abstract

Few studies deal with the Saudi Arabian labour market and most of them have paid little attention to wage structure and differentials. This study is concerned with the determinants of wage differentials in Al-Sharkiyah (the Eastern Province of Saudi Arabia). Therefore, the aim of this study is to fill a research gap and contribute to the empirical work on the Saudi Arabian economy.

A survey of previous economics research reveals that there are several theories and approaches which have been used to explain wage determination and differentials. This study involves the identification of some of these theories and approaches which, it is believed, should be helpful in explaining the determinants of wage differentials in this part of the country. These include 1) The human capital theory; 2) The segmentation (dual) theory; 3) The discrimination theory, and 4) Other factors that are theoretically relevant to the determination of wage differentials. These theories are explained and tested by statistical techniques, including regression analysis. Wages in both the formal and informal sectors are tested using a Logistic model.

In the light of these theories and approaches, the aim of this study is to provide a theoretical and empirical analysis, focusing on economic and non-economic factors which directly and indirectly influence wage determination and differentials in the study area. In order to accomplish this objective, models are selected based on the above-mentioned theories and approaches to wage determination and differentials. The empirical analysis is based on cross-sectional data which were collected by means of a questionnaire.

This study should prove valuable in explaining the existing pattern of employment and determinants of wage differentials in the private sector of the Eastern Province of Saudi Arabia. In addition, it should be of considerable assistance in rationalising the labour market's wage policies, improving the position of low-wage workers and. of major importance to the Saudi Arabian government, in assisting their Saudiisation programme.

Table of Contents

Declaration II

Copyright II

Dedication III

Acknowledgements IV

Abstract V

Table of Contents VI

List of Tables XVI

List of Figures XX

List of Appendices XXI

List of Tables for Chapter Six XXII

List of Figures for Chapter Seven XXV

List of Figures for Chapter Eight XXVI

Glossary XXVII

Chapter One

Introduction

1.1 Background: Wages and Salaries Differentials 1

1.1.1 Low-Wage Workers 2

1.1.2 Wage Policies 3

1.2 The Statement of the Problem 3

1.3 The Purpose and Importance of the Study 5

1.4 Objectives of the Study 5

1.5 Research Questions (Hypotheses) 6

1.6 Other Further Issues Related to Wage Differentials, Low-Wage Workers and Wage Policies 6

1.6.1 The Saudi Private Sector 7

1.6.2 The Informal Sector (Small Scale Enterprises) in the Saudi Private Sector 7

1.6.3 Saudiisation 8

1.6.4 Unemployment 10

1.7 Organisation of the Thesis 11

Chapter Two
The Saudi Arabian Economy and Labour Market

2.1 Introduction 13

2.2 The Characteristics of the Saudi Economy 13

2.3 Planning and Development in Saudi Arabia 14

2.3.1 Directions of Planning 15

2.3.2 Saudi Development Plans 16

2.4 The Oil Sector 18

2.5 The Non- Oil Sector 20

2.6 Government Finances 22

2.7 Balance of Payments 23

2.8 Privatisation 23

2.9 Population 24

2.9.1 Age Structure of the Saudi Population 25

2.9.2 Future Estimates of the Kingdom's Population in 2020 27

2.10 The Labour Market 27

2.10.1 Labour Market - Overview 27

2.10.2 Employment Structure 29

2.10.2.1 Employment Structure by Economic Activity 29

2.10.2.2 Employment Structure by Occupation 29

2.10.3 Saudi Labour Force Supply 31

2.10.3.1 Labour Force by Age Groups 31

2.10.3.2 New Entrants into the Labour Market by Level of Educational Attainment 32

2.10.4 Labour Demand 32

2.10.5 Unemployment 35

2.10.6 Employment Regulations in the Saudi Labour Market 37

2.11 Human Resources Development 39

2.11.1 General Education 39

2.11.2 Higher Education 40

2.11.3 Technical Education and Vocational Training 41

2.12 Economic Reform Programme 41

2.13 Wage Indicators in the Saudi Arabian Private Sector. 43

2.13.1 General Average Monthly Wages for All Labour in the of Saudi Private Sector 43
2.13.2 Suggested Starting Wage 45
2.13.3 Types of Low-Waged Jobs 48
2.14 Conclusion 50

Chapter Three
Wage Theory and Policy

3.1 Introduction 51
3.2 Definition of Wages 51
3.3 Kinds of Wages 52
3.4 Wage Theories 52
3.4.1 Subsistence Theory 53
3.4.2 Wage -fund Theory 54
3.4.3 Marxian Surplus-value Theory 55
3.4.4 Marginal-productivity Theory 55
3.4.5 Bargaining Theory 55
3.5 Wage Determination Factors 56
3.5.1 Cost of Living 56
3.5.2 The Relative Supply of Labour 57
3.5.3 The Relative Value of Product 57
3.5.4 Bargaining Power 57
3.5.5 Comparative Attractiveness of Occupations 57
3.5.6 Mobility of Labour 58
3.5.7 Custom and Legislation 58
3.6 The Wage Structure 59
3.6.1 First Case: Perfect Competition: Homogenous Workers and Jobs 59
3.6.2 Second Case: The Wage Structure in Saudi's Private Sector 59
3.6.3 Third Case: Wage Differentials: Heterogeneous Jobs (Employers) 61
3.6.4 Fourth Case: Wage Differentials: Heterogeneous Workers 64
3.6.5 Fifth Case: Wage Differentials: Labour Market Imperfections 65
3.7 Wage Policies 65
3.7.1 Minimum Wage Policy 65

3.7.1.1 Minimum Wage Law in UK 67
3.7.1.2 Minimum Wage System in OECD Countries 67
3.7.1.3 Minimum Wage in United States 70
3.7.1.4 Minimum Wage in Canada 72
3.7.1.5 Minimum Wage in Japan 74
3.7.2 Wages Subsidies/Employment Tax Credit 74
3.7.3 Earned Income Tax Credit (EITC) 79
3.7.4 Investment Tax Credit to Reduce Unemployment 80
3.7.5 Income Replacement Programmes 81
3.8 Wage Rigidities 82
3.8.1 Explanation of Wage Rigidities 82
3.8.2 Policies to Combat Wage Rigidities 85
3.8.2.1 Increasing Wage Flexibility 85
3.9 Conclusion 86

Chapter Four

Theories of Earnings Differentials

4.1 Introduction 87
4.2 Human Capital Theory 87
4.2.1 Literature Review 87
4.2.1.1 Adam Smith and Equalising Differences 87
4.2.1.2 Education as Investment 88
4.2.1.3 On-the-job Training as Investment 90
4.2.1.4 Screening as an Alternative to Human Capital Theory 91
4.2.2 Selected Empirical Results on Determinants of Wages 92
4.2.2.1 Rates of Return to Education 92
4.2.2.2 Returns to On-the-job Training and Experience 95
4.3 Segmented (Dual) Labour Market Theory 96
4.3.1 Segmented (Dualistic) Structure of Labour Markets 96
4.3.1.1 The Informal Sector 97
4.3.1.2 The Formal Sector 98
4.3.2 Review of Empirical Literature 100
4.3.2.1 An Overview of Informal Sector 100

4.3.2.2 The Sectoral Allocation of the Labour Force 101
4.3.2.3 The Effect of Sector Allocation upon Personal Earnings 103
4.4 Nationality and Wages 105
4.4.1 Overview 105
4.4.2 Discrimination Theories 105
4.4.2.1 Becker's Theory of Discrimination 106
4.4.2.2 The Statistical Theory of Discrimination 107
4.4.3 Empirical Results on Determinants of Wages by Nationality and other Variables in the Saudi Arabian Labour Market 107
4.5 Conclusion 110

Chapter Five
Research Methodology

5.1 Introduction 111
5.2 Questionnaire Design 111
5.2.1 Questioning Methods 111
5.2.2 Questionnaire Construction 112
5.2.3 Selecting The Pilot Test Sample 113
5.3 Sample Designs 114
5.3.1 Population and Sample Frame 114
5.3.2 Sample Size 115
5.4 Data 115
5.4.1 The Sampling Procedures 115
5.4.2 Manipulating the Data 117
5.4.3 Measuring Data Reliability 118
5.5 Data Analysis 119
5.5.1 Choosing the Right Statistical Technique 119
5.5.2 Justification for the Choice of Statistical Techniques 121
5.5.3 Techniques Used to Explore Differences Among Groups 124
5.6 Function Form 125
5.7 Variables 128
5.7.1 Dependent Variable: Earnings (Wages) 128
5.7.2 Independent Variables 128

5.8 Regression Model-OLS 133
5.8.1 Major Models 133
5.8.2 Sub-Major Models 134
5.9 Extension: Logistic Regression 135
5.19 Conclusion 136

Chapter Six

Descriptive and Inferential (Analytical) Statistics

6.1 Introduction 137
6.2 Respondents' Background Variables 138
6.2.1 Nationality of Employees 139
6.2.2 Marital Status 140
6.2.3 Urbanisation 142
6.2.4 Age Category 143
6.2.5 Province of Origin/Place of Birth 144
6.2.6 Occupational Category 145
6.2.7 Job Title 146
6.2.8 Level of Occupational Skill 148
6.2.9 Age 149
6.3 Human Capital Variables 149
6.3.1 Education 150
6.3.2 Level of English 152
6.3.3 Level of Computer Skills 153
6.3.4 Experience 154
6.4 Segmented Labour Market Variables 155
6.4.1 Firm Ownership 156
6.4.2 Type of Firm 157
6.4.3 Number of Employees 158
6.4.4 Firm Classification 160
6.5 Current and Starting Wages (Salaries) Variables 161
6.6 Conclusion 162

Chapter Seven
Wage Regression Models

7.1Introduction 163

7.2 Applying General Assumptions of Multiple Regression 164

7.2.1 Sample Size 164

7.2.2 Outliners 165

7.2.3 Multicollinearity 165

7.2.4 Normality, Linearity, Homoscedasticity of Residuals 166

7.3 Respondents' Background Variables 167

7.3.1 Applying Related Assumptions: Multicollinearity 167

A. Correlation Matrix 167

B. Collinearity Diagnostics 167

7.3.2 Estimating Respondents' Background Information 168

7.3.2.1 Reporting the Results 168

7.3.2.2 Using Dummy Variables for *PBIRTH* 170

7.3.3 Applying Related Assumptions: Normality, Linearity, and Homoscedasticity of Residuals 172

7.3.4 Corrections 173

7.3.4.1 Transforming the Dependent Variable into the Natural Log (As a General Solution) 173

7.3.4.2 Correction for Heteroscedasticity 175

7.4 Human Capital Variables 176

7.4.1 Applying Related Assumptions: Multicollinearity 176

A. Correlation Matrix 176

B. Collinearity Diagnostics 177

7.4.2 Estimating Human Capital Wage Linear Regression 177

7.4.2.1 Reporting the Results 177

7.4.3 Applying Related Assumptions: Normality, Linearity and Homoscedasticity of Residuals 178

7.4.4 Corrections 179

7.4.4.1 Transforming the Dependent Variable into the Natural Log (As a General Solution) 179

7.4.4.2 Correction for Heteroscedasticity 180

7.5 Segmented Labour Market Variables 181
7.5.1 Saudi and Non-Saudi (Nationality) 181
7.5.2 Job Category 182
7.5.3 Job Skill 184
7.5.4 Firm Ownership 185
7.5.5 Economic Sectors 186
7.5.6 Employment Category 187
7.5.7 Province of Origin/Place of Birth (Discrimination Theory) 188
7.5.8 Wage Category 190
7.6 The Proper Econometric Model 191
7.6.1 Building a Proper Econometrics Model 191
7.6.2 Segmenting Private Labour Market into Two Main Labour Markets 192
7.6.3 Applying the Appropriate Model on Sub-Section 7.6.2 192
7.7 Logistic Regression Model 194
7.7.1 Data Analysis Procedures 194
7.7.2 Data 195
7.7.3 Coefficients for the Logistic Model Using the Whole Sample in the Eastern Province 195
7.7.4 Coefficients for the Logistic Model Using the Saudi Sample in the Eastern Province 197
7.7.5 Coefficients for the Logistic Model Using the Non-Saudi Sample in the Eastern Province 198
7.7.6 Probability of Being at the High Wage Level in the Eastern Private Sector of Saudi Arabia. 199
7.8 Conclusion 200

Chapter Eight
Low-Wage Workers and Fair Wage Policies in the Private Sector of Saudi Arabia's Eastern Province

8.1 Low-Wage Workers 202
8.1.1 Overview 202
8.1.2 Who are the Low-Wage Workers in other Countries? : 203
8.1.3 The Low-Wage Saudi Workers 204

8.1.4 Characteristics of Low-Wage Saudi and Non-Saudi Workers 205
8.1.5 A Profile of Low-Wage Workers in the Saudi Labour Market 206
8.2 Wage Policies 211
8.2.1 Overview 211
8.2.2 Saudi Wage and Saudiisation Policies 214
8.2.2.1 Minimum Wage Policies (Policies 1 and 2) 214
8.2.2.2 Policies for Improving Wages (Policies 3 and 4) 218
8.2.2.3 Segmented Labour Market Policies (Polices 5 and 6) 219
8.2.2.4 A Tighter Immigration Policy (Policy 7) 220
8.2.2.5 Subsidies Policy (Policy 8) 221
8.2.2.6 Income Tax Policy (Policy 9) 223
8.2.2.7 Direct Foreign Investment (Policy 10) 224
8.2.2.8 Small Firm Policies (Policies 11,12 and 13) 225
8.2.3 Optimal Wage and Saudiisation Policies 227
8.2.4 Wage Policy Problems 229
8.3 Conclusion 230

Chapter Nine
Conclusion

9.1 Introduction 232
9.2 Descriptive and Inferential (Analytical) Statistics 232
9.2.1 Summary of Respondents' Background Variables 232
9.2.2 Summary of Human Capital Variables 236
9.2.3 Segmented Labour Market Variables 237
9.3 Regression Models 238
9.3.1 Summary of Respondents' Background Variables 239
9.3.2 Summary of Respondents' Background and Human Capital Variables 240
9.3.3 Segmented Labour Market 241
9.3.3.1 Ranking the Importance of the Variables 245
9.3.4 Logistic Model 246
9.4 Low-Wage Workers and Fair Wage Policies in the Private Sector in the Eastern Province of Saudi Arabia 246
9.5 Employment Measures and Policy Implications 247

9.6 The Limitation of the Study 252

Bibliography 254

Appendices 267

List of Tables

Table 2.1 Population Structure of the Kingdom during 1995.1999 and 2000 25

Table 2.2 Saudi Population by Age Group, Sex , and Relative Distribution in 2000 26

Table 2.3 Employment Structure by Economic Activity during the Seventh Development Plan (2000-2004) 30

Table 2.4 Employment Structure by Occupation during the Seventh Development Plan (2000-2004) 31

Table 2.5 Labour Force Projections in the Seventh Development Plan (2000-2004) 32

Table 2.6 New Entrants into the Labour Market (Graduates of Education and Training Systems) during the Seventh Development Plan, (2000-2004) 33

Table 2.7 New Entrants into the Labour Market by Source of Demand during the Seventh Development Plan (2000-2004) 34

Table 2.8 Unemployment Calculation 36

Table 2.9 General Education in the Kingdom 39

Table 2.10 Graduates in the Kingdom during the Last Five Years 40

Table 2.11 Number of Students Enrolled in the Kingdom during the Last Five Years 40

Table 2.12 Education in Universities and Specialised Colleges during the Academic Year 2000 41

Table 2.13 Average Monthly Wages (SR) for all Labour in the Saudi Private Sector 44

Table 2.14 Descriptive Statistics for the General Monthly Wage (SR) in the Saudi Private Sector 45

Table 2.15 Saudi Employers' and Employee's Attitudes towards Suggested Starting Salary in the Private Sector 47

Table 2.16 Low-Waged Jobs 49

Table 3.1 Comparative Cost of Living 56

Table 3.2 Estimated Mean Current Monthly Income According to Country of Origin 59

Table 3.3 Average Monthly Earnings for Saudi and non-Saudi Workers in the 60

Private Sector, 1994
Table 3.4 Average Monthly Earnings (SR) 61
Table 3.5 Summary of Minimum Wage Systems in OECD Countries with a National Minimum 68
Table 3.6 History of Federal Minimum Wage Rates under the Fair Labour Standards Act,1938-1996 71
Table 3.7 Summary of Research on the Minimum Wage 73
Table 4.1 Characteristics of the Two-Sector Economy 99
Table 4.2 Income in Riyadh (1968) 110
Table 5.1 Summary Table of the Characteristics of the Major Statistical Techniques 122
Table 6.1 Nationality 139
Table 6.2 Marital Status 141
Table 6.3 Urbanisation 142
Table 6.4 Age Category 143
Table 6.5 Province of Origin/Place of Birth 144
Table 6.6 Occupational Category 145
Table 6.7 Job Title 147
Table 6.8 Level of Occupational Skill 148
Table 6.9 Descriptive Statistics for Age 149
Table 6.10 Education Level 150
Table 6.10i. Education as a Continuous Variable 151
Table 6.11 Level of English 153
Table 6.12 Level of Computer Skills 154
Table 6.13 Experience 155
Table 6.14 Firm Ownership 156
Table 6.15 Type of Firm 158
Table 6.16 Number of Employees 159
Table 6.17 Firm Classification 161
Table 6.18 Current and Starting Wage Variables 161
Table 7.1 Extreme Values 166
Table 7.2 Correlation Matrix 167
Table 7.3 Collinearity Statistics 168

Table 7.4 Predicted Wage Regression Model for Background Variables 169
Table 7.5 Predicted Wage Regression Model for Background Variables Using Dummy Variables for *PBIRTH* 171
Table 7.6 Predicted Wage Regression Model for Background Variables using the Natural Log Wage as Dependent Variable, and Comparison between OLS and OLS using the Natural Log 174
Table 7.7 OLS and WLS Regression Methods 175
Table 7.8 Correlation Matrix 176
Table 7.9 Collinearity Statistics 177
Table 7.10 Predicted Wage Regression Model for Human Capital Variables 178
Table 7.11 Predicted Wage Regression Model for Human Capital Variables using the Natural Log Wage as Dependent Variable, and Comparison between OLS and OLS using the Natural Log 179
Table 7.12 OLS and WLS Regression Methods 180
Table 7.13 Nationality 182
Table 7.14 Job Category 183
Table 7.15 Job Skill 184
Table 7.16 Firm Ownership 185
Table 7.17 Economic Sectors 186
Table 7.18 Employment Category 188
Table 7.19 Province of Origin/Place of Birth 189
Table 7.20 Wage Category 190
Table 7.21 Comparing Various Regression Models 193
Table 7.22 Applying the Appropriate Model on Sub-Section 7.6.2 194
Table 7.23 Coefficients Estimates for the Whole Sample using Logistic Regression Model 196
Table 7.24 Coefficients Estimates for the Saudi Sample using Logistic Regression Model 197
Table 7.25 Coefficients Estimates for the Non-Saudi Sample using Logistic Regression Model 198
Table 8.1 Low-and High-Wage workers in the Saudi Labour Market 203
Table 8.2 Distribution of Low-Wage Workers Among all Workers Surveyed 206
Table 8.3 Distribution of Saudi and Non-Saudi Low-Wage Workers Among 207

All Low-Wage Workers
Table 8.4 The Level of Educational Attainment by Each Type of Worker % 207
Table 8.5 Skill Levels of Each Type of Worker % 208
Table 8.6 Province of Origin/Place of Birth of Each Type of Worker % 209
Table 8.7 Urbanisations of Each Type of Worker % 209
Table 8.8 Marital Status of Each Type of Worker % 210
Table 8.9 Job Category of Each Type of Worker % 210
Table 8.10 Age Category of Each Type of Worker % 211
Table 8.11 Reactions to Wage and Saudiisation Policies 212
Table 8.12 Ranking the Wage and Saudiisation Policies 228
Table 9.1 Summary of Respondents' Background Variables Table 233
Table 9.2 Summary of Human Capital Variables 237
Table 9.3 Summary of Segmented Labour Market Variables 239
Table 9.4 The Significance of the Segmented Variables 244
Table 9.5 Ranking the Importance of the Variables 246
Table 9.6 Logistic Model Results 246

List of Figures

Figure 2.1 Trends of General Average Monthly Wages in the Saudi Private Sector 50

Figure 2.2 General Average Monthly Wages in the Saudi Private Sector: Difference 50

Figure 3.1 Relationship between Wages, Earnings, Compensation, and Income 53

List of Appendices

Appendix A: The Meaning of Wages in the UK Employment Rights Act 1996 s.27 — 267

Appendix B: Questionnaires — 269

B1: Employee's Questionnaire — 269

B2: Employee's Questionnaire (In Arabic) — 278

B3: Employer's Questionnaire — 287

B4: Employer's Questionnaire (In Arabic) — 292

Appendix C: List of Abbreviations — 297

Appendix D: Tables for Chapter Six — 299

Appendix E: Figures for Chapter Seven — 229

Appendix F: Figures for Chapter Eight — 323

List of Tables for Chapter Six

6.2. Respondents' Background Information Table 229

6.2.1. Nationality of Employees 229

II. W2CT*NAT Cross-Tabulation Table 229

III-I. W*NAT Independent Sample Test Table 229

III-II. W*NAT Mann-Whitney U Test Table 229

6.2.2. Marital Status 300

II. W2CT*MARSTAT*NAT Cross-Tabulation Table 300

III-I. W*MARSTAT Independent Sample Test Table 300

III-II. W*MARSTAT Mann-Whitney U Test Table 300

6.2.3. Urbanisation 301

II. W2CT*URBAN*NAT Cross-Tabulation Table 301

III-I. W*URBAN Independent Sample Test Table 301

III-II. W*URBAN Mann-Whitney U Test Table 301

6.2.4. Age Category 302

II. W2CT*AGECATT*NAT Cross-Tabulation 302

III-I. W*AGECATT*NAT ANOVA Table 302

III-II. W*AGECATT*NAT Kruskal-Wallis Test Table 302

6.2.5. Province of Origin/Place of Birth 303

II. W2CT*PBIRTH*NAT Cross-Tabulation Table 303

III-I. W*PBIRTH*NAT ANOVA Table 303

III-II. W* PBIRTH*NAT Kruskal-Wallis Test Table 303

6.2.6. Occupational Category 304

II. W2CT*JOBCATT*NAT Cross-Tabulation Table 304

III-I. W*JOBCATT*NAT ANOVA Table 304

III-II. W*JOBCATT*NAT Kruskal-Wallis Test Table 304

6.2.8. Level of Occupational Skill 305

II. W2CT*JOB SKILL*NAT Cross-Tabulation Table 305

III-I. W*JOBSKILL*NAT ANOVA Table 305

III-II. W*JOBSKILL*NAT Kruskal-Wallis Test Table 305

6.2.9 Age 306
III-I. W*AGE Pearson Correlation Table 306
III-II. W*AGE Spearman's rho Table 306
6.3 Human Capital Variable Tables 307
6.3.1 Education (as Category Variable 307
6.3.1 Education (as Category Variable) 307
II. W2CT*EDUC*NAT Cross-Tabulation Table 307
III-I W*EDUC*NAT ANOVA Table 307
III-II W*EDUC*NAT Kruskal-Wallis Test Table 307
6.3.1i. Education (as Continuous Variable) 308
IIi. W2CT*EDUC*NAT Cross-Tabulation Table 308
III-Ii. W*EDUCONT Pearson Correlation Table 308
III-IIi. W*EDUCONT Spearman's rho Table 308
6.3.2. Level of English 309
II. W2CT*ENGLISHL*NAT Cross-Tabulation Table 309
III-I. W*ENGLISHL*NAT ANOVA Table 309
III-II. W*ENGLISHL*NAT Kruskal-Wallis Test Table 309
6.3.3 Level of Computer Skills 310
II. W2CT*COMPUTRL*NAT Cross-Tabulation Table 310
III-I. W*COMPUTRL*NAT ANOVA Table 310
III-II. W*COMPUTRL*NAT Kruskal-Wallis Test Table 310
6.3.4. Experience 311
III-I. W*CURRTEXP Pearson Correlation Table 311
III.Ii. W*CURRTEXP Spearman's rho Table 311
III-II. W*PREVEXP Pearson Correlation Table 312
III-IIi. W*PREVEXP Spearman's rho Table 312
6.4 Segmented Labour Market Variables 313
6.4.1 Firm Ownership 313
II. W2CT*FIRMOWNR Cross-Tabulation Table 313
III-I. W*FIRMOWNR ANOVA Table 313
III-II. W*FIRMOWNR Kruskal-Wallis Test Table 313

6.4.2. Type of Firm 314
II. W2CT*FIRMTYPE*NAT Cross-Tabulation Table 314
III-I. W*FIRMTYPE ANOVA Table 314
III-II. W*FIRMTYPE Kruskal-Wallis Test Table 314
6.4.3 Number of Employees 315
IIi. W2CT*EMYCAT20*NAT Cross-Tabulation Table 315
IIii. W2CT*EMYCAT40*NAT Cross-Tabulation Table 315
IIiii. W2CT*EMYCAT500*NAT Cross-Tabulation Table 315
III-I. W*EMYCAT ANOVA Table 316
III-II. W*EMYCAT Kruskal-Wallis Test Table 316
6.4.4 Firm Grade 317
II. W2CT*FIRMGRAD*NAT Cross-Tabulation Table 317
III-I. W*FIRMGRAD*NAT ANOVA Table 317
III-II. W*FIRMGRAD*NAT Kruskal-Wallis Test Table 317
6.5 Current and First Salary Variables 318
III-I. W*ANLFTWAG Pearson Correlation Table 318
III-II. W*ANLFTWAG Spearman's rho Table 318

List of Figures for Chapter Seven

Figure 7.1 Normal P-P Plot of Regression Standarized Residual Dependent Variable: W = Annual Wage 319

Figure 7.2 Scatterplot: Dependent Variable: W = Annual Wage 319

Figure 7.3 Normal P-P Plot of Regression Standarized Residual Dependent Variable: natural log for anlsalry (Annual Wage) 320

Figure 7.4 Scatterplot: Dependent Variable: natural log for anlsalry (Annual Wage) 320

Figure 7.5 Normal P-P Plot of Regression Standariszed Residual Dependent Variable: W = Annual Wage 321

Figure 7.6 Scatterplot: Dependent Variable: W = Annual Wage 321

Figure 7.7 Normal P-P Plot of Regression Standarized Residual Dependent Variable: natural log for anlsalry (Annual Wage) 322

Figure 7.8 Scatterplot: Dependent Variable: natural log for anlsalry (Annual Wage) 322

List of Figures for Chapter Eight

Figure 8.1 Histogram for Saudi Employees 323

Figure 8.2 Histogram for Non-Saudi Employees 323

Figure 8.3 Histogram for Saudi and Non-Saudi Employees 324

Glossary

AEITC	Advance Earned Income Tax Credit
ARAMCO	The Saudi Oil Company
BLS	Bureau of Labour Statistics
CDS	Central Department Statistics
CSE	Community Services Employment
CV	Coefficient of Variance
CWA	The Communications Workers Union Association
EITC	Earned Income Tax Credit
FATHERS	Fostering Action to Help Earnings and Responsibility
FC	Family Credit
GCC	Gulf Co-Operation Council
GDP	Gross Domestic Product
GOSI	General Organisation of Social Insurance
IEA	International Energy Agency
Ln	Natural Log
LPC	The Low Pay Commission
MC	Marginal Cost
MEED	The Middle East Business Weekly
MP	Marginal Product
NCPA	The National Centre for Policy Analysis
NICs	Employer's National Insurance Contributions
NIT	Negative Income Tax
NMW	National Minimum Wage
OECD	Organisation for Economic Co-Operation and Development
OLS	Ordinary Least Squares
OPEC	Organisation of Petroleum Exporting Countries
OPIC	Overseas Private Investment Corporation
PRWORA	Personal Responsibility and Work Opportunities Act of 1996
SABB	The Saudi British Bank
SABIC	Saudi Arabian Basic Industries Corporation
SAMA	Saudi Arabian Monetary Agency

SAMBA	Saudi Arabian American Bank
SEC	The Supreme Economic Council
SMEs	Small and Medium Enterprises
SR	The Saudi Riyal
STC	The Saudi Telecommunications Company
TANF	Temporary Assistance for Needy Families
UAW	The United Autoworkers
WFTC	Working Families Tax Credit
WLS	Weighted Least Squares
WOTC	The Work Opportunity Tax Credit
WTO	The World Trade Organisation

Chapter One

Introduction

1.1 Background: Wages and Salaries Differentials

Wages continue to account for a large portion of government spending in Saudi Arabia, estimated at between 50 and 60 per cent of total current expenditure (Bin-Abied and Al-Gawad, 1998). The differences in wages among workers have been noted in many previous wage studies. The reasons for the differences in workers' wages are complex and controversial. As a result, many economists have produced different theories to explain why workers receive different wages and salaries in similar situations (see Chapter Four).

It is very important to clarify that which determines 'wage differentials'. They may be due to different levels of skill, different levels of formal education, differences between formal and informal firms, and differences in age, sex, nationality or ethnic group. Stiglitz (1993, p.529), when referring to wage differentials, stated that:

> The basic competitive model suggests that if the goods being sold are the same, prices will also be the same. Wages are the prices in the labour market; but differences in wages are conspicuous and widespread. Even in the absence of unions, similar types of workers performing similar types of jobs are sometimes paid at quite different wages. For example, some secretaries are paid twice as much as others. How can economists explain differences?

This quotation illustrates the reality of wage differentials in the labour market. Stiglitz suggested several factors which account for wage differentials:

1. Unions: they may succeed in obtaining higher wages for their workers.
2. Compensating differentials: wage differences may correspond to differences in the nature of the job.
3. Productivity differentials: wage differences may correspond to differences in productivity between workers.

4. Information-based differentials: wage differences may reflect the fact that workers do not have sufficient information about the opportunities available in the market.
5. Imperfect labour mobility: individuals rarely move between jobs, so wage differentials will persist.
6. Discrimination: wage differentials can sometimes be traced to nothing more than racial or gender differences. Discrimination once took the more obvious form of employers refusing to hire certain groups; today it is more subtle.

This study seeks to explain wage differentials in the private sector of Saudi Arabia's Eastern Province by using: 1) the 'human capital theory', which takes investment in human capital as the basic determinant of personal wages; 2) the 'segmentation theory', which shows the determinants of wage differentials in both the informal and formal sectors; and 3) the 'wage discrimination theory', which determines whether there are any wage differentials in existence among Saudis themselves, and between Saudi and non-Saudi workers in the same situations. This study, therefore, will focus on the human capital, segmentation and discrimination theories, and other determinants that are theoretically relevant to the determination of wage differentials.

In addition, this thesis examines the low-wage workers in the Eastern Province of Saudi Arabia and wage policies in Saudi Arabia as a whole. These two subjects are of major importance to this thesis, and complement the main subject of study, i.e., determinants of wage differentials.

1.1.1 Low-Wage Workers

Low-wage workers, both Saudi and non-Saudi, in the Eastern Province of Saudi Arabia will be examined in order to determine what constitutes and characterises a low-wage worker. This forms an essential part of the subject of this thesis, i.e., the determinants of wage differentials. The present study seeks to discover whether the distribution of wages in the private labour market of Saudi Arabia's Eastern Province is skewed more positively towards non-Saudi than towards Saudi employees (see

Appendix F).[1] This study demonstrates that there are many Saudi and non-Saudi low-wage workers, and many more poor than rich individuals in the Eastern private labour market.

In this section another problem is also highlighted. In the near future, the present low paid non-Saudis' jobs are most likely to be those which provide opportunities for new Saudi entrants to the labour market during the Saudiisation process. Thus, the Kingdom must pay serious attention to the low wages of many workers in order to remedy the present skewness and encourage Saudis to take over non-Saudi jobs.[2]

1.1.2 Wage Policies

This study examines the wage policies which have been introduced in various countries, e.g. the United States and certain European Union countries, that could help to narrow the wage gap between low-wage workers and those with higher wages in Saudi Arabia. The aim is also to decrease wage inequality, in particular for those who have different wages and yet have similar qualifications and do similar jobs.

Raising wages for low-wage Saudi workers, however, will give rise to additional business costs and make businesses less competitive. The payment of subsidies, or other wage policies, will have to have a time limit set, or else this will exacerbate the present problem and reduce incentives to increase wages. This important issue will be discussed in detail in the final part of Chapter Eight.

1.2 The Statement of the Problem

Al-Hammed (1996) stated that the main obstacles to Saudiisation in the private sector are:

1. High wages demanded by Saudi employees as compared with low wages paid to non-Saudi employees, which accounts for wage differentials.

---

[1] When wages are positively skewed, this means that relatively high wages are not offset by correspondingly low wages (Freund, 1979).

[2] Although a wage subsidy for low-wage workers was introduced in the year 2000, no minimum wage was set.

2. Low productivity of Saudi employees compared with higher productivity of non-Saudi employees.

In other words, due to the general low productivity and high wage levels of most of the Saudi labour force, Saudiisation has not progressed as quickly as had been hoped.

The researcher believes that government programmes and policies could go some way towards overcoming these two obstacles. The issue of low productivity has been paid much attention by the Saudi government. For instance, the government is continuously reforming the education system and providing more training programmes in order to improve skills. On the other hand, high wages and wage differentials are not accorded adequate attention by the Saudi government. For example, there is no established minimum wage, although the government has increased the cost of non-Saudi employment in a bid to create more job opportunities for the growing number of Saudis entering the labour market. In addition, under Decree no. 50, published by the Council of Ministers in 1995, Saudi nationals must make up at least 5 per cent of the workforce in any company which employs more than 20 workers. Companies that do not comply with this ruling will not be given visas for expatriate workers. Government subsidies and allowances will be dependent on the positive steps taken in the Saudiisation progress.

The policies already introduced to solve the second obstacle - that of high wages or wage differentials - are believed to be insufficient. These policies can prevent firms in the private sector from achieving their main goal of maximising profit. It is an economic fact that a firm with low profits will employ fewer workers and, therefore, will not aid Saudiisation. In other words, the potential high cost of employing Saudis relative to non-Saudis will slow down the implementation of Saudiisation in the private sector, especially for labour-intensive activities in the service sectors.

In this study, attention will be given to determinants of wage differentials in the segmented labour market of Saudi Arabia's Eastern Province. Thus, the main wage theories, such as the human capital theory, the segmented labour theory, and the nationality (discrimination) approach are explained and tested by statistical

techniques such as regression analysis. In addition, wages in the formal and informal sectors will be tested using a Logistic model. The results of the study may provide support for recommended Saudi policies, the aim of which is to solve the problem of the high wages involved in employing Saudis, and to assist low-wage Saudi workers.

To summarise, this study will focus on determinants of wage differentials in the segmented private labour market of Saudi Arabia's Eastern Province. The results should help to suggest measures for reducing the gap between the cost of employing Saudis and that of employing non-Saudis. This should have a positive impact on Saudiisation rates in the private sector. In addition, the position of low-wage workers and wage policies will be analysed, as these are complementary aspects to the determinants of wage differentials.

1.3 The Purpose and Importance of the Study

The Sixth and Seventh Development Plans emphasise the importance of human capital development as a prerequisite for a more equitable distribution of wages. This study aims principally to identify the major factors influencing wage distribution and differentials in the Eastern Province of Saudi Arabia. Moreover, the importance of this study lies in the author's belief that factors such as an individual's province of birth, nationality (Saudi or non-Saudi), and the size of firms largely explain the wage differentials.

Given the fact that the Kingdom lacks research in this area, this study is expected to be helpful to Saudi policy makers dealing with these important issues. In addition. the study aims to present results, recommendations and policy implications, which should encourage further research and provide valuable insights for policy makers in the future.

1.4 Objectives of the Study

The main objectives of this study are as follows:

1. To provide a theoretical and empirical analysis of economic and non-economic factor that directly and indirectly influence wage differentials and structures in the private sector in the Eastern Province of Saudi Arabia.

2. To determine to what extent the labour market is segmented.
3. To categorise Saudi low-wage workers and examine how support could be provided.
4. To aid the process of Saudiisation, which has been a major goal in Saudi Arabia's recent Five-Year Development Plans.
5. To suggest and support wage policies that would encourage Saudis to work in what are, at present, low-wage jobs, thus furthering the Saudiisation process.

1.5 Research Questions (Hypotheses)

Taking into account the objectives of the study, the researcher is seeking to provide answers to the following questions:

1. How important are background variables, such as marital status, urbanisation, place of birth/province of origin and age, in explaining the wage differentials between Saudis and non-Saudis in the labour market of the Eastern Province.
2. To what extent do human capital variables, including knowledge of English and computer skills, explain wage differentials between Saudis and non-Saudis?
3. Does nationality affect wage differentials in the Eastern Province of Saudi Arabia?
4. How important is the combination of all the above variables in relation to Saudi Arabia's Eastern segmented labour market?
5. Which types of worker are in the informal sector, and which are in the formal sector? Saudi or non-Saudi or both?
6. What determines who becomes a low-wage worker?
7. Can this study suggest policies that would be useful in addressing the Saudiisation problem and, ultimately, reduce Saudi unemployment?

1.6 Other Issues Related to Wage Differentials, Low-Wage Workers and Wage Policies

Providing some insight into four related areas- the Saudi private sector, the informal sector, Saudiisation and unemployment - may help in explaining how wage differentials occur.

1.6.1 The Saudi Private Sector

The Saudi government expects the private sector to play a key role in the economy. The Seventh Development Plan emphasises the role of the Saudi private sector in achieving development objectives. The plan lists the main objectives that will guide future policies for the private sector:

1. Accelerate private sector growth to ensure more job opportunities for Saudi nationals, thereby improving the performance of the national economy and raising the standard of living for the lower paid workers.
2. Further diversify the economic base, with particular emphasis on increasing non-oil exports.
3. Increase the Kingdom's capacity to be more flexible in response to rapidly changing technological and economic conditions at the global level.
4. Raise the overall level of efficiency of the national economy through a more efficient use of resources.

An extensive privatisation process is expected to enhance the private sector's economic role and increase the opportunities available for private investment, both national and foreign.

1.6.2 The Informal Sector (Small Scale Enterprises) in the Saudi Private Sector

Every private sector has small and large-scale enterprises. In Saudi Arabia, small-scale enterprises are defined as those employing fewer than 20 workers. Small-scale enterprises comprise the majority of private establishments and absorb about 98 per cent of the foreign labour force (Al-Saud, 2002). These enterprises could provide an appropriate target for the Saudiisation programme.

The Kingdom emphasises the essential role of small and medium scale enterprises in providing job opportunities for Saudis. Therefore, the Seventh Development Plan makes several recommendations, aimed at supporting small and medium scale enterprises by:

1. Streamlining procedures for establishing small and medium scale enterprises, so as to eliminate associated routine constraints and increase technical and administrative support for these firms.
2. Studying the possibility of establishing a special fund, with government and private sector participation, to facilitate access to loans for small and medium scale enterprises and develop Islamic financing instruments such as Musharaka, Murabah and Mudaraba further to broaden financial opportunities available to these enterprises.
3. Expanding the lending activities of the Saudi Credit Bank.

1.6.3 Saudiisation

The Saudiisation programme means the replacement of non-Saudi labour by Saudi nationals. Although the Kingdom has made great efforts in its Saudiisation programmes, the number of Saudi nationals constitutes only a modest percentage of the total employed in the private sector. For instance, the private sector provided about 473,500 jobs for Saudis during the Sixth Development Plan (1995-2000) compared with about 154,700 jobs provided by the government sector. Thus, greater efforts are needed during the Seventh Development Plan (2000-2004) to encourage the private sector's capacity to provide job opportunities for the continuously growing number of new potential Saudi entrants to the labour market, especially as their absorption into the government sector will be difficult.

Studies prepared by the Manpower Council in Saudi Arabia indicate that the majority of foreign workers in the Kingdom work in establishments employing fewer than 20 workers (Mahdi, 2000). Therefore, the Kingdom has asked all those establishments in the private sector which employ 20 workers or more to increase the number of Saudi workers by an annual rate of 5 per cent. It is notable that the private establishments that have applied this rate of increase represent only a modest proportion of the total. Accordingly, the Kingdom continues to emphasise the essential role of small and medium scale enterprises in providing job opportunities for Saudis.

The Seventh Development Plan recommends many measures to help in increasing the level of Saudi employment, such as:

1. Encouraging the private sector to provide job opportunities for Saudi citizens and continuing with Saudiisation in government agencies.
2. Identifying appropriate mechanisms for follow-up and implementation of Saudiisation plans in different occupations and sectors according to their importance by setting specific priorities for the Saudiisation of some sectors and occupations in the private sector.
3. Concentrating recruitment of foreign labour on those who are qualified, by setting specific criteria to control the number of recruited workers.
4. Continuing to make intensive efforts to control work permits and enforce residence regulations.
5. Increasing investments in small enterprises and enhancing the role of the Saudi Credit Bank in this context.
6. Implementing directives of the Manpower Council by the government agencies.
7. Enhancing awareness through the public media, stressing the religious and social value of work.
8. Making maximum use of the available female labour force and increasing job opportunities for Saudi women in accordance with the teachings of Islam.
9. Reviewing articles of the Labour and Employment Law to ensure their conformity with the Kingdom's development requirements and to attain consistency and integration between the social insurance schemes and the civil retirement systems.
10. Ensuring that the education system meets labour market requirements, and emphasises technical and practical skills so as to ensure the availability of qualified Saudis.
11. Giving high priority to the expansion of training centres and the organisation of special evening training courses offered by private business consulting firms. These facilities will target, in particular, owners and managers of small and medium scale firms.
12. Giving high priority to the launching of a national information campaign to demonstrate the significance of work as a religious and social value, with the aim

of changing attitudes towards professions and trades which are deemed undesirable by some citizens.

13. Reviewing the costs of recruiting foreign labour, while raising penalties for illegally employing foreign nationals and establishing a fund for the training of Saudis.

Moreover, a key policy aims to support the role of the Saudi Human Resources Development Fund (HRDF) by helping new Saudi entrants to the labour market. The HRDF's main goal is to support the Saudiisation programme. It provides grants for qualifying, training and recruiting national manpower in the private sector.

1.6.4 Unemployment

The Kingdom faces a rising unemployment problem and a rapidly expanding population. Unemployment has become a major issue with a large number of social and security implications. There are no official unemployment statistics: most estimates put the rate at 15 – 20 per cent. Thus, providing job opportunities for young Saudis is a very important challenge facing the Kingdom. It is regarded as the major concern in the government's economic agenda.

Oil revenues have fluctuated over the last few years, and this has been the main reason behind the rise in unemployment. Moreover, the growth of the non-oil sectors of the economy has been insufficient to provide opportunities for the growing numbers of job-seekers. The Kingdom has to achieve higher rates of economic growth in order to provide enough employment opportunities for an increasing number of unemployed Saudis and new graduates seeking jobs.

It is hoped that this study will contribute to the literature on how to solve the unemployment problem in Saudi Arabia by suggesting wage policies that should decrease wage differentials between employees.

1.7 Organisation of the Thesis

The study is organised into nine chapters. Chapter One, the introductory chapter, provides a framework for the study, gives a statement of the problem, states the

study's objectives, and outlines the research questions and other issues relevant to this study. This chapter introduces the subject of wage differentials, low-wage workers and policies relating to wages.

Chapter Two focuses on the economy of Saudi Arabia, with the aim of providing a broad view of the Saudi economy. First, a general overview of the basic structure of the Saudi economy is provided, followed by a brief survey of planning and development in the country. Special attention is paid to the Saudi labour market and wage issues.

Chapter Three provides a detailed analysis of wage structure and wage policies. The many definitions of what constitutes wages are examined. This chapter refers, also, to wage definition in the UK (ERA 1996 s.27) and discusses wage theories, wage determination factors, and wage structures.

Chapter Four contains a discussion of most major theories and factors relating to wage differentials. It examines certain empirical studies of the economics of wages and wage differentials in other countries and in Saudi Arabia specifically.

Most of the well-known theories and methods used in determining wage differentials, as well as wage policies, will be discussed in Chapter Four. The corresponding research methods used to apply these theories are explained in Chapter Five. In this chapter, the methods used for data collection and the selection of appropriate statistical techniques are presented. Consideration is also given to the wage function form and appropriate econometrics models, and the analysis of the data using the Logistic model is presented.

Chapter Six presents the findings of the wage survey administered to both Saudi and non-Saudi employees in the private sector of the Eastern Provinces of Saudi Arabia. The chapter provides a detailed description of the sample under study. In particular, in this chapter, an attempt is made to examine the distribution of the variables and to obtain summary measures, as well as to explore the strength and direction of the

linear relationship between the variables, and to assess differences between groups and conditions.

The first six chapters attempt to specify suitable theoretical models of wage determinants, the findings of the wage survey conducted on both Saudi and non-Saudi employees in the private sector of the Eastern Province are presented. Chapter Seven provides more empirical evidence for the determinants of and differences in wages in the private labour market of the Eastern Province by using multiple regression models. This chapter applies many regression models that correspond, in the main, to the theories of wage differentials and determination, as mentioned earlier in this study. Moreover, these regression models show econometric estimations of the relationship between annual wage as a dependent variable, and a set of independent variables, such as background, human capital and segmented variables.

In Chapter Eight an examination is made of low-wage workers in the Eastern Province of Saudi Arabia, and of wage policies as a complementary aspect of wage differentials and determination. It will refer to the many different definitions of low-wage workers. In this chapter, policies which could be introduced to decrease wage differentials, encourage low-wage Saudi workers and stimulate the economy to reduce unemployment are suggested.

Finally, Chapter Nine presents the conclusions of this study. The main findings and results are summarised, the limitations of the study are discussed, and some recommendations for Saudi policy makers are put forward. There are also suggestions made concerning areas where further research is needed.

Chapter Two

The Saudi Arabian Economy and Labour Market

2.1 Introduction

In order to achieve the objectives of this research, it is necessary to provide some background information about the country with which it is concerned. This chapter will focus on the economy of Saudi Arabia. The aim is to provide a broad picture of the Saudi economy by outlining its basic characteristics, and the government's attempts to put into practice a series of development plans. Special attention is also paid to the role of the Saudi private labour market and its wage structure.

2.2 The Characteristics of the Saudi Economy

Prior to the discovery of oil in the 1930s, the Saudi economy depended mainly on trade, agriculture, animal husbandry and services to pilgrims who visited the holy cities of Makkah and Madinah. After the end of World War II in 1945, oil quickly replaced these activities as the main source of revenue. By the early 1970s, the Saudi government had launched a long-term programme to use its oil revenues to build the infrastructure to facilitate the diversification of the economy. The government invested heavily in order to modernise the country by establishing electricity, telecommunications, road, rail networks and its airline and airports. Unfortunately, the fall in the price of oil in the mid-1980s drastically reduced revenue from oil and brought this stage of infrastructure expansion to an end. This economic slowdown led companies in the private sector to reduce their reliance on government contracts (Bourland, 2002).

In the 1990s, as Saudis were moving in larger numbers through the educational system and into the workforce, the government shifted the focus of its spending away from military purchases and infrastructure development towards education, health care, and social programmes. Moreover, the Gulf War period resulted in substantial budget deficits, as had also occurred in the mid-to late-1980s. In 1993-1995, government expenditure was reduced by approximately 24 per cent from $52 billion to around $40 billion, as another downturn occurred in the oil market. A significant fiscal imbalance was starting to appear, and in particular an increasing debt burden, by 1995. The government considered this deficit seriously and.

therefore, took steps to eliminate it by, for example. encouraging privatisation. believing that the private sector would be an engine for future growth. As a result. the deficit had declined by just under 3 per cent of GDP by 1997.

From 1998 to 1999, a further downturn occurred in the oil market and oil prices fell drastically. The budget of 1998 showed that although the government had cut spending by 15 per cent from 1997 to offset the decline in revenue, there was still a budget deficit of over $12 billion, i.e., close to 10 per cent of the GDP. The budget deficit of 1999 was $3 billion less than that of the previous year. From the beginning of the second quarter of 1999, oil prices began to recover, which allowed the government to reduce its deficit still further. The 2000 fiscal balance showed a $6.1 billion surplus, the first since 1982. In 2001 and 2002, however, the budget slipped again into deficit.

The Kingdom has emphasised the development of non-oil industries. According to the Ministry of Industry, by 1980 Saudi Arabia had 730 industrial plants with a total invested capital of $6.3 billion. At the end of 2000, the number of plants had grown to 4,836, with a total invested capital of $71.9 billion. In addition, the government has been encouraging foreign investment in Saudi Arabia. A new foreign direct investment law came into effect in April 2000. This reduces tax rates on a foreign owner's corporate profits from a maximum of 45 per cent to a maximum of 30 per cent, in order to allow foreigners to own the land where they do business and to sponsor their own foreign employees (ibid.).

For the past 30 years, economic development has been largely governed by five-year development plans. The current development plan, which began in 2000. emphasises the importance of employing young Saudis and increasing the private sector's role in the economy.

2.3 Planning and Development in Saudi Arabia

The rise in the accumulation of surpluses from oil sales after the early 1970s (1390s H) enabled the Kingdom of Saudi Arabia to decide to use these surpluses for the Kingdom's development, according to methods laid out in a series of five-year development plans. Over the past thirty years, six development plans have

been put into practice. The first, second and third plans emphasised the development of the Kingdom's infrastructure, with later plans focusing increasingly on human resources, private sector development and a reduction in the country's dependency on oil. The Seventh Development Plan is being implemented during the period 1420-1425H (2000-2004). This plan emphasises the importance of employing young Saudis and increasing the private sector's role in the economy. The following sections provide a brief overview of the last six plans.

2.3.1 Directions of Planning

The long-term strategic objectives for Saudi development were first conceptualised during the preparation of the First Development Plan in 1390/1391H (1970). Each plan has adopted objectives, programmes and policies that are aimed at achieving substantial developments at each stage, thus preparing the way for the next plan. The Ministry of Planning in Saudi Arabia intended that each individual plan would cover the basic dimensions of development, which are: 1) the *social* dimension, with an emphasis on safeguarding Islamic values, developing manpower and improving the social welfare of citizens by upgrading the health, education and cultural aspects of their lives; 2) the *economic* dimension, focusing on supporting the economic base, diversifying sources of income, realising the balanced growth of the various economic sectors, seeking optimal utilisation of economic resources and achieving high productivity of human and economic resources; and 3) the *institutional* dimension, directed at raising the efficiency of government services by amending inadequate administrative regulations, restructuring certain government agencies and establishing new ones, in order to enhance the government's performance and upgrade the productivity of government agencies entrusted with serving the economy and society.

The Ministry of Planning in Saudi Arabia summarised the major strategic objectives of the development plans as follows:

- To safeguard Islamic values and confirm Allah's Sharia.
- To defend the Faith and the Nation; to uphold security and social stability; and to deepen the values of national loyalty and belonging.
- To improve the standard of living and the quality of life.

- To develop human resources, increase productivity and replace non-Saudi manpower with qualified Saudis.
- To realise balanced growth throughout all regions of the Kingdom.
- To diversify the economic base and to reduce dependence on the production and export of crude oil through the development of other natural resources and the promotion of other economic activities.
- To provide a favourable environment for the activities of the private sector, and to encourage it to invest and to play a leading role in the development process.
- To enhance the Kingdom's position within the global economy, promote economic integration among the Gulf Cooperation Council (GCC) countries and strengthen economic cooperation with other Arab and Islamic countries.

2.3.2 Saudi Development Plans

Within the perspective of these objectives, each of the past six development plans built, sequentially, on the accomplishments of the earlier plans and laid the groundwork for further achievements in the following stage. The First Development Plan (1970-1975) placed emphasis on the groundwork necessary for the Kingdom's rapid transformation into a more advanced nation by focusing on the infrastructure and basic public services, such as the water supply and electricity generation, along with the expansion of social programmes and the development of Saudi human resources.

The Second Development Plan (1975-1980) was prepared under more advantageous economic conditions, since the Kingdom's oil revenues had increased significantly due to the increase in crude oil prices on the worldwide market. No financial limitations, such as those that had influenced the preparation of the First Plan were present. This financial abundance enabled the Second Plan to focus on four major areas: maximum possible expansion of the transport, electricity, water and housing infrastructure; conservation of hydrocarbon resources; encouragement of energy-intensive industries; and export of their high value added products. The establishment of a Royal Commission for Jubail and Yanbu gave support to those

areas. Moreover, the establishment of a number of special credit funds at that time gave encouragement to the private sector.

The preparation of the Third Development Plan (1980-1985) coincided with large-scale development in the national economy and an increase in oil revenues that made the Kingdom one of the most financially powerful countries in the world. The Third Development Plan focused on achieving structural changes in the national economy by controlling oil and gas production levels in order to maintain national resources, by continuing to build hydrocarbon industries, and by completing infrastructure projects. The plan also aimed to support developments in all regions of the Kingdom, and to enhance management efficiency by improving administrative organisation and government procedures.

The Fourth Development Plan (1985-1990) constituted a new model, in terms of planning methodology. With this new methodology, the plan shifted from a central planning and projects-based approach towards a programme planning methodology that would ensure greater flexibility for government agencies. The plan focused on efficiency of operations and of usage of the Kingdom's resources and facilities; a diversification strategy for the development of producing sectors to enable the private sector that would play a substantial role in the economic development process; and a labour policy to reduce the number of unskilled and manual foreign workers in the Kingdom by more than half a million.

During the Fifth Development Plan (1990-1995), the private sector was encouraged to increase its participation in some areas where the government typically provided services, such as some public utilities and the transport sector. It focused on achieving balanced development among the different regions of the Kingdom, improving the technical base in many economic sectors, and achieving economic and social integration between the Arab Gulf Co-operation Council countries. However, the execution of the Fifth Plan was to some extent adversely affected by the Gulf War (1991), which required some adjustments to be made in the priorities for government expenditure, which, in turn, affected private sector investment.

The Sixth Development Plan (1995-2000) was prepared under exceptional domestic and global conditions. The Gulf War and low growth in the world oil market put some limitations on the plan's preparation. However, the achieved plan attempted to realise its objectives by boosting the role of the private sector and reducing dependence on oil revenues. It emphasised the need to achieve the following objectives:

- To continue supporting the ongoing development of the Kingdom's own defence capabilities.
- To rationalise Government expenditure and make the national economy more dependent on the private sector.
- To develop human resources by increasing the absorptive capacity of universities, educational institutions, and vocational training and technical colleges, with due emphasis on quality at all levels of education and training, in order to meet the needs of the private sector.
- To develop the necessary policies for the Saudiisation programme.

The Seventh Development Plan (2000-2004) emphasised the important goals of diversifying government sources of revenue, creating jobs for Saudis, giving priority to privatisation, improving the efficiency of the government rather than increasing its size, developing technical training and job skills for Saudis, joining the WTO, promoting investment and growth, and expanding the infrastructure in line with population growth and in order to facilitate economic development.

2.4 The Oil Sector

The Kingdom currently has the world's largest oil reserves: it has about 261 billion barrels of proven crude oil reserves. On the basis of an International Energy Agency (IEA) report, this represents more than 25 per cent of the world's oil reserves. Early in 2002, The Saudi British Bank (SABB) stated that the rate of new discoveries of oil reserves has surpassed the depletion rate; oil reserves in 2000 were higher by almost 95 billion barrels than 15 years earlier. This high volume of reserves represents over 90 years of production at current levels. Moreover, on the basis of Bourland's calculation (2002), this volume of reserves could allow the

continuation of current oil production for 102 years. Despite the diversification that is taking place, the oil sector still determines the underlying power and growth prospects of the Saudi economy. The oil sector contributed an estimated 44 per cent of nominal GDP in 2000, which represented almost 81 per cent of the government's total revenues.

The Organisation of Petroleum Exporting Countries (OPEC) was established in 1960 to co-ordinate the petroleum-related policies of its members. Saudi Arabia, as a founding member, restricts its crude oil production output under the current OPEC crude oil production quota, which is 7 million barrels per day for Saudi Arabia as of January 1, 2002. Saudi Arabia is a very strong competitor in the oil market. For instance, the year-end 2001 price for Saudi oil was $17.5 per barrel on average, while its production cost was only $1.50 per barrel, compared with a global average cost of $5-10 per barrel. In addition to this, it costs Saudi Arabia less than 10 cents per barrel to discover new well reserves (Bourland, 2002).

Oil and gas exploration, production, refining, marketing and distribution are managed by ARAMCO. In 1978, the government of Saudi Arabia purchased the shares held by foreign shareholders and the company was renamed Saudi ARAMCO. Recently, Shaybah, a major new field, was opened up and put into production by Saudi ARAMCO. This field produces 500,000 barrels per day. One main goal of Saudi ARAMCO is to develop fields of high-grade crude, so that the 5 types of crude sold (Arab Heavy, Arab Medium, Arab Light, Arab Extra Light, and Arab Super Light) would tend to have a higher quality and thus be higher priced under existing production quotas. Another important long-term goal is to shift the domestic uses of energy from oil to gas, thus freeing more oil production for export. In this regard, the Kingdom has opened up some investment opportunities for foreign oil companies to develop gas in the Kingdom for domestic use.

The prosperity of the oil sector, through its impact upon government revenues, has important implications for government spending in crucial areas like health, education, defence and social services. Basically, oil has two effects, one positive and the other negative. The positive benefit comes with more oil revenue, which

allows for a greater proportion of capital expenditure and more government spending. The negative effect comes with less oil revenue which diverts spending from private sector development, if borrowing has to be undertaken in the domestic market. This situation damages the economy in the long term, as the national and foreign private sector needs a stable economic environment in which to invest. For these reasons the Kingdom has tried to pursue a policy of oil price stability on the world stage. This allows greater certainty that sustainable development can be achieved by predicting a reasonable level of oil exports and government oil revenues.

2.5 The Non-Oil Sector

The previous section showed that the primary objective of the Saudi Kingdom is the reduction of its dependence on oil revenues by focusing on industrial diversification. This section discusses various aspects of this strategy and provides statistics that indicate some of the achievements (reported by SAMA, 2001). For instance:

2.5.1 Petrochemicals

The petrochemical industry of Saudi Arabia relies on gas and natural gas liquids for industrial feedstock for other oil and gas derivatives. The Saudi petrochemical company SABIC is the largest publicly-listed company in the Middle East and one of the top 25 chemical companies in the world. SABIC holds a vital position in the world markets for petrochemicals. Most of SABIC's companies are joint ventures, for the most part multinational companies.

2.5.2 Mining

Saudi Arabia has significant deposits of minerals such as gold, copper and phosphates, but these remain largely unexplored. The development of the Kingdom's mineral deposits is now seen as important to the economy. The country is rewriting the Mining Investment Regulations. In 1997, a new government-owned mining company, Ma'aden, was set up to carry out investigations of base metals and industrial minerals, and to participate in joint local and foreign private sector ventures.

2.5.3 Air Transportation

Saudia, the national carrier, with a monopoly of domestic routes. has been provided with the latest modern aircraft to complete the upgrading of its fleet. The number of new aircraft received by Saudia up to the end of 2000 stood at 58, of which four were Boeing 747-400, 21 were Boeing 777-200, 29 were MD-90 and four were MD-11 for cargo. It is planned to privatise Saudia which is currently at the introductory stages of outlining a privatisation plan. Saudia has made good progress in replacing non-Saudi staff with Saudis. A high level executive committee was established to review the strategic plan and to achieve a higher rate of Saudiisation. National employees currently represent 88 per cent of the total.

2.5.4 Construction

The construction industry is starting to depend increasingly on the private sector and semi-government companies projects, as the government role in the economy was reduced many years ago. Petrochemicals, electrical power, water, and the telecommunications sectors are now undertaking major projects. In addition, the construction of houses and other buildings continues, in line with the growth in population. The prosperity of this sector is related to oil revenue levels in the Kingdom. As a result, 2001 was a good year for profitability, the cement industry being an example.

2.5.5 Telecommunications

Telecommunications is one of the strongest growth areas in the Kingdom. The Saudi Telecommunications Company, STC, operated 2.96 million fixed lines and 1.36 mobile lines by the end of 2000. Moreover, internet services are now widely used, with over 20 internet service providers.

2.5.6 Agriculture

Agriculture in Saudi Arabia has grown rapidly since the Kingdom has been aiming at self-sufficiency in many agricultural products. This sector had been aided significantly by the government, but suffered major subsidy reductions between 1993 and 1995. Although subsidies have continued to decline since then, the agricultural component of GDP has remained steady, at between $8 and $9 billion. or 5.3 per cent of GDP in 2000. Although there are generous agricultural subsidies.

Saudi Arabia still remains the largest food importer in the Middle East. In 2000 it imported $5.4 billion in foodstuffs.

2.5.7 The Financial System

The central bank of Saudi Arabia is the Saudi Arabian Monetary Agency (SAMA), which, as the government's bank, monitors and regulates commercial banks, manages the government's foreign assets, carries out Saudi monetary policy and issues the country's currency, the Saudi Riyal (SR). In addition to the commercial banks, there are several government credit institutions. They give loans and advances on soft terms for special purposes to Saudi individuals and companies. These are the Saudi Agricultural Bank, the Public Investment Fund, the Saudi Credit Bank, the Saudi Industrial Development Fund, and the Real Estate Development Fund. At mid-year 2001, the value of their loans had reached $39.3 billion.

2.6 Government Finances

The Minister of Finance and National Economy, in conjunction with the various ministries, proposes Saudi Arabia's budget. Before approval by the Council of Ministers, it has to be reviewed by the Supreme Economic Council and the Majlis al-Shoura. The fiscal year runs from 1 January to 31 December and the new budget announcement is typically made in December of each year.

Three imbalances exist in Saudi government finances, which its fiscal policy is trying to eliminate (Bourland, 2002). These are:

1. High government debt.
2. Low capital expenditure relative to current expenditure. In other words, the investment in infrastructure is less than the combined cost of salaries, operations and maintenance. This imbalance forces the government to make further efforts to encourage privatisation.
3. High dependence on oil for revenues. Saudi Arabia receives 81 per cent of its revenues from oil sales. The Kingdom is planning to introduce new taxes and increase fees. This is intended to lessen its dependence on oil revenues (*Arab News*, 26th October 2002).

2.7 Balance of Payments

Saudi Arabia's trade picture is generally a healthy one. However, there have been some periods of stress. Its balance of payment went deeply into deficit during 1991-92 because of the high cost of the Gulf War. In 1993-94, oil prices fell, facing the Kingdom into another difficult situation, but it benefited from oil price rises in 1995 and 1996.

Although 1996 and 1997 were strong years for oil revenue, only a small current account surplus resulted. In 1998 the current account recorded a $13 billion deficit. In 1999 it jumped back to record a small surplus because of the increase in oil revenue. 2000 and 2001 saw surpluses of $14.8 billion and $8.3 billion respectively (Bourland, 2002).

The major source of payment inflows to the current account are oil revenues, while the major outflows are non-Saudis' remittances and payments for imports.

2.8 Privatisation

Privatisation is the process of transferring the ownership or management of public establishments, projects and services from the government sector to the private sector, relying on market mechanisms and competition, and using a number of methods, including contracts for managing, operating, financing or selling all or part of each of the government's assets to the private sector.

The decision of the Saudi government to move forward with the privatisation of a number of public enterprises is a strategic one. It will encourage the continued expansion of the role of the private sector in economic activity. The Supreme Economic Council (SEC) is entrusted with the task of supervising the privatisation programme in co-ordination with government authorities. The SEC was called upon to set out a strategic plan and a timetable for the privatisation.

The Supreme Economic Council approved the privatisation strategy for Saudi Arabia. The SEC mentions many basic objectives, such as: increasing the capacity of the national economy; encouraging private sector investment; expanding the ownership of productive assets by Saudi citizens; encouraging local investments of

domestic and foreign capital; increasing employment opportunities and optimising the use of the national work force; ensuring the continued equitable increase in individual income; providing services to citizens and investors in a timely and cost-effective manner; rationalising public expenditure and reducing the burden on the government budget by giving the private sector opportunities to finance: operate and maintain certain services which it is able to provide by increasing government revenues from returns on its participation in activities transferred to the private sector, and from the sale of shares in Saudi government-owned companies (SAMA, 2001, and Bourland, 2002).

The following is a list of public enterprises that are being prepared for privatisation:

1. The telecommunications sector.
2. Saudi Arabian Airlines (Saudia).
3. The postal services.
4. The electricity sector.
5. The railways.
6. Some services of the General Port Authority.

2.9 Population

SAMA (2001) reported that the latest official estimate by the Central Department of Statistics of the total population of the Kingdom was 22.01 million in 2000, as compared with 21.33 million in 1999. This indicates a rise of 0.68 million, or an annual growth rate of 3.1 per cent. This rate is equal to the average annual growth rate of the Kingdom's population during the period 1995-2000.

As shown in Table 2.1, the Saudi population stood at 16.21 million in 2000. This represented 73.6 per cent of the total population of the Kingdom, as compared to 15.66 million in 1999. This increase has been calculated as 3.5 per cent, which is equal to the average annual growth rate of the Saudi population during the period 1995-2000. On the other hand, the non-Saudi population grew by 2.2 per cent from 5.68 million in 1999 to 5.80 million in 2000. 5.80 million represented 26.4 per cent of the Kingdom's total population. The growth rate in the non-Saudi population

during 2000 was a little higher than its average annual growth rate of 2.1 per cent in 1995-2000.

There are certain factors which have caused this high rate of population growth in the Kingdom. First, the birth rate exceeded 5.5 infants per woman in 2000. The average birth rate in the rest of the world is 2.7.

Table 2.1 Population Structure of the Kingdom during 1995, 1999 and 2000

	1995	1999	2000
Total population (million)	18.80	21.33	22.01
Annual growth rate (%)	3.6	3.2	3.1
Average growth rate in the period 1995-2000 (%)	3.1		
Saudi population (million)	13.59	15.66	16.21
Annual growth rate (%)	3.6	3.5	3.5
Ratio to total population (%)	72.3	73.4	73.6
Average growth rate in the period 1995-2000 (%)	3.5		
Non-Saudi population (million)	5.21	5.68	5.80
Annual growth rate (%)	1.7	2.4	2.2
Ratio to total population (%)	27.7	26.6	26.4
Average growth rate in the period 1995-2000 (%)	2.1		

Source: SAMA reports 2001.

Secondly, improvements in living conditions, health and educational facilities in the Kingdom have led to a decrease in the mortality rate and a rise in life expectancy in the Saudi population. The life expectancy of a Saudi citizen is estimated at 72 years, compared with the world average of 67 years. Thirdly, an external factor, the continual heavy influx of non-Saudi labourers and their families has helped to make the rate of population growth in the Kingdom one of the fastest in the world.

2.9.1 Age Structure of the Saudi Population

Saudi Arabia has a large percentage of young people. Table 2.2 shows that in 2000, the age structure of the Saudi population was such that the number of people below 30 years of age was 11.9 million, which accounted for 74 per cent of the total Saudi

population. This ratio exceeded the 55.6 per cent for the world population as a whole. The group aged between 12 and 64 years accounted for 59.0 per cent of the total Saudi population. The Saudi youth expansion represents both an enormous challenge and an opportunity for the country.

Table 2.2 Saudi Population by Age Group, Sex, and Relative Distribution in 2000

	Saudi population			Relative distribution of Saudi population %		
Age group	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
Total	16,208	8,151	8,057	100.0	100.0	100.0
0-4	2,820	1,436	1,384	17.4	17.6	17.2
5-9	2,459	1,250	1,209	15.2	15.3	15.0
10-14	2,109	1,071	1,038	13.0	13.1	12.9
15-19	1,799	911	888	11.1	11.2	11.0
20-24	1,513	765	748	9.3	9.4	9.3
25-29	1,212	608	604	7.5	7.5	7.5
30-34	965	481	484	6.0	5.9	6.0
35-39	805	402	403	5.0	4.9	5.0
40-44	653	326	327	4.0	4.0	4.1
45-49	489	242	247	3.0	3.0	3.1
50-54	378	185	193	2.3	2.3	2.4
55-59	298	143	155	1.8	1.8	1.9
60-69	419	198	221	2.6	2.4	2.7
70 and over	289	133	156	1.8	1.6	1.9

Source: SAMA reports, 2001.

The Saudi government has to respond to these challenges by providing more education, training, health, and housing facilities as well as by setting up programmes that aim to create appropriate job opportunities for Saudi young people. The Seventh Development Plan (2000-2004) focuses on how these challenges may be addressed.

2.9.2 Future Estimates of the Kingdom's Population in 2020

The Seventh Development Plan expects that the Saudi population will increase from 16.2 million in 2000 to 29.7 million by 2020. This gives an average annual growth rate of 3.0 per cent during the period 2000-2020. Moreover, if this occurs, the Kingdom's total population (Saudis and non-Saudis) will increase from 22.0 million in 2000 to about 33.4 million by the year 2020, i.e., an average annual growth rate of 2.1 per cent. In 2020, the total non-Saudi population is predicted to be only 3.7 million, or 11.1 per cent of the Kingdom's total population.

Previous estimates indicate that the size of the labour force will be 10.7 million workers by 2020. About 9.6 million members of this labour force are expected to be working in the private sector by that time. The Saudi labour force is expected to increase from 3.17 million in 1999 to about 8.26 million in 2020. On the other hand, the non-Saudi labour force will decline from 4.0 million in 1999 to about 2.5 million in 2020.

2.10 The Labour Market

2.10.1 Labour Market - Overview

The financial wealth from oil, coupled with a labour deficiency in terms of skill levels means that Saudi Arabia has a serious problem. The short-term solution to the problem of the shortage in national labour was, and still is, to bring in foreign labour to meet the need for appropriate skills. The long-term solution to the problem of the national labour shortage has always been gradually to replace non-Saudi labour with a growing youth and productive Saudi workforce. To achieve this aim, ever since it began to derive revenue from oil production, the Kingdom has put human resource development at the forefront of its policy-making agenda. The hope is that Saudi labour will take over, significantly, through natural market forces. However, in the current economic environment, it is doubtful that this can happen without some regulation of the labour market to help the process along.

Presley (2000) showed that by 1999, total civilian employment stood at 7.2 million, up from 6.0 million in 1990, and projected that it would be over 7.5 million in 2000, of which only 2.5 million would be Saudi, putting the Saudi share of the workforce at only 34.7 per cent.

In 2000, the expatriate workforce constituted over 65 per cent of the total workforce. This indicates that reversing these proportions will be a long process. The Sixth Development Plan (1995-2000) showed that the private sector has failed to employ Saudi nationals largely because of the availability of cheaper and better qualified foreign labour. Moreover, Saudi nationals generally express a preference for working in the public sector, where wage and salary levels have been higher. Almost 95 per cent of non-Saudi labourers work in the private sector, whereas around 80 per cent of the working Saudi population have jobs in the public sector.

The Seventh Development Plan (2000-2004) aims to develop human resources, to upgrade their efficiency by means of training in order to meet the requirements of the national economy, and to replace non-Saudi labour with Saudi. It estimates that the total numbers of the labour force in Saudi Arabia stood at 7.2 million in 1999. Saudis accounted for 3.2 million, or 44.2 per cent of the total, while non-Saudi workers accounted for 4.0 million, or 55.8 per cent of the total. The plan also mentions that the number of workers in the government sector was estimated at 0.9 million, out of which 0.7 million were Saudi employees, i.e., 78.2 per cent of the total, while non-Saudi employees were estimated at 0.2 million, i.e., 21.8 per cent of the total. On the other hand, the number of employees in the private sector was estimated at 6.3 million, and Saudi employees at 2.4 million, i.e., 38.7 per cent of the total labour force in the private sector. Non-Saudi employees therefore accounted for 3.8 million or 61.3 per cent of the total. The number of Saudi nationals in employment is thus lower than the government considers satisfactory, in view of its aim to lessen dependence on foreign workers.

The Seventh Development Plan mentions that the number of Saudis of working age (12 years and above) was 9.7 million in 1999. This represents an annual growth rate of 3.9 per cent, as against 2.6 per cent for the population under the working age (below 12 years). Therefore, the Kingdom should plan for a structural change in favour of the population of working age, which represents some 62.0 per cent of the total Saudi population. Moreover, students constitute the majority of the population of working age.

The Kingdom is aware of the need to provide more jobs for those reaching working age. In its latest plan, it shows that 328,600 new job opportunities should be provided. The private sector is expected to supply 311,000 jobs, 94.6 per cent of the total. Moreover, 488,700 job opportunities are projected to be made available as a result of the Saudiisation programme. This means the government anticipates that 12.1 per cent of all non-Saudi manpower will no longer be needed during this plan period. The Saudiisation programme, it is hoped, will raise the share of Saudi labour in the total manpower from 44.2 per cent in 1999 to 53.2 per cent by 2004. Thus, the total labour force will rise from 7.2 million in 1999 to 7.5 million by the end of the Seventh Plan period in 2004.

2.10.2 Employment Structure

2.10.2.1 Employment Structure by Economic Activity

The Seventh Development Plan indicates, as shown in Table 2.3, that employment in the non-oil private sector is expected to rise from 6,161,200 in the base year 1999 to 6,472,200 by the end of the Seventh Plan period in 2004. Hence, 311,000 new job opportunities will be created in the private sector. This represents 94.6 per cent of all new opportunities forecast for the plan period.

In the production sectors, 81,400 new jobs will be created in construction, 72,000 in the manufacturing sector and 24,400 in agriculture. The forecast for employment increase in private sector services is almost equally distributed among its sectors. With the rationalisation of its expenditure, the Saudi government aims to provide only 16,100 new job opportunities in the public sector during the plan period. Therefore, the share of government employment is expected to decrease slightly, from 12.8 per cent of total employment in the base year 1999, to about 12.4 per cent by the end of the plan period in 2004.

2.10.2.2 Employment Structure by Occupation

During the period of the Seventh Plan (see Table 2.4) the expected annual growth rates of employment by main occupational categories will range from 1.4 per cent for production, construction, and transport workers, to 0.5 per cent for service workers.

Table 2.3 Employment Structure by Economic Activity during the Seventh Development Plan (2000-2004)

Description	Employment (Thousand)		Share (%)		Change		
	1999	2004	1999	2004	Thousand	%	Average annual growth %
1. Private non-oil sector :	6,161.2	6,472.2	85.9	86.2	311.0	94.6	1.0
1.1 Private producing sectors:	2,273.3	2,760.6	31.7	32.8	187.3	57.0	1.6
- Agriculture	557.9	582.3	7.8	7.8	24.4	7.4	0.9
- Non-oil mining	13.2	14.7	0.2	0.2	1.5	0.5	2.2
- Manufacturing:	589.0	661.0	8.2	8.8	72.0	21.9	2.3
*** Oil refining**	21.5	21.8	0.3	0.3	0.3	0.1	0.3
*** Petrochemicals**	9.4	10.1	0.1	0.1	0.7	0.2	1.4
*** Other industries**	588.1	629.1	7.8	8.4	71.0	21.6	2.4
- Electricity, gas & water	93.5	101.5	1.3	1.4	8.0	2.4	1.7
- Construction	1,019.7	1,101.1	14.2	14.7	81.4	24.8	1.5
- 1.2 Private services sectors:	3,887.9	4,011.6	54.2	53.5	123.7	37.6	0.6
- Trade	1,036.6	1,071.2	14.4	14.3	34.6	10.5	0.7
-Transport & communication	299.2	310.1	4.2	4.1	10.9	3.3	0.7
- Finance and real estate	334.9	375.2	4.7	5.0	40.3	12.3	2.3
-Community & personal services	2,217.2	2,255.1	30.9	30.0	37.9	11.5	0.3
2. Government services	916.2	932.3	12.8	12.4	16.1	4.9	0.3
Total of Non-oil sectors	7,077.4	7,404.5	98.6	98.7	327.1	99.5	0.9
3. Crude oil & natural gas	98.9	100.4	1.4	1.3	1.5	0.5	0.3
Total of all sectors	7,176.3	7,504.9	100.0	100.0	328.6	100.0	0.9

Source: The Seventh Development Plan (2002-2004).

Moreover, the share of production, construction and transport workers' employment should increase slightly, from 30.5 per cent in the base year 1999 to around 31.2 per cent by the end of 2004. On the other hand, the share of service workers should decline from 29.8 per cent to 29.3 per cent, while the share of other occupational categories should remain at approximately their 1999 base year levels.

Table 2.4 Employment Structure by Occupation during the Seventh Development Plan (2000-2004)

Description	1999	2004	1999 %	2004 %	Thousand	%	Average annual growth rate %
Professional and technical	1,122.4	1,159.9	15.6	15.5	37.5	11.4	0.7
Management	1,33.9	142.9	1.9	1.9	9.0	2.7	1.3
Clerical	5,34.4	558.4	7.4	7.4	24.0	7.3	0.9
Sales personnel	507.6	528.2	7.1	7.0	20.6	6.3	0.8
Services personnel	2,138.1	2,196.6	29.8	29.3	58.5	17.8	0.5
Agricultural and related	551.0	575.1	7.7	7.7	24.1	7.3	0.9
Production, construction, and transportation	2,188.9	2,343.8	30.5	31.2	154.9	47.1	1.4
Total	7,176.3	7,504.9	100.0	100.0	328.6	100.0	0.9

Source: The Seventh Development Plan (2000-2004).

2.10.3 Saudi Labour Force Supply

The Seventh Development Plan (2000-2004) aims to increase the supply of Saudi labour by implementing policies aimed at the development of the Kingdom's own human resources. Tables 2.5 and 2.6 confirm this, as shown by the following analysis.

2.10.3.1 Labour Force by Age Groups

Table 2.5 shows that the average annual growth rate of the working age population during the period covered by the Seventh Development Plan is expected to be about 3.9 per cent, compared to 2.6 per cent for the population below working age. The plan assumes, also, that the aggregate participation rate will increase from 32.8 per cent in the base year 1999 to around 34.1 per cent of the total working-age population by the end of the plan in 2004. In addition, the cumulative increase in the workforce (new entrants to the labour market) during the period of the Seventh Development Plan is estimated to be about 817,300 workers, who will be employed in the new jobs.

2.10.3.2 New Entrants into the Labour Market by Level of Educational Attainment

Table 2.6 shows that around 760,000 graduates from the education and training systems are expected to enter the labour market. This represents 93 per cent of the total number of new entrants during the Seventh Development Plan period. On the other hand, only 57,300 of the rest are considered as 'other' new entrants to the labour market (see Table 2.6). This represents 7 per cent of the total number of new entrants during the plan period. The Seventh Development Plan shows that the share of new entrants to the Saudi labour market graduating from education and training systems is high compared to the rate from other sources. This comparison indicates an improvement in the educational and training profile of the Saudi labour force.

Table 2.5 Labour Force Projections in the Seventh Development Plan (2000-2004)

Description		1999	2004	Change	%
Population below working-age	Number (Thousand)	5,996.2	6,814.8	818.6	---
	Average Annual Growth Rate (%)			---	2.6
Working-age population	Number (Thousand)	9,662.2	11,705.5	2,043.3	---
	Average Annual Growth Rate (%)			---	3.9
Total population	Number (Thousand)	15,658.4	18,520.3	2,861.9	---
	Average Annual Growth Rate (%)			---	3.4
Dependency ratio		62.1	58.2	3.9	3.9
Aggregate labour force participation rate (%)		32.8	34.1	1.2	1.2
Population in work-force	Number (Thousand)	3,172.9	3,990.2	817.3	---
	Average Annual Growth Rate (%)			---	4.7

Adapted from: The Seventh Development Plan (2000-2004).

2.10.4 Labour Demand

Table 2.7 shows, as it is shown in the Seventh Development Plan, the number of new entrants into the labour market by main occupational categories. and their distribution according to sources of demand, new jobs and replacement jobs. It is notable that the main job opportunities for new entrants will be replacement jobs.

For instance, 197,600 jobs will be for service workers, 197,000 for professional and technical workers, and 111,800 for clerical workers.

Table 2.6 New Entrants into the Labour Market (Graduates of Education and Training Systems) during the Seventh Development Plan (2000-2004)

Description		Number (Thousand)	Share (%)
Higher level	**Universities**	178.6	21.9
	Teacher Training Institutes	36.7	4.5
	Intermediate Technical Colleges	16.7	2.0
	Sub-Total	232.0	28.4
Secondary level	**Secondary Education (General)**	213.9	26.2
	Technical Education and Vocational Training	78.7	9.6
	Sub-Total	292.6	35.8
Primary level	**Intermediate**	143.1	17.5
	Elementary	92.3	11.3
	Sub-Total	235.4	28.8
Total number of entrants from graduates of education and training systems		760.0	93.0
Other entrants		57.3	7.0
Total number of new entrants		817.3	100.0

Source: The Seventh Development Plan (2000-2004).

In other words, increases in Saudi employment brought about by replacing non-Saudis with Saudis in the same occupational categories represent about 77.2 per cent, 84 per cent and 82.3 per cent of total expected job opportunities respectively. Consequently, the expected decline in the number of non-Saudis in these three categories will add up to 506,400 during the period covered by the plan.

Moreover, the number of expected new job opportunities for Saudis will amount to 12,700 in the management and administration category, 35,500 for sales workers and 44,100 for agricultural and related workers. Therefore, the expected decline in the number of non-Saudis in these three categories will amount to 92,300 during the plan period.

Table 2.7 New Entrants into the Labour Market by Source of Demand during the Seventh Development Plan (2000-2004)

Description		New Entrants	Sources of Demand (Job Opportunities) New Jobs	Replacement Jobs	Total
Professional and Technical	Number (Thousand)	234.6	37.6	197.0	234.6
	Distribution according to available job opportunities (%)		16.0	84.0	100.0
Management and Administration	Number (thousand)	12.7	9.1	3.6	12.7
	Distribution according to available job opportunities (%)		71.7	28.3	100.0
Clerical	Number (thousand)	135.8	24.0	111.8	135.8
	Distribution according to available job opportunities (%)		17.7	82.3	100.0
Sales Personnel	Number (thousand)	35.5	20.0	14.9	35.5
	Distribution according to available job opportunities (%)		58.0	42.0	100.0
Services Workers	Number (thousand)	256.1	58.5	197.6	256.1
	Distribution according to available job opportunities (%)		22.8	77.2	100.0
Agriculture and Related Workers	Number (thousand)	44.1	24.1	20.0	44.1
	Distribution according to available job opportunities (%)		54.6	45.4	100.0
Workers in the Production, Construction and Transport Activities	Number (thousand)	98.5	154.7	-56.2	98.5
	Distribution according to available job opportunities (%)		157.1	-57.1	100.0
Total (all occupations)	Number (thousand)	817.3	328.6	488.7	817.3
	Distribution according to available job opportunities (%)		40.2	59.8	100.0

Source: The Seventh Development Plan (2000-2004).

The production, construction and transport category gives a different result from the other categories. In this category, since the output from the technical education and vocational training system represents only about 9.6 per cent of the total number of new entrants, the expected cumulative increase in Saudi employment during the plan period will be insufficient to meet the demand from projected

economic growth. As a result, 56,200 additional non-Saudi workers will be needed to fill the gap between supply and demand in this occupational category.

The conclusion is that expected job opportunities for new entrants into the labour market through the replacement of non-Saudis will amount to 488,700 jobs, or 12.1 per cent of the total number of non-Saudis employed at the beginning of the plan. It should also increase the relative share of Saudis in total employment from 44.2 per cent in the base year 1999 to about 53.2 per cent by the end of the plan in 2004.

2.10.5 Unemployment

Providing job opportunities for young Saudis is a major challenge facing the Kingdom. Unemployment becomes a serious issue with its large number of social and security dimensions. It is at the top of the government's agenda.

The weak growth rate of the Saudi economy over the last few years, resulting from falling oil prices, has been the main reason behind the fast rise in unemployment. Moreover, the growth of the non-oil sectors of the economy has not been fast enough to provide opportunities for the increasing number of job-seekers. The Kingdom has to attain higher rates of economic growth in order to provide enough employment opportunities for the growing number of unemployed Saudis and new graduates seeking jobs.

There are no official unemployment statistics, but most estimates put the rate at between 15 and 20 per cent. Table 2.8 shows how Bourland (2002) has attempted to calculate the unemployment rate in the Kingdom with the available data. His idea was to calculate the difference between the number of jobs expected to be available in a period and the actual number of jobs filled. He assumed that the number of unemployed Saudis, as a base figure, was at a structural low of about 4 per cent, in 1994. This low percentage would give 96,000 unemployed Saudis out of a total Saudi labour force of 2.4 million at that time. He then used the available official data from the Central Department of Statistics (CDS) as follows:

1. The five-year plan (1995-1999) reported that Saudi entrants to the labour market over the plan period would total 659,900.

2. The General Organisation of Social Insurance (GOSI) data indicate that about 220,000 Saudis were added to private sector payrolls in firms with more than 20 employees between 1995 and 1999. Another 50,000 were added to provide for a possible undercount of the total private sector job additions. Thus. the total in the private sector would be 270,000.

Table 2.8 Unemployment Calculation

Unemployment base, year-end 1994	
Saudi Labour Force	2,400,000
Unemployment Rate (at structural low of 4%)	4.0%
Number of Unemployed, 1994	96,000
Employment developments,1995-1999	
Entrants to Labour Force, 1995-1999	659,900
Private sector jobs created	-270,000
Government civilian jobs created	-148,570
Addition to unemployed,1995-1999	241,330
Unemployed,1994	96,000
Total unemployed, year-end 1999	337,330
Saudi Labour force, year-end 1999	2,890,000
Unemployment rate,1999	11.67%
Employment developments,2000-2001	
Entrants to Labour Force, 2000-2001	326,000
Private sector jobs created	-100,000
Government civilian jobs created	- 60,000
Addition to unemployed,2000-2001	166,000
Total unemployed, year-end 1999	337,330
Total unemployed, year-end 2000	503,330
Saudi Labour force, year-end 2001	3,300,000
Unemployment rate, 2001	15.25%

Source: Bourland (2002).

3. Ministry of Civil Service data revealed that 118,570 Saudi employees were added to government payrolls during the period 1995-1998. Bourland estimated the figure for 1999 by adding 30,000 as the yearly average during 1995-1998. As a result, the total number of jobs available to Saudis in the government sector over the 5-year period ending in 1999 was 148,570.
4. The number of additional government and private sector jobs available to Saudis in the period 1995-1999 was about 418,570.

5. The difference between the total planned jobs, (659,900). and the actual jobs (418,570) was 241,330. This shows how many Saudis were added to the roll of the unemployed between 1995 and 1999.
6. Added to the 1994 base of 96,000, this would put the total of unemployed Saudis at 337,330 at the end of 1999.
7. According to the CDS, the Saudi labour force stood at 2.89 million in 1999. With 337,330 of that labour force unemployed, the unemployment rate at the end of 1999 would have been approximately 12 per cent.

2.10.6 Employment Regulations in the Saudi Labour Market

This section focuses on the regulations that apply to the Saudi labour market, where labour unions are non-existent and the mobility of foreign workers is strictly controlled. Saudi labour regulations cover pay, working conditions and relations between employers and employees. One of the principal missions of any union is to enter into negotiations with employers over workers' rights, but the situation in Saudi Arabia is different, as there are no labour unions. Unionising of labour is forbidden by the labour law. Labour unions and incitement to strike have been prohibited since 1958. Many Saudi labourers prefer to work in the public sector rather than the private sector, as public sector labour regulations do give them a variety of privileges and rights. This indicates that there is much labour regulation in the Saudi labour market. Some of it only applies to labour in the private sector and the rest applies only to labour in the public sector.

Mahdi (2000) stated that the labour regulations that regulate work in the private sector are different from those in the public sector. The statement of a personal contract between the employer and the employees is the cornerstone of work relations in the private sector. The existence of wage differentials between workers of the same occupation and experience, whether in the same firm or different firms, is one of many indicators that show that the statement of a personal contract between the employer and the employee is not a standardised contract. This was highlighted in a study made by the High Commission for Riyadh Development, in 1996. This study showed that there were significant income differentials among Saudi and non-Saudi households in the Riyadh area. It indicated that 38.3 per cent of Saudi households had an average annual income of $32,000 dollars and above,

whilst only 15.8 per cent of non-Saudi households were in this income category. The same study also looked at the mean wages for different occupations for both Saudi and non-Saudi households. Wage dissimilarity was clear between the two groups in different occupations. For instance, a previous study has shown that a Saudi production manager received an average annual wage of $32,700 dollars, while his non-Saudi counterpart received only $13,400 dollars. Moreover, a Saudi engineer received an average annual wage of $31,000 dollars, while a non-Saudi engineer received $21,100 dollars. This report also showed that average annual wages for the two groups were also different to a certain extent. The mean wage was about $35,300 dollars for Saudi labour and only $5,400 dollars for non-Saudi labour.

The Residency Regulations (Iqama), which apply only to foreign workers, play a crucial role in the Saudi labour market. According to Iqama (work permit) regulations, non-Saudi labourers are only allowed to work if they first have a work contract with a Saudi who acts as the worker's sponsor (Kaffel), and this must be arranged before the foreigner enters the country. Once the Iqama is issued, the non-Saudi has the right to reside in the country and the obligation to work. No non-Saudi person can stay in the country unless he/she has a sponsor, with the exception of pilgrims who are allowed to enter and visit only the Holy Places for a short period and have no right to go to other cities or places in the country.

The Social Insurance Law applies to labour in the private sector. The General Organisation for Social Insurance (GOSI) provides insurance against occupational diseases and work risks and provides a pension for workers. A non-Saudi labourer is only covered for occupational diseases and work risks. Thus the insurance subscription rates are different for Saudi and non-Saudi labourers.

2.11 Human Resources Development

The Kingdom has given special weight to the human resources sector in all its development plans. It has paid great attention to the fields of education and training. Therefore, general schools, technical institutes, universities, higher institutes and specialised colleges have been established to satisfy the Saudi labour market's need for skilled labour.

2.11.1 General Education

In 2001, the SAMA reported that the total number of both male and female students enrolled in government and other private schools, at the three levels of general education-the primary, intermediate and secondary levels-rose by 2.9 per cent to more than 4.11 million during the academic year 2000, as compared with about 3.99 million in the preceding academic year (see Table 2.9). The total number of male students enrolled at different levels of general education in the Kingdom went up by 2.6 per cent, from 2.02 million in the preceding year to 2.16 million. This represented 52.5 per cent of the total number of students enrolled. Of these, 1.19 million were at the primary level, indicating a rise of 1.2 per cent over the preceding year, 581,900 at the intermediate level, a rise of 3.2 per cent, and 389,900 were at the secondary level, showing an increase of 6.5 per cent. In addition, 8,344 students were enrolled in special education schools and 33,536 in adult education schools.

Table 2.9 General Education in the Kingdom

	1999			2000		
Number of Students	Total	Male	Female	Total	Male	Female
Primary	2,259,849	1,175,556	1,084,293	2,285,328	1,189,364	1,095,964
Intermediate	1,035,363	563,624	471,739	1,073,175	581,864	491,311
Secondary	704,566	366,121	338,445	755,419	389,860	365,559
Total	3,999,778	2,015,301	1,894,477	4,113,922	2,161,088	1,952,834

Source: SAMA report, 2001.

The number of female students enrolled in schools providing general education totalled 1.95 million, reflecting an increase of 3.0 per cent. This indicates that 47.5

per cent of the total number of male and female students was provided with a general education. Of these, 1.09 million were at the primary level, an increase of 1.1 per cent over the preceding academic year, 491,300 were at the intermediate level, an increase of 4.1 per cent, and 365,600 were at the secondary level, a rise of 8.0 per cent. In addition, 365 were enrolled in female teacher training institutes, 4,277 in vocational institutes and centres, 3,706 in special education schools and 75,359 in adult education schools.

Table 2.10 Graduates in the Kingdom during the Last Five Years

Graduates	1996	1997	1998	1999	2000
General Education (Secondary)	109,726	125,191	146,664	165,030	188,551
Higher Education	28,918	30,720	36,977	49,497	51,080
Technical Education	12,500	12,610	11,891	11,924	12,596

Source: SAMA report, 2001.

2.11.2 Higher Education

Table 2.11 shows that the number of students (male and female) enrolled in the universities and colleges in the Kingdom during the academic year 2000 was 399,300. From the figures shown in Table 2.12 it may be seen that 190,500 male and female students were studying at the Kingdom's universities. This represented 47.7 per cent of the total number of students in higher education. Tables 2.11 and 2.12 indicate that male and female enrolment in other specialised colleges was 208,900.

Table 2.11 Number of Students Enrolled in the Kingdom during the Last Five Years

Number of Students	1996	1997	1998	1999	2000
General Education	3,633,499	3,756,256	3,867,585	3,999,778	4,113,922
Higher Education	237,340	282,956	316,228	371,522	399,338
Technical Education	37,019	35,369	37,295	46,187	50,004

Source: SAMA report, 2001.

The number of graduates of universities and other specialised colleges during 2000 was more than 54,000. Of these, 22,600 were male and 31.400 female. The number of female graduates has increased at a higher rate than that of male graduates. Female graduates represented 58.1 per cent of the total (ibid.).

2.11.3 Technical Education and Vocational Training

Technical education and vocational training have been given a high priority in the Kingdom's development plans. This type of education is of vital significance for the preparation of a highly trained national labour force that will fulfil the need for national skilled labour and achieve the Saudiisation of various occupations. Thus, many technical colleges and vocational training centres have been established in order to increase the number of trainees.

Table 2.12 Education in Universities and Specialised Colleges during the Academic Year 2000

	No. of Enrolled Students			No. of Graduates		
	Total	Male	Female	Total	Male	Female
Total University Students	190,478	132,259	58,219	23,488	15,940	7,548
Teacher Training Colleges	24,655	24,655	----	4,021	4,021	----
Girls' Colleges	159,660	----	159,660	23,579	----	23,579
Health Colleges and Institutes	4,612	3,049	----	982	695	287
Technical Colleges	19,933	19,933	----	1,977	1,977	----
Total	399,338	179,896	219,442	54,047	22,633	31,414

Source: SAMA report, 2001.

All three previous tables indicate that the total number of students enrolled in the 77 colleges, institutions and centres of the General Organisation for Technical Education and Vocational Training grew by 3,817 (8.3%) to more than 50,000 in 2000. The number of graduates from the same institutions and organisation during the academic year 2000 rose by 8.0 per cent (12,600) (see Table 2.10) (ibid.).

2.12. Economic Reform Programme

A package of reforms was devised for the Saudi economy to increase private sector growth and create more jobs for Saudis. Some of the reforms, listed below, have

been ongoing for several years and further new developments are being introduced (Bourland, 2002):

1. Corporatisation of the Saudi Telecommunications Company (1998).
2. Establishment of the Supreme Economic Council (August 1999).
3. Opening up the stock market to foreigners for them to invest through mutual funds (November 1999).
4. Royal decree outlining restructuring and corporatisation of the electricity sector (December 1999).
5. Establishment of the Supreme Council for Petroleum and Mineral Affairs (January 2000).
6. Foreign Investment Law and creation of the Saudi Arabian General Investment Authority (April 2000).
7. Real Estate Law allowing foreigners to own real estate, except in Makkah and Madinah (October 2000).
8. Creation of a Human Resources Development Fund for job skill training for Saudis (November 2000).
9. Creation of a Supreme Tourism Authority for maximising growth of tourism in Saudi Arabia (November 2000).
10. Transfer of privatisation responsibility to the Supreme Economic Council. The SEC was required to produce a plan and a timetable for privatisation (February 2001).
11. Guidelines for transparency of economic and fiscal data (May 2001).
12. Reductions in tariffs from 12 per cent to 5 per cent (May 2001).
13. Establishment of the telecommunications regulator (May 2001).
14. Establishment of the electric power regulator, the Electricity Services Regulatory Authority (November 2001).

In addition, there are more ongoing reforms, including:

1. The Gas Initiative, allowing foreign oil companies to develop the gas industry and to promote domestic use of gas.
2. Privatisation, at varying stages, of telecommunications, electric power, the national airline, postal services, railways, port services, and many other smaller state-owned assets.

3. A Capital Market Law, in draft, to modernise the regulation of the stock market and fixed-income markets.
4. An Insurance Law, in draft, to provide a legal regulatory framework for insurance activities.
5. A Mining Law, in draft, to facilitate investment in mineral sectors.
6. WTO accession negotiations are under way.
7. A Competition Law, in draft, to establish anti-trust regulations that are WTO-compliant.
8. A Labour Law, in draft, to modernise labour procedures and increase labour force mobility.

This list of reform activities indicates that the government is trying to encourage the private sector to be active in creating jobs for Saudis.

2.13 Wage Indicators in the Saudi Arabian Private Sector

This section highlights some related indicators of wage levels in the Saudi Arabian labour market. A study of these indicators should provide an insight into the prevailing wage structure in the Saudi private sector.

2.13.1 General Average Monthly Wages for all Labour in the Saudi Private Sector

In Table 2.13, the general average monthly wage data for all labour in the Saudi private sector have been compiled from several annual reports issued by the General Organisation for Social Insurance in Saudi Arabia. The data used here are real data, i.e., they do not differ from the raw data. They can be seen as time series data, because each row in the table represents an observation at a different time. These time series data were collected between 1973 and 1999. It is important to note that they relate to both Saudi and non-Saudi workers.

Wages in the Saudi private sector depend mainly on government contracts. Figure 2.1 shows the trends of general average monthly wages for all labour in the Saudi private sector. Table 2.13 shows that wages in the private sector rose sharply from the early 1970s until the early 1980s, because during this period the Kingdom invested heavily in modernising the country. The fall in the price of oil in the mid-

1980s substantially reduced government expenditure, and the subsequent economic slowdown led companies in the private sector to reduce reliance on government contracts. During that time wages rose slowly, with some modest decrease between 1985 and 1986. However, at beginning of 1987, wages began to decrease slightly, and then sharply at the beginning of 1988. After that they remained stable for more than two years, then increased again to the previous peak level for one year from 1991 to 1992. The Gulf War, in 1990-1991, resulted in a visible increase in defence-related spending which, in turn, increased government business with the private sector. In this period, wages recovered. In 1992 they again sank to the previous low and remained there for almost three years, from 1993 to 1996, as another downturn occurred in the oil market and government budget expenditure was reduced by approximately 24 per cent.

Table 2.13 Average Monthly Wages (SR) for all Labour in the Saudi Private Sector

Year	General Average of Monthly Wages	Year	General Average Of Monthly Wages	Year	General Average of Monthly Wages
1973	1,156	**1982**	2637	**1991**	2294
1974	1,238	**1983**	2,785	**1992**	2860
1975	1,406	**1984**	2,844	**1993**	2,294
1976	1,784	**1985**	2,888	**1994**	2,320
1977	2,210	**1986**	2,839	**1995**	2,346
1978	2,311	**1987**	2,848	**1996**	2,355
1979	2373	**1988**	2,825	**1997**	2,852
1980	2506	**1989**	2,313	**1998**	2,672
1981	2696	**1990**	2295	**1999**	2,594

Sources: Several reports by the General Organisation for Social Insurance.

In 1996 the Kingdom planned to improve fiscal discipline in order to eliminate its deficits and encourage privatisation. This caused the average wage to jump for the second time to the previous peak. In 1998, wages began to decrease slightly as oil prices dropped drastically, reaching historic lows by the year-end. The top line in Figure 2.1 is taken as the mean for average monthly wages in general. In Table 2.14, it appears that the data are concentrated towards the lower end of the scale, indicating that they are positively skewed. The mean, median and mode, as

measures of the central tendency, represent the average monthly wage distributions.

The final figure in this chapter, Figure 2.2 on p.50, shows the trend of the general monthly wage in the Saudi private sector using the differences between these wages. SPSS is used to calculate the differences between the successive values of this variable. In other words, it takes the current value minus the previous value as the difference of order 1. This figure shows that there were small to medium fluctuations between 1973 and 1988. After 1988 the fluctuations started to increase in size. The difference between the highest positive and negative is about SR600. This figure suggests the prevailing wage in the Saudi labour market.

Table 2.14 Descriptive Statistics for the General Monthly Wage (SR) in the Saudi Private Sector.

Mean	**2,390.41**
Median	**2,373.00**
Mode	**2,294.00**

2.13.2 Suggested Starting Wage

There were 181 employers, 138 Saudi employees and 192 non-Saudi employees who responded to the question concerning suggested starting wage levels in the survey. This section displays both the Saudi employers' and Saudi and non-Saudi employees' attitudes towards the suggested wage levels as a justification for reforming the Saudi labour market. Table 2.15 summarises the results from all suggested starting wage levels. This table details the opinions of the employers and the employees in the private sector of Eastern Saudi Arabia. In the statistical analysis, a mode is cited as the longest bar in the histogram, since it shows the highest frequency number (Freund, 1979). The highest frequency number is the important one here as it best represents a central value in the distribution. Note, also, that it was not possible to calculate a mean or a median here with a coded number. In addition, each suggested starting wage can be explained separately, as follows:

1. It should be noted that while 35.5 per cent of Saudi employees support a starting wage of SR2,000-3,000 for Saudis with less than a high school qualification. almost 38 per cent of Saudi employers and 32.8 per cent of non-Saudi employees showed their support for paying a lower wage, i.e., SR1,000-1,500. Moreover, fewer than four out of ten (35.5%) Saudi employees supported a suggested starting wage, coded 4, and fewer than four out of ten (38%) Saudi employers and about three out of ten non-Saudi employees supported coded 2. The highest percentage of Saudi employees indicated that their wage was low and that they deserved a higher wage. A comparison of all respondents' opinions reveals that there is no clear wage system in the Saudi Arabian labour market.

2. Table 2.15 shows that all respondents supported a wage of less than SR1,000 for non-Saudis without a high school education. The highest responses (66% and 46.4%) were from Saudi employers and Saudi employees respectively. The lowest response (40%) was from non-Saudi employers. The Saudi employees' responses indicated that most of them wanted to pay less than SR1,000 for non-Saudis with less than a high school qualification.

3. A reasonable percentage of both Saudi and non-Saudi employees supported the suggestion that a Saudi with a high school qualification should receive between SR3,001-4,000. On the other hand, Saudi employers suggested only SR1,501-2,000. How should this huge disparity be dealt with? The best method would be to apply wage policies, such as a minimum wage and a wage subsidy. Applying appropriate wage policies could encourage companies to employ Saudis who are seeking higher wages.

4. Table 2.15 shows that all respondents supported the SR1,000-1,500 for non-Saudis with a high school qualification. The highest responses (41% and 30.4%) were from both Saudi employers and Saudi employees respectively. The lowest response (26.6%) was from non-Saudi employees. The non-Saudi employees' responses indicate that most of them were not happy with a wage of SR1,000-1,500 for a non-Saudi with a high school qualification. This result indicates that their wages should be improved.

5. A reasonable percentage of both Saudi and non-Saudi employees supported the view that Saudis with a college degree should receive a higher wage than that suggested by the Saudi employers. The Saudi employers suggested only SR3,001-4,000.

6. The table also shows that both Saudi and non-Saudi employees supported having a wage of SR3,001-4,000 for non-Saudis with a college degree. In other words, 28.3 per cent and 22.4 per cent of Saudi and non-Saudi employees, respectively, supported the idea that employees with college degrees should receive at least a wage of SR3,001-4,000. Saudi employers, however, did not support this as a starting wage and wished to pay less than that. In fact, 31 per cent of them suggested SR2,001-3,000 as a suitable wage for employees with a college degree.

Table 2.15 Saudi Employers' and Employees Attitudes towards Suggested Starting Salary in the Private Sector

	Employers (Mode)	Saudi Employees (Mode)	Non-Saudi Employees (Mode)
1. Saudi with no high school qualification	Code = 2 # = 68 %= 38	Code = 4 # = 49 % = 35.5	Code = 2 # = 63 % = 32.8
2. Non-Saudi with no high school qualification	Code = 1 # = 119 % = 66	Code = 1 # = 64 % = 46.4	Code = 1 # = 77 % = 40.1
3. Saudi with high school qualification	Code = 3 # = 55 % = 30	Code = 5 # = 46 % = 33.3	Code = 5 # = 43 % = 22.4
4. Non-Saudi with high school qualification	Code = 2 # = 74 % = 41.5	Code = 2 # = 42 % = 30.4	Code = 2 # = 51 % = 26.6
5. Saudi with college qualification	Code = 5 # = 38 % = 21	Code = 8 # = 54 % = 39.1	Code = 6 # = 50 % = 26.0
6. Non-Saudi with college qualification	Code = 4 # = 56 % = 31	Code = 5 # = 39 % = 28.3	Code = 5 # = 43 % = 22.4

Key to the codes in Table 2.15:

1	2	3	4	5	6	7	8	9
Less than SR1,000	SR 1,000 - 1,500	SR 1,501 - 2,000	SR 2,001 - 3,000	SR 3,001 - 4,000	SR 4,001 - 5,000	SR 5,001 - 6,000	More than SR 6,000	Other (specify) SR-----

From the data shown in Table 2.15, it appears that SR3,000 is seen as a suitable wage for high school graduates. The reason behind this particular figure is that both Saudi and non-Saudi employees support it as a suitable minimum wage for such employees. This is above the suggested minimum wage of SR2,000 which was suggested by some Saudis (Al-Saudani and Al-Kain, 2001). If wages are subsidised by the Saudi Fund for Human Resources, the SR3,000 should not be too costly for Saudi employers.

2.13.3 Types of Low-Waged Jobs

Table 2.16 lists some low-waged jobs in the private sector of Eastern Saudi Arabia. This may help the policy makers in devising a list of low-waged jobs. This list might aid them in proposing any wage policy which could increase the Saudi employment level in the Saudi economy.

2.14 Conclusion

This chapter has described the economic environment of Saudi Arabia. In particular, it has drawn attention to two of the main problems facing the Kingdom. First, it has been shown that in the past, the country has depended heavily on its oil revenue to establish and modernise its basic infrastructures. Unfortunately, the fall in the price of oil in the mid-1980s reduced the revenue from oil and brought the infrastructure expansion to an end. The continuing fall in the price of oil and the Gulf War, have resulted in a substantial budget deficit. The government has considered this deficit seriously and taken steps to eliminate it by, for example, encouraging privatisation and foreign investment.

Secondly, it has been shown that a shortage of labour, in terms of numbers and skill levels, forced the Kingdom to bring in foreign labour as a short-term solution. The long-term solution is to replace non-Saudi employees with the growing number of

Saudi youth in the workplace. However, providing reasonable jobs in the private sector for the large number of young Saudis moving through the educational system and into the workforce seems impracticable, without motivational policies and regulations to remove potential obstacles. This study examines one possible obstacle, that of wage differentials and their causes. The results, if acted upon, should have a positive impact on Saudiisation rates in the private sector.

Table 2.16 Low-Waged Jobs

Job Name	Monthly Wage
A/C Technician	2,000
Inspector	1,558
Machinist	1,000
Administrator	3,000
Accountant	2,000
Entry Clerk	2,800
Treasurer	1,200
Purchases Representative	1,800
Sales Representative	1,200
Public Relations Manager	2,500
Warehouse Manager	1,800
Pursuer*/representative	1,000
Administrative Staff	1,200
Operator	1,800
Other Low-Waged Jobs	800

* An intermediary who deals with official documents on behalf of the general public in Saudi Arabia.

Figure 2.1 Trends of General Average Monthly Wages In the Saudi Private Sector

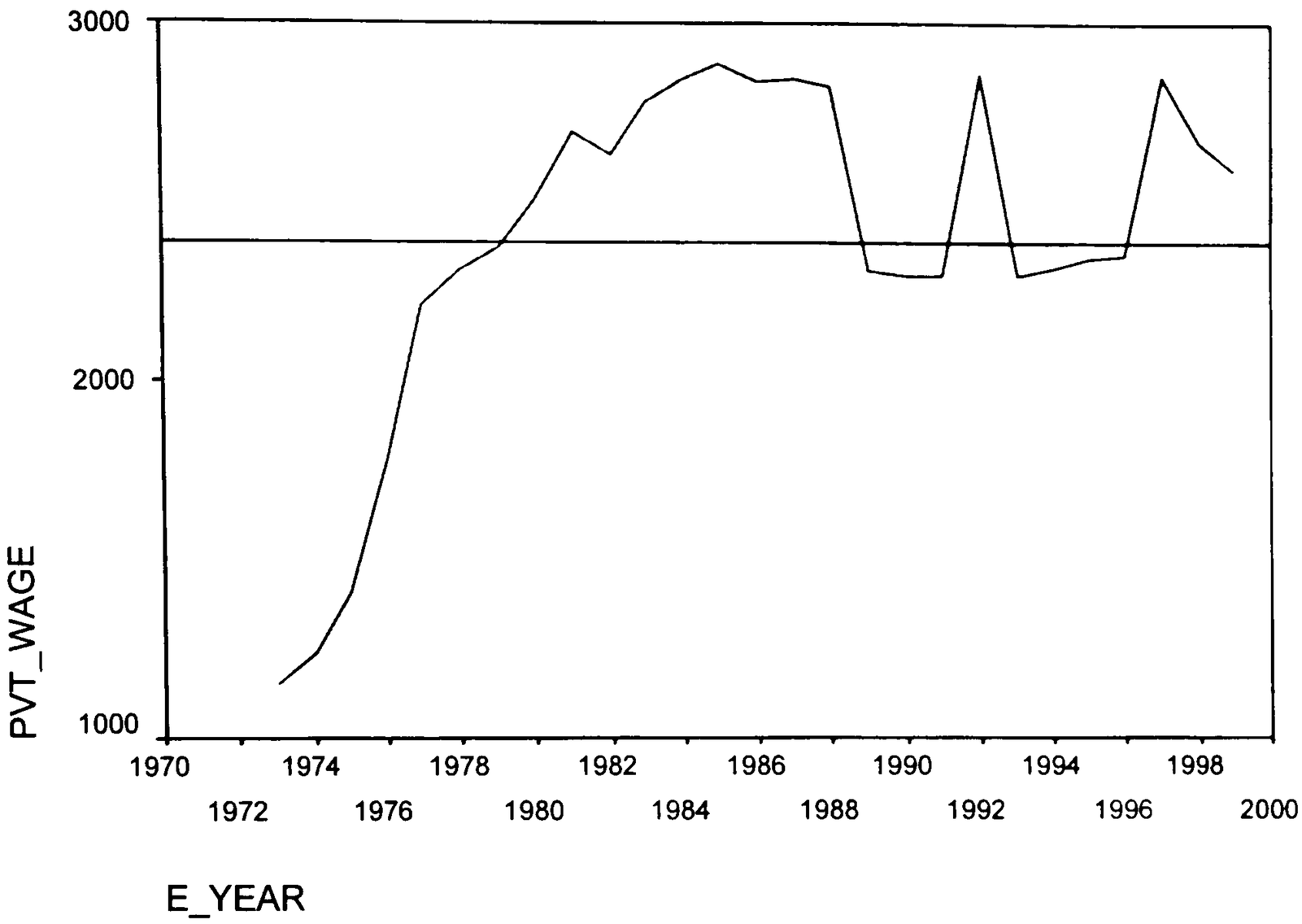
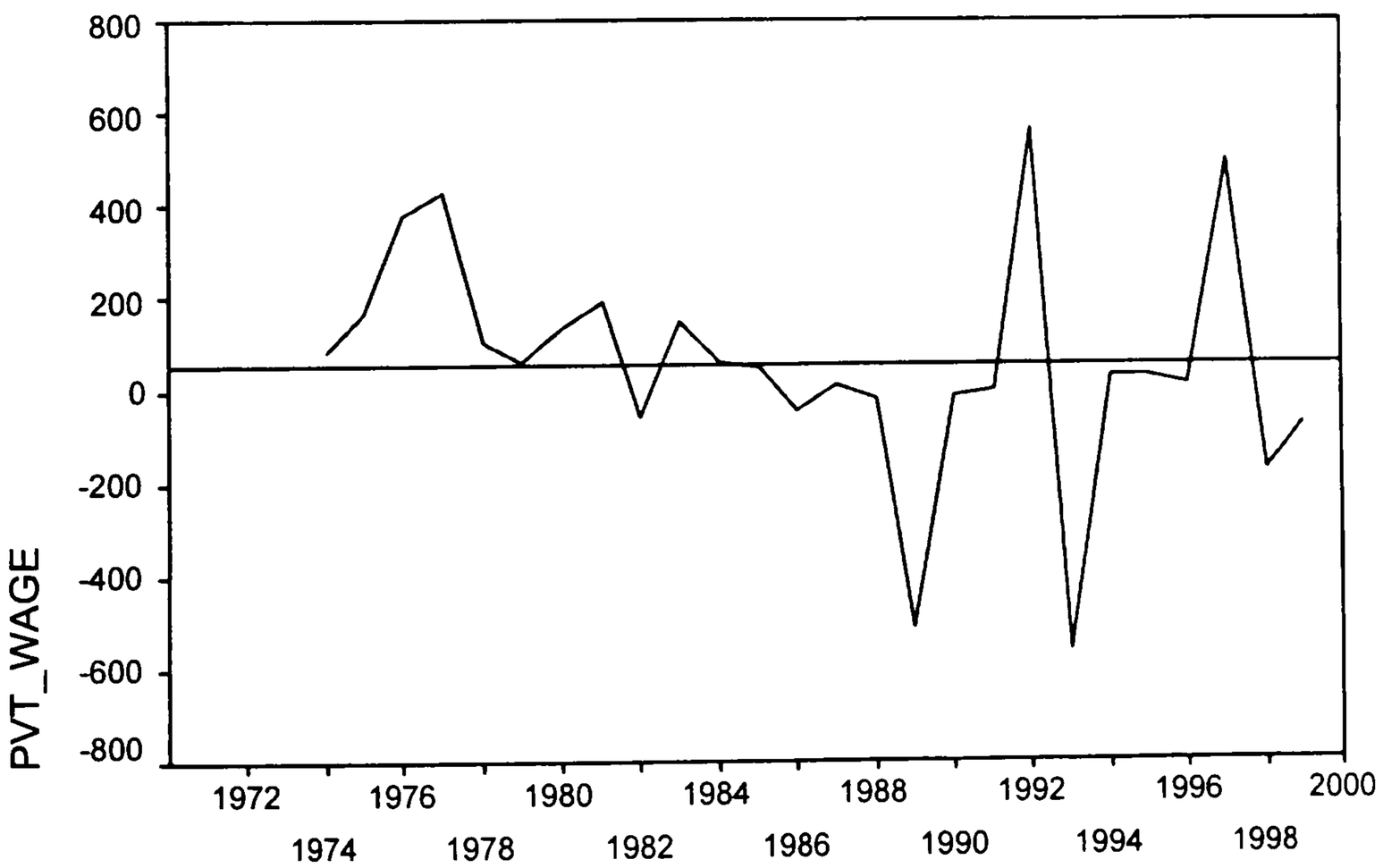


Figure 2.2 General Average Monthly Wages in the Saudi Private Sector: Difference



Chapter Three

Wage Theory and Policy

3.1 Introduction

Wages are of the utmost importance to everyone. To employees, wages represent income, to businesses they represent costs, and to the government they represent potential taxes. This chapter begins by examining the definitions of wages, as there are many. Then, nominal wages and real wages will be discussed and contrasted. Wage theories and the results of intensive studies by economists regarding wages will be examined. Finally, efforts will be made to identify wage policies which could be effective in narrowing wage differentials in Saudi Arabia, in order to assist in the process of Saudiisation.

3.2 Definition of Wages

It is very important to understand fully what is meant by wages.

The UK Employment Rights Act 1996 s.27 (ERA 1996 s.27) has produced a good definition of wages. It states that:

> The basic definition of wages is simply any sum payable to the worker by his employer in connection with his employment (other than specified exceptions such as refund of expenses or pensions) and specifically including any fee, bonus, commission, holiday pay or other emolument referable to his employment, whether payable under his contract or otherwise.[3]

Backman (1959) provided another definition. He mentioned that the term 'wages' refers to the actual income received by the worker from his employer. It includes cash income as well as income in kind -that is, room and board- where these are provided. Figure3.1 was used by Ehrenberg and Smith (1994) to show the distinctions among wages, earnings, total compensation and income. This is reproduced here, as it is significant in this research. In Figure 3.1, the term 'wages' refers to the payment for a unit of time, while earnings refer to wages multiplied by the number of time units (typically hours) worked.

---

[3]See Appendix A for a lengthy definition of wages in the Employment Rights Act, 1996 s.27.

Thus, earnings depend on both wages and the length of time the employee works. Income includes both earnings and unearned income. which includes dividends or interest received on investments and transfer payments received from the government in the form of food stamps, welfare payments. unemployment compensation and the like.

It should be noted that both wages and earnings are normally defined and measured in terms of direct monetary payments to employees (before any taxes for which the employee is liable). Total compensation, on the other hand, consists of earnings plus employee benefits. Those benefits may either be payment in kind. or deferred.

As there are so many definitions available in the current literature, for the purposes of this study, the term wages will refer mainly to the definition provided by the UK ERA, 1996 s.27, presented above.

3.3 Kinds of Wages

Wages can be defined in many ways. First, one should distinguish between nominal wages and real wages. The nominal wage is what workers get paid per hour in current currency terms; nominal wages are most useful when comparing the pay of various workers at a given time. Real wages, that is, nominal wages divided by some measure of prices, suggest how much can be purchased with a worker's nominal wage. The wage rate is the price of labour per working hour. In addition, wages may be estimated at time rates, piece rates, or incentive rates. The time rate is also known as the day rate, flat rate, or hourly rate. Workers are simply paid a predetermined rate per week, day or hour, for the actual time they have worked. Workers on piece rates are paid uniformly for each unit output. With incentive rates workers are paid according to formulae that relate output to earnings in ways designed to produce higher production (Ehrenberg and Smith, 1994).

3.4 Wages Theories

The most important aspects of the labour field to be dealt with here are wages and any subject related to wages. Wages have been studied intensively by economists, and wage theories are the result of these studies. Wage theories help any researcher

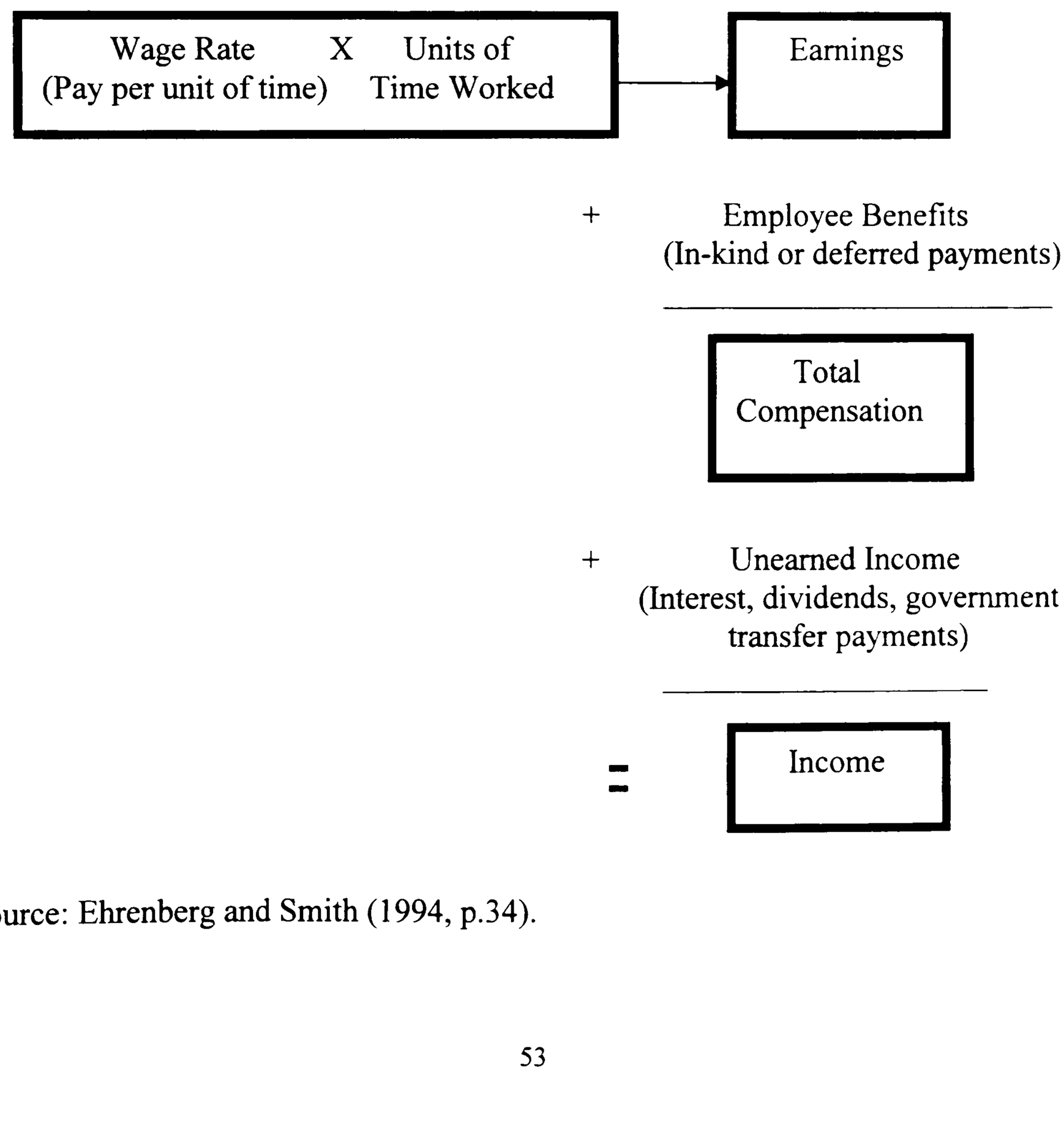
to understand more precisely the functions determining wages. The main wage theories are explained below.

3.4.1 Subsistence Theory

Subsistence theory is the first and oldest of the wage theories. It was introduced by Adam Smith (1723-1790) and is associated most closely with David Ricardo (1772-1823). Elements of a subsistence theory appear in the Wealth of Nations, where Smith wrote that the wages paid to workers had to be enough to allow them to live and to reproduce. David Ricardo implied that, at least in a growing economy, the wage levels would have to be above the subsistence level, in order to permit the population to increase sufficiently to supply the additional workers needed. He also wrote that the average level of wages would conform to the subsistence level in the long run.

Figure 3.1

Relationship between Wages, Earnings, Compensation, and Income



Source: Ehrenberg and Smith (1994, p.34).

Ricardo's view of the average wage level was consistent with the Malthusian theory of population, which held that population adjusts to the means of supporting it. Hence, in the short term, if wages fell below subsistence level, the number of workers would decrease and, consequently, wage rates would rise.

Conversely, if wages were to rise above subsistence level, the birth rate and, therefore, the supply of labour, would increase and this would bring the wage rate down. This sequence of events would bring the wage rate back up to the subsistence level. This conclusion earned the theory the name of the "iron law of wages". In addition, Ricardo contended that the subsistence wage theory depends on the habits and customs of the people. The subsistence theory has been criticised, because it focuses on the supply aspects and neglects the demand aspects of the labour market. It holds that changes in the labour supply are the basic force that drives real wages to the subsistence level (ibid.).

3.4.2 Wage-fund Theory

The wage-fund theory was developed in the early nineteenth century. It held that the average wage rate is determined by 'supply and demand'. In John Stuart Mill's words (1878, pp. 420-421 and 549-55, quoted in McConnell, 1970):

> Wages.... depend mainly upon the demand and supply of labour,
>
> or.... on the proportion between population and capital.

This theory held that a predetermined fund of wealth exists for the payment of wages. The average wage could be determined simply by dividing the fund by the number of workers. This theory encountered extensive criticism. For instance, when the population increased too rapidly in relation to food and other necessities, wages would be driven down to the subsistence level. It followed, also, that a trade union could not raise wages with only a fixed fund to draw upon. If some workers were able to achieve a high wage rate, this, consequently, would reduce the average wage rate of the others. Moreover, many economists pointed out that the demand for labour was not determined by a fund but was derived from the consumer demand for products. The wage-fund theory, however, continued to exert an important influence until the end of the 19th century, in spite of these criticisms (ibid.).

3.4.3 Marxian Surplus-value Theory

McConnell (1970) mentioned that Karl Marx combined the notion of a subsistence wage with the labour theory of value. Marx asserted that labour is the sole source of economic value, and that capitalists are in a position to pay workers a daily wage rate much smaller than the value of their daily output. The difference is "profit" to the capitalists. Also, the capitalist could force the worker to spend more time at his job in order to earn his subsistence. Suliman (1974) pointed out that Marx suggested that all workers have to be united in their efforts, if they wish their wages to rise beyond the subsistence level.

3.4.4 Marginal-productivity Theory

John R. Hicks also examined the functioning of the labour market (McConnell, 1970). He highlighted two necessary conditions for labour market equilibrium: first, that every worker should receive the same wage and, second, that the wage rate must equal the value of the labour's marginal product. According to this theory, employers would hire workers until marginal product (MP) equals marginal cost (MC). The theory also provides an explanation of wage differentials. The wages of unskilled workers are lower than those of skilled workers because their marginal product is less. In other words, wage differentials are caused by differences in the marginal product.

3.4.5 Bargaining Theory

Wages, hours and working conditions are determined by the bargaining strength of the employers and employees. Davidson (1898) argued that the determination process of wages involves many factors that interact to establish the relative bargaining strength of the parties (ibid.). The price of labour is determined somewhere between the estimate of the employers and the estimate of the employees. The estimate of the employees depends on two factors: the utility of the reward and the disutility of the labour, while the estimate of the employers depends on the indirect utilities provided by the employees.

Should the employee place too high an estimate upon what he offers to sell, or the employer too low an estimate on what he wishes to buy, such considerations as the

productivity of the workers, the competitive situation. and the size of the investment must be examined. On the other hand, the estimate of the employees is influenced by such factors as minimum wages legislation, the worker's cost of living and rates paid to others. The value of labour will generally be determined neither by one estimate nor the other, but somewhere between the two.

3.5 Wage Determination Factors

The theories described above are general principles, and therefore not to be used in determining labour wage. All these theories can be seen as guides to understanding the general wage level (Suliman, 1974). For instance, the labour unions follow certain factors/guidelines in their negotiations to raise wages and do not follow any of these theories. There are many factors that determine wages, some of which are dealt with below:

3.5.1 Cost of Living

The population will not reproduce itself unless wages are sufficient to pay the cost of sustaining the workers and their children. The government of Saudi Arabia has to consider the cost of living, as do other countries, in reforming their salary scale or wage rate. For instance, SAMA (1998) reported that the cost of living index of all Saudi Arabian cities rose at an average annual rate of 1.51 per cent during 1988-97.

Table 3.1
Comparative Cost of Living

Country	Value
Bahrain	87.26
New York	100.00
Frankfurt	100.68
Paris	106.33
Jeddah	100.43
London	116.05
Dubai	105.00
Kuwait	99.45

Source: PE INVUXON Ltd. (1998, p.4).

A study carried out by PE INVUXON Ltd. (1998) compares the cost of living in a number of cities, with New York City being used as a base. It found that the cost of living in Jeddah, the commercial capital of Saudi Arabia, was 100.43 per cent of the cost of living in New York. Table 3.1 shows the results of this study.

3.5.2 The Relative Supply of Labour

Sometimes, the ratio of labour to other resources is not high. For example, in the United States in the 19th century, demand for labour exceeded supply, which helped to raise the general wage level, whereas in present day India, the ratio of labour to other resources is high, which helps to depress the general wage level (Suliman, 1974). In the Saudi Arabian labour market, the supply of Saudi labour exceeds the demand, the result of a rapid population growth rate and a cheap foreign labour supply. This tends to depress the general wage level in the Saudi Arabian labour market.

3.5.3 The Relative Value of Product

Skilled workers, who produce a more valuable output than unskilled workers are worth more to firms and, therefore, are usually paid more. The ILO (1998) examined the highest and lowest average salary, per skill classification, of newly recruited Philippino workers in Saudi Arabia, 1992-1995. In 1995, for instance, Philippino professional and technical workers were paid between SR472 and SR1, 143. On the other hand, Philippino sales workers received between SR201 and SR646. In the Saudi labour market, young Saudis do not want to undertake manual labour and professionals demand higher wages than foreigners.

3.5.4 Bargaining Power

The organisation of labour enhances its relative bargaining power to raise wages for its workers, especially in times of deflation. Hence, a union may lift the wages of its members above the scales paid to unorganised workers of equal skill. Saudi government decrees prohibit the establishment of labour unions and any strike activity. Collective bargaining is also forbidden (Saudi Labour and Workmen Law, 1981).

3.5.5 Comparative Attractiveness of Occupations

For disagreeable or dangerous jobs the pay is usually higher than for normal jobs. This is confirmed in Saudi labour law (1981, p.47):

> With regard to workmen who perform work in exploration areas and live in camps, the employer shall also provide his workmen, gratuitously and free of charge, with camps suitable for living, and shall provide them potable water

and three meals a day at work places, meeting sanitary conditions which he shall establish for the purpose. The kinds and quantities of food in each meal shall be determined by a decision of the Minister, and these meals may not be replaced by any financial allowance.

Thus, those who work in remote areas receive more benefits than those in more convenient areas.

3.5.6 Mobility of Labour

Where the working population is immobile, wage differentials are wide: on the other hand, movement of workers over long distances to better-paying positions tend to narrow wage differentials among firms, occupations and communities. Mobility of labour may be between industries, provinces and income groups .For instance, a study undertaken by El-Beshir and Auda (1980s), called "Labour Mobility in the Kingdom of Saudi Arabia" included a section entitled "Income Mobility". They established seven "monthly income groups" in order to trace the movement between them. The groups were: less than SR1,000, SR1,000-2,000, SR2,000-3,000, SR3,000-5,000, SR5,000-7,000, SR7,000-10,000, and more than SR10,000. Their results showed that movement out of income groups generally declines with an increase in income level. Thus, movement is at a maximum for the lowest income group (i.e. < SR1,000) and at a minimum for the highest group (> SR10,000). They concluded that Saudi workers are most mobile with respect to income and less so with respect to industries and provinces, etc...

3.5.7 Custom and Legislation

Many wage differentials are rooted in custom or legislation. For example, in the US Hispanic workers are lower paid than white workers. On the other hand, governments and unions do act to eliminate wage differentials based on race, sex, and other irrelevancies and to standardise wages generally. Custom and legislation also affect wages in the Saudi labour market. For instance, Heisler (1989) found in his study of nationality and wages in Riyadh in 1986 that Western labourers are paid the highest wages of all nationalities, including Saudis. The Saudi Arabians ranked second and Arab groups followed. Asians were the lowest paid. Table 3.2 shows

mean monthly income in Riyadh, in 1986, for all workers, according to country of origin.

Table 3.2

Estimated Mean Current Monthly Income (SR)

According to Country of Origin

Nationality	Estimated Mean Current Monthly Income
Western	9,508
Saudi	7,112
Other Nationalities	5,991
Yemeni	5,872
Pakistani and Bangladeshi	5,388
Indian	5,275
Korean, etc.	5,096
Indonesian, etc	5,089
Other Arabs	5,075
Turkish	4,377
Lebanese, etc.	4,184
Egyptian	3,830

Source: Heisler, D. W. (1989, p.133).

3.6 The Wage Structure

This section focuses on the wage structure generated by the labour market and factors that interact to produce wage differentials. Some cases will be presented below, which will help to facilitate an understanding of wage structures and wage differentials.

3.6.1 First Case: Perfect Competition: Homogenous Workers and Jobs:

If all jobs and workers are homogeneous and there is perfect competition and mobility, then workers would move among the various jobs until the wages paid in all markets were identical.

3.6.2 Second Case: The Wage Structure in Saudi Arabia's Private Sector:

Many studies reveal that wage differentials exist in developing countries. In Saudi Arabia, itself a developing country, wage differentials exist in its private sector.

Table 3.3 shows an overview of occupational wage differentials in the Saudi labour market, according to the Riyadh Chamber of Commerce and Industry, RCCI, (1995). It is notable that the average monthly earnings of Saudi and non-Saudi managerial workers in 1992 were SR13,000, while technical and scientific workers received SR9,000 for Saudis and SR6,000 for non-Saudis. Managerial and professional workers received the highest earnings, while farming, forestry and fishing workers were paid the lowest.

Table 3.3

Average Monthly Earnings for Saudi and non-Saudi Workers in the Private Sector, 1994

Occupational Group	Saudis			Non-Saudis		
	Quantity (thousand)	Earnings (million)	Average Earnings (thousand)	Quantity (thousand)	Earnings (million)	Average Earnings (thousand)
Technical and Science Workers	9	81	9	58	334	6
Managerial & Professional Workers	3	41	13	3	43	13
Secretarial Workers	29	183	6	36	125	3
Sales & Purchases Workers	1	7	7	12	31	3
Service Workers	11	49	4.5	30	33	1
Farming , Forestry & Fishing Workers	0.2	1.2	7.1	4	3	0.8
Operators and Labourers	79	554	7	793	15.5	2
Total	132.2	916	6.9	936	2074	2.2

Source: Riyadh Chamber of Commerce and Industry (1995, p. 79).

Abdurahman (1988), studied wage level differences between the public and the private sectors in Saudi Arabia. He found that there are wage differentials between

the public and private sectors. This wage gap can be seen clearly in Table 3.4. By analysing the data in this table, he found that the wage gap between the two sectors decreased during the period 1979-1984.

3.6.3 Third Case: Wage Differentials: Heterogeneous Jobs (Employers)

In real life, employers are not homogenous; they vary in many aspects, such as union status, firm size and location. Jobs are also heterogeneous rather than homogenous. They have differing wage and non-wage attributes. Employers must pay more to compensate a worker for an undesirable job characteristic that does not exist in other jobs. This is called compensating wage differentials. Compensating wage differentials deter employees from shifting to higher paying jobs, thereby causing wage rates to move towards equality.

Table 3.4

Average Monthly Earnings (SR)

Years	Public Sector	Private sector
1979	945	2,318
1980	1,371	2,508
1981	1,649	2,696
1982	1,820	2,637
1983	2,286	2,785
1984	2,459	2,844

Source Abdurahman (1988, p. 68).

There are many sources of compensating differentials, such as 1) fringe benefits, 2) risk of job-related injury and death, 3) job status, 4) job location, and 5) regularity of earnings. These sources influence supply decisions in ways which generate compensating wage differentials. These are called the non-wage aspects of jobs. McConnell and Bure (1992) explained these as follows:

1. Fringe Benefits

Total compensation consists of earnings plus employee benefits. Employee benefits are either payment in kind or deferred. Examples of payment in kind are: health care, health insurance, sick leave, and time off in lieu of cash. Deferred payments are any

form of employer-financed retirement benefits. Those firms which do not provide fringe benefits have to pay compensating wage differentials in order to equalise the wage differentials between firms and to attract qualified employees.

2. Risk of Job-Related Injury or Death

There will be compensating wage differentials for a negative job characteristic. This compensation encourages more people to work in this kind of job, since, if any job is classified as undesirable work, the labour supply for this job will be low.

3. Job Status

Prestigious firms should find it easier to attract workers than their less prestigious counterparts. For example, in Saudi Arabia there is more status attached to being a semi-skilled worker in the petroleum industry than to being a semi-skilled worker in the construction industry. Compensating wage differentials may emerge between low and high prestige work to equalise the wage differentials between these two industries.

4. Job Location

The differences in living costs between the cities of a country may bring about the need for compensating for wage differentials. The capital of Saudi Arabia, Riyadh, is a good example. It has a high cost of living. The nominal wage rate in Riyadh is not equal in purchasing power to the same rate in small cities such as Al-Hassa. Differentials in nominal wage rates are needed to equalise the wage rates gap between the labour markets of the two cities.

5. Job Security: Regularity of Earnings:

Some jobs provide long-term job security, whereas others, such as commissioned sales and construction, provide only short-term security. Fewer workers may find these occupations attractive because regular payment is not assured throughout the year. Compensating wage differentials may be paid to attract more labour to these kinds of job. There are other factors that produce wage differences, such as skill requirements, efficiency wage payment, firm size, union status, and discrimination.

1 Skill Requirements

As stated earlier, jobs are not homogenous. Assuming other things to be equal, jobs that require a high level of skill would pay a higher wage rate than those that do not. Differing skill (education and training) requirements for various jobs constitute a major source of wage differentials in the economy. McConnell and Bure (1992) mention that wage differentials caused by greater education and training can either increase, lessen, or reverse wage variance produced by differences in the non-wage aspects of jobs.

Thus, in order to attract skilled workers to an occupation that requires a high level of skill, employers must pay those workers more than less skilled workers.

2. Efficiency Wage Payment

An efficiency wage means a wage above the market-clearing wage. It may help in explaining wage differentials among workers possessing similar qualifications. This theory explains pay differences within and among industries and it predicts that wages will be higher where it is difficult to monitor the performance of employees. McConnell and Bure (1992) highlighted the fact that many efficiency ideas are related to efficiency wage payment, such as:

2.1 *Shirking Model of Efficiency Wages*

Some employers prefer to pay efficiency wages to avoid the high cost of monitoring the performance of employees. Without efficiency wages the probability is that employees would shirk their responsibilities. Firms may pay above the market – clearing wage in order to counteract this possibility. This higher wage increases the relative value of the job. Thus, the productivity of work will improve. As a result, efficiency wages create wage differentials that are unrelated to skill differentials or to differences in non-wage amenities.

2.2 *Turnover Model and Wage Differentials*

Employers may pay wages above the market–clearing wage in order to reduce the rate at which employees quit their jobs, especially in circumstances in which hiring and training costs are large. If the efficiency wage is sufficient, the productivity and

the average level of job experience should both rise. The main point is that wages may vary both across and within industries according to this model.

3. Firm Size

Several studies have shown that large firms pay higher wages than smaller firms. There are many reasons for this. For example, a large firm's employees are more likely to belong to a union, for them, a better quality of capital exists and a significant amount of training is available which creates higher productivity. Firm size will be discussed, in detail, in Chapter Seven and this will provide an insight into the wage structure and differentials in formal (large) firms and informal (small) firms in Saudi Arabia.

4. Union Status

Many studies have tried to determine how much more union members get paid than do non-union workers in the private sector. The estimate of the union relative wage advantage lies in the range of 10 to 20 per cent (Ehrenberg and Smith, 1994).

5. Discrimination

Wages of blacks, females and Asians have been tested in many studies. The results of those studies indicate that there are wage differentials between male and female, white and black, and national and non-national employees. The reason is that some employers are biased towards or against hiring certain classes of employee (ibid.).

3.6.4 Fourth Case: Wage Differentials: Heterogeneous Workers:

Wage differentials are also created by differences in terms of human capital and individual preferences. People possess differing stocks of human capital, and it is the type and quality of education and training that cause these differences in human capital stock. This human capital heterogeneity produces wage differentials. In addition, people are also heterogeneous with regard to their preferences for various non-wage aspects of work (e.g. some people value job safety highly, while others do not). People are heterogeneous with regard to present versus future income and various non-wage aspects of work. Differences in both human capital and individual preferences are considered to be major sources of wage disparities (McConnell and

Bure, 1992).

3.6.5 Fifth Case: Wage Differentials: Labour Market Imperfections

The heterogeneous nature of employers and workers can explain wage differences to some extent, but not fully. Labour market imperfections can create wage differences because they impede labour mobility. Many factors maintain wage differentials throughout labour markets, such as imperfect information, costly migration or immobility. In reality there is no such thing as perfect information. Labour market information, in general, is imperfect and costly to obtain. For instance, firms have to search for, or employ an agent to find, workers who are best suited to fill their vacancies. Similarly, workers attempt to gather information about job opportunities. This search by employees and firms is costly to undertake. In short, imperfect information in the labour market has an important implication for wage structure.

The second factor is immobility, defined as any impediment to the movement of labour. There are geographic, institutional and sociological barriers to labour mobility. These barriers create wage differences between workers (ibid.).

3.7 Wage Policies

This section will detail a number of related wage policies which can be effective tools for labour market reforms (narrowing wage differentials), and provide some opportunity for unemployed and low-wage workers to advance into the economic mainstream. Policies that are related both directly and indirectly to this study will be examined.

3.7.1 Minimum Wage Policy

The situation regarding the minimum wage in various countries will be explored in this section, including the legal framework governing minimum pay rates, to whom these apply, and the ways in which rates are set and updated. There are many wage regulatory mechanisms within countries, resulting from segmented labour markets and other socio-economic and institutional conditions. The aims of these wage regulatory mechanisms are to provide a type of security net for the most insecure of

employees, such as those just entering the labour market, and to assist with social integration.

Eurostat (1997) summarised three regulating minimum wage mechanisms and gave some example of types of minimum wage. These mechanisms and examples are as follows:

1. A statutory national minimum wage: the basic minimum wage is fixed at an hourly, weekly or monthly rate by the government, in most cases after consultation with concerned bodies, and this minimum wage is enforced by law. Spain, France, Luxembourg, the Netherlands and Portugal follow this method. Belgium employs a similar system, whereby a central agreement fixes 'an average minimum monthly income' applicable to all industries' wage levels. In addition, collective agreements fix a minimum above the threshold within the branches of industry. It usually applies to all employees in the economy and all occupations. Age, length of service, skills, and economic conditions affecting the firm and changes in prices measured by the consumer price index or by growth may be considered when fixing the minimum wage.

2. Minimum rates of payment and other working conditions in certain sectors are regulated by government intervention, as in Ireland. In this area, occupations such as agricultural workers, retail grocery workers, and hotel and catering workers are covered by this kind of procedure. This method is similar to the first but less comprehensive in its coverage. It covers only a minority of employees. Elsewhere, minimum wage rates vary among sectors and are determined by collective bargaining or individual contracts.

3. Wage determination is left to individual contracts or to collective bargaining between employers and employees, representatives in individual sectors. This method is adopted by governments in other countries such as Austria, Finland, Sweden, and Norway. The agreements may be legally enforceable and usually regulate a range of working conditions, including levels of remuneration. Agreements may be made at national, regional or sector level.

The United States and Canada have statutory minimum wage regulations. They have state statutory minimum wages in addition to the Federal minimum wages. US employers pay higher wages than the Federal or State minimum wage to almost all workers. This indicates that the Federal minimum wage is too low. In Canada, the rural minimum wage covers most rural workers. In Japan the government establishes regional minimum wages that apply to all workers in each province.

3.7.1.1 Minimum Wage Law in the UK

Jackson (1970) mentioned that long before the 1970s the imposition of a national minimum wage had not found favour with the British government. They had preferred to allow wages to be fixed largely as a result of collective bargaining, and would only impose a minimum wage in limited areas where collective bargaining was weak or non-existent. The main instrument of minimum wage regulation used to be the Wages Council. The Wages Council was seen as a means of protecting low paid employees who lay outside the scope of collective bargaining. The origin of the Wages Council system is to be found in the Trade Boards Act, 1909. The Wage Council did not cover all business sectors and provinces of the country and its power was reduced by the Wage Act 1986. This Act helped to remove employees aged less than 21 from minimum wage provision. Thus, the Council lost its power to determine non-pay conditions such as holidays. In November 1993, the Wage Council was abolished. The Low Pay Commission was established as a result of the National Wage Act 1998 to advise the British government about a national minimum wage, which has now been implemented.

3.7.1.2 Minimum Wage System in OECD Countries

In 1997, the economics department of the OECD issued a useful working paper, no.185, entitled "OECD Submission to the UK Low Pay Commission". This paper provided a brief factual survey of statutory minimum wage systems in OECD countries. The majority of OECD countries have some form of minimum wage setting arrangement in accordance with the ILO conventions regarding minimum wages.

Table 3.5
Summary of Minimum Wage Systems in OECD Countries with a National Minimum

Country	Name and Type of Determination	Employees Excluded	Rates for Younger Employees (age and % Adult Minimum)	Indexation or "Up rating" Procedures	Other Comments
Belgium	The minimum monthly wage -- *garantie du revenue minimum mensuel moyen* (RMMMG)--is set by a national collective agreement	Public sector workers, apprentices, trainees and workers in sheltered workshops	20.94%; 19.88%; 18.82%; 17.,,76%; and under 17.70%	RMMMG, like all pay, is indexed to consumer prices. It is also increased when the central agreement is renegotiated, usually every two years.	Since 1991, additional clauses to the RMMMG have been added for adult workers with more than 6 to 12 months' tenure
Canada	Statutory minimum hourly wages are set at both the federal and provincial levels	Certain groups of agricultural, hunting and fishing workers under provincial regulations	Lower Federal and provincial rates for under 17s and, in some provinces, under 18s	No automatic indexation for general price or wage inflation	Since July 1996, the federal rate has been aligned with the rate in each province and territory.
Czech - Republic	A basic minimum wage and Minimum Wage Tariffs (MWTs), on an hourly and monthly basis, are set by statute.	MWTs only apply to employees not covered by collective agreements. Public sector pay levels are set separately by the government		No automatic indexation for general price or wage inflation	Lower rates than the basic minimum are set for disabled employees. MWTs vary according to complexity, responsibility and physical difficulty of job performed.
France	The minimum hourly wage—*salaire minimum interprofessionnel de croissance* (SMIC) – is set by statute	General government workers and disabled workers (who are covered by separate rules).	17 and 18.90% and under 17.80%.	The SMIC is indexed to consumer prices (for rises of 2% or more) and must rise by at least half the rise in manual hourly wages. It can be raised by more than this amount by decree and is also reviewed annually by the National Collective Bargaining Board.	Apprentices and trainees entitled to 30% to 75 % of the SMIC, depending on age and stage of training.
Hungary	The minimum hourly (and monthly equivalent) wage is set by statute.				
Japan	Statutory minimum daily wages are set for each of the 47 prefectures	Disabled workers		Minimum wages are revised every year, taking into account increases in wages and commodity prices and after consultation with local tripartite minimum wage councils.	Minimum wages are also set for selected industries within each prefecture and at a national level for the coal and metal mining industries
Korea	The minimum hourly wage is set by statute.			There is no automatic indexation. The minimum wage is regularly adjusted by the Minister of Labour after consulting the tripartite Minimum Wage Council	
Luxe-mbourg	The minimum monthly wage—*salaire* social minimum (SSM) –is set by statute	Only covers private sector employees	17.80%; 16.70%; and 15. 60%	The SSM is indexed to consumer prices. Also reviewed biennially in line with economic and pay growth	

Mexico	Daily minimum wages for broad geographical zones are fixed by the tripartite Council of Representatives of the National Minimum Wage Board.		No reduced rate for youth		
Nether-lands	The minimum weekly wage – *Minimumloon* – is set by statute.		22.85%; 21.72.5%; 20.61.5%; 19.52.5%; 18.45.5%; 17.39.5% and 16. 34.5%.	Former link with collectively agreed wage rate index abolished in1991. Since 1984 has been frozen in nominal terms for periods covering several years.	
New Zealand	The minimum weekly wage is set by statute.	Apprentices and other trainees.	Under 20.60%	No automatic indexation for general price or wage inflation.	
Poland	The minimum wage is set by statute				
Portugal	The minimum monthly wage— *remuneracao minima mensal garantida* (RMMG) –is set by statute.	Disabled workers are covered under separate regulations	Under 18,75%	Updated annually by law after tripartite consultation, taking into account Inflation and economic performance	Lower rates are set for domestic staff and apprentices.
Spain	The minimum monthly wages – *salario minimo interprofesional* (SMI) – is set by statute	Apprentices	Under 18,89%	Updated annually by law after tripartite consultation, taking into account inflation and economic performance	
Turkey	The minimum monthly wage is set by the tripartite Minimum Wage Setting Commission.	Apprentices.	Lower rate for workers under 16.		
United States	Federal and State minimum hourly wages are set by statute.	Form: Federal minimum, executive, administrative and professional employees and certain other specific, but small, groups of workers.	No reduced Federal rate for younger workers over legal minimum working age.	No automatic indexation for general price or wage inflation.	Subject to certain conditions, employers may pay trainees 85% of the federal rate as well as lower rates for full-time students and disabled workers.

Source: Income Data Services of the Economics Department of the OECD (1997).

In general, minimum wages are only set by the government in 15 OECD countries. Greece and Belgium have a different system, in which the minimum wage is set through a national agreement between the social partners. Table 3.5 summarises the minimum wage systems in OECD countries with a national minimum. This table shows many important points, such as:

1. Trainees, younger workers and public servants are not covered by minimum wages. Disabled workers are often not covered or come under the scope of separate regulations.

2. Minimum wages are determined by many factors such as inflation, overtime, age, province, benefit and tax.

3.7.1.3 Minimum Wage in the United States

A minimum wage of $0.25 per hour was established by the Fair Labour Standards Act 1938. This Act was the first major step towards protecting low-waged workers in the United States. Minimum wage provisions were needed to ensure that each worker received a reasonable wage for his or her work effort, and to provide full-time workers with an annual income sufficient to buy the necessities of life. In 1990, the new law also established, for the first time, a sub-minimum training wage for teenagers: $3.62 per hour to workers aged 16-19 in their first jobs, rather than $4.25 for the first three months of employment and for an additional 90 days if the employment is in a formal training programme. Table 3.6 shows minimum wage rates in the US from 1939 to 1997 (Labour Standards Act, US, 1938-1996).

Moreover, the Joint Economic Committee of the United States Congress provided a useful study, in 1995, on minimum wages which summarised 50 years of research. This study comprised two parts. The first consisted of studies that partly support a minimum wage, such as those of David Card and A. Krueger, (1994) and Lawrence Katz et al., (1992). Their studies found no loss of jobs among fast food restaurants that were surveyed before and after the increase. The second part shows that the minimum wage has wide-ranging negative effects. These negative effects are summarised in Table 3.7.

Table 3.6

HISTORY OF FEDERAL MINIMUM WAGE RATES UNDER THE FAIR LABOUR STANDARDS ACT, 1938 - 1996

Minimum hourly wage of workers in jobs first covered by --

Effective Date	1938 Act [1]	1961 Amendments [2]	1966 and Subsequent Amendments[3]	
			Non-farm	Farm
Oct 24, 1938	$0.25			
Oct 24, 1939	$0.30			
Oct 24, 1945	$0.40			
Jan 25, 1950	$0.75			
Mar 1, 1956	$1.00			
Sep 3, 1961	$1.15	$1.00		
Sep 3, 1963	$1.25			
Sep 3, 1964		$1.15		
Sep 3, 1965		$1.25		
Feb 1, 1967	$1.40	$1.40	$1.00	$1.00
Feb 1, 1968	$1.60	$1.60	$1.15	$1.15
Feb 1, 1969			$1.30	$1.30
Feb 1, 1970			$1.45	
Feb 1, 1971			$1.60	
May 1, 1974	$2.00	$2.00	$1.90	$1.60
Jan. 1, 1975	$2.10	$2.10	$2.00	$1.80
Jan 1, 1976	$2.30	$2.30	$2.20	$2.00
Jan 1, 1977			$2.30	$2.20
Jan 1, 1978	$2.65 for all covered, non-exempt workers			
Jan 1, 1979	$2.90 for all covered, non-exempt workers			
Jan 1, 1980	$3.10 for all covered, non-exempt workers			
Jan 1, 1981	$3.35 for all covered, non-exempt workers			
Apr 1, 1990[4]	$3.80 for all covered, non-exempt workers			
Apr 1, 1991	$4.25 for all covered, non-exempt workers			
Oct 1, 1996	$4.75 for all covered, non-exempt workers			
Sep 1, 1997[5]	$5.15 for all covered, non-exempt workers			

Source: Labour Standards Act, 1938-1996, US.

[1] The 1938 Act was applicable generally to employees engaged in interstate commerce or in the production of goods for interstate commerce.

[2] The 1961 Amendments extended coverage primarily to employees in large retail and service enterprises as well as to local transit, construction, and gasoline service station employees.

[3] The 1966 Amendments extended coverage to State and local government employees of hospitals, nursing homes, and schools, and to laundries and dry cleaners, and to large hotels, motels, restaurants and farms. Subsequent amendments extended coverage to the remaining Federal, State and local government employees who were not protected in 1966, to certain workers in retail and service trades previously exempted, and to certain domestic workers in private household employment.

[4] 'Grandfather clause' - This term is used for employees who do not meet the tests for individual coverage, and whose employers were covered by the FLSA on March 31, 1990,and failed to meet the increased annual dollar volume (ADV) test for enterprise coverage, who must continue to receive at least $3.35 an hour.

[5] A sub-minimum wage -- $4.25 an hour -- is established for employees under 20 years of age during their first 90 consecutive calendar days of employment with an employer.

3.7.1.4 Minimum Wage in Canada

The first attempts at regulating a minimum wage resulted in the payment of 'fair wages' to persons engaged in all public works and government contracts. Male Minimum Wage Orders only began to appear in the 1930s and became popular in the mid-50s. The Minimum Wage Board or other labour boards are authorised by law to recommend, after the necessary inquiries, investigation and research into minimum rates of wages with the approval of the Lieutenant Governor. The rates are reviewed and increased from time to time by minimum wage orders to the provinces which are termed Employment Standards Acts, which are approved by governmental order. The boards are usually controlled by members who represent the interests of employers and employees and in some cases the public sector, with an impartial chairman and, usually, an officer of the department of labour. The job of this board is

to fix a basic wage, taking into account the cost of living, economic conditions and other relevant factors. The aim of setting a minimum wage is mainly to protect unorganised and unskilled workers (Eurostat, 1997).

Table 3.7

Summary of Research on the Minimum Wage

Results of the Study	Number of Studies
The minimum wage reduces employment	5
The minimum wage reduces employment more among teenagers that adults	14
The minimum wage reduces employment most among black teenager males	7
The minimum wage helped white South Africans at the expense of blacks	1
The minimum wage hurts blacks generally	2
The minimum wage hurts the unskilled	1
The minimum wage hurts low-waged workers	3
The minimum wage hurts low-waged workers particularly during cyclical downturns	2
The minimum wage increases job turnover	1
The minimum wage reduces average earnings of young workers	1
The minimum wage drives workers into uncovered jobs, thus lowering wages in those sectors	3
The minimum wage reduces employment in low-wage industries, such as retailing	5
The minimum wage hurts small businesses generally	1
The minimum wage causes employers to cut back on training	4
The minimum wage has long-term effects on skills and lifetime earnings	2
The minimum wage leads employers to cut back on fringe benefits	2
The minimum wage encourages employers to install labour-saving devices	1
The minimum wage hurts low-wage provinces, such as the South and rural areas	3
The minimum wage increases the number of people on welfare	2
The minimum wage hurts the poor generally	1
The minimum wage does little to reduce poverty	6
The minimum wage helps upper income families	4
The minimum wage helps unions	2
The minimum wage lowers the capital stock	1
The minimum wage increases inflationary pressure	4
The minimum wage increases teenage crime rates	2
The minimum wage encourages employers to hire illegal aliens	1
A few workers are permanently stuck at the minimum wage	2
The minimum wage has had a massive impact on unemployment in Puerto Rico.	2
The minimum wage has reduced employment in foreign countries	4
Characteristics of minimum wage workers	7

Source: Joint Economic Committee (1995, February 15).

3.7.1.5 Minimum Wage in Japan

In 1959, a Minimum Wage Law was introduced in Japan. This law provided that a minimum wage be determined by three methods: 1) businessmen's agreements. 2) extension of collective agreements of minimum wage provisions to all workers of the same type in a province, and 3) deliberation of wage councils at both central and prefectural levels. The third method was first used in 1966 and the practice quickly grew. In 1969, this law was amended.

The Minister of Labour or the Head of the Prefectural Labour Standards Office is in charge of minimum wages based on recommendations by Central and Prefectural Minimum Wage Councils or by the extension of collective agreements. In 1970 the Central Minimum Wage Council advocated the promotion of regional minimum wages. By 1976, regional minimum wages were established in all prefectures. There are two kinds of minimum wage agreements in Japan, namely regional minimum wages and industrial minimum wages. Regional minimum wages are applied to all workers and all employers, regardless of industry or occupation. in a specified area. The industrial minimum wage can be divided into two types. First, it is determined for a specified industry in a prefecture, such as the Tokyo Iron and Steel Industry. Second, it is determined for specified industries, such as mining, for the whole country. In addition, the minimum wage should be fixed by taking into consideration the cost of living of workers, wages of similar workers and the normal capacity of industries to pay wages (ibid.).

3.7.2 Wages Subsides /Employment Tax Credit

Wage subsidies are a system of payments by governments to firms for increasing their employment levels. When the payment is made directly to employers, it is called a wage subsidy. If the payment is indirect, it is called an Employment Tax Credit. Both types of payment programme have identical effects. The subsidies can be either general or targeted (selective). A general subsidy is aimed at reducing demand (deficient unemployment), while a target is designed to lessen the extent of structural unemployment.

Both general and selective programmes have been tried in European nations and in the United States. For instance, a New Jobs Tax Credit was part of the 1977 economic stimulus package passed by the US Congress. In this programme, an employer could receive the equivalent of 50 per cent of each worker's annual earnings up to a maximum earning ceiling of $4,200. This programme stimulated employers to hire more unskilled and part-time workers. In 1979, this programme was replaced by a Targeted Jobs Tax Credit. The new programme provided tax subsidies for firms hiring unemployed youths (18 to 24), handicapped persons, and welfare recipients. (Ehrenberg and Smith, 1994, and McConnell and Bure, 1992).

In July 1996, the Canadian government put in place a programme called Active- Re-employment Benefits. This is a set of proven to be effective return-to-work tools such as Targeted Wage Subsidies, Self-Employment Assistance, Job-Creation Partnership, Targeted Earnings Supplements and Skills Loans and Grants. Two of these programmes will be explained here because they are highly relevant to this study. Targeted Wage Subsidies help people who have been unemployed for a long time or face specific barriers to finding jobs. In addition, Targeted Earnings Supplements provide a supplement to encourage them to take work that pays less than their previous job. Both programmes encourage employers to hire individuals whom they would not normally hire in the absence of a subsidy (Human Resources Development, Canada, 2001).

The OECD (1995) stated that the United Kingdom has recently launched several initiatives to increase the labour market attachment of the unemployed such as 'Workstart' and 'Jobmatch'. The Workstart scheme provides wage subsidies to any employer who recruits an unemployed person for more than two years. The Jobmatch scheme pays an allowance for six months to those unemployed for more than two years who take a part-time job while continuing to look for full-time or additional part-time employment.

The Welfare Information Network, on the Internet, summarises many subsidy schemes in the US. It points out that subsidising private sector employers is one vehicle for creating jobs for welfare recipients under the Personal Responsibility and

Work Opportunities Act of 1996 (PRWORA). Tax credit is taken as a form of employer subsidy. The Work Opportunity Tax Credit (WOTC) is a federal income credit available to an employer who hires welfare recipients. In addition, some states offer state tax credits to employers who hire welfare recipients. In other words, a variety of supportive services, that would facilitate job retention, can be paid by states to increase employment levels. For instance, long-term welfare recipients can earn their employers a Welfare-to-Work Tax Credit of up to $3,500 for their first, and $5000 for their second year of employment. Other welfare recipients can earn employers a WOTC of up to $2,400 for their first year of employment. There are many programmes related to employment subsidies in the US, examples of which include:

Florida has a Grand Diversion or Wages Work Supplementation programme. This programme will pay a participant's temporary cash assistance benefits to an employer for up to six months if he meets two conditions: 1) Employment must be full-time and pay more than the federal minimum wage; 2) The employer must keep the labourer as a regular employee for at least 12 months.

Since 1998, Kansas has had a programme called Ageing Mentoring Works. This programme uses retired, successful business people to provide guidance and counselling to welfare clients in their transition to becoming self-sufficient. It has been employed by large employers such as General Electric and United Parcel Service and has also been used by some small firms. This programme uses in-house mentors to recruit, hire and counsel clients on the job so as to reduce turnover. The Metropolitan Community Colleges Business Technology Center teaches welfare recipients to work at customer service centres throughout the Kansas City area. Since the programme began in 1997, nearly 190 former welfare recipients have completed training and now work in full-time positions paying between $8.25 and $14.00 an hour. Over 85 per cent of those placed in jobs are still working after the probationary period. In addition, there is another programme in the state of Missouri called the 21st Century Communities Programme. Under this programme, Welfare and Food Stamps grants are used as wage supplements to help welfare recipients get jobs. Wage supplements are paid to employers who create jobs in low-income

neighbourhoods, and childcare and health care are paid for by the state for a limited time. The state also provides services such as job readiness training, counselling on job progression, education, and housing assistance. Moreover, several states and localities have taken the opportunity to create publicly-funded jobs programmes. Positions are usually temporary and reserved for Temporary Assistance for Needy Families (TANF) recipients who do not find jobs after a specified period of job-search. These programmes are often called Community Service Employment or Community Service Jobs. Publicly-funded jobs are eligible for the Earned Income Tax Credit (EITC) and their wages are subject to payroll taxes. This Community Service Job programme is different from the unpaid Community Service Jobs programme. In the latter, participants receive only their welfare payment, which is not subject to payroll or income tax but cannot be used as a basis for EITC eligibility.

Other similar assistance programmes exist, e.g.:

1. The state of Oregon has a programme called Jobs Plus. In this programme employers provide short-term employment for welfare recipients. Employees in Jobs Plus positions receive a pay cheque from their employer, who is then reimbursed by the state using public assistance funds. Moreover, this programme is a subsidised work activity for recipients of Unemployment Insurance, Food Stamps or TANF in Oregon. Employers are subsidised up to the state minimum wage for each placement with cash from TANF and food stamp benefits. The employer, in turn, pays each participant a salary equivalent to that paid for similar jobs, adjusted for experience and training. This programme began in 1994 under 1115 Waiver Authority and was extended widely in July 1996. An employee may stay in this programme for a maximum of six months.

2. The state of Minnesota has a programme called Fostering Action to Help Earnings and Responsibility (FATHERS). This state is launching a new programme that uses publicly-funded jobs and a variety of other strategies to boost employment rates. Participants are placed in full-time, minimum wage jobs in non-profit making agencies that agree to provide close supervision at

the work site. The participants will move into unsubsidised employment after staying in the scheme for six months. There is per hour as a cash bonus in addition to the minimum wage for participants who successfully complete their publicly-funded jobs and remain in unsubsidised private employment for a minimum of six months.

3. In the late 1990s, the New York City Council introduced the Transitional Jobs Programme. This programme provides subsidised wage-paying jobs with training for those low-income families in New York who are having a difficult time finding employment. It will create 7,500 placements over the next three years in public and non-profit sector jobs. In contrast to workfare placements, the programme substitutes a pay cheque for a welfare cheque and provides jobs lasting 12 months. Employees are paid $7.50 an hour, which is half of what the Federal Labour Department has determined as a family's 'lower living' budget in New York City, for those working in full-and part-time jobs. The employees will then qualify for the federal Earned Income Tax Credit.

4. Vermont's Welfare Employment Programme requires welfare recipients to work after reaching a time limit in jobs provided in public non-profit agencies by Community Service Employment (CSE). CSE serves as a training programme as well as a way of meeting the work requirement. The TANF payment that the family would have received before reaching the time limit is diverted and paid as wages that count as earned income under law. Participants are paid the minimum wage for each hour they work and receive worker's compensation and Social Security coverage. Each employee can remain in a CSE-provided job for no longer that 10 months. If he or she can find a job within two months, another CSE placement will be developed.

5. In Washington there is a programme to help TANF recipients who are long-term unemployed. Each recipient works for 20 hours a week, receives a pay cheque for hours worked, and receives one-to-one support and mentoring to overcome barriers to working.

3.7.3 Earned Income Tax Credit (EITC)

Governments can use various approaches to supplement the earnings of the working poor. Earned Income Tax Credit can reduce poverty and increase the incentive to work for welfare recipients. In the US, EITC was established by Congress in 1975. Federal earned income tax credit and similar state credits use the tax system to increase the income of the working poor. Most taxpayers file returns in the interval between 1st January and 15th April. The EITC Campaign 2001 stated that EITC is a federal income tax credit that is refunded to qualified taxpayers after their taxes have been paid. Even if a person does not have to pay any tax on his/her income, he/she may still qualify for a refund. In addition, the Advance EITC (AEITC) allows taxpayers who expect to qualify for the EITC, and have at least one qualifying child, to receive part of the credit in each pay cheque during the year.

The UK has had an in-work benefits programme since 1971 (Dilont and McCare, 2000). This programme was called Family Credit (FC) from 1988 to 1999. In October 1999 FC was replaced by a more generous programme called Working Families Tax Credit (WFTC). It is a form of Negative Income Tax (NIT). People whose incomes are below a personal allowance level do not pay income tax. On the other hand, a NIT would pay money to people whose income was below their personal allowance level. This programme will make entering the labour market more attractive to lone parents.

Walker and Wiseman (1997) wrote a convincing article about Earned Income Tax Credit in the UK. They point out that the Department of Health and Social Security, 1985, showed that Family Credit had multiple objectives, such as to provide extra support for families, to ensure that UK families were better off in work than not, and to reduce the marginal tax rate. They stated that Family Credit does indeed appear to work well in a number of respects:

Family credit provides work incentives and support for family income:

> Family Credit ensures that the vast majority of recipient families' incomes in work are above those when not working and hence contributes directly and immediately to higher nominal living standards (p.402).

3.7.4 Investment Tax Credit to Reduce Unemployment

An investment tax credit allows firms to subtract from their tax bills a certain percentage of the investments they make in new capital equipment and assets. This policy is an implicit subsidy given to firms for increasing their capital stocks. It may stimulate employment growth and reduce the unemployment rate or it might encourage capital to be substituted for labour.

Many countries apply this kind of policy. For instance in the UK, the BBC announced (2001) that Chancellor Gordon Brown has promised to make more tax cuts and to provide new funds to boost investment in UK industry. He announced that there would be a 20 per cent reduction in Capital Gains Tax for business assets held for more than one year, and a 10 per cent reduction for business assets held for two years. Small UK firms could receive some cash help if they move their payroll and tax system online. Moreover, there is to be support through a Community Investment Tax Credit for areas suffering from high unemployment. These areas are to get one pound of government money to complement every four pounds of private investment.

In 2001, the Blair Area Chamber of Commerce (USA) announced online that the 'Employment and Investment Growth Act' (LB775) could save a company millions of dollars in state and local taxes. This Act stated that:

> For a qualified firm that invests at least $3 million and creates 30 new jobs in an approved project, the benefits include:
>
> 1. Refund of all sales and use taxes on purchases of depreciable property used as part of the project.
> 2. Five per cent tax credit on total compensation on additional Nebraska jobs each year for seven years, essentially a 35 per cent payroll credit.
> 3. Ten- per cent tax credit for total investment made.
>
> In addition, for a qualified firm that invests at least $10 million and adds 100 new jobs in an approved project, benefits include all of the above plus:

1. Fifteen-year personal property tax exemption on mainframe computers and certain peripheral components used in the project.
2. Fifteen-year personal property tax exemption for equipment used in processing agricultural products.

Moreover, for a qualified firm that invests at least $20 million in an approved project, benefits include the refund of all sales and use tax on purchases of depreciable property used in connection with the project.

Saudi Arabia paid a great deal of attention to this policy many years ago in order to stimulate the economy. Dahlan (1993) mentioned that Saudi Arabia has a similar kind of investment tax credit. Industrial projects, in which Saudi shareholders own 25 per cent or more of the capital, are exempt from taxation for 10 years from the start of the operation. In addition, national and joint venture investments enjoy customs exemptions, when important equipment and materials are required by an industrial project.

3.7.5 Income Replacement Programmes

Unemployment insurance, workers' compensation, and disability insurance are called Income Replacement Programmes. Unemployment insurance benefits are paid to workers who have been laid off, permanently or temporarily, by their employers. Workers' compensation is paid to employees who have been insured for the work. Disability benefits are paid to former employees whose physical or mental disabilities are judged severe enough to prevent their holding down a job. All three programmes are intended to compensate workers for earnings lost owing to their inability to work.

Unemployment insurance is a new concept in Saudi Arabia's labour market. Stiglitz (1993) stated that an unemployment insurance programme is the most important one for providing assistance to the unemployed worker. The US regulated this policy in 1935 in the midst of the Great Depression with the passage of the Social Security Act. This programme pays, typically, up to 50 per cent of a worker's former salary for twenty-six weeks. The cover has now been extended to thirty-nine weeks or

longer with an increase in the unemployment rate. New workers are not covered by unemployment insurance because the workers must have worked for a minimum number of weeks, such as four out of the previous fifty-two.

This policy has been criticised for many reasons. For instance, it helps to reduce worker's incentives to work hard or to search for a new job. Moreover, it does not provide enough support for either the long-term unemployed or new entrants into the labour force (ibid.).

In the UK, there is a programme called Employers' National Insurance contributions. The OECD (1995) stated that the November 1994 budget introduced changes to employers' national contributions and that this change will further favour the part-time, the low paid and the long-term unemployed.

3.8 Wage Rigidities

There are many reasons for wage rigidities. First, it is necessary to explain why there is wage rigidity in a labour market and second, to explain what kind of policies the government should apply when attempting to deal with it.

3.8.1 Explanation of Wage Rigidities

Stiglitz (1993) pointed out that there are many types of unemployment. The types mainly related to wages are involuntary and voluntary unemployment. Involuntary unemployment exists when the supply of labour exceeds the demand for workers at the prevailing market wage. This happens because demand for labour shifts but wages do not decline. It could be argued that all unemployment is voluntary. Workers can always find work at a lower wage or in a different field, but the cost of moving to a new job's location is great, and accepting a low-wage job might send the wrong signals in the future to potential employees. In general, when wage-related unemployment, fails to adjust sufficiently in response to a shift in the supply or demand for labour, economists say that wages exhibit downward rigidity or stickiness. There are four major reasons why wages may not fall enough to eliminate unemployment quickly (ibid.).

1. Union Wage Adjustments

Stiglitz (1993) further stated that, in the long run, unions are not successful in obtaining higher wages for their members, but are probably successful in slowing down the process of adjustment of wages to changed economic circumstances. He gives as an example, that when a person has signed a three-year contract, before an economic downturn then it may be more than two years before the new economic circumstances are reflected in the wages. In addition, contract provisions rely on the cost of living at the start of the contract, which means that wages are relatively unaffected by the level of inflation. Moreover, wages do not decline rapidly in response to unemployment, even if the unions are sensitive, in their wage bargaining, to the unemployment rate. Thus, adjustment of union wages must be slow. In several European countries, union bargaining occurs at the national level, and the number of workers belonging to unions is much higher than in the United States, thus the statement that unions have played an important role in wage rigidities seems more valid for Europe than it does for the United States.

2. Insider-Outsider Theory

The question has been asked: why do firms not decide to pay lower wages to new employees? The Insider-Outsider theory provides an answer. Insiders are those with jobs at particular firms, while outsiders are people who want jobs at that firm. This theory focuses on the cost of training. Each firm would like a labour force trained in the special way in which it operates. Most of the training is done by insiders. They recognise that their bargaining position with the firm will be reduced by training new employees. Thus, the firm may promise to continue to pay them higher wages than outsiders, but insider/current employees know that this promise could be broken. After all, they are training their own replacements. In future bargaining situations, the employer can use the availability of these lower-wage workers to apply downward pressure on the wages of the current employees. The result is that the insiders refuse to cooperate in training the outsiders. The firm can rectify this only by offering similar pay, but these results in wage stickiness, i.e., the wages offered to new workers cannot be lowered to a level at which the demand for new workers equals the supply; therefore, unemployment can persist. In general, firms do not like two-tier wage systems. For instance, Ford undertook an experiment in 1982 which

allowed the company to sign a contract with new workers that provided only 85 per cent of the wages previously-hired workers received. This experiment was unsuccessful and was abandoned in 1984.

3. Minimum Wage

The minimum wage is a government-enacted price floor. It keeps the demand for labour from equalling supply. Many studies show that a minimum wage causes higher unemployment, and when most workers earn considerably more than the minimum wage, minimum wage legislation probably contributes to some unemployment. Even if it has a negative affect on employment many countries apply it as a 'fair wage' policy. Minimum Wage is explained in detail in Section 3.7.1.

4. Efficiency Wage Theory

Some firms may find that they make more profit by paying a wage higher than the going wage in the labour market. In 1914, Ford paid $5 per day, more than double the going wage. He knew that with his assembly line and high payments the worker would work harder. This would result in more products and, therefore, more profit. Many modern companies apply the same philosophy. This theory can answer the very important question regarding how much productivity depends on wages. Economists have identified three main reasons why firms may benefit if they pay high wages: wages affect the quality of the workforce, they affect the level of effort and they affect the rate of labour turnover. Each of these three reasons is discussed below.

1. The Quality of the Labour Force

   It is common for firms to discover, after a wage cut, that they have lost the best of their workers. In other words, there is concern that if a firm cuts wages for all workers, as a result of a decrease in demand for workers, the best qualified workers are most likely to leave. Indeed, this is the reason frequently given by firms for not cutting wages.

2. The Level of Effort

   There is a generally held belief that workers paid a higher wage than the market-clearing wage will make more effort to keep their work and will not shirk. Firms

would apply a penalty for shirking, if they pay a higher wage than the market-clearing wage. There are two reasons why firms follow this practice: first, if their workers are fired because they are caught shirking, then the workers will have to accept the lower wage jobs being offered by other firms, and second, with higher wages than market-clearing wages, firms will hire fewer workers and unemployment will result. A worker who is fired may have to remain unemployed for a long period.

3. The Rate of Labour Turnover

If firms pay lower wages, the workers will quit the work and find another job more to their liking, either because it pays a higher wage or for some other reason. Economists refer to this rate as labour turnover. So firms try to pay a higher wage than the market-clearing wage.

Finally, the efficiency wage theory provides a significant part of the explanation for wage rigidities. Its considerations are likely to be less important where workers are paid piece rates, or in a situation where training costs are low and monitoring is easy.

3.8.2 Policies to Combat Wage Rigidities

There are two wage rigidity policies: unemployment insurance and increasing wage flexibility. The first policy has been mentioned in a previous section and the second policy will be explained below.

3.8.2.1 Increasing Wage Flexibility

Increasing Wage Flexibility is a policy used if unemployment is caused by wage rigidities. Wage rigidities may be due to any or all of these three reasons: 1) firms may not be allowed to pay lower wages because of either union pressure or government legislation; 2) firms may not choose to pay lower wages; 3) wages may fall, but prices may fall at the same time and at the same rate, so the real wages, in relation to purchasing power, do not fall.

When a firm bases wages on its profits it follows a wage flexibility policy. In Japan, large companies have long-term implicit contracts with their workers, but their workers receive a substantial fraction of their pay in the form of annual bonuses. The

workers receive various amounts from year to year depending on the profit of the firm. Many economists believe that the reason there is less unemployment in Japan compared to other countries is flexible wages. Others do not support this policy because workers would get an income reduction in hard times. In addition, some firms can only expect a small profit if they give large profit shares to their workers (ibid.).

3.9 Conclusion

In this chapter, the following important points have been made:

1. Although there are many definitions of the term wage in the literature, in this study, we refer mainly to the definition provided by the UK ERA 1996 s.27, which is any sum payable to the worker by his employer in connection with his employment.
2. In this research, only nominal wage is dealt with, i.e., what employees get paid per hour in current currency terms, as this is the most useful basis on which to compare the pay of various employees at a given time.
3. As a result of intensive research into wages, economists have produced various wage theories, among which the Marginal Productivity Theory is the most important. It provides a good explanation of wage differentials. Unfortunately, this theory is only used as a guide to understanding general wage levels. In fact, there are many factors which affect wage determination and differentials, e.g., the cost of living, the relative value of products, bargaining power, the comparative attractiveness of occupations, the mobility of labour and custom and legislation. This study will also consider other factors, including the background of actual employees and human capital variables.
4. Narrowing the wage differentials in the Saudi labour market will require the introduction of some standard wage policies. The choice of appropriate wage policies depends on many factors, and this research attempts to identify the policies.

Chapter Four

Theories of Wage Differentials

4.1 Introduction

This chapter first provides a review of the major theories of wage differentials, among which the human capital theory is the most dominant economic theory of wage determinants and differentials. Second, the segmented labour market theory will be applied to the Saudi situation to determine whether a wage gap exists between the formal and the informal sectors. Third, the wage discrimination theory will be applied in order to ascertain whether there are any wage differentials in existence among Saudis themselves, and between Saudi and non-Saudi employees, in the same occupations. Finally, this chapter surveys some empirical studies concerned primarily with the economics of earnings, and also a number of Saudi Arabian empirical studies of wages.

4.2 Human Capital Theory

As stated above, the human capital theory is the most dominant economic theory of wage determination. Its development was aided by important contributions from Jacob Mincer (1957, 1958, and 1962), Theodore Schultz (1960, 1961) and Gary Becker (1962, 1964). However, modern human capital theory has its roots in the classic eighteenth-century writings on equalising differentials by Adam Smith. This section therefore begins with a review of Smith's notion of equalising differences.

4.2.1 Literature Review

4.2.1.1 Adam Smith and Equalising Differences

Adam Smith (1973) argued that the wages paid to workers should compensate for the differences in workplace amenities and disamenities. If two jobs requiring identical skills vary in the non-monetary amenities provided, the employer providing fewer non-monetary amenities would be forced to pay higher wages; otherwise, it would be difficult for him to hire workers. In Smith's words (1776), cited in Polachek (1993, p.174):

The whole of the advantages and disadvantages of the different employment of labour and stock must, in the same neighbourhood, be either equal or continually tending to equality. If in the same neighbourhood there was any employment evidently either more or less advantageous than the rest, so many people would crowd into it in one case, and so many would desert it in the other, that its advantages would soon return to the level of other employment.

Smith implies that workers whose jobs have undesirable aspects should be paid more by their firm and that this will also attract more labour to these jobs in a competitive market. His theory of equalising differentials has been used to explain, in part, a substantial number of observed occupational wage differentials, for example, workers holding jobs that have good conditions, command sizeable wage premiums, as do workers in positions that have extremely poor working conditions.

Polachek (1993) stated that Adam Smith (1776, p.112ff) identified five job characteristics, which would require compensating pay:

1. the "agreeableness or disagreeableness" of the job;
2. the "difficulty and expense" of learning the job;
3. the "constancy or inconstancy" of employment in the job;
4. the "great trust" required of the person doing the job;
5. the "probability or improbability of success" in the job.

This theory has, in principle, important empirical implications. Hence, Smith's concept of equalising differentials has formed the basis of the modern theory of human capital.

4.2.1.2 Education as Investment

The wage implications of investment in human capital, such as schooling, on-the-job training, job-seeking, and migration are an extension of Smith's notion of equalising differences. It is important to recognise the human capital implications of education. The idea of education as an investment in human beings has been evident in economic literature for a long time. Polachek (1993) mentioned also that Adam

Smith (1776, ch.10, p.11) likened an educated person to an expensive machine, stating that

> Work which he learns to perform, it must be expected, over and above the usual wages of common labour, will replace to him the whole expense of his education, with at least the ordinary profits of an equally valuable machine.

Despite these earlier references to human capital, the full formulation of the theory awaited the publication of the pioneering work by Gary S. Becker (1964). Becker assessed the implications of investment in schooling for the distribution of personal earnings. According to him, in a perfectly competitive market, everyone will invest in himself to the point where the expected marginal rate of return from the investment becomes equal to the marginal cost of financing such an investment.

Mincer (1974) made some simple assumptions when attempting to derive an estimable earnings function, related to years of schooling, as an explanatory variable. These assumptions were that:

1. Neither any post-schooling investment in human capital nor any depreciation of human capital takes place;
2. There are only indirect costs of schooling in the form of foregone earnings;
3. The length of an individual's earning life is the same irrespective of the number of years of schooling acquired;
4. The present value of life-long earnings of those with greater schooling is equal to the present value of the earnings of those with less schooling, due to competition on the supply side.

Based on these assumptions, he derives the following earnings function:

$$\text{Ln } Y_s = \text{Ln } Y_0 + rs$$

where:

Ln = natural log.

Y_s = earnings of the individual with s years of schooling.

Y_0 = earnings of the individual with no schooling

r = rate of return on schooling.

s = the number of years of schooling.

Thus, the wage differences between the more and the less educated are simply compensating wage differentials, this compensation being required to adjust for the extra cost incurred in becoming educated.

4.2.1.3 On-the-job Training as Investment

Although formal schooling is one way in which human capital may be accumulated. it is not the only route. Many labour market skills are acquired through on-the-job training. Becker (1964) classified such training into general and specific training. *General training* refers to the creations of skills or characteristics, which are equally usable in any firm or industry. Thus, general training increases the productivity of a worker at any task. One important feature of general training is that if labour markets are competitive, firms may be unwilling to assume any of the training costs. The reason for this is that general training provides a worker with skills which are transferable; that is, they may be sold to other firms at a higher wage rate. So the worker who receives general training paid for by the firm could quit upon completion of training, and the firm would be unable to recoup any of its general training investment in the worker. Hence, the worker will pay for general training by receiving lower wages during the period of training.

A polar contrast to general training is *specific training*. It refers to on-the-job training that can be used only in the particular firm providing the training. Specific training provides a worker with skills which are not transferable. The worker has gained nothing of value to show in the labour market if he is fired or laid off later. This training, therefore, raises the productivity of a worker only at that firm.

Specific training raises some interesting issues in terms of who bears the cost of training and who recoups the gains from the investment. Firms might be willing to bear the entire cost of specific training to prevent trained workers from moving elsewhere. In other words, if trained workers were mobile, firms would find it in their interest to share some of the returns from specific training with their trained workers by paying them a wage that was slightly higher than they could earn elsewhere. General and specific on-the-job training are polar extremes, and in many cases, investments in workers represent a mix of these two types of training.

Regardless of the mix, human capital theory assumes that additional human capital may be accumulated by incremental job experience.

On average, those individuals who receive the largest amount of formal education also tend to receive more on-the-job training. This may reflect, in part, employers' beliefs that individuals with less formal education may only be trained at a high cost, and that individuals with more formal education may be trained at less cost, since they have already demonstrated an ability to learn. It is noted that if the more educated also become the more trained, then their human capital will accumulate very rapidly, resulting in a steeper experience-earnings profile than that of less educated workers.

Mincer (1974) accepts Becker's argument that a part of the cost of training is borne by workers. However, this cost of training, or the amount of investment in on-the-job training, is such that it is not generally observable.

4.2.1.4 Screening as an Alternative to Human Capital Theory

Although the human capital theory of wage determination is widely accepted, it has its detractors. According to Kenneth Arrow (1973) and Michael Spence (1973, 1974), education may serve only as a filter for individuals with greater abilities, instead of augmenting the productivity of those acquiring it.

Firms view educational degrees and diplomas as signals indicating that the holders of those degrees have superior abilities and, therefore, greater potential productivity. In such a case, educational degrees provide a signal and serve as a convenient screen but do not directly affect workers' productivity. This notion is called the *screening hypothesis of education.*

This raises the question: Why might employers use education as a screen? There are at least two reasons. First, it may be very costly for firms to determine the abilities and productivity of individuals. Using educational degrees as a screening device may be a cost-effective way of identifying high-quality workers. Second, it may in fact be

the case that on average, holders of educational degrees have greater abilities and skills.

According to the screening hypothesis, an educational degree is an admission ticket to a higher-paying job in which there are attractive opportunities for further training and promotion. On the other hand, less educated workers are excluded from such positions.

4.2.2 Selected Empirical Results on Determinants of Wages

Human capital variables, such as schooling and on-the-job training, are the most commonly used explanatory variables in earnings functions. The empirical literature on returns to education and to on-the-job training is extremely large, and it is impossible to provide a comprehensive survey of that literature. The modest goal in this section is, therefore, to consider those sources and studies, which provide typical results. This section begins with an overview of the results concerning returns to education, then will examine returns to training.

4.2.2.1 Rates of Return to Education[4]

The early empirical research on returns to education was for the most part non-econometric. Researchers such as Jacob Mincer (1957, 1958, 1962), W. Lee Hansen (1963), and Gary Becker (1964), cross-classified annual earnings from a cross-sectional sample of the US population census by age and years of schooling, and assumed that differentials by level of educational attainment remained constant over the remaining work-lives of individuals. They used this average earnings data to estimate average foregone earnings for individuals who missed out on earning because they attended school, and then used a standard formula to compute internal rates of return.

One very simple way to calculate the internal rate of return to a college education is to use the formula,

$$(1 + r)^n = Y_1/Y_0$$

where

---

[4] Many studies in this field employ this term 'Return to Education' so it is used here instead of Returns from/on Education.

Y_1 = the mean earnings of college graduates;

Y_0 = the mean earnings of high school graduates;

n = the number of years required in high school to obtain a college degree (usually four years);

r = the real before-tax internal rate of return.

Becker (1964) computed the rates of return for males with both a college and a high school education based on data from the 1950, 1960 and subsequent surveys. The earnings of college graduates were higher than those of high school graduates at all ages after 22 in 1939 and after the age of 24 in 1949. The peak of the differential was reached between the ages of 45 and 54. On the basis of these earnings differentials and estimates for the cost of education, Becker estimated the rate of return for a college education at 14.5 per cent for 1939, 13 per cent for 1949, 12.2 per cent for 1956, and 14.8 per cent for 1958; analogous estimates for high school graduates were 16 per cent, 20 per cent, 25 per cent, and 28 per cent respectively.

Giora Hanoch (1967) did the earliest econometric study of returns to education.[5] He estimated the rates of return on schooling for a sample of more than 57,000 males over 14 years old, taken from the 1960 census of the US population. He assumed that net earnings during school years were zero, since positive earnings during those years simply cancelled out the direct costs of education. To eliminate the influence of a number of non-human capital variables, he divided his sample into 24 groups defined by race (white, non-white), province (South, non-South), and six age groups (14-24, 25-34, 35-44, 45-54, 55-64 and 65 and over). He then ran separate regressions (not log earnings) on earnings for each of these groups, using 23 explanatory variables, most of which were in dummy form. From these equations, he estimated the earnings for each school-age group by using the appropriate values of other explanatory variables.

Then he calculated the earnings differentials between adjacent school levels of various ages. His rates of return, like those of Becker, were generally higher for lower levels of schooling and lower for higher levels of schooling. In particular, the

[5] The earliest econometric study of returns to education was a 1965 University of Chicago Ph.D. dissertation, eventually published as Hanoch (1967).

marginal rates of return to college education (16 years) were smaller than for those having a high school diploma (12 years), which in turn were smaller than for those who had only completed elementary school (8 years). The marginal rates of return for whites in the North ranged from 7 per cent for 17 and more years of schooling to 22 per cent for 8 years of schooling. In the South, the rates were somewhat lower.

Freeman (1975) found that rates of return for men in college training were 11 per cent in 1959, 11.5 per cent in 1969, and 10.5 per cent in 1972, but only 8.5 per cent in 1974. He argued that rates of return fell sharply in the 1970s because of huge subsidies provided for college training, which increased the supply of graduates at that time.

George Psacharopoulos (1981) found similar results to those of Freeman and Hanoch. His results showed that while rates of return to secondary education varied modestly around a mean of about 12 per cent from 1939 to 1976, rates of return to college education remained relatively constant at about 11 per cent from 1939 to 1969, but then began falling sharply. In 1999, Rischall raised a pertinent question about the effects of education and skill on income. He asked how education and skill could explain much of the correlation across generations. He found that if one believes that family background variables are valid instruments for education, then one sees that the returns to schooling are small otherwise, the returns to schooling are large.

The National Centre for Policy Analysis, NCPA (1996), reported some results taken from a number of studies relating to the United States. These results were published in its report of February 1996 and may be summarised as follows:

- In 1994, a full-time male worker over the age of 25 with a four-year college degree earned 89 per cent more per year on average than a similar worker with only a high school degree.
- Each year of formal schooling after high school added 5 to 15 per cent more to annual earnings later in life.
- 35 per cent of those in the 18-24 year-old age group enrolled in college.

In June, 1996, the NCPA confirmed these results and made the following observations:

- Graduates earn about 80 per cent more than someone with just a high school degree and more than three times as much as a high school dropout.
- Half of those in the top fifth of incomes had a college degree while just 2 per cent in the top tier were high school dropouts.
- One fifth of those in the lowest income bracket were high school dropouts while 4 per cent went to college.

4.2.2.2 Returns to On-the–job Training and Experience

According to the human capital approach, education and training can provide productive skills that may be rented out to employers.

The earliest study on the subject of human capital was by Mincer (1958) in the *Journal of Political Economy*. His study argued that variations in income among individuals were due primarily to differences in ability and luck.

In 1960, Schultz focused on five major forms of human capital investment: health facilities and services; on-the-job training by firms; formal school education and higher education; adult study programmes; and migration to adjust to changing employment opportunities. He argued that in the absence of human capital considerations, it was difficult to explain the unexpectedly rapid post-war recovery in Europe.

It was Gary Becker, however, who in 1964 undertook the most rigorous treatment of the subject of human capital. In this work, Becker formulated a model of on-the-job training, which he defined as training received from the person's employer while they are in work. He also extended his model to include schooling and other forms of human capital. Becker's model recognised that an individual's human capital is affected more by the level of education they have invested in: ability and on-the-job training will also play a part.

A classic econometric study of returns to on-the-job training was carried out by Mincer in 1974. Mincer reported results from a number of regressions, each based on the assumption that all training is general. He used 1959 data on 31,093 white, non-farm workers, non-student males up to the age of 65, from the 1960 census. Mincer began by running a simple least squares regression of log earnings on schooling, and found that the estimated schooling coefficient implies a 7 per cent annual return to schooling and is highly significant. However, the proportion of variation in log earnings on schooling is small, since the R^2 is only 0.067.

When experience (X) and its square (X^2) are added as regressors, where (X) equals age minus years of schooling minus 6 years, the goodness of fit improves enormously from 0.067 to 0.285. The estimate of the returns to schooling increases to 10.7 per cent, as predicted by human capital theory, and returns to experience are positive, but decline with increases in experience.

The NCPA (1997) reported that workers need skills and training not college education. The report gives the following results that show the importance of training. First, labour market analysts contend that skills show a stronger correlation with future employment and earnings potential than does formal education. Second, the Bureau of Labour Statistics (BLS) research established that high school graduates whose jobs required specific training earned slightly more than college graduates who had not obtained any type of training. Third, a 1995 US Trust survey found that fewer than half of America's top wage earners had completed college and almost 30 per cent had never attended college.

4.3 Segmented (Dual) Labour Market Theory

4.3.1 Segmented (Dualistic) Structure of Labour Markets

The labour market is characterised by the coexistence of a formal and an informal sector. This dualism has for a long time been a permanent feature of the market in developing countries. The following sections will first examine the informal sector then the formal sector.

4.3.1.1 The Informal Sector

The term 'Informal Sector' was given prominent attention in the ILO (1979) report on Kenya. Since then, significant studies have been conducted in many developing countries in Latin America, Asia and Africa. The informal sector is an umbrella term, which describes a variety of small-scale units, often called micro-enterprises. There are different and conflicting schools of thought regarding the informal sector. According to the 'optimistic' school, the informal sector is a transitional sector where rural migrants and youths are waiting to find employment in the formal sector. For the 'pessimistic' school, the informal sector is a 'dead end'.

According to the ILO (1972) report on Kenya the main features of the informal sector are:

1. Ease of entry to the sector;
2. Reliance on indigenous resources ;
3. Family ownership of units;
4. Small-scale operations;
5. Labour-intensive and adapted technology;
6. Skills acquired outside the formal school system; and
7. Unregulated and competitive markets.

The ILO report is not the only one which lists such features. Santos (1972) listed about 16 variables, as shown in Table 4.1.

According to a study carried out by the Georgia Institute of Technology (1975). labour in the informal sector includes traditional artisans, repair workers, market and street vendors, and workers involved in small construction, petty trades, transport, and small-scale processors of primary products.

In 1972 the ILO reported that the informal sector included: small-scale units producing and distributing goods and services, and consisting largely of independent, self-employed producers in urban and rural areas of developing countries, some of which also employed family labour and a few hired workers. It

stated that the informal sector operated with very little capital or none at all, and it included activities carried out without formal approval from the authorities. (ILO South East Advisory Team 1998).

This definition does not capture the importance of the informal sector, which is a major provider of urban jobs. In urban areas, the informal sector's enterprises encompass a very wide range of industries, occupations and working situations. The labour force includes street food or market vendors, small automotive and machine repair shops, small-scale manufacturers, for example of garments and shoes, waste recyclers and transport drivers, amongst others.

The report on Thailand (1994) stated that the largest proportions of employment in the formal sector were to be found in the electricity, gas, water and sanitary services, services and manufacturing, while in the informal sector they were in the agriculture, commerce, transport and construction industries.

4.3.1.2 The Formal Sector:

According to the ILO (1972) report, the formal sector has the following basic characteristics:

1. Difficult entry;
2. Frequent reliance on overseas resources;
3. Corporate ownership;
4. Large-scale operations;
5. Capital-intensive and often imported technology; and
6. Protected markets (through tariffs, quotas, and trade barriers).

The formal sector's labour force comprises workers in large-scale manufacturing enterprises, financial institutions, and large service firms in the private sector, and all public-sector employees. This sector is subject to minimum-wage legislation and labour welfare regulations. It employs most of the educated work force. The prospects of job advancement and higher wages motivate workers to acquire new skills. The workers remain in their jobs for life, partly because of the pension and provident-fund benefits that they can accumulate by doing so. Labour is usually

organised into unions. In addition, the regulations governing the relationship between workers and employers provide extensive protection to workers against being fired. The employment is stable and there is a tendency to see workers as 'reliable'. Enterprises in the sector have easy access to formal capital markets where they can obtain credit at interest rates below the market rate.

Table 4.1 Characteristics of the Two-Sector Economy

Characteristic	Formal Sector	Informal Sector
Technology	Capital intensive	Labour-intensive
Organisation	Bureaucratic	Family-based
Capital	Abundant	Scarce
Working hours	Regular	Irregular
Wages	Normal (regular)	Rare (irregular)
Inventories	Large; high quality	Small; low-grade
Prices	Often fixed	Often negotiable
Credit	From banks and similar institutions	Personal; non-bank
Profits	Large on high turnover	Low on small turnover
Client relations	Impersonal	Personal
Fixed costs	Large	Negligible
Publicity	Necessary	Little or none
Re-use of goods	None; wasteful	Frequent recycling
Overhead capital	Indispensable	Dispensable
State aid	Large	Almost none
Foreign dependence	Great; often export-oriented	Small

Source: Santos, Milton (1979, p.38).

Due to the greater amount of physical capital, the power of the unions, the minimum wage and other labour welfare regulations and oligopolistic product markets, workers in the formal sector earn more than their counterparts in the informal sector. However, labour is used economically in the formal sector.

In the public sector part of the formal sector, workers' earnings may be even greater than in the formal private sector, for two main reasons. First, governments try to play

the role of a model employer, and secondly, profit is not a consideration for the public administration operations as their wages and salaries are paid out of taxes and do not have to depend upon productivity.

In addition to the two dichotomies, formal/informal and public/private sectors, there is a third one, that of urban/rural labour markets. Earnings in the urban sector are higher than in the rural sector, because of the large number of employers to choose from, as compared with the very monoposonistic nature of the village labour market. In addition, the differences in the cost of living between rural and urban areas necessitate the differences in personal earnings.

4.3.2 Review of Empirical Literature

This section contains:

4.3.2.1 An overview of the informal sector;

4.3.2.2 The allocation of the labour force using other variables; and

4.3.2.3 The effect of this allocation upon personal earnings.

4.3.2.1 An Overview of the Informal Sector

A large number of studies have appeared in developing countries since the ILO study on Kenya (1972) highlighted the importance of the informal sector. Almost all of them give an estimate of both the size of the informal sector and the size of the formal sector, since they are complementary. The criteria used for classification in these studies differ somewhat from one to another. Some studies do not even make explicit the rules used for demarcation. Those using an explicit rule for classifying criteria for inclusion in the formal sector have used the application of minimum-wage legislation, the size of the establishment, registration of the establishment with the government, type of economic activity and contribution to social security.

According to the ILO (1997), Asian cities have the greatest concentration of people in the informal sector, with 50-60 per cent of the urban labour force estimated to be engaged in informal sector activities. Therefore, in most developing countries in Asia, the informal sector has been a viable source of employment for those who have been unable to find employment in the formal sector. Only countries with very rapid

economic and employment growth, such Malaysia and Singapore, have experienced a reduction in this sector.

The total number of employed persons in Thailand, using 1994 Labour Force Survey data, was about 32.1 million and of these, 23.2 per cent were employed in the formal sector and 76.8 per cent in the informal sector. During the period 1988-1994, formal sector activities increased, causing a slight decrease in unemployment (Social Statistics Division in Thailand).

The clear-cut selectivity in the sectoral allocation of the labour force, if ignored in the analysis of personal earnings, might give a biased estimate of the effect of the sectoral allocation on earnings.

4.3.2.2 The Sectoral Allocation of the Labour Force

There are several empirical questions to be answered in segmented labour market studies: 1) Is the labour market segmented? 2) What is the nature of these segments? 3) Are there significant worker outcome differences, such as earnings, employment stability, etc., in different markets, even after controlling for individual characteristics? 4) Are there different earnings determination processes in the different segments?

Most empirical studies on labour market segmentation have focused on industrial segmentation, using such variables as market concentration, capital, economic scale, etc. (Tolbert, Horan and Becker, 1980). However, there are some conceptual problems in using industry as a unit of analysis. The key actor in the economy is the firm, and different firms may often operate in many industries. Therefore, data on industries, as aggregations of firms, cannot reveal the earnings determination process of individuals in firms, since industry data represent an aggregation of information on all firms in an industry (Baron and Bielby, 1980).

The most frequently used firm variable in segmented labour market studies is firm size, which is usually measured by the number of employees, since 1) data on firm size may be more easily available than those on other indicators, such as capital, and 2) firm size can be a good proxy for other variables (for example, the correlation

between firm size, measured by the number of employees, and capital is usually very high).

Another firm variable used in segmented labour market studies is firm location. Firms can be segmented according to firm location. Firms in the core sector, which have large product markets and complex technologies, tend to be located in large metropolitan areas, since 1) they need to be close to major suppliers and markets, 2) they must have ready access to good transportation facilities, and 3) they need complex supportive services and highly trained, disciplined labour forces (Bibb and Forum, 1977).

On the other hand, other researchers, e.g., Osterman (1975), argue that labour markets are segmented according to occupation, and the processes governing level of earnings attainment vary from one occupation to another, because of the occupationally specific nature of worker investments.

Human capital theorists argue that worker outcome differences among segmented markets are simply artefacts resulting from different individual characteristics such as education, IQ, experience, etc... However, many studies of segmented labour markets find that there are significant differences in earnings between the segments, even after allowing for individual characteristics. However, there are disagreements about the relative importance of individual characteristics and segmented labour market variables, both of which explain earnings differences in markets. For example, some studies, e.g., that of Bibb and Forum (1977), found that market structure variables explain more variances of earning differences than do individual characteristics. However, Kalacheck and Raines (1976) found that individual human capital variables are more important in explaining earnings differences than labour market structural variables. The different findings of these studies are due mainly to the different statistical methods used. The Bibb and Forum (1977) study ignored the indirect effect of individual human capital variables on earnings via market structure variables. In other words, since human capital variables affect the initial allocation of individuals into different labour markets, the effect of market structure variables on earnings differences includes part of those effects. However, other studies, taking into account these indirect effects, find that market structure variables affect earning

differences independently of individual characteristics (Kallerberg, Wallace, and Althauser, 1981).

There is believed to be great selectivity in the allocation of workers to the formal and informal sectors, based on age, sex, education, position in the household, and migration status. Workers outside the prime age group, females, non-heads of households, illiterate and less-educated workers, and migrants, especially recent migrants, are more likely to be found in the informal than in the formal sector.

Some segmented labour market studies divide labour markets according to worker characteristics such as earnings, job stability, etc., which are endogenously determined, and use these variables as dependent variables. Therefore, the worker outcome differences between primary and secondary labour markets are shown largely to reflect the original differences in individual characteristics.

4.3.2.3 The Effect of Sector Allocation upon Personal Earnings.

The inclusion of structural factors, such as the segmentation of the labour market, in the earnings function is potentially significant. For a study of personal income distribution, the relative amount of employment provided by each sector is a good measure of its importance.

All the studies on the sectoral dichotomy show that personal earnings in the informal sector are lower than in the formal sector. A study in Thailand (1994) found that workers in the formal sector had higher average monthly wages than those in the informal sector.

Very few of these studies looked at the effect on earnings of the sector as such, after allowing for the differences in education, sex, and migration status, which may be expected to affect earnings. Among the few that did is that of Mazumdar (1981), who made attempts to estimate the net effect of the employment sector on earnings. He carried out a multiple classification analysis of the earnings of urban-sector male workers in Malaysia. He used education, age, race, province, and size of enterprise as explanatory variables, although age and education, the two human capital variables, dominate the explanatory power of the model. Size of enterprise, one of the criteria used for dividing the labour market into the formal and informal sectors.

also affects earnings significantly. However, Mazumdar's coefficients for age and age^2 in the regression analysis of wage earnings, refute the conventional hypothesis of a flatter age-earnings profile for workers in the informal sector as compared with the formal sector. As a matter of fact, blue-collar workers in small enterprises show greater growth of earnings with age.

Marcouiller, Castilla and Woodruff (1995) used comparable micro-level data from El Salvador, Peru and Mexico. He investigated what type of people worked in the informal sector, and whether informal workers earned lower wages than equivalent workers in the formal sector. The results were as follows: the young and the old were more likely to be in the informal sector than were prime-aged workers; formal workers, generally, had more schooling than did informal workers, and construction, transportation, personal services and the retail trade were largely informal activities.

After running an OLS wage regression for men and women separately in each sector, the returns to schooling and experience were found to be of the expected signs and magnitude in all cases. The main results showed that there was a significant wage premium associated with formal employment in El Salvador and Peru, but a premium associated with work in the informal sector in Mexico was found when personal characteristics were controlled for. This result shows that by considering the effect of sector allocation on earnings, one could obtain an unbiased estimate that supports the findings of this study.

Tansel (1999) confirmed that the labour market of developing countries is characterised by duality. His study stated that a social security programme covers the formal sector in Turkey, but that the informal sector is excluded. A social security programme could be used to differentiate between the formal and informal sectors in different countries, although more studies would be needed. The results of the 1994 Household Expenditure Survey indicate that wage earners with more education are likely to be in the formal sector and those with less education are more likely to be in the informal sector.

4.4 Nationality and Wages

4.4.1 Overview

The Saudi Arabian private sector is dominated by expatriates who hold around 94 per cent of the jobs. This is due to an imbalance between labour supply and demand that dates from the discovery of oil in 1938.

This characteristic divides the labour market into Saudis and non-Saudis (including both Arabs and non-Arabs) in the private sector. The main questions to be asked are: Who enjoys higher wages and salaries? Why is this? Is there inequality of earnings distribution in the Saudi private labour market?

Becker (1971) cited discrimination in the labour market as an explanation of the earning-differentials between blacks and whites (racial discrimination) and between males and females (sex discrimination). The discrimination in some Western economies has been directed mainly against minorities, but in Saudi Arabia the private sector is different. The researcher believes there are many cases of discrimination, including the following:

1. In the informal sector, discrimination is directed against Saudi workers.
2. In the formal sector, there are no significant pay differences between Saudis and non-Saudis.

The purposes of this section are, first, to provide a theoretical framework identifying discrimination against Saudis both in the formal and informal sectors of the private labour market; and, second, to review some of the studies on determinants of wages by nationality in the Saudi Arabian labour market.

4.4.2 Discrimination Theories

There are several kinds of discrimination in the labour market, including wage discrimination and employment discrimination. Here the only aspect examined on is that of wage discrimination.

4.4.2.1 Becker's Theory of Discrimination

In the neo-classical labour market, wages vary only in relationship to the worker's talents, experience and productivity. Here, workers have complete information about employment opportunities and move freely to maximise income. However, when employees are not completely informed and mobile and are, therefore, restricted to a given labour market, the employer may discriminate.

Discrimination is found in the labour market when the employer pays different wages for the same job to workers with the same qualifications. This definition of discrimination assumes that the human capital of each worker is the same and, therefore, the productivity of the workers is equal (Becker, 1971). However, the human capital of two workers is difficult to compare, as components such as education and experience may nominally be the same, while the actual quality and contribution to productivity of different employees'experience, training or academic education may differ substantially.

Discrimination is a characteristic of segmented labour markets because they depend on restricted mobility and reflect a range of attitudes and decisions that are more than economic. Becker (1971, p.312) states:

> Discrimination by employers based on their own tastes and prejudices thus implies they do not maximise money profits. Instead they maximise utility in order to indulge their tastes about the composition of the labour force.

Labour market discrimination, that is, the payment of different wages to workers with the same productivity, can be either to the advantage or disadvantage of a worker, or group of workers with a specific characteristic, and, according to Fleisher and Kniesner (1984, p.393), it results from:

1. Incorrect information concerning the productivity of minority workers; 2) A desire (by employers) to make themselves better off at the expense of labour market minorities; and 3) A dislike of associating with minority workers.

4.4.2.2 The Statistical Theory of Discrimination

Becker's theory assumes that employers have perfect information about employees' productivity. As a matter of fact, employers do not possess such information and discrimination is often based on imperfect information about the labour market as the statistical theory asserts (Arrow, 1973).

According to this theory, employers cannot assess the true productivity of employees because only imperfect information is available to them regarding the employee's characteristics. Therefore, employers should invest in information, which is costly in the market, to determine the productivity or qualifications of an employee. However, to minimise cost, employers usually depend on a cheap source of information, such as skin colour, sex, ethnic background, etc. to 'determine' the employee's productivity. If the employer believes that a particular group, such as black people or women, is less qualified than white people or men, then he will discriminate against the unfavoured group regardless of an individual's more relevant characteristics. As stated by Arrow (1973, p.23):

> If employers have the preconceived idea that black workers have lower productivity than white workers, they may be expected to be willing to hire them only at lower wages.

4.4.3 Empirical Results on Determinants of Wages by Nationality and other Variables in the Saudi Arabian Labour Market

Heisler (1989) described the population and labour force in Riyadh in 1986, and estimated the wage differences by nationality after controlling for other variables. His study was based on the Riyadh Development Authority's October 1986 random sample survey of 5,009 occupied dwelling units in Riyadh, which included 2,736 Saudi and 2,273 non-Saudi households. He found that there were significant differences in wages based on employee's nationality, when the effects of all other variables were controlled for.

It follows that one should expect to find each occupation in the private sector to be dominated by migrant workers from a single country that can supply the required

skills at an acceptable level of quality for the reservation wage. He actually found foreign workers from several nations in each occupation.

In 1996, Kadah's study computed many variables, such as education, age, experience, nationality, sex, economic sector, and occupation. Each variable included in his multi-regression model had some effect on the determination of the individual's earnings in Saudi Arabia. Nevertheless, among these variables, he found that the nationality factor played the most important role. The study proved that, on average, Saudis receive higher earnings than non-Saudis. However, this study covers only two groups of people, the Saudis and the non-Saudis from only a few developing countries (LDCs), particularly from Arab countries. Kadah also included public and private sectors in his study. There are many differences to be found between the methodology of his research and that of this study. This study, when compared with that of Kadah:

1. Applies more new variables, such as computer skills and second language in current employment.
2. Adds another group of people, that is non-Saudis from developed and developing countries, in addition to the Saudi and Arab employees;
3. Focuses only on private sector companies;
4. Pays more attention to the segmented labour market, especially in the informal sector;
5. Pays more attention to the low-waged workers;
6. Suggests policies that may help to solve the unemployment problem in the Saudi Arabian labour market.

Al-Towajari (1992) argued that cultural factors,[6] in particular familial relationships, influence wages in the Saudi Arabian labour market. Saudi workers may be reluctant to leave their families in order to work in the major cities in Saudi Arabia. This factor is as important as training and education in terms of increasing the productivity of national workers.

---

[6] The teachings of religion, tradition, and the education system persuade national workers to stay near to their families and in their hometown.

He suggested, following the theory of compensation wage differentials, that Saudi workers must be compensated for working a long distance from their families, because working far away from the family residence is a job disamenity. Therefore, his wage equation incorporates the influence of family on wages by including distance. The findings of his research show that family factors influence wages, and he recommends that Saudi workers be compensated by the Saudi government for working away from their family residence.

In 1970, a report was prepared by Industrial Export Surveys for the British National Export Committee for Middle East Trade. This report was the only study of income distribution in Saudi Arabia at that time. It found that approximately 76 per cent of the population were then living outside the towns, and were not yet fully integrated into the money economy. Few people in this sector were regular wage earners.

In the towns, incomes were low except for a small minority of persons. A town planning study of Riyadh, prepared for the Ministry of the Interior by Doxiadis Associates in May 1968, indicated that there was considerable inequality in income. On the basis of a survey of households in Riyadh, the study shows that 50 per cent of the city's households had an annual income of under SR6, 000 (£561). The complete breakdown of incomes in Riyadh is estimated in Table 4.3.

Sirageldin (1984, p.11) refers to a joint Saudi Ministry of Planning/ World Bank study of the regional distribution and mobility of labour and the determinants of wages. This study was based on national establishment and household surveys in 1978. The World Bank household sample was described as:

> An independent national sample of households stratified according to province and by urban and rural residence.... All (male) heads of selected households and additional adult males, if available, were interviewed.

Of the 867 Saudi males interviewed nationwide, 186 were from the Central Province which includes Riyadh. Women were not included in the study; no data on foreign workers were published beyond the sample size; and urban/rural location was not distinguished. When multiple classification analysis was used to adjust monthly

salaries for the effects of age, education, public/ private sector, prior training and employment status, no significant salary difference was found by occupation. This finding may be due to the small sample size, so it is not supported in this dissertation.

Table 4.2 Income in Riyadh (1968)

Annual Income SR			Household in Riyadh %
Under 2,400	(£224)	or ($640)	12
2,401-3,600	(£224-£336)	or ($640-960)	18
3,601- 4,800	(£336- 449)	or ($960-1280)	12
4,801-6,000	(£449 - £561)	or ($1280-1600)	8
6,001-8,400	(£561-£785)	or ($1600-2240)	12
8,401-12,000	(£785-£1,121)	or ($2240-3200)	11
12,001-18,000	(£1,121-£1,682)	or ($3200-4800)	13
18,001-24,000	(£1,682-£2,243)	or ($4800-6400)	7
24,001-60,000	(£ 2,243-£5,607)	or ($6400-16000)	6
Over 60,000	(£ 5,607)	or over ($16000)	1

Source: A report prepared by Industrial Export Surveys for the British National Export Council Committee for Middle East Trade (1970).

4.5 Conclusion

This chapter has pointed out that the human capital theory is the most important economic theory of wage determination and differentials. Smith's concept of equalising wage differentials provided the basis for the modern theory of human capital. This theory confirms that investment in human capital, such as schooling and on-the-job training equates with wage differences. The chapter has referred to the large number of studies have carried out the ILO study on Kenya (1972) which emphasised the importance of the informal sector in the economy of a country. It was necessary to distinguish clearly between the informal and formal sectors so that the wage differentials between these sectors of the Saudi Arabia's Eastern labour market could be highlighted. Wage discrimination exists if employees with the same economic characteristics receive different wages, and if these differences are correlated with particular non-economic factors. These findings could be used to detect any wage gap between Saudi and non-Saudi employees.

Chapter Five

Research Methodology

5.1 Introduction

Most of the prominent theories utilised in the determination of earnings, as well as the wage policies, were discussed in Chapters Three and Four of this study. The corresponding research methodology employed to apply these theories is explained in this chapter. It will describe how the data were collected, test the choice of suitable statistical methods for determining the wage function form, and for applying appropriate models. A list of abbreviations for the variables used is provided in Appendix C.

5.2 Questionnaire Design

Designing the questionnaire is one of the most critical stages in the process of a research survey. Zikmund (2000), citing Paul Erdos, wrote, "A good questionnaire appears as easy to compose as does a good poem". Many researchers believe that good grammar and common sense are all that are needed to design a questionnaire, but the art of questionnaire design requires more than this: above all it needs not only to elicit useful answers to the questions but also to elicit comments which may provide valuable insights into the situation, which were unknown or unexpected by the compiler.

5.2.1 Questioning Methods

Asking for the information needed is the most commonly used method of collecting data. The most common questioning methods that may be used to secure this information are mail, fax, telephone, person-to-person, online, and through a survey team. The advantages of the different methods vary with circumstances. The best method to use is that which will secure the information needed with the greatest degree of accuracy, at the lowest cost, and often in the least amount of time. Two methods have been used in this study, mailed questionnaire and survey team. The mail method was not very successful in obtaining the information needed from every individual. On the other hand, the survey team was much more successful in procuring the information by personal contact, but it was much more expensive than

using mail. Use of a survey team also enabled the researcher to obtain information from a much higher percentage of targeted respondents than did the mail method.

A total of 2,000 questionnaires were distributed to Saudi and non-Saudi employees in all major cities of the Eastern Province of Saudi Arabia. The characteristics of the respondents were as follows: 138 respondents were Saudis 192 respondents were non-Saudis. In addition, 1,000 questionnaires were distributed to Saudi employers, but only 181 responded (see Appendix B).

5.2.2 Questionnaire Construction

The kind of questions used and the construction of a questionnaire vary according to the type of information required. Thus, the questions must be phrased carefully in order to be certain that the desired information is secured. Many steps are involved in the construction of a questionnaire. The researcher begins with the research objectives, then goes through the process of preparing the questions.

The main objectives of this study are to explore the structure, determinants and differences of wages in Saudi Arabia's Eastern private labour market, to indicate how many employees are in the low wage level, and to explore the attitudes and perceptions of employees and employers towards certain wage policies.

The questionnaire was designed with two goals in mind: relevance and accuracy. A questionnaire is relevant if no unnecessary information is collected. For instance, a fringe benefits question was considered irrelevant to this study's objectives, and was thus omitted from the questionnaire. Accuracy means that the information is reliable and valid. So the sequence and elicit wording of the questions were designed in such a way as to promote accuracy and informative answers from the respondents. The reliability and validity of the answers are discussed in subsequent sections of this chapter.

As a result of the sensitivity of this topic, several principles were adapted from those employed by other researchers, such as Zikmund (2000). These may be summarised as follows:

1) The questions asked should be relevant to the research problem. 2) Questionnaires should be as short as possible. 3) Avoid ambiguity, confusion, and vagueness. 4) Avoid leading questions. 5) Avoid asking questions that are beyond the respondents' capabilities.

The questionnaire used in this study consists of 8 pages, including the covering letter that briefly states the objectives of the questionnaire and also assures the respondents that all the information they provided would be treated with strict confidentiality (see Appendix B). The questionnaire was divided into four parts. The first part dealt with the respondent's personal details. The variables in this part are considered as independent variables that will be used in the regression model to explore the relationship between these and the dependent variables.

General information about the respondent's firm was requested in part two. This part provided four criteria: firm ownership, type of firm, number of employees and firm grade. All of these criteria help to distinguish between the formal and informal sector in terms of wages in the labour market of the Eastern Province.

Part three of the questionnaire was designed to focus on the most sensitive and important dependent variable. It contained six questions which were concerned with wage variables as dependent variables. The purpose of questions 1, 4, 5 and 6 was to obtain, directly and indirectly, information about wages from the respondents.

The final part asked for the attitudes and opinions of the Saudi respondents regarding which suggested wage policies that should be applied to help Saudis who are at a low wage level.

5.2.3 Selecting The Pilot Test Sample

It is common practice to pre-test the questionnaire with a small sample prior to starting the survey proper, as this minimises the problems that may arise when producing the final draft.

Thus, once the initial draft of the questionnaire has been designed, each question and the questionnaire as a whole should be tested and evaluated. One of the main objectives of pilot testing is to refine the wording, filtering, and ordering, and to control the questionnaire length (Zikmund, 2000 and McAllister, 1975). In addition, a pilot study is very useful in making sure that the translation of the questionnaire will not lead to any misunderstanding of the questions.

At least three drafts were made before the final draft. Three lecturers from King Faisal University, two lecturers from Imam University, and a small number of employers and employees were asked to complete the first draft of the questionnaire and to state their opinions. Their answers and opinions provided valuable feedback, especially with regard to the translation from English language into Arabic and the suitability of some questions. Their opinions also gave strength to the final questionnaire.

The pilot study was undertaken after correcting the initial draft of the questionnaire. This was to ensure that the testing of the questionnaire achieved its intended objective. The questionnaire was distributed manually to 30 employees in the Eastern private sector, who were asked to respond.

5.3 Sample Designs

This section explains the nature of sampling and the methods used to determine the appropriate sample design for our study.

5.3.1 Population and Sample Frame

A population is a group of persons, institutions, or events that one wishes to describe or study, or about which one wants to generalise results by studying a sample that is meant to be representative of that population.

Nachmias (1996) mentioned that a population is the aggregate of all cases that conform to some designated set of specifications. For instance, the term 'residents of Saudi Arabia', used in this study, defines a population consisting of all the people, both nationals and non-nationals, who reside in the country. Correspondingly, the

term 'employed in Saudi Arabia', is used to define a population consisting of all employees working in the Saudi Arabian labour market.

The sampling frame is the list or other record of the population from which the sampling units are drawn. Note that not all members of the population of interest are included in the sampling frame. The sampling frame may be based on telephone directories, city directories, or membership lists of private organisations. The sampling frame in this study embraces all employees working in the Eastern private sector of Saudi Arabia. Zikmund (2000) stated that if a complete list of population elements is not available, materials such as maps might be utilised to identify selected areas as a sampling frame. In addition, he states, a sample of more than 30 is thought to be a good estimate of the population. For this study the sample was much larger than 30.

5.3.2 Sample Size

Different authors tend to give different guidelines concerning the number of cases required for multiple regressions. Tabachnick and Fidell (1996, p.132) produced a formula for calculating sample size requirements, which considers the number of independent variables in the study (Pallant, 2001). This formula is $N > 50 + 8m$ (where N = sample size and m = number of independent variables). This study has one independent variable as the lowest event and less than 10 independent variables as the highest. For instance, the lowest event needs $50 + 8(1) = 58$ cases and the highest needs $50 + 8(10) = 130$. According to Roscoe (1975), sample sizes larger than 30 cases and smaller than 500 cases are suitable for most research. In this study, the sample size that has been used is 330 cases. In addition, the larger the sample the more accurate the research, while increasing the sample size decreases the width of the confidence interval at a given confidence level.

5.4 Data

5.4.1 The Sampling Procedures

The data were collected from the private sector of the labour market in the Eastern part of Saudi Arabia by employing the following methods:

1. The questionnaire was given to employees by the researcher and/or the survey team.

2. The questionnaire was given to students in academic institutes which had on-the job training programmes. This was very important since these academic institutes send their final year students to the private sector for training as a requirement of graduation every second term of each year, or in the summer term. The students' task was to distribute the questionnaires to employees and explain the purpose of this study.

3. The questionnaires were sent by mail to large firms in the Saudi Arabian labour market.

A survey team was organised to distribute the questionnaire forms to employees and employers in the Eastern private sector. This team was headed by the researcher and consisted of about 50 Imam University students living in different cities, 24 teachers from the Commercial High Schools in Al-Hassa and Dammam, each one accompanied by 25 trainees, 20 helpers from the Saudi Electrical Company, 10 helpers from SABIC, Education Directors in Al-Hassa, other helpers from the Al-Hassa and Dammam branches of the Commercial and Industrial Council, and the Saudi Communication Company, and five branches of an Islamic teaching organisation.

The researcher initially held a short meeting with each group. At the meeting, the researcher explained in detail each part of, and the actual questions in, the questionnaires. In addition, a general instruction sheet was distributed to help in explaining how to deal with different situations which could arise when conducting the survey.

The Eastern Province of Saudi Arabia is most important for its oil reserves, the largest in the world. Both Saudi and multinational employees work in this province. This makes it a good location in which to study wage structures, wage determination and differentials.

5.4.2 Manipulating the Data

Once the questionnaires had been collected and once the data had been entered and the data file has been checked for accuracy, the next step involved manipulating the raw data into a form that could be used to conduct analyses and to test the research hypotheses. Pallant (2001) demonstrated some effective procedures which can be used to manipulate data sets.

1. Calculating total scale score

   This will create a new variable at the end of the data set. If any items had missing data, the overall score will also be missing. The created variable, with its full details, should be recorded for a clear guide to the study.

2. Transforming variables

   The distributions of scores on a scale or measure often do not fall in a normally distributed curve. Sometimes scores will be positively skewed, where most of the respondents record low scores on the scale. Sometimes the scores will end with a negatively skewed distribution, where most scores are at the high end. Parametric statistical tests cannot be used with these skewed distributions. Non-parametric tests, such as Spearman's rho and the Kruskal-Wallis tests can be used here. Another alternative with a non-normal distribution is to transform this variable. This involves mathematically modifying the scores using various formulae until the distribution looks more normal. There are a number of different types of transformation, depending on the shape of the distribution. The logarithm formula will be used in our study because the shape of this formula is the closest one to our data. Mincer used a logarithm formula as well in most of his studies about earnings structure and determination, and it was his model which was employed in the present survey.

3. Collapsing a continuous variable into groups

   This allowed the researcher to divide the sample into equal groups according to respondents' scores on some variables. For example, wage as a continuous variable could be divided into two groups using the median as the cut-off point (SR3,000).

This creates a new variable that has only two possible values (1 and 2). Each person in the sample will be reclassified by wage into one of these groups.

5.4.3 Measuring Data Reliability

When data estimates are obtained from sample survey data there is often a possibility that the estimates might differ from the true figures that could be obtained from the entire target population. This difference is referred to as "sampling error". Many statistical texts have stated that the accuracy of survey data could be interpreted by application of several useful rules, such as:

1. Number of Observations

   The aim of a survey is to contact only as many individuals as are necessary to produce estimates that closely approximate the actual characteristics of the target population. In this study, the sample size section indicates that with more individuals surveyed, the greater the accuracy of this study.

2. Data Variance and Coefficient of Variance

   The closer the data values are to one another the greater the likelihood that the estimated average of those values will be very close to the actual average for the target population. The variance of the data is the measure of this closeness. The coefficient of variance (CV) is a ratio of the variance over the data estimate. This measure indicates how far out the estimated value could be from the actual value for the target population. Chapter Six details numerous tests regarding the coefficient of variance.

These two rules may be used with various statistical tests to interpret the accuracy and normality of the data of this survey. These will be applied and discussed in the next chapters. Cases in each variable will be independent, errors will be uncorrelated between items, and each pair of items will have a bivariate normal distribution. In addition, all the required assumptions of regression: linearity, normality, constant variance, and independence of observations, will be followed.

5.5 Data Analysis

5.5.1 Choosing the Right Statistical Technique

Choosing the correct statistical technique to analyse data is one of most difficult parts of the research process. When making this selection, a number of different factors have to be considered, such as: the type of question, the type of scales. the nature of the data for each variable and the assumptions that must be met for each of the different statistical techniques. Identifying the statistical techniques used in other related studies should also help in choosing the correct one.

There are a number of steps that can help the researcher to navigate through the decision-making process for the questionnaire (ibid.).

Step 1. What questions does the researcher want to address?

Any researcher should write a full list of all the questions, he or she would like to have answered in his or her research. Some questions could be asked in a number of different ways. These alternatives can help to cover each of the areas of interest. For instance, the effect of education or age on wage level could be asked about different ways, such as:

- Is there a relationship between age and level of wages?
- Do older employees receive higher wages level than younger employees?

These two different questions require different statistical techniques.

Step 2. Identify the nature of each variable

The next step is to identify the nature of each variable. The researcher should determine whether each of the variables is an independent, or a dependent variable. These determinations come from an understanding of the topic area, relevant theories and previous research. In addition, it is not necessary to specify which variables are independent and dependent for analyses such as correlation. For other analyses such as regression, it is important to make this clear.

Knowing the level of measurement for each variable is very important. Different statistics are required for variables that are categorical and continuous. Variables may be categorical (also referred to as nominal level data, e.g., nationality: Saudi

non-Saudi), ordinal (rankings: 1st, 2nd, 3rd), or continuous (also referred to as interval level data, e.g., age in years, wage in currency, or scores on the attitude scale).

Step 3. Draw a scatter-plot for each research question

A diagram guides researchers in trying to explain what they are researching. Three key issues should follow with this step. The first key issue which should be addressed is whether the researcher is interested in the relationship between two variables, or comparing two groups of subjects? The second key issue is whether information which has been collected can be summarised and a scatter-plot drawn for each question.

Step 4. A parametric or a non-parametric statistical technique

Statistical techniques are classified into two main groups: parametric and non-parametric. Parametric techniques assume that the underlying distribution of scores is normal. In addition, each of the different parametric techniques contains other additional assumptions that must be checked before carrying out the analyses. The specific assumptions are listed for each of the techniques used in Table 5.1. Both parametric and non-parametric statistical techniques were used in this study.

What should the researcher do if the assumptions for the statistical technique cannot be met? Unfortunately, in social science research this is a common situation. In this case, a number of choices are available, such as:

Option 1. Parametric techniques may be used while hoping that this will not seriously invalidate the findings. Some statistics writers assert that most approaches using a good size sample will tolerate minor violations of assumptions.

Option 2. Transforming the data if their distribution is not normal so the assumptions of the statistical test are met.

Option 3. Using a corresponding non-parametric technique as an alternative when the parametric assumptions are not met. Non-parametric techniques tend to be not as powerful, and less sensitive in detecting a relationship or a difference among groups.

Step 4. Making the final decision

Taking into account the steps described above and other studies on wage determination and differences, the researcher selected various statistical techniques as being appropriate for this study. These are:

1. Techniques used to explore relationships among variables.

A. Chi-square for independence

B. Correlation

C. Multiple Regression

2. Techniques use to explore differences among groups.

A. Independent-samples t-test

B. One-way analysis of variance between groups (ANOVA)

5.5.2 Justification for the Choice of Statistical Techniques

Each test will be explained separately in detail, then all tests will be summarised in Table 5.1.

A. Chi-square for independence

The explanation of the Chi-square by Pallant (2001) is very useful. He stated that the chi-square test for independence is used to determine whether two categorical variables are related. It compares the frequency of cases found in the various categories of one variable across the different categories of another variable. Two categorical variables with two or more categories in each are needed. The lowest expected frequency in any cell should be 5 or more for the main assumption. In addition, the significant value needs to be .05 or smaller, otherwise the result is not significant. This test is used in Chapter Six.

B. Pearson Correlation:

This is used to explore the strength of the relationship between two continuous variables. The results of this technique indicate both the strength of the relationship and the direction (positive or negative). A positive correlation indicates that as one variable increases, so does the other. A negative correlation indicates that as one variable increases, the other decreases.

Table 5.1

Summary Table of the Characteristics of the Major Statistical Techniques Used

Purpose	Example of question	Parametric Statistic	Non-Parametric Alternative	Independent Variable	Dependent Variables	Essential Features
Exploring Relationships	What is the relationship between gender and dropout rates from therapy?	None	Chi-square	One categorical variable: Sex; M/F	One categorical variable Dropout / complete therapy: Yes No	The number of cases in each category is considered, not scores
	Is there a relationship between age and optimism scores?	Pearson correlation coefficient (r)	Spearman's Rank order correlation (rho)	Two continuous variables: Age, Optimism scores		One sample with scores on two different measures, of the same measure at time 1 and time 2.
	How much of the variance in life satisfaction scores can be explained by self-esteem, perceived control and optimism? Which of these variables is the best predictor?	Multiple regression	None	Set of two or more continuous independent variables: self-esteem, perceived control, optimism	One continuous dependent variable: life satisfaction	One sample with scores on all measures
Comparing Groups	Are males more likely to drop out of therapy than females?	None	Chi-square	One categorical independent variable: Sex	One categorical dependent variable: Dropout / complete therapy	You are interested in the number of people in each category, not scores on a scale.
	Are males more optimistic than females?	Independent samples t-test	Mann-Whitney U Test	One categorical independent variable (two levels): Sex	One continuous dependent variable: Optimism scores	Two groups: different people in each group
	Is there a difference in optimism scores for people who are under 35 years, 36-49 years and 50+ years?	One-way between groups ANOVA	Kruskal Wallis	One categorical independent variable (three or more levels): Age group	One continuous dependent variable: optimism scores	Three or more groups: different people in each group

Source: Pallant, (2001).

It is advisable to generate a scatter-plot before performing a correlation analysis. This enables one to check for violation of the assumption of linearity and homoscedasticity. In addition, it helps to check a number of aspects of the distribution of two continuous variables. The distribution of data points can tell us a number of things, such as: 1) If the data points are spread all over the place, this indicates a very low correlation. 2) If all the points are neatly arranged in a narrow cigar shape, this indicates quite a strong correlation. 3) If the line is curved, indicating a curvilinear relationship, then the Pearson correlation should not be used. The Pearson correlation assumes a linear relationship.4) If the shape of the cluster starts off narrow and then gets fatter, the data may be violating the assumption of homoscedasticity.

A correlation of 0 indicates no relationship at all, a correlation of 1.0 indicates a perfect positive correlation, and a value of –1.0 indicates a perfect negative correlation. Pallant (2001) listed guidelines that interpret the values between 0 and 1.

*r = .10 to .29 or r = -.10 to -.29 small
*r = .30 to .49 or r = -.30 to -. 49 medium
*r = .50 to 1.0 or r = -.50 to -. 1.0 large

Spearman's Rank Order Correlation (rho) is also used to calculate the strength of the relationship between two continuous variables. It is the non-parametric alternative to Pearson's correlation. Both tests are applied in Chapter Six.

C. Multiple Regression

Multiple regressions are a more sophisticated extension of correlation. They are used to explore the predictive power of a set of independent variables on one continuous dependent measure. The researcher should have a sound theoretical or conceptual reason for the analysis and the order of variables entering the equation. Multiple regression with its actual application are explained in detail in Chapter Seven.

5.5.3 Techniques Used to Explore Differences Among Groups.

A. The Independent-samples t-test

This is used to compare the mean scores. It compares the values of certain continuous variable for two groups, or on two occasions, of two different groups of subjects. When applying the t-test, the output box of the independent sample t-test shows the results of Levene's test for equality of variances. This tests whether the variance (variation) of scores for the two groups is the same. If the significance value is larger than .05, equal variances are assumed as the first line, then the box should be used. On the other hand, if the significance level of Levene's test is .05 or less, equal variances are not assumed and the variances for the two groups are not the same. The significant (2-tailed) result helps to determine whether there is a significant difference between two groups. Two values are placed in this box with significant (2-tailed) column, one for equal variance, and the other for unequal variance. Which one is chosen depends on the previous step. If the value in the significant (2-tailed) column is equal or less than .05, then there is a significant difference in the mean scores of the dependent variable for each of the two groups, otherwise, there is no significant difference between the two groups (Pallant, 2001 and Brown, 1991). This test will be conducted in Chapter Six.

B. One-way analysis of variance (ANOVA)

This is similar to a t-test, but is used with more than two groups to compare their mean scores on a continuous variable. It is called one-way because it measures the impact of only one independent variable on the dependent variable. It compares the variance between the different groups, with the variability within each of the groups. The variance between the groups is given by an F ratio. A large F ratio indicates that there is more variability between the groups. In this case, the null hypothesis that states that the population means are equal can be rejected (ibid.). An ANOVA test is applied in Chapter Six.

5.6 Function Form[7]

The previous chapter presented the main theories of wage determinants, with no discussion of mathematical derivations or exact functional forms. To implement these theories empirically, one must use specific functional forms. The econometric literature on earnings has been based for the most part on regression equations of the form

$$Ln\, y_i = f(s_i, x_i, z_i) + u_i \quad i = 1, \ldots\ldots n \tag{5.1}$$

where:

$Ln\, y_i$ = the natural log of earnings or wages for the ith individual;

s_i = a measure of schooling or level of educational attainment;

x_i = the human capital stock of experience;

z_i = the factors affecting earnings, such as race, province of residence of the individual/province of origin, formal or informal sector and nationality;

u_i = a random disturbance term reflecting unobserved ability characteristics.

It is possible to obtain some guidance on functional form by using the human capital framework and assuming that the foregone earnings are only costs of schooling. The rate of return on the first year of education, r_1, is computed as incremental benefits divided by incremental costs, that is,

$$r_1 = (Y_1 - Y_0)/ Y_0 \tag{5.2}$$

where Y_1 is earnings after one year's education and Y_0 is earnings without education. Equation (5.2) can be rewritten as

$$Y_1 = Y_0 (1 + r_1) \tag{5.3}$$

Similarly for year 2 of schooling, the rate of return r_2 is defined as

$$r_2 = (Y_2 - Y_1)/Y_1 \tag{5.4}$$

where Y_2 is earnings after two years' education. This implies that

$$Y_2 = Y_1 (1 + r_2) \equiv Y_0 (1 + r_1) (1 + r_2) \tag{5.5}$$

After s years of schooling, it follows that

---

[7] This section is summarised from Berndt, E.R. (1991, pp. 161-167).

$$Y_s = Y_0 (1 + r_1) (1 + r_2) \ldots\ldots\ldots\ldots (1 + r_s) \quad (5.6)$$

If one assumes that the rate of return to education is the same for all levels of schooling, that is, $r_1 = r_2 = \ldots\ldots = r_s = r$, and if one approximates $(1 + r)$ by e^r, as one can, provided that r is small, then Eq. (5.6) becomes

$$Y_s = Y_0 e^{rs} \quad (5.7)$$

This, with a multiplicative disturbance term e^u appended, can be rewritten in logarithmic form as

$$Ln\ Y_s = ln\ Y_0 + rs + u_i \quad (5.8)$$

Equation (5.8) is the most basic form of the earnings function. Notice that if this equation is fitted by least squares to data on schooling and the logarithm of earnings, the estimated slope coefficient provides an estimate of r, the private rate of return to schooling, and the estimated intercept indicates the predicted level of log earnings in the absence of schooling.

This simple specification of the earnings function has been generalised by Jacob Mincer (1974) to take into account the effects of general on-the-job general training. One possibility is to illuminate Eq. (5.8) to have the form

$$Ln\ Y_i = ln\ Y_0 + \beta_1 s_i + \beta_2 X_i + u_i \quad (5.9)$$

where β_1 is the rate of return to schooling, β_2 is the rate of return to on-the-job training, and X_i is the ith worker's years of labour market experience, usually measured as age minus s_i minus six years. Further, the human capital theory suggests that earnings should, in general, not be constant after leaving school but should follow an oval-shape, peaking somewhere in mid-life. This has led Mincer and others to suggest Eq. (5.9) to have a form that is linear in schooling, but quadratic in experience:

$$Ln\ Y_i = ln\ Y_0 + \beta_1 s_i + \beta_2 X_i + \beta_3 X^2 + u_i \quad (5.10)$$

If the earnings function is concave in experience, as is suggested by the human capital theory, then estimates of β_2 should be positive, while those of β_3 should be negative. Further, to calculate the years of experience for which lnY_i is greatest, one

can differentiate Eq. (5.10) with respect to X_i, set the result equal to zero. and then solve for X^*. This yields that level of experience for which lnY_i is maximised.

$$X^* = -\beta_2/2\beta_3 \qquad (5.11)$$

which is independent of the level of schooling s_i.

Dummy variables are often used in wage determination. To see how dummy variables are applied, recall that in an equation such as Eq. (5.10), the intercept term lnY_0 represents the log of earnings of an individual with no schooling and no experience. For a variety of reasons, regardless of the level of schooling or experience, suppose that the earning levels of *A* group were always a constant percentage less than those for *B* group or in other words, that the logarithm of earnings for these two groups always differed by a constant absolute amount. If it is assumed that differences between group *A* and sub-group *B* are constant and independent of schooling and experience, it may also be assumed that the rates of return on schooling or experience are identical for both groups and that all members of these groups have the same slope parameters, β_1, β_2 *and* β_3, in Eq. (5.10). Despite this, the intercept terms will differ.

The earnings function (5.10) can be modified to incorporate these effects by defining a dummy variable called C_{1i} that takes on the value 1 if the individual is a member of the determined group, and, which otherwise is zero. This productive is

$$LnY_i = lnY_0 + \alpha_1 C_{1i} + \beta_1 s_i + \beta_2 X_i + \beta_3 X^2 + u_i \qquad (5.12)$$

where α_1 represents the constant difference in log earnings for being a member of group *A* rather than being from the remaining population, regardless of the level of schooling or experience.

This simple dummy variable specification can be expanded. Suppose, for example, that all individuals were in either the informal or the formal sector and that it is hypothesised that the earnings effects of the informal sector are different from those of the formal sector, but that rates of return to schooling and experience are identical

for all individuals. In addition, the dummy variable can be applied for gender, race, nationality, and occupation or industry.

5.7 Variables

5.7.1. Dependent Variable: Earnings (Wages)

Many studies on earnings inequalities seem to prefer the natural logarithm of earnings to the actual amount of earnings since the coefficients of variables in terms of proportional change may be interpreted more clearly. Gujarati (1988, p.147) stated that

> In the log-line model, $lnY_i = \alpha_1 + \alpha_2 X_i + u_i$, the slope coefficient α_2 measures the constant proportional or relative change in Y for a given absolute change in X, that is: $\alpha_2 = relative\ change\ in\ Y/absolute\ change\ in\ X$. If we multiply the relative change in Y by 100, this equation will then give the percentage change in Y for an absolute change in X. In addition, using differential calculus it can be shown that $\alpha_2 = d(ln\ Y)/dX = (1/Y)(dY/dX) = (dY/Y)/dX$ which is nothing but the previous equation. For small changes in Y and X this may be approximated by $[(Y_t - Y_{t-1})/Y_{t-1}]/(X_t - X_{t-1})$, the subscript t indicating the current value and the subscript $t-1$ indicating the previous value.

It is very difficult to obtain information about earnings, especially in a country such as Saudi Arabia. The researcher may choose one of two methods for collecting wages data. The first, is one in which the wages variable is treated as a series of classes, such as SR1,000-2,000, SR2,001-3,000 and so on. This method is not accurate. The second method is where the wages variable is treated as single or individual figures, such as: less than SR1,000, SR1,000, SR1,500 and so on. This method that is more accurate and helps one to apply extension econometrics models, e.g., the Logit (Logistic) model. This will be explained later in this chapter.

5.7.2. Independent Variables

Explanatory variables in this study fall into three main categories: human capital, segmented labour market variables, and miscellaneous variables. All these variables

to be included will be based on the theoretical literature review (Chapter Four). A complete list of the variables and an explanation of each given below:

A) Human Capital Variables

1. Education

The human capital theory states that the education factor is a very important variable in determining the earnings model. It maintains that the level of personal earnings increases more for those with a higher educational level than it does for those with a lower level of education. The following number of years of schooling will be used to measure the effect of school years on personal earnings levels in the Saudi Arabian labour market:

6 years for those who completed elementary school.

9 years for those who completed middle school.

12 years for those who completed high school.

14 years for those who completed Polytechnic Institute course.

16 years for those who completed graduate and postgraduate studies.

However, a dummy variable method might be applied in order to measure the effects of school level on personal earnings. These dummy variables are defined as follows:

DUMYPRIM = if workers graduated with less than a high school degree; otherwise = 0,

DUMYHIGH = if workers graduated with a high school degree; otherwise = 0,

DUMYDIPL = if workers had a Polytechnic Institute degree; otherwise = 0,

DUMYCIN = if workers graduated from a college of science; otherwise = 0.

DUMYART = if workers graduated from a college of art; otherwise = 0.

DUMYPHD = if workers graduated with a Ph.D. degree; otherwise = 0.

The elementary school level will be considered as the intercept term or the base earnings level of the education factor.

2. Experience Factor

Experience is another important human capital variable. It has been found that the years of experience have some effect on personal earnings. Mincer (1974) used age as a proxy for experience (age - 6 years - schooling years) because of a lack of direct information regarding experience. The data in this study contained direct information about years of experience. This allowed for computing the years of experience by the following methods. Experience may be divided into two types: general and specific. While general experience refers to the creation of skills which may be used in any firm, specific experience refers to the creation of characteristics or skills which are used only in a particular firm. In this study, general experience is computed by taking years of total working experience minus years of working experience with the current employer, whereas specific experience is computed using years of working experience with the current employer.

Multicollinearity may be an issue since these two experience variables are highly correlated with age. Mincer (1974) stated that the quadratic form shows that the best fit to the age-earnings profile, thus the square of the general experience, would be included in the model.

3. Training

In addition, training is a very important factor in determining the earnings model. In this study, training is treated as a dummy variable (***TRAND*** = if the worker is having training in his/her firm; otherwise = 0).

B) Segmented Labour Market Variables

1. Firm Size

Firm size is widely used in segmented labour market studies because it can be easily assessed, relative to other information on firm characteristics. In this study, the number of employees is used as a proxy for firm size and is represented as follows:

1-9, 10-19, 20-39, 40-59, 60-79, 80-99, 100-199, 200-299, 300-399, 400-499, and more than 500. The researcher will use 20 workers as the cut-off point for the

formal/informal sector classification, on the basis of Decree 50, of 1995, which required all firms with more 20 employees to allocate 5 per cent of the number of employee openings to Saudi Arabian nationals.

2. Firm Location

In general, all firms with large production and high technology tend to be located in major industrial areas, close to major suppliers, markets, transportation facilities and services. Firms in Dammam, Jubaill, and Al-Hassa; major cities in the Eastern Province of Saudi Arabia, will be considered to be in the formal sector. Otherwise, firms will be treated as being in the informal sector. By using a dummy, variable the formal and informal classification will be easy to apply in this study (1 for firm location in a major city; 0 for firm location in a small city or rural area). In other words, if the firm is in a big city, ***FBIGCD*** = 1; otherwise = 0.

3. Firm Ownership

There are many firms in Saudi Arabia owned by both Saudis and non-Saudis. The Saudi Commercial Law insists that the ownership of a firm must be 51 per cent Saudi and 49 per cent non-Saudi[8]. A dummy variable, 1 for workers in mixed ownership (Saudi with non-Saudi ownership) companies, 0 for workers in full Saudi ownership companies. In another words, if the firm is a joint venture, ***FIRMOWNR*** = 1; otherwise = 0.

4. Industry

The Saudi industrial market may be classified into several industries, such as: utilities, construction, transportation, communications, wholesale and retail, finance and insurance, services, agricultural, oil and petrochemical, and, finally, manufacturing. Each of these industries has its own characteristics, which may affect personal earnings. To measure the relative effects of the economic industry factor on personal earnings levels, the dummy variable method will be used in this study.

---

[8]This Saudi commercial law will be changed soon. The new Saudi commercial law will allow a non-Saudi to own 100 percent of a firm as agreed with the WTO.

The Riyadh Chamber of Commerce and Industry, RCCI (1995) stated that the percentage of Saudi workers in construction was very low. Thus, this will be taken to be an intercept term representing the initial earnings level of the industry. This study will use nine dummy variables to capture a possible industrial segmentation. These nine dummy variables are created as follows: if workers are working in utilities industries, ***UTILD*** = 1; otherwise = 0; if they are in transportation industries, ***TRSPD*** = 1; otherwise = 0; if they are in the communications industry, ***COMMD*** = 1; otherwise = 0; if they are in wholesale and retail industries, ***WHRTD*** = 1;otherwse = 0; if they are in financial industries, ***FIND*** = 1; otherwise = 0; if they are in services industries, ***SERVD*** = 1; otherwise = 0; if they are in oil and petrochemical industries, ***OILD*** = 1; otherwise = 0; if they are in manufacturing industries , ***MAFD*** = 1; otherwise = 0.

5. Occupation

The RCCI (1995) found that occupation has an impact on the determination of levels of personal earnings. As with the industry data, occupations appear in only five classifications: professional or technical, administrative, clerical, sales and service. This study will use only four occupation dummy variables. These four dummy variables for occupations are created here as follows: if workers are professional or technical, ***PROFD*** = 1; otherwise = 0; if they are administrative, ***ADMD*** = 1; otherwise = 0; and if they are sales workers, ***SALED*** = 1; otherwise = 0; if they are service workers, ***SERVD*** = 1; otherwise = 0.

C. Background Variables

1. Nationality

In the Saudi Arabian labour market, nationality is a very important factor in determining personal earnings. The researcher believes that there are many cases of discrimination, including the following: 1). In the informal sector, discrimination is directed against Saudi workers 2). In the formal sector, there are no significant pay differences between Saudis and non-Saudis. Therefore, the dummy variable method is used to measure the effect of the nationality factor on personal earnings levels. If the workers are of Saudi nationality, ***NAT*** = 1; otherwise = 0.

2. Age

By including age in the models, this study can examine the importance of age in determining earnings levels in Saudi Arabia. Age is sometimes used as a proxy to represent experience. For instance, experience equals age minus schooling minus the starting age in primary education.

3. Relevant Additional Variables/ Background Variables

Two other relevant variables will be examined: marital status and province of origin (Eastern Province, Western Province, Southern Province, Northern Province and Central Province; and this only for Saudi workers). As mentioned above, all independent variables are listed in Appendix C. These independent variables are very important in any wage study. Marital status is applied to show the difference in wage levels between single and married persons, and province of origin is used to indicate the wage inequality between provinces.

5.8. Regression Model-OLS

Brown (1991) stated that econometrics is a set of statistical techniques used in the analysis of empirical data. Econometricians use a variety of statistical techniques, but the main tool is regression analysis. The basic objective of regression analysis is to test hypotheses regarding the statistical relationship between two or more sets of data. While regression analysis cannot be used to prove that a causal relationship exists between the data, regression models are always constructed with the idea of causality in mind. That is, we must assume that one variable is affected (caused) by the other variables. The causal variables are called independent variables or regressors; the variable affected by the independent variable is called the dependent variable.

5.8.1. Major Models

- Miscellaneous (Background) Variables Model:

Model 1: $$Ln\ W = B_0 + B_1 NAT_i + B_2 MARSTAT_i + B_3 URBAN_i + B_4 PBIRTH_i + B_5 AGE_i + E_i$$

- Human Capital Mode:

Model 2: $Ln\ W = B_0 + B_1\ EDUC_i + B_2\ ENGLISHL_i + B_3\ COMPUTRL_i + B_4\ CURRTEXP_i + E_i$

- Segmented Labour Market Model:

Model 3: $Ln\ W = B_0 + B_1\ NAT_i + B_2\ MARSTAT_i + B_3\ URBAN_i + B_4\ PBIRTH_i + B_5\ AGECATT_i + B_6\ EDUC_i + B_7\ ENGLISHL_i + B_8\ COMPUTRL_i + B_9\ CURRTEXP_i + E_i$

Models 1 and 2 represent the background and the human capital models for wage determination in the present study. By employing these models, one can estimate the total effect of background and human capital variables on wage levels. Model 3 consists of a combination of Models 1 and 2. In applying Model 3, many aspects, such as 1) Nationality (Saudi and non-Saudi), 2) Job Category, 3) Job Skill, 4) Firm Ownership, 5) Economic Sector, 6) Employment Category, 7) Province of Origin, and 8) Wage Category will be used to determine whether there are any wage differences in the segmented labour market, in Saudi Arabian's Eastern private sector. Model 3 represents, also, the segmented labour market model of wage determinants. From this model, one can further estimate the total effects of the segmented labour market variables on wage levels. Moreover, by observing the difference in the coefficients for human capital variables in Model 2 and Model 3, it is possible to estimate the extent to which the coefficients of human capital variables are affected by segmented labour market variables. This procedure is based on the assumption that human capital variables affect the segmented labour market variables, and not vice versa. This assumption is widely supported in terms of theoretical argument and temporal order. (see Abbreviation list for all variables in Appendix C).

5.8.2. Sub-Major Model

In this study, there are other new models which may be added to fulfil the needs of the study, such as:

Model 4: $Ln\ W = Variables\ in\ Model\ 1 + NAT_i$

Model 5: $Ln\ W = Variables\ in\ Model\ 2 + AGE_i$

Model 6: $Ln\ W = Variables\ in\ Model\ 2 + AGE_i + MARSTAT_i + URBAN_i$

Model 7: $Ln\ W = Variables\ in\ Model\ 2 + AGE_i + MARSTAT_i + URBAN_i + PBIRTH_i$

5.9 Extension: Logistic Regression[9]

In the previous sections it was assumed that the dependent variable Y was quantitative, whereas the explanatory variables were either quantitative or qualitative or a mixture of both. The model used in this sub-section shows that the dependent variable is a dummy variable that takes the value of 1, if formal sector (high wage level), and 0, if informal sector (low wage level). Here the dependent variable may be dichotomous in nature, taking a 1 or 0 value.

Thus, the Logistic regression model as a standard approach will be used to answer the questions: Is the Eastern private labour market in Saudi Arabia segmented? Who is in the formal sector and who is in the informal sector? In this section, on extension, the Logistic regression model will be used to estimate the likelihood of a worker's being in the formal (high wage level) or the informal (low wage level) sector. The data and the abbreviation of variables used here will be the same as used in the previous models.

The major change will be in the wage variable which, as a dependent variable should be dichotomous. The wage variable was transferred to a dummy variable by using an arbitrary annual wage of SR60,000, as a cut-off between the formal sector (high wage level) and the informal sector (low wage level). The dummy variable will replace the original variable. Logistic regression is useful for positions in which one wants to be able to predict the presence or absence of a characteristic of, or outcome based on, values of a set of predictor variables.

The Logistic regression model has the following functional form:

$$Ln\ [P_i / 1\text{-}P_i] = a + b_iX_i + U \qquad (5.13)$$

---

[9] This part is summarised from Gujarati, Damodar (1999, p. 449), and from Gujarati, Damodar N. (1988, pp. 467-491).

where P_i is the probability of being in the formal sector and $(1-P_i)$ is the probability of being in the informal sector (or the probability of not being in the formal sector). In other words, P_i is the probability of being at a high wage level and $(1-P_i)$ is the probability of not being at a high wage level. The ratio $P_i / (1-P_i)$, known as the *odds ratio,* is simply the odds in favour of being in formal sector. The natural log of this odds ratio is called the Logit, and the model (5.13) is called the Logistic model. The Logistic model implies that the log of the odds ratio is a linear function of explanatory variables, X_i. The slope coefficient, B_i, gives the change in the log of the odds ratio per unit change in the X_i. The special feature of the Logistic model is that the probabilities are guaranteed to lie within the logical bounds of 0 and 1.

In addition, the estimate of the Logistic model is carried out two methods. If the available data are individual, one can use the method of maximum likelihood (ML) to estimate the model. On the other hand, if there is grouped observation, one can then use OLS. Brown (1991) confirmed that SPSS has the ability to estimate Logistic routines.

5.10. Conclusion

The methodology employed in this thesis was for obtaining sufficient information to satisfy the basic requirements of the thesis. In the case of the questionnaire used the number of respondents, although not any many as was hoped, nevertheless should prove adequate for interpreting the situation. The final questionnaire benefited greatly from the pilot study, which proved invaluable for framing the appropriate questions. The success of the statistical analyses can be judged from the results obtain in Chapter Six and Seven which should enable the significant variables to be determined and to judge their affects on the wage determinants in the segmented labour market. The next chapter (Chapter Six) will present the finding of the survey using descriptive statistics.

Chapter Six

Descriptive and Inferential (Analytical) Statistics

6.1 Introduction

This chapter presents the findings of the survey which was administered to both Saudi and non-Saudi employees in the Eastern private sector of Saudi Arabia. It aims to provide a detailed description of the sample under study; so as to enable the reader to appreciate the characteristics of the respondents involved. Therefore, many descriptive procedures will be explored so that some useful preliminary steps may be undertaken before the regression analysis is attempted. Precisely, the main aims are to examine the distributions of the variables, to obtain summary measures, to explore the strength and direction of the linear relationship between the variables, and to assess differences between groups or conditions.

This chapter is divided into four sections that correspond in the main to the theories of wage determinants and differentials mentioned earlier in this study. Within each section there may be two different ways of presenting the findings of the survey, one that is more suitable for categorical variables (e.g., nationality) and the other for continuous variables (e.g., age and wages). For instance, frequencies, percentages of responses for each categorical variable, and the mean and the standard deviation for each continuous variable are analysed. The reason for the different approaches is that some statistics are more appropriate for certain variables than others. Then, univariate and bivariate analyses, with some appropriate procedures for testing hypotheses, will be used to establish whether there is a statistically significant difference between groups, and to determine the strength and direction of the relationship between the variables. Although descriptive statistics serve only as a first step, they are essential for the development of further inferential analysis.

As mentioned in the previous chapter, when choosing the appropriate statistical test, the researcher had to consider the type of questions, items and scales to be included in the questionnaire, the nature of the data and the assumption that must be met for each of the different statistical techniques.

In summary, each term or variable in the following sections will be tested by at least three statistical procedures:

I. Univariate analysis.

II. Bivariate analysis.

III. Testing hypotheses.

All three statistical procedures were explained, in detail, in Chapter Five. Univariate analysis describes frequency distributions which researchers use to organise their data for statistical analysis. It focuses on measures of central tendency and measures of dispersion, which may be used to describe distributions. Bivariate analysis examines the relationships between two variables. In addition, the nationality variable is used in the bivariate analysis as the control variable. This enables the Cross-Tabulation method to be used in this study. The last statistical procedure is the testing of hypotheses, which deals with the problem of evaluating population characteristics when only the sample evidence is available. This enables the researcher to evaluate the accuracy of the estimates. Consequently, parametric and non-parametric tests are employed for testing the hypotheses. These methods of testing hypotheses were also summarised, together with statistical procedures, in the preceding chapter.

Applying all three statistical procedures to the variables will help to achieve the aforementioned main objectives. Note that only univariate tables are presented in this chapter, while the others are organised in Appendix D, and the list of abbreviations is to be found in Appendix C. The main sections of this chapter are as follows:

1. Respondents' background variables.
2. Human capital variables.
3. Segmented labour market variables.
4. Current and starting wage variables.
5. Conclusion.

6.2. Respondents' Background Variables

This section analyses the characteristics of the sample in terms of nationality, marital status, urbanisation, age category, province of origin, occupational category, job title and level of occupational skill as categorical variables, and age as a continuous

variable. It shows that frequencies and percentages provide descriptive statistics of categorical variables, and the mean, median and standard deviations describe the characteristics of continuous variables. In addition, other statistical tests indicate whether there is a statistically significant difference between groups, and what kind of relationship exists among the variables. The main categories and the distribution of scores on continuous variables are described below.

6.2.1 Nationality of Employees

Nationality is a very important factor in determining personal wages. By applying statistical tests on the nationality variable, and then on both the nationality and the wage variables, significant results were obtained.

I. Table 6.1 presents the nationality of the respondents.

Table 6.1 Nationality

	Frequency	Per cent
Saudi	138	41.8
Non-Saudi	192	58.2
Total	330	100.0

Saudis make up 138 respondents (41.8% of the survey). Non-Saudis make up 192 (58.2% of the survey). This justifies the choice of province, that is the Saudi Eastern Province. Saudi and multinational employees work in this province, which makes it a good location for collecting data on wages. It also provides a good opportunity to study wage structure, determination and difference in Saudi Arabia's labour market.

II. The W2CT*NAT Cross-Tabulation Table summarises the relationship between current annual wage category and nationality. The current wage as a continuous variable has been transformed (recoded)[10] into a categorical variable. This transformation provides a continuous variable with some categorical statistical procedures. ***W2CT 1*** refers to a lower annual wage level and ***W2CT 2*** refers to an upper annual wage level or category.

---

[10] Discrete values are assigned to a continuous variable, e.g, current annual wage has been assigned to the lower level, which is coded 1 and the upper level coded 2. The wage amount of SR60,000 is taken to be a cut-off point. This annual wage is higher than the current annual wage average in this study, which is SR56,274.

This table shows that there are only 46 Saudi employees but more than triple that number, 165 of non-Saudi employees, at the lower wage level. On the other hand. there are 91 Saudi employees and less than one-third that number, 27. non-Saudi employees, at the upper wage level. This suggests that Saudi employees are paid higher wages than non-Saudis.

Next, the appropriate tests for comparing groups are the independent-samples t-test (parametric statistic) and its alternative the Mann-Whitney U Test (non-parametric statistic). Both these tests require one categorical variable (e.g., nationality) and one continuous variable (e.g., current wage). The independent-samples t-test and the Mann-Whitney U Test determine whether the two variables in a Cross-Tabulation are related or not.

III.I The W*NAT Independent Sample Test Table shows that where the significant value is less then .05, then equal variances will not be chosen. In addition, where the value in the significant (2-tailed) column is less than .05, then there is a significant difference in the mean of the annual wage variable (***W***) as a dependent variable for each of the Saudi and non-Saudi groups. This result is obtained by applying the interpretation guide of the output from the independent-samples t-test, as explained in the previous chapter.

III.II The W*NAT Mann-Whitney U Test is the non-parametric alternative to the t-test for independent samples. It shows that when the significant (2-tailed) value is less than .05, the result is significant. Hence, there is a statistically significant difference between the current annual wages of Saudi and non-Saudi employees.

6.2.2 Marital Status

I. Table 6.2 shows how many employees are single and how many are married. Single employees comprise only 80 respondents (24.2% of the survey). while those who are married comprise of 250 respondents (75.8% of the survey). These findings may be attributed to the importance of marriage in Islam (the religion of Saudi Arabia), and to Islamic laws, which prohibit sexual relationship outside marriage. Therefore, Saudi and non-Saudi employees are encouraged to marry at an early age.

Table 6.2 Marital Status

	Frequency	Per cent
Single	80	24.2
Married	250	75.8
Total	330	100.0

II. The relationship between current wage category and marital status is summarised in the W2CT*MARSTAT*NAT Cross-Tabulation Table. Nationality is considered an additional variable or a control variable. The current wage categories fall into just two categories: upper and low wage categories. This helps to show the relationship between these two variables.

As can be seen from the total in each row, 33.3 per cent of the Saudi sample are in the lower wage category and 66.7 per cent of the same sample are in the upper one. The number of Saudis in the upper wage category is double that in the lower wage category, while 51.9 per cent of the single Saudi sample and 28.8 per cent of the married Saudi sample are in the lower wage category. This leaves more than 71 per cent of married Saudi employees in the upper category. On the other hand, 85.9 per cent of the non-Saudi sample are in the lower wage category and only 14.1 per cent of this sample are in the upper wage category. This gives an indication as to why the Saudiisation process has not progressed as quickly as was hoped. The researcher believes that in order to speed up the Saudiisation process it is necessary to take account of present wage levels and categories and close the gap between the upper and lower wage categories. There are 94.3 per cent of the single non-Saudi and 82.7 per cent of the non-Saudi married samples in the lower wage category. This leaves a small percentage of non-Saudis at the upper level.

III.I In the W*MARSTAT Independent Sample Test Table, equal variances are not assumed and will not be chosen because the significant value is less than .05. Likewise, the value in the significant (2-tailed) column is less than .05, so there is a significant difference in the mean of the annual wage variable (***W***) as a dependent variable for both single and married groups.

III.II The W*MARSTAT Mann-Whitney U Test shows that the significant (2-tailed) value is less than .05, therefore the result is significant. In other words the

difference between the current annual wages of single and married groups is statistically significant.

6.2.3 Urbanisation

I. From the results shown in Table 6.3, it appears that 258 employees (78.2% of the survey) live in urban areas and seventy-two employees. (21.8% of the survey) live in rural areas.

This suggests that many Saudis have left their hometown to work in the city. This raises the following questions: why do Saudis leave their hometown? Why do non-Saudis come to Saudi Arabia, especially to the major cities? Are they trying to find a better job or a higher wage than in their hometown or country? These important questions will be answered below.

Table 6.3 Urbanisation

	Frequency	Per cent
Urban	258	78.2
Rural	72	21.8
Total	330	100.0

II. The relationship between their current wage category and their urbanisation is shown in the W2CT*URBAN*NAT Cross-Tabulation Table. Nationality is taken to be a control variable. The 'current wage' had to be reclassified into upper and lower categories. These two categories provide more flexibility for Cross-Tabulation analysis.

More upper category Saudi employees live in urban than in rural areas, whereas lower category Saudi employees live more in rural areas than in the city. There is no significant difference when making the same comparison for non-Saudi employees.

III.I In the W*URBAN Independent Sample Test Table, where the significant value is less than .05, then equal variances not assumed are chosen. However, where the value in the significant (2-tailed) column is less than .05, there is a significant difference in the mean of the annual wage variable (***W***) as a dependent variable for each of the urban and rural groups.

III.II The W*URBAN Mann-Whitney U Test shows that the significant (2-tailed) value is less than .05, therefore the result is significant. This leads to the conclusion that there is a difference between the current annual wages of urban and rural groups.

6.2.4 Age Category

I. The results presented in Table 6.4 show the number of respondents in each age category. The highest frequencies are in the 25-29 and 30-34 age categories. This indicates that most private sector employees in Saudi Arabia are between 25 and 39 years of age. The frequency decreases after 40 years old for many reasons, such as some employees requesting early retirement, others leaving the company and opening their own businesses and, in some cases, the companies ending work permits for non-Saudi employees because they are over-budget.

Table 6.4 Age Category

Age Category	Frequency	Per cent
20-24	27	8.2
25-29	75	22.7
30-34	79	23.9
35-39	55	16.7
40-44	44	13.3
45-49	31	9.4
50-54	17	5.2
55-59	1	0.3
60-64	1	0.3
Total	330	100.0

II. The relationship between the current wage category and the age category is summarised in the W2CT*AGECATT*NAT Cross-Tabulation Table. Once more, the current wage category falls into just two categories, upper and lower. Nationality is taken as the control variable. Hence, the relationship between these two variables has improved. The percentage of lower-waged Saudi employees (73.7%) aged 20-24 years old is almost triple the percentage of upper-waged Saudi employees (26.3%) in the same age category. Almost 94 per cent of Saudi employees aged between 40 and 44 are in the upper wage category, whereas most non-Saudi employees over the entire age range are in the lower wage category.

III.I In the W*AGECATT*NAT ANOVA Table, the null hypothesis is rejected. and there is a difference in wages or wage level between age groups because the F value is far from 1. The overall significant value is less than .05, therefore there is a significant difference in the mean scores on annual wage variable (***W***) for all age groups.

III.II In the W*AGECATT*NAT Kruskal-Wallis Test Table, the significant value is less than .05, and there is a statistically significant difference in the (***W***) variable across the age groups (***AGECATT***).

6.2.5 Province of Origin/Place of Birth

I. The results in Table 6.5 show that the highest frequency is for those born in the Eastern Province, followed by the Central and Southern Provinces. The lowest frequency is for those born in the Western and Northern Provinces. The province of origin variable was compared with the wage variable to determine whether the Eastern Saudi employees have the highest wage on average. Stiglitz (1993) stated that wage discrimination exists if individuals with the same economic characteristics receive different wages and the differences are systematically correlated with certain non-economic (e.g., province of origin) characteristics of the individual. Note that non-Saudi employees are not singled out by country, as they came from so many different countries, which makes applying such a statistical test very difficult.

Table 6.5 Province of Origin/Place of Birth

Province of Origin	Frequency	Per cent
Eastern Province	82	24.8
Western Province	6	1.8
Southern Province	15	4.5
Northern Province	5	1.5
Central Province	14	4.2
Other Country	208	63.0
Total	330	100.0

II. The relationship between current wage category and province of origin is highlighted in the W2CT*PBIRTH*NAT Cross-Tabulation Table. The question of possible wage discrimination between non-Saudi employees is ignored here for the above reasons stated above. Employees born in the Eastern Province obtained the

Lowest and highest percentages (40 % and 60%) in the lower and upper wage levels respectively, likewise the other provinces obtained their lowest and highest percentages in the lower and upper wage levels respectively.

III.I In the One Way Analysis of the Variance Table (W*PBIRTH*NAT ANOVA), the F value confirms that there is a difference in wage between province of origin groups. The significant value is less than .05. Therefore, there is a significant difference in the mean of the annual Saudi wage variable (***W***), according to province of origin (***PBIRTH***).

III.II The W*PBIRTH*NAT Kruskal-Wallis Test Table shows that the significant value is less than .05, and so there is a statistically significant difference in the continuous variable (***W***) according to the province of origin for Saudi employees (***PBIRTH***).

6.2.6 Occupational Category

I. Table 6.6 charts differences in the frequencies of all employees. There are five occupational categories. The highest frequency is professional or technical and the lowest is sales marketing. Ehrenberg and Smith (1994) showed that the highest paying occupations are executive and professional. On the other hand, machine operators and assemblers receive the lowest pay. Using statistical techniques to compare wage and occupation categories or actual occupation name in Saudi Arabia's Eastern market, attempts were made to determine whether the Saudi Arabian sample would confirm Ehrenberg and Smith's result.

Table 6.6 Occupational Category

Occupational Category	Frequency	Per cent
Professional or Technical	131	39.7
Administrative	76	23.0
Production Worker	40	12.1
Accounting or Financial	35	10.6
Other	29	8.8
Sales and Marketing	19	5.8
Total	330	100.0

II. The W2CT*JOBCATT*NAT Cross-Tabulation Table summarises the relationship between current wage category and job category. Saudis who work as professional; accountants and production workers are mainly at the upper wage level. Others are at the lower wage level. On the other hand, most non-Saudi employees are at the lower wage level, no matter what kind of occupational category they are in.

III.I Next, the appropriate tests for comparing more than three groups are the ANOVA Test (parametric statistic) and its alternative, the Kruskal-Wallis Test (non-parametric statistic). Both these tests require one categorical variable with more than two groups (i.e., ***JOBCATT***) and one continuous variable (i.e.. current wage). The ANOVA and Kruskal-Wallis Tests determine whether the two variables in a Cross-Tabulation are related or not.

The W*JOBCATT*NAT ANOVA Table shows that the null hypothesis is rejected and there is a difference in wages between job category or type. The F value is 3.77 and the significant value is less than .05. Therefore, there are significant differences in the mean scores on the annual wage variable (***W***) for all occupational category groups.

III.II The W*JOBCATT*NAT Kruskal-Wallis Test Table shows that the significant value is less than .05, and there is a statistically significant difference in the continuous variable (***W***) across the occupational job category groups (***JOBCATT***).

6.2.7 Job Title

A list of job titles for most of the employees in the survey is presented in Table 6.7. It shows that this survey covers many job levels. For instance, it includes high paid jobs such as general manager, down to lower paid jobs such as cook/chef. It shows that the highest frequencies are accountants, inspectors, administrative staff and mechanical engineers. On the other hand, the lowest frequencies are many, such as general manager, and deputy general manager. Fifty-four job titles are not on the list either because the respondents did not give an answer, or because their current job title is not included in the list in the questionnaire. These fifty-four jobs were therefore classified as "other" jobs in order to include them in the study. The whole

list should be very useful for the Saudi Ministry of Labour and Social affairs in planning for future needs.

6.7 Job Title

Job Title	Frequency	%	Job Title	Frequency	%
Other	54	16.4	**Purchases Representative**	5	1.5
Inspector	20	6.1	**Branch Manger**	5	1.5
Accountant	20	6.1	**Computer Engineer**	5	1.5
Administrative Staff	19	5.8	**Purchases Manager**	4	1.2
Mechanical Engineer	16	4.8	**A/C Technician**	4	1.2
Mechanic Technician	14	4.2	**Public Relations Manager**	4	1.2
Electrical Technician	13	3.9	**Sales Manager**	3	0.9
Machinist	11	3.3	**Architect**	3	0.9
Computer Operator	10	3.0	**Carpenter**	3	0.9
Secretary	10	3.0	**Operator**	2	0.6
Sales representative	9	2.7	**House Keeper/Janitor**	2	0.6
Electrical Engineer	9	2.7	**Construction Inspector**	2	0.6
Pursuer/ Representative	8	2.4	**Plumber/Pipe Fitter**	2	0.6
Warehouse Manager	7	2.1	**Builder**	2	0.6
Treasurer	7	2.1	**Heavy Equipment Drive**	2	0.6
Civil Engineer	7	2.1	**General Manager**	2	0.6
Chief Accountant	6	1.8	**Filings Employees**	1	0.3
Mechanic	6	1.8	**Electrical Inspector**	1	0.3
Programmer	6	1.8	**Deputy General Manager**	1	0.3
Cook/Chef	6	1.8	**Administrator**	1	0.3
Driver	6	1.8	**Director of Finance**	1	0.3
Entry Clerk	5	1.5	**Expeditor**	1	0.3
Welder	5	1.5	**Total**	330	100.0

Job titles are introduced so as to describe the nature and characteristics of the sample gathered from the survey. Moreover, they enable the researcher to understand and appreciate the type of respondents included in the sample.

6.2.8 Level of Occupational Skill.

I. The results shown in Table 6.8 show that there are four categories: skilled, semi-skilled, unskilled and unknown. From the survey results obtained it may be seen that out of a total of 330 employees, the professional skilled (197) have the highest percentage and the unskilled the lowest (4). Later in this section more detailed information will be given about the Saudi and non-Saudi employees in each category.

Table 6.8 Level of Occupational Skill

Level of Occupational Skill	Frequency	Per cent
Professional/ Skilled	197	59.7
Semi-Skilled	113	34.2
Unskilled	4	1.2
I Don't Know	16	4.8
Total	330	100.0

II. The W2CT*JOBSKILL*NAT Cross-Tabulation Table shows that at the upper wage level, the percentage of skilled and semi-skilled Saudis is greater than the percentage of unskilled Saudis. At the lower wage level, the percentage of semi-skilled and other non-Saudis is higher than the percentage of skilled non-Saudis.

III.I Is the null hypothesis true? Is there no wage difference between the levels of occupational skill? A large value for the F ratio indicates that the sample means vary more than one would expect if the null hypothesis were true. A small significant value indicates that the null hypothesis is not true. The W*JOBSKILL*NAT ANOVA Table shows that the value of F is smaller than 1 and the significant value is larger than .05. In this case one cannot reject the null hypothesis and there is no difference in wage or wage level according to level of occupational skill.

III.II The W*JOBSKILL*NAT Kruskal-Wallis Test Table shows that the significant value is larger than .05, which indicates that there is not a statistically significant difference in the continuous variable across the four groups.

6.2.9 Age

I. Age is considered as a continuous variable. At this stage it would be meaningless to compute the frequency distribution. Age, as actual data, would be measured at the interval level. Therefore, mean and variance or standard deviation should be computed here. Table 6.9 shows that there are 329 respondents, this means that one value is missing. The range of ages is from 21 to 62 years, with a mean of 34.90 and a standard deviation of 8.33.

Table 6.9 Descriptive Statistics for Age

	N	Minimum	Maximum	Mean	Std. Deviation
AGE	329	21	62	34.90	8.33

III.I The strength and direction of the linear relationship between two variables is described by correlation analysis. The Pearson product-moment coefficient is used because age and wage variables are continuous (interval level). Its alternative, the Spearman rank order correlation, is used also.

The size of the value of Pearson correlation (r) can range from -1.00 to 1.00. This range indicates the strength of the relationship between two variables. As is known, a correlation of 0 indicates no relationship at all, a correlation of 1.0 indicates a perfect positive correlation and a value of -1.0 indicates a perfect negative correlation, following Pallant's (2001) guidelines, as mentioned in Chapter Five. The W*AGE Person Correlation Table shows that there is a medium positive correlation between age and wage variables.

III.II Moreover, in W*AGE Spearman's *rho* Correlation Table confirms that there is a medium positive correlation between the two variables.

6.3 Human Capital Variables.

The human capital theory is the most dominant economic theory of wage determination. Most research related to the human capital theory has used variables such as education, experience and training to illustrate this theory. Education, level of English, level of computer skills, and current and previous experience are

analysed in this section to show the human capital character of the sample in the Saudi labour market.

6.3.1 Education

The results presented in Table 6.10 show the number of employees in the sample, at each education level, for both Saudis and non-Saudis. Education is a very important factor in determining the earnings model. In Table 6.10 it is treated, as a categorical variable, which means one has to use dummy variables to run a regression. Some studies have used years of education instead. For instance, 12 years is used to indicate the employees having a high school qualification and 16 years indicates that he has a Bachelor's degree. This helps in the use of the education variable as a continuous variable. Thus, there is no need for a dummy variable to run a regression.

Table 6.10 Education Level

Educational Level	Frequency	Per cent
Primary School	6	1.8
Elementary School	17	5.2
High School	86	26.1
Diploma	68	20.6
Bachelor of Science	109	33.0
Bachelor of Art	30	9.1
Master's Degree	13	3.9
Ph.D. Degree	1	0.3
Total	330	100.0

I. Table 6.10 shows that 109 employees have Bachelor of Science degrees and only thirty employees have a Bachelor of Art. That suggests that graduates with a Bachelor of Science have a better chance of getting a job. The number of employees who have a high school and diploma is greater than those with a Bachelor of Art degree. Is the return to education, therefore, large or small in the Eastern labour market of Saudi Arabia? Cross-tabulation and regression analysis are employed in an attempt to answer these questions.

II. The W2CT*EDUC*NAT Cross-Tabulation Table shows that on the whole the percentages of Saudis at the upper level are greater than the percentages of Saudis at the lower level, except in the Master's category. The percentage of Master's degrees at the upper wage level is only 33.3, that is half the percentage at the lower wage

level. By contrast, all the percentages of the non-Saudis at the lower wage level are greater than those at the non-Saudi upper wage level.

III.I Does the W*EDUC*NAT ANOVA Table show any wage difference between the various education levels? A small value for significant and a high value for F indicates that the null hypothesis is not true. Here the F value is 2.171 which is greater than 1 and the significant value is .037, which is smaller than .05, therefore the null hypothesis is rejected. The large F value indicates that the sample means vary more than one would expect if the null hypothesis were true. The small significant value also indicates that the null hypothesis is not true.

III.II The W*EDUC*NAT Kruskal-Wallis Test Table shows that the significant value is smaller than .05, which indicates that there is a statistically significant difference in the continuous variable across all education levels or groups in this sample. Would the results be the same if one treats education as a continuous variable? An analysis of the current wage as compared with the number of years of education should answer this question.

Ii. In Table 6.10i education is considered as a continuous variable. Education, as actual data, is measured at the interval level. Therefore, mean and variance or standard deviation is computed here for all 330 respondents with no missing value. This table indicates that most employees, in so far as the sample is representative, have a higher than diploma level of education and that the average time spent in education is 14.5 years.

Table 6.10i Education as a Continuous Variable

	N	Minimum	Maximum	Mean	Std. Deviation
EDUCONT	330	6.00	22.00	14.4697	2.7950

Iii. The relationship between current wage category and education category is summarised in the W2CT*EDUCONT*NAT Cross-Tabulation Table. Again, the current wage has two levels, upper and lower. Nationality is considered an additional variable or a control variable. This helps to show the relationship between those two

variables more clearly. With an increasing number of years of education there is an increase in those at the upper wage level and a decrease in the proportion at the lower wage level for both Saudi and non-Saudi employees.

III.Ii The Pearson product-moment coefficient is used to show the strength and direction of the linear relationship between the variables for current wage and number of years of education. Again, following Pallant's (2001) guidelines, the W*EDUCONT Person Correlation Table presents the Pearson correlation and shows that there is a medium positive correlation between the number of years of education and the wage category variables.

III.IIi The alternative, the Spearman rank order correlation, is also used. The W*EDUCONT Spearman *rho* Table confirms that there is a medium positive correlation between the variables for wage and the number of years of education.

6.3.2 Level of English

I. Table 6.11 indicates that most employees in the Eastern Province of Saudi Arabia have an intermediate level of English. This reflects the fact that the main business language in the Eastern Province is English. Is there any kind of relation between wages and level of English? What is the English level of Saudis and non-Saudis? Applying cross-tabulation to these two variables will clarify some issues. The level of English is treated here as a categorical variable. In addition, analysis of variance as a parametric test and the Kruskal-Wallis Test as a non-parametric test are used. as these should provide relevant answers.

II. The W2CT*ENGLISHL*NAT Cross-Tabulation Table shows that for lower wage level Saudis the percentages of intermediate and advanced English levels are lower than for other groups. There is no substantial difference at percentages of English levels for lower wage non-Saudis except in the advanced English level. At the advanced level, 31.9 per cent of non-Saudis are at the upper wage level and 68.1 per cent of them are at the lower wage level.

Table 6.11 Level of English

Level of English	Frequency	Per cent
None	7	2.1
Beginner	35	10.6
Intermediate	175	53.0
Advanced	113	34.2
Total	330	100.0

III.I Does the W*ENGLISHL*NAT ANOVA Table show no wage difference between English levels? If so, the null hypothesis would be rejected. A large F value and a small significant value indicate that the null hypothesis is not true. Here the F value is 13.190, that is bigger than 1, and the significant value is less than .05, so the null hypothesis is rejected. The large F value indicates that the sample means vary more than one would expect if the null hypothesis were true.

III.II The W*ENGLISHL*NAT Kruskal-Wallis Test Table shows that the significant value is less than .05, which indicates that there is a statistically significant difference in our continuous variable across the four English groups.

6.3.3 Level of Computer Skills

I. Level of computer skills is also treated as a categorical variable. Are Saudi employees more skilled than non-Saudis? Is there any kind of relation between level of computer skill and wages? Table 6.12 indicates the number of employees at each level. The intermediate level has the highest number of employees. There is no great difference in the number of employees with beginner and advanced levels of computer skills. Therefore, there is a demand for computer skills in the Eastern labour market of Saudi Arabia.

II. The W2CT*COMPUTRL*NAT Cross-Tabulation Table shows, in general, that the percentages increase with an increase in computer skill for all Saudi and non-Saudi employees at the upper wage level. On the other hand, the percentages decrease with an increase in computer skill for Saudi and non-Saudi employees at the lower wage level.

III.I Does the W*COMPUTRL*NAT ANOVA Table show the null hypothesis to be true? Is there no wage difference according to level of computer skills? A large F

value indicates that the sample means vary more than one would expect if the null hypothesis were true. A small significant value indicates that the null hypothesis is not true. The ANOVA Table shows that the F value is large and the significant value is less than .05. In this case one may reject the null hypothesis. There is a difference in wages according to level of computer skills.

Table 6.12 Level of Computer Skills

Level of Computer Skills	Frequency	Per cent
None	54	16.4
Beginner	77	23.3
Intermediate	127	38.5
Advanced	71	21.5
Missing	1	0.3
Total	330	100.0

III.II The W*COMPUTRL*NAT Kruskal-Wallis Test Table shows that the significant value is less than .05, indicating that there is a statistically significant difference in the continuous variable across the four groups of computer skills.

6.3.4 Experience

I. As mentioned earlier, many studies have used age as a proxy for experience (age - years of schooling - 6 years). For instance, Mincer (1974) used this formula in his study because of a lack of direct information on experience. Number 6 is equated with 6 years old, the age for enrolling in primary school. The data collected from the survey gave direct information concerning years of experience. The mean and standard deviations are calculated in Table 6.13 because the experience variable is considered to be a continuous one. This table shows two kinds of experience: current and previous experience. Current experience ranges from 0 to 30 years with a mean of 7.7 years and a standard deviation of 6.6. Previous experience ranges from 0 to 28 years with a mean of 5.1 years and a standard deviation of 5.9; zero means that there is no experience.

Many studies have found that years of experience have some effect on personal earnings. Does the experience variable collected in this survey show any effect on personal wages in Saudi Arabia?

III.I Because experience and current wage are continuous variables (interval level), the Pearson product-moment coefficient and the Spearman rank order correlation are used for correlation analysis. Correlation analysis shows the strength and direction of the linear relationship between the two variables.

Table 6.13 Experience

	N	Minimum	Maximum	Mean	Std. Deviation
How many years of experience do you have in your present position?	330	0	30	7.68	6.54
How many years of previous experience before present occupation?	330	0	28	5.03	5.85

Following Pallant's (2001) guidelines, as mentioned in the methodology chapter of this thesis, the W*CURRTEXP Pearson Correlation Table indicates that there is a medium positive correlation between the current wage and current experience variables and also between the current wage and previous experience variables. Moreover, The W*CURRTEXP Spearman's *rho* Table confirms that there is a medium positive correlation between them.

III.II The strength of the relationship between the current wage and previous experience is shown by the W*PREVEXP Pearson Correlation Table. It shows that the two variables have a medium positive correlation. The W*PREVEXP Spearman's *rho* Table confirms this result.

6.4 Segmented Labour Market Variables

The labour market is characterised by the coexistence of a formal and an informal sector. Many studies have taken place in developing countries since the ILO study on Kenya emphasised the importance of the informal sector. In the present study, four criteria were applied in order to distinguish between the formal and the informal

sectors in the Saudi labour market. This provides the opportunity to study wage differences between the two sectors. The criteria used were:

6.4.1 Firm Ownership

I. From the output shown in Table 6.14, it appears that 236 employees (71.5 % of the survey) work in Saudi firms and 84 employees (25.5 %) work in joint venture firms. Only ten employees work in non-Saudi firms. Fewer employees work for joint venture and non-Saudi firms than for Saudi firms.

Table 6.14 Firm Ownership

Firm Ownership	Frequency	Per cent
Owned by Saudis	236	71.5
Owned by Non-Saudis	10	3.0
Joint Venture	84	25.5
Total	330	100.0

Does this distinction of firm ownership help to distinguish between the formal and the informal sectors of the Saudi labour market? Does the wage differential go along with other studies, which found personal wages in the informal sector to be lower than those in the formal sector? Are all joint venture and non-Saudi firms in the formal sector? Are some Saudi firms in the informal sector? All these questions will be dealt with, in detail, below. The sample is taken as representative of the Eastern Province of Saudi Arabia's private sector labour market.

II. The W2CT*FIRMOWNR*NAT Cross-Tabulation Table shows that more Saudi and non-Saudi employees who work in joint ventures are at the upper wage level than are at the lower wage level. Moreover, there is a slight difference between upper and lower levels for Saudi employees in Saudi firms. There are more non-Saudi employees at the lower wage level than the upper wage level in both Saudi and non-Saudi firms.

III.I Looking at the W*FIRMOWNR ANOVA Table, the null hypothesis would be rejected. A large F value and a small significant value indicate that the null

hypothesis is not true. Here the F value is 60.148, that is bigger than 1. and the significant value is less than .05, so the null hypothesis is rejected. There is a difference in wages across the three kinds of firm ownership.

III.II In the W*FIRMOWNR Kruskal-Wallis Test Table, the significant value is less than .05, which indicates that there is a statistically significant difference in our continuous variable across the three kinds or groups of firm ownership.

6.4.2 Type of Firm

I. Table 6.15 indicates that the highest number of employees is to be found in industry and the lowest is in insurance and transportation. The service sector is placed after the industrial sector. It has 69 employees. There is almost no difference between the commercial sector and the agricultural sector in terms of employee numbers. Each of these sectors has its own characteristics, which could affect personal earnings.

II. The W2CT*FIRMTYPE*NAT Cross-Tabulation Table shows that at the lower wage level, there are a high percentage of Saudi employees in the commercial, agricultural and services sectors, although non-Saudis are found in all the sectors. At the upper wage level, with the exception of the commercial and agricultural sectors, Saudi percentages are high, and percentages of non-Saudi employees are low in all sectors except the industrial.

III.I Is there a wage difference between sectors? Would the null hypothesis be rejected? The W*FIRMTYPE ANOVA Table reveals a large F value and a small significant value. This indicates that the null hypothesis is not true. Here the F value is 14.281 which is larger than 1 and the significant value is less than .05. Therefore the null hypothesis is rejected.

Table 6.15 Type of Firm

Type of Firm	Frequency	Per cent
Industrial	113	34.2
Commercial	38	11.5
Agricultural	35	10.6
Finance and Insurance	5	1.5
Transportation	6	1.8
Construction	37	11.2
Services	69	20.9
Others	27	8.2
Total	330	100.0

III.II The above results are confirmed by the W*FIRMTYPE Kruskal-Wallis Test Table. This shows that the significant value is less than .05, which indicates that there is a statistically significant difference in the continuous variable across the sectors.

6.4.3 Number of Employees

I. Number of employees is widely used in segmented labour market studies because this information can be obtained easily compared with other information or criteria regarding a firm's characteristics. More than 20, more than 40 and equal and more than 500 employees will be used as the cut-off points for the formal and informal sector classification. Decree 50 (1995) requires all firms with more than 20 employees to allocate 5 per cent of the number of employee openings to Saudi Arabian nationals. This implies that it is appropriate to consider 20 employees as the cut-off point in this study. The second cut-off point, which is 40 employees, was chosen because the Saudi Chamber of Commerce and Industry used it in 1992 to distinguish between large and small firms. More than '500 employees' is taken as the third cut-off point, but many studies have used only 300 employees. However, in the sample area some firms had more than 500 employees (see Table 6.16), so 500 seemed a more suitable choice. The number of employees in the informal sector was 32 in the 20 category and 58 in 40 category. The strength of the relationship between wage and number of employees as polling data will be analysed. This variable, i.e., 'number of employees', has been transformed into a category variable, number 1 being employees in the informal sector and number 2 being employees in the formal sector. This should help to distinguish between the formal and informal sectors and ascertain the wage differences between sectors.

II. In all W2CT*EMYCAT (20, 40 or 500)*NAT Cross-Tabulation Tables, percentages of Saudi and non-Saudi employees at the lower wage level are greater in the informal sector than in the formal sector. On the other hand, their percentages at the upper wage level are greater in the formal sector than in the informal sector.

III.I Is there any wage difference between the employees groups? Does the W*EMYCAT ANOVA Table show the null hypothesis to be true? Sample means vary more than would be expected. The ANOVA Table shows that the value of F is large and the significant value is less than .05. In this case one can reject the null hypothesis and there is a wage difference between the employees groups.

Table 6.16 Number of Employees

Employees Category	Frequency	Per cent
1-9	18	5.5
10-19	14	4.2
20-39	26	7.9
40-59	14	4.2
60-79	11	3.3
80-99	19	5.8
100-199	15	4.5
200-299	18	5.5
300-399	6	1.8
400-499	22	6.7
500-more	165	50.0
Unknown	2	0.6
Total	330	100.0

III.II The W*EMYCAT Kruskal-Wallis Test Table shows that the significant value is less than .05, which indicates that there is a statistically significant difference in our continuous variable across the employees groups.

6.4.4 Firm Classification[11]

I. The Saudi Chamber of Commerce and Industry reclassifies each firm every year. This classification depends on many factors such as capital, ownership, number of employees and revenues. There are three categories: high, medium and low, according to the fees they pay to the Saudi Chamber of Commerce and Industry. Depending on the level of fees, the Chamber of Commerce and Industry publicises details of the company, with the largest firms which pay the highest fees getting the most publicity and receiving the highest level of service from the chamber. These categories may be used to distinguish between large and small firms, with the lowest category applying to the small firms.

Table 6.17 shows that 124 employees (37.6 % of the survey sample) work in higher firms and 89 employees (27% of the survey sample) work in medium firms. Only 30 employees (0.9% of the survey sample) work in low firms. This thesis uses the high and medium categories as the cut-off point for the formal and the informal sectors. What will the wage level be in the formal and informal sectors in the Eastern Province of Saudi Arabia? Is there a wage difference between these two sectors? Attempts will be made, below, to answer these questions.

II. The W2CT*FIRMGRAD*NAT Cross-Tabulation Table shows that, at high and medium levels, the percentages of Saudis at the upper wage level are much higher than the percentages at the lower wage level. On the other hand, non-Saudi percentages at the lower wage level are higher than the percentages at the upper level.

III.I Is there a wage difference among grade levels? Should the null hypothesis be rejected? In the W*FIRMGRAD*NAT ANOVA Table, a large F value and a small significant value indicate that the null hypothesis is not true. The F value is 12.716, which is greater than 1, and the significant value is less than .05, so the null hypothesis is rejected.

---

[11]The Saudi Chamber of Commerce and Industry directory has many levels, but for simplicity only three classification levels (high, medium, and low) are considered here.

III.II The W*FIRMGRAD*NAT Kruskal-Wallis Test Table shows that the significant value is less than .05, which indicates that there is a statistically significant difference in our continuous variable across the grade levels.

Table 6.17 Firm Classification

Firm Categories	Frequency	Per cent
High	124	37
Medium	89	27
Low	30	0.9
Unknown	87	26.1
Total	330	100.0

6.5 Current and Starting Wages (Salaries) Variables

I. Wages are an important issue for everyone. To the firms wages represent cost. to the worker they represent income and to the whole country they represent potential taxes. Three kinds of wages are explained in this section: current, without fringe benefits and actual starting wages.

Table 6.18 Current and Starting Wage Variables

	N	Minimum SR	Maximum SR	Mean SR	Std. Deviation SR
What is your current monthly wage?	329	500	24,000	4,881.10	4,664.79
What is your current monthly wage without fringe benefits	301	500	18,810	4,130.97	3,615.71
How much was your starting (first) wage?	317	150	120,000	3,397.39	7,383.18

In Table 6.18 the information for each of the wage types is summarised. All the variables are continuous. A mean and standard deviation plus minimum and maximum are the appropriate tests for these continuous variables. With regard to current monthly wage, this ranges from SR500 to SR24,000 with a mean of SR4,881.10 and a standard deviation of SR4,664.79. The mean of the current monthly wage is higher than the mean of the current monthly wage without fringe benefits. In addition, the mean of the actual starting wage is smaller than other means in the table. Are the above tests sufficient for our study? Is there any kind of correlation? What test should be chosen cross-tabulation, and non-parametric or

parametric tests? The answers to most of these questions have been provided in the previous sections so there is no need to repeat tables that indicate the relationship or differences between wage variables (as dependent variables) and closely related variables (independent variables). The next chapter will examine these variables by using a regression procedure in order to answer any questions that remain.

III.I Because the annual current wage and first wage are a continuous variable (interval level), a Pearson product-moment coefficient and a Spearman rank order correlation are used to show the strength and direction of the linear relationship between them. Following Pallant's (2001) guidelines, the W*ANLFTWAG Pearson Correlation Table indicates that there is a medium positive correlation between the current wage and the first wage variables.

III.II Moreover, the W*ANLFTWAG Spearman's *rho* Table confirms that there is a large positive correlation between the two variables.

6.6 Conclusion

The results of each variable have been organised in a simple form that is suitable for use in addressing the research questions. The first procedure summarised patterns in the responses of people in the sample. The second procedure examined bivariate relationships between variables. The results have been shown in the Cross-Tabulation Tables. These tables have revealed that most Saudis in the Eastern Province are paid a higher wage than non-Saudis. When using testing hypothesis as the third procedure, this revealed whether there was a significant relationship or a difference between the dependent variable and the independent variables.

Chapter Seven

Wage Regression Models

7.1 Introduction

In the previous chapters the theoretical models of wage determination and the findings of the wage survey administered to both Saudi and non-Saudi employees in the Eastern private sector of Saudi Arabia were presented. The present chapter provides more empirical evidence for the wage structure, its determinants and the differences in Saudi Arabia's Eastern private labour market by using multiple regression models.

In order to discover relevant empirical results, several regression models were applied that corresponded to the theories of earning determination mentioned earlier in this study. These regression models show econometric estimations of the relationship between annual wage as a dependent variable and a set of independent variables such as background, human capital and segmented variables. Only predicted wage regression tables are presented in this chapter. The list of abbreviations and figures are to be found in Appendices C and E, respectively. The main sections of this chapter are headed as follows:

1. Applying general assumptions of multiple regression
2. Respondents' background variables
3. Human capital variables
4. Segmented labour market
5. Appropriate econometrics models
6. Conclusion

For consideration:

1. Most sections include some econometric linear and natural log models. Violations, detection and correcting of regression assumptions are also included.

2. There are some wage studies that use, in their regression models, both age and experience variables, and other studies that use age as a proxy for experience,

because finding precise data for experience is not easy. This study uses both age and experience for the reasons given below:

- Data on age and experience are available, so there is no need to use a proxy.
- There is no strong correlation between these two variables shown in this chapter.
- Age has been split up into categories, so if there are any indications of correlations between them, these categories will reduce their effect on wages.
- Age and experience are included when selecting an appropriate model (see Section 7.6) which indicates that both are considered as variables.

3. Moreover, some wage studies use a form that is quadratic in experience (***CURRTEXP***^{2}). This transformed variable indicates that the returns due to experience decline with an increase in experience (Mincer, 1974). Adding this variable when choosing an appropriate model (see also Section 7.6) will give a negative sign, as its coefficient does not contribute significantly to the model under consideration. So its null hypothesis cannot be rejected. As a result, this variable was omitted from this study.

4. In Chapter Five, on methodology, a dummy variable is used in order to measure the effects of school level on personal wages. For simplicity, these dummy variables are not applied in the wage model.

7.2 Applying General Assumptions of Multiple Regression

Multiple regression involves making a number of assumptions about the data, which must be adhered to for meaningful results. The major assumptions are as follows:

7.2.1 Sample Size

Different authors tend to provide different guidelines as to the number of cases required for multiple regression. As mentioned earlier in this study, Tabachnick and Fidell (1996, p.132) provided a very useful formula for calculating sample size requirements (Pallant, 2001). This formula takes into account the number of independent variables in the study. In this formula, $N > 50 + 8m$ (where N = sample size and m = number of independent variables). This study has one independent variable as the lowest event and less than 10 independent variables as the highest.

For instance, the lowest event needs 50 + 8(1) = 58 cases and the highest needs 50 + 8 (10) = 130. According to Roscoe (1975), sample sizes larger than 30 cases and less than 500 cases are suitable for most research. In this study, the sample size contained 330 cases, so it was satisfactory for this purpose.

7.2.2 Outliners

Multiple regression is very sensitive to outliners. Extreme scores should be checked for all the continuous variables. Pallant (2001) mentioned that outliners can either be deleted from the data set or given a score that is high, but not too different from the remaining cluster of scores. Table 7.1 confirms that SPSS is able to provide an extreme values table for the highest and lowest values recorded for continuous variables. SPSS also gives the ID number of the case with that score. In this study, continuous variables that will be checked for outliners are: ***CURRTEXP***, ***W***, ***WWFB*** and ***AGE.*** Outliners in each variable will be given as an average, which is a common solution in many studies.

7.2.3 Multicollinearity

Multicollinearity refers to the relationship between the independent variables. It exists when the independent variables are highly correlated (r = 0.9 and above), as suggested by Pallant (2001). Multicollinearity does not contribute to a good regression model; hence checks should be made for this problem as one of the first steps. On other hand, independent variables should show at least some relationship with dependent variables (above 0.3 preferably), as Pallant (2001) also suggested. In order to check this assumption, a correlation matrix and collinearity diagnostics are applied here. SPSS provides a tolerance column as part of a collinearity diagnostics table. This column is calculated by the formula $1-R^2$ for each variable. Pallant (2001) noted that if the result of this formula is very low (near 0), then this indicates that the multiple correlation with other variables is high, suggesting the possibility of multicollinearity. Multicollinearity will be checked later in Sections 7.3 and 7.4. Moreover, Tabachnick and Fidells' suggestion, as mentioned by Pallant (2001), is that if the correlation between independent variables is 0.7 or above, then the researcher has to think carefully before including those variables in his model.

Table 7.1 Extreme Values

			Case Number
W	Highest	1	133
		2	253
		2	120
		4	125
		5	123
	Lowest	1	247
		2	234
		3	287
		4	199
		5	289
CURRTEXP	Highest	1	86
		2	49
		2	114
		4	181
		5	6
	Lowest	1	57
		2	312
		3	134
		4	143
		5	160
AGE	Highest	1	85
		2	299
		2	278
		4	63
		5	205
	Lowest	1	196
		2	166
		3	45
		4	238
		5	8
WWFB	Highest	1	253
		2	71
		2	123
		4	34
		5	122
	Lowest	1	276
		2	49
		3	233
		4	91
		5	275

7.2.4 Normality, Linearity and Homoscedasticity of Residuals

These assumptions can be checked from the residual scatter-plots, which are generated as part of the multiple regression procedure. Residuals are the differences between the obtained and the predicted dependent variable scores. These assumptions may be explained as follows:

1. Normality: the residuals should normally be distributed about the predicted dependent variable scores;

2. Linearity: the residuals should have a straight-line relationship with predicted dependent variable scores; and
3. Homoscedasticity: the variance of the residuals about predicted dependent variable scores should be the same for all predicted scores.

7.3 Respondents' Background Variables

Background variables are very important when studying the determinants of wages. It identifies the difference between one employee and another. Fundamentally, this section shows how nationality, marital status, urbanisation, province of origin and age as respondents' basic background variables affect the wage levels in the Saudi private labour market.

7.3.1 Applying Related Assumptions: Multicollinearity

A. Correlation Matrix.

Table 7.2 shows that each independent variable has some correlation with annual *W* as a dependent variable. These correlation values are quite respectable, so this assumption appears not to be violated. On the other hand, there is no large inter-correlation between the independent variables. This indicates that there is no multicollinearity.

Table 7.2 Correlation Matrix

	W	*NAT*	*MARSTAT*	*URBAN*	*PBIRTH*	*AGE*
W	1.000	-.501	.233	-.182	-.332	.150
NAT	-.501	1.000	-.093	.106	.782	.225
MARSTAT	.233	-.093	1.000	-.063	-.042	.380
URBAN	-.182	.106	-.061	1.000	.179	.059
PBIRTH	-.332	.782	-.042	.179	1.000	.204
AGE	.150	.225	.380	.059	.204	1.000

B. Collinearity Diagnostics

Table 7.3 shows that the tolerance values are quite respectable. Some values in the tolerance column are quite far from 0 and others are very far from 0. This indicates

that the multiple correlation with other variables is low, suggesting the possibility of no multicollinearity.

Table 7.3 Collinearity Statistics

	Tolerance
Constant	-----
NAT	.374
MARSTAT	.816
URBAN	.958
PBIRTH	.378
AGE	.784

7.3.2 Estimating Respondents' Background Variables

7.3.2.1 Reporting the Results

The next thing to establish is which of the background variables, included in the model, contribute to the prediction of the dependent variables. Table 7.4 shows that the coefficients for the independent variables are listed in the column labelled ***B***. The estimated regression model could be constructed easily by using these coefficients.

$\hat{W}$ is the predicted wage level for Saudi and non-Saudi employees. Generally, in the multiple regression model, the partial regression coefficient for a variable indicates how much the value of the dependent variable changes when the value of that independent variable increases by one unit and the values of the other independent variables remain constant In this linear regression model the largest ***beta*** coefficient is $\hat{B}_1$ which is for Nationality ***(NAT)***. This means that this variable makes the strongest unique contribution in predicting the dependent variable (wage level). This shows that a non-Saudi employee is paid SR66,565 less per year than a Saudi. ***URBAN,*** as the second contribution, shows that an employee working in a rural area is paid annually SR18,125 less than an employee working in an urban area. The third contribution is ***MARSTAT***. This indicates that a married employee receives SR8,785 more than a single employee per year. ***PBIRTH*** is the fourth contribution which indicates that some Saudi employees are getting SR3,836 more per year than other employees because of their province of origin of birth. Using a dummy variable with ***PBIRTH*** is very useful; it helps to determine which province, as place of birth, has

the greatest impact on wage level. The ***beta*** for ***AGE*** indicates that it contributed less to predicted wage level.

Table 7.4 Predicted Wage Regression Model for Background Variables

$\hat{W}$	B_i	t-test	Sig
Constant	96,483	6.497	.000
B_1 ***NAT***	-66,565	-9.098	.000
B_2 ***MARSTAT***	8,785	1.542	.124
B_3 ***URBAN***	-18,125	-3.322	.001
B_4 ***PBIRTH***	3,836	2.316	.021
B_5 ***AGE***	1,568	4.860	.000
F-test	36.040		.000
R^2	.36		

The significance column shows whether these variables make a statistically significant contribution to the wage regression model. All significant values, except the ***MARSTAT*** significant value, are less than .05, which means that those variables make a significant contribution to the prediction of the wage variable. That means that the null hypothesis for ***NAT, PBIRTH, URBAN*** and ***AGE*** coefficients can be rejected. The ***MARSTAT*** coefficient does not contribute significantly to the model being considered, therefore its null hypothesis cannot be rejected.

All of the variables except ***NAT*** and ***URBAN*** have positive coefficients, which means that wage expectancy increases with increasing values of the variables. All signs of coefficients are as expected. The estimated intercept, $\hat{B}_0$, is SR96,483. Econometricians differ in their opinions about the interpretation of the intercept. In Brown's opinion, an intercept of SR96,483 appears to imply that $\hat{W}$ will equal SR96,483, even if all independent variables are zero. Others believe that this intercept is a result of the combined effect of omitted independent variables. The intercept value is very high, which gives an indication that the linear wage regression model is not suitable.

An ***F-test*** is used to test several equivalent null hypotheses. Brown (1991) stated that in multiple regression models, the ***F-test*** is used to test the overall significance of the regression. In other words, it tests the joint significance of all of the independent variables except for the intercept, B_0. It detects if there is no linear relationship in the population between the dependent variable and the independent variables. If the observed significance level is less than .05, the null hypothesis can be rejected. What will the result be if this is applied to the above wage model? The null hypotheses for the wage model cannot be rejected. At least one of the population regression coefficients is not 0.

The coefficient of determination, R^2, determines how well the model fits the data. It lies between 0 and 1, with a higher value indicating that more of the variation of the dependent can be explained by the independent variables. For this application, the coefficient variation was only 0.357 which indicates that barely 36 per cent of the variation in $\hat{W}$ can be explained by the ***NAT, MARSTAT, URBAN, PBIRTH*** *and* ***AGE*** independent variables. A low R^2 and a high intercept imply that the model could be improved. Using dummy variables makes the linear regression model a flexible tool that is capable of handling many empirical regression problems.

7.3.2.2 Using Dummy Variables for *PBIRTH*

All the above included independent variables are qualitative in nature, except ***AGE***, which is quantitative. The qualitative variables should indicate the presence or absence of a "quality ", such as Saudi or non-Saudi, married or single, and urban or rural. Gujarati (1988) stated that one method of quantifying such qualities is by structuring moulded or coded variables that take on values of 1 or 0, 0 indicating the absence of a quality and 1 indicating the presence of that quality. ***NAT, MARSTAT*** and ***URBAN*** have been treated already by entering our data from the wage survey. In this section, ***PBIRTH*** is our main concern. It has to be coded again as a qualitative variable with six categories: ***DUMYEAST, DUMYEAST, DUMYSOTH, DUMYNRTH, DUMYCNTR*** and ***DUMYOTHR.***[12] Following the rule that the number of dummies be one less that the number of categories of the variables, five

[12] For more information on these abbreviations see Chapter Five and Appendix C.

dummies are introduced to take care of the six categories of the ***PBIRTH*** variable. ***DUMYEAST*** will be excluded and treated as the base category.

The OLS method is used to run the wage regression model with six categories of the ***PBIRTH*** variable. The wage model '***W***' with its estimated results is depicted below:

$$W = B_0 + B_1 NAT_i + B_2 MARSTAT_i + B_3 URBAN_i + B_4 DUMYWEST_i + B_5 DUMYSOTH_i + B_6 DUMYNRTH_i + B_7 DUMYCNTR_i + B_8 DUMYOTHR_i + B_9 AGE_i + E_i$$

Table 7.5 Predicted Wage Regression Model for Background Variables Using Dummy Variables for *PBIRTH*

*W^*	B_i	t-test	Sig
Constant	83,436	5.231	.000
B_1 ***NAT***	52,164	-6.327	.000
B_2 ***MARSTAT***	10,210	1.826	.069
B_3 ***URBAN***	15,668	-2.911	.004
B_4 ***DUMYWEST***	52,333	2.909	.004
B_5 ***DUMYSOTH***	16,651	1.511	.132
B_6 ***DUMYNRTH***	73,945	4.034	.000
B_7 ***DUMYCNTR***	28,261	2.503	.013
B_8 ***DUMYOTHR***	9,864	1.115	.266
B_9 ***AGE***	13,360	4.136	.000
R^2	.399		

Again, using dummy variables for ***PBIRTH*** categories helps to determine which province, as place of birth, has the highest effect on wages. The results in Table 7.5 confirm that there are wage differences among Saudi employees themselves and that these are due to their original place of birth/ province of origin. Employees born in the Northern Province receive the highest wage and employees born in the Eastern Province receive the lowest.[13] After the employees born in the Northern Province, the wages of those born in the Western, Centre, Southern, and "Other" countries decrease gradually.

All significant values except ***MARSTAT, DUMYSOTH*** and ***DUMYOTHR*** are less than .05 which means that more than half the included variables make a significant

[13] There is no clear result in the table for Eastern Province employees because they are considered as the base category. Following the dummy variable rule this category is considered as a constant in the regression model.

contribution to the prediction of the wage level. The null hypothesis for the ***NAT, AGE, URBAN, DUMYWEST, DUMYNRTH*** and ***DUMYCNTR*** coefficients can be rejected. The ***MARSTAT, DUMYSOTH*** and ***DUMYOTHR*** coefficients do not contribute significantly to the model being considered, so, their null hypothesis cannot be rejected.

The coefficient of determination, R^2, is 0.399, which is slightly higher than the previous estimate. It indicates that 40 per cent of the variation in $\hat{W}$ can be explained by the independent variables listed.

7.3.3 Applying Related Assumptions: Normality, Linearity, and Homoscedasticity of Residuals

As mentioned in Section 7.2.4, these assumptions may be checked in the residual scatter-plot and the Normal Probability Plot following the above mentioned rules. The scatter-plot of the standardised residuals shows that there is a clear pattern for the residuals. Deviations from a centralised rectangle suggest some violation of the other assumptions. For instance;

1. Checking Normality

The normality assumption is violated if the Normal Probability Plot shows that the points are not in a reasonably straight diagonal line from bottom left to top right. In Figure 7.1, the Normal Probability Plot as a normality test indicates a violation of the normality assumption because the points do not lie in a reasonably straight diagonal line from bottom left to top right.

2. Checking Linearity.

There are two methods for checking linearity. The first method is to plot the dependent variable against the independent variables. The second method detects the linearity assumption by plotting the residuals against the predicted values. In this scatter-plot, the residuals should be roughly rectangularly distributed with most of the scores concentrated at the centre (Pallant, 2001). In Figure 7.2, the residual scatter-plot shows that the residuals are not rectangularly distributed, so the

relationship between the dependent variable and the independent variables is not linear.

3. Checking for Constant Variance: Homoscedasticity

The homoscedasticity assumption indicates that the variance of the dependent variables is the same for all values of the independent variables. Plotting the standardised residuals against the predicted values checks whether the residuals, variance is homoscedastic or constant. In Figure 7.2, the variability of the residuals increases with increasing predicted values. That means the variance of the residuals is smaller for small values of the predicted dependent variable than it is for larger values. This result indicates that there is a heteroscedasticity problem.

What should the researcher do if there are violations of regression assumptions? As mentioned earlier, there are two solutions: one is very general, and requires the transformation of the values of the dependent variable or independent variable. In this study the dependent variable is transformed to the natural log following the Mincer model as explained in the methodology in Chapter Five of this thesis. The second method is more specific and is usually used by econometricians. They use WLS to solve for heteroscedasticity.

7.3.4 Corrections

7.3.4.1 Transforming the Dependent Variable into the Natural Log (As a General Solution)

Most wage studies use a linear regression model, or a natural log regression model, or both models. Transforming the dependent variable to the natural log might help to provide good results.

$$Ln\ W = B_0 + B_1 NAT_i + B_2 MARSTAT_i + B_3 URBAN_i + B_4 PBIRTH_i + B_5 AGE_i + E_i$$

In Table 7.6, the natural log wage regression model shows that all independent variables make a statistically significant unique contribution to wage level. In other words, significant values are less than .05, which indicates that almost all variables make a significant contribution to the prediction of the wage level. Transforming it

to the natural log allows ***MARSTAT*** to contribute significantly in affecting the wage variable. In other words, ***MARSTAT*** is insignificant, but after transformation it becomes significant.

Moreover, looking at each Normal Probability Plot and scatter-plot after running ***Ln*** wage regression model in Figure 7.3, the Normal Probability Plot shows that almost all points lie in a reasonably straight diagonal line from bottom left to top right. In Figure 7.4, the scatter-plot shows that there is not a clear pattern to the residuals. Therefore, one may conclude that there is no major violation of these assumptions after the data are remedied by using transformation of the wage variable. The coefficient of determination, R^2, is 41 per cent.

Table 7.6 Predicted Wage Regression Model for Background Variables using the Natural Log Wage as Dependent Variable, and Comparison between OLS and OLS using the Natural Log

	OLS			**OLS using the Natural Log Wage**		
$\hat{W}$	B_i	**t- test**	**Sig**	B_i	**t- test**	**Sig**
Constant	96,483	6.497	.000	11.292	44.822	.000
B_1 ***NAT***	-66,565	-9.098	.000	-1.135	-9.146	.000
B_2 ***MARSTAT***	8,785	1.542	.124	0.272	2.818	.005
B_3 ***URBAN***	-18,125	-3.322	.001	-0.404	-4.367	.000
B_4 ***PBIRTH***	3,836	2.316	.021	0.050	1.787	.075
B_5 ***AGE***	1,568	4.860	.000	.0247	4.516	.000
R^2	.36			.41		

This indicates that 41 per cent of the variation in ***Ln*** $\hat{W}$ can be explained by all the background variables. A comparison of OLS and OLS using the natural log for the wage variable, as a dependent variable is very important. Table 7.6 also shows that:

1. Some of the corresponding t-test scores rose higher, which indicates that OLS with the natural log has given a more efficient estimate of the slope parameters.
2. R^2 rose from 36 per cent to 41 per cent.

7.3.4.2 Correction for Heteroscedasticity:

This is an alternative correction for the original background regression model. Residual variances are required to be homoscedastic or constant. If they are not constant ($\sigma_i^2 \# \sigma_j^2 \ \forall \ i, j$) then heteroscedasticity exists, which is most common in cross-sectional analysis. Brown (1991) mentioned that heteroscedasticity is suspected to exist in many cases and for various reasons such as:

1. In a cross- sectional study.
2. Errors increase as X (independent variable, ***AGE***) increases, as shown in Figure 7.2.
3. The omission of variables can sometimes result in errors that appear heteroscedastic. So there are major variables omitted from this wage regression model.
4. Both R^2 and the ***F- test*** are adequate.

Table 7.7

OLS and WLS Regression Methods

	OLS			WLS		
$\hat{W}$	B_i	t-test	Sig	B_i	t-test	Sig
Constant	96,483	6.497	.000	99,823.32	7.805	.000
NAT	-66,565	-9.098	.000	-56,209.77	-8.148	.000
MARSTAT	8,785	1.542	.124	21,029.91	4.586	.000
URBAN	-18,125	-3.322	.001	-11,238.68	-2.129	.034
PBIRTH	3,836	2.316	.021	4,102.66	2.681	.0077
AGECATT	1,568	4.860	.000	---------	-------	------
R^2	.36			.31		
Source Variable				***AGECATT***		

Heteroscedasticity does not bias parameter estimates, but it does make them inefficient relative to alternative estimates. Heteroscedasticity could be eliminated by Weighted Least Squares (WLS) as the most common method. A comparison of OLS and WLS results is crucial. Table 7.7 shows some important differences.

1. The corresponding *t-test* rose higher. This indicates that the WLS transformation model has generated a more efficient estimate of the slope parameters.
2. R^2 fell from 36 per cent to 31 per cent.

7.4 Human Capital Variables

It was indicated in the literature review of this study that the human capital theory is the most dominant economic theory of wage determination. In this section this theory will be mainly applied in econometric models in order to determine how human capital variables such as education and experience affect the wage level in the Saudi private labour market. English and computer skill levels will also be tested. In other words, human capital and background variables will be combined to see how respectable effects may be obtained.

7.4.1 Applying Related Assumptions: Multicollinearity

A. Correlation Matrix.

Table 7.8 shows that there is no great inter-correlation between the independent variables. In addition, it shows that each independent variable has a respectable correlation with annual ***W*** as a dependent variable. Therefore, this indicates that there is no multicollinearity.

Table 7.8 Correlation Matrix

	1	2	3	4	5	6	7	8	9
1	1.000	-.501	.233	-.182	.175	.123	.296	.335	.313
2	-.501	1.000	-.093	.106	.260	.194	.085	-.146	-.041
3	.233	-.093	1.000	-.061	.419	.043	.096	.031	.319
4	-.182	.106	-.061	1.000	.041	-.142	-.114	-.333	-.044
5	.175	.260	.419	.041	1.000	.054	.165	-.133	.517
6	.123	.194	.043	-.142	.054	1.000	.421	.363	-.126
7	.296	.085	.096	-.114	.165	.421	1.000	.465	.036
8	.335	-.146	.031	-.333	-.133	.363	.465	1.000	-.014
9	.313	-.041	.319	-.044	.517	-.126	.036	-.014	1.000

1= ***W***, 2 = ***NAT***, 3 = ***MARSTAT***, 4 = ***URBAN***, 5 = ***AGECATT***, 6 = ***EDUC***. 7 = ***ENGLISHL***, 8 = ***COMPUTRL***, 9 = ***CURRTEXP***.

B. Collinearity Diagnostics

Table 7.9 shows that all values in the tolerance column are far from 0. This indicates that the multiple correlation with other variables is low. Because tolerance values are quite respectable, this suggests the possibility of no multicollinearity.

Table 7.9 Collinearity Statistics

	Tolerance
Constant	------
NAT	.800
MARSTAT	.767
URBAN	.877
AGECATT	.532
EDUC	.721
ENGLISHL	.666
COMPUTRL	.616
CURRTEXP	.668

7.4.2 Estimating Human Capital Wage Linear Regression

7.4.2.1 Reporting the Results

The ways in which the variables of the human capital theory, such as education level, years of experience, level of English and computer skills, plus the variables referred to in the previous section, affect the wage levels in the Eastern private labour market of Saudi Arabia are explored below.

$$W = B_0 + B_1\, NAT_i + B_2\, MARSTAT_i + B_3\, URBAN_i + B_4\, AGECATT_i + B_5\, EDUC_i + B_6\, ENGLISHL_i + B_7\, COMPUTRL_i + B_8\, CURRTEXP_i + E_i$$

In Table 7.10, the significant column shows that all included independent variables, except ***MARSTAT*** and ***URBAN,*** are significant in contributing to the prediction of the wage level. Thus, their null hypothesis can be rejected. On the other hand, the null hypothesis of ***MARSTAT*** and ***URBAN*** cannot be rejected. The coefficient of determination is 0.499 which indicates that 50 per cent of the variation in $\hat{W}$ can be explained by the listed independent variables.

7.4.3 Applying Related Assumptions: Normality, Linearity and Homoscedasticity of Residuals

1. Checking Normality

In Figure 7.5, the Normal Probability Plot shows that the points are not in a reasonably straight diagonal line from bottom left to top right. This indicates a violation of the normality assumption.

2. Checking Linearity

The standardised residuals are plotted against the predicted values in Figure 7.6 in order to check the linearity assumption. This shows that the relationship between the dependent variable and the independent variables is not linear.

3. Checking for Constant Variance: Homoscedasticity

By again plotting the standardised residuals against the predicted values, Figure 7.6 shows that the error variance is not constant. It shows that the variability of the residuals increases with the increase in predicted values. This result indicates that there is no homoscedasticity. By following the same solutions mentioned in the previous section, the problems should be solved.

Table 7.10

Predicted Wage Regression Model for Human Capital Variables

$\hat{W}$	B_i	t-test	Sig
Constant	31,321	1.997	.047
B_1 ***NAT***	-55,829	-12.570	.000
B_2 ***MARSTAT***	700	.134	.893
B_3 ***URBAN***	-4,472	-.883	.378
B_4 ***AGECATT***	6,039	3.757	.000
B_5 ***EDUC***	4,116	2.311	.021
B_6 ***ENGLISHL***	12,971	3.804	.000
B_7 ***COMPUTRL***	7,257	2.887	.004
B_8 ***CURRTEXP***	1,581	3.919	.000
R^2	.50		

7.4.4 Corrections:

7.4.4.1 Transforming the Dependent Variable into the Natural Log (As a General Solution).

Many studies have used the natural log regression to obtain a good result. The ***Ln W*** regression model shows that all independent variables offer a statistically significant contribution to the wage variable. Moreover, significant values are less than or almost equal to .05, giving an indication that almost all variables listed in the table make a significant contribution to the prediction of the wage variable. In Figure 7.7. the Normal Probability Plot shows all points lying in a reasonably straight diagonal line from bottom left to top right. The scatter-plot in Figure 7.8 shows that there is not a clear pattern to the residuals. Using the transformation of wage variable remedied the violation of the assumption.

$$LnW = B_0 + B_1\,NAT_i + B_2\,MARSTAT_i + B_3\,URBAN_i + B_4\,AGECATT_i + B_5\,EDUC_i + B_6\,ENGLISHL_i + B_7\,COMPUTRL_i + B_8\,CURRTEXP_i + E_i$$

Table 7.11 Predicted Wage Regression Model for Human Capital Variables using the Natural Log Wage as Dependent Variable, and Comparison between OLS and OLS using the Natural Log

	OLS			OLS using the Natural Log Wage		
$\hat{W}$	B_i	t- test	Sig	B_i	t- test	Sig
Constant	31,321	1.997	.047	9.996	38.842	.000
B_1 *NAT*	-55,829	-12.570	.000	-1.021	-14.007	.000
B_2 *MARSTAT*	700	.134	.893	.132	1.542	.124
B_3 *URBAN*	-4,472	-.883	.378	-.167	-2.006	.046
B_4 *AGECATT*	6,039	3.757	.000	.097	3.669	.000
B_5 *EDUC*	4,116	2.311	.021	.082	2.811	.005
B_6 *ENGLISHL*	12,971	3.804	.000	.272	4.855	.000
B_7 *COMPUTRL*	7,257	2.887	.004	.122	2.952	.003
B_8 *CURRTEXP*	1,581	3.919	.000	.024	3.575	.000
R^2	.50			.57		

A comparison of OLS and OLS using the natural log for a wage variable as a dependent variable is very important. Table 7.11 also shows some important points.

1. Some of the corresponding t-test scores rose higher. This indicates that OLS using the natural log gives a more efficient estimate of the slope parameters.
2. R^2 rose from 50 per cent to 57 per cent.

7.4.4.2 Correction for Heteroscedasticity

Heteroscedasticity is suspected to exist in original linear wage regression model output. The evidence is that the residuals increase as predicted values increase and both R^2 and ***F-test*** are adequate. As a result of heteroscedasticity the parameters are biased. This problem could be eliminated by WLS. This method shows that some ***t-test*** values become slightly higher and others become lower. In addition, R^2 does not change at all. A comparison of OLS and WLS results is crucial. Table 7.12 shows some important differences.

1. The corresponding ***t-test*** rose slightly. This indicates that the WLS transformation model has generated a more efficient estimate of the slope parameters.
2. R^2 does not change.

Table 7.12

OLS and WLS Regression Methods

	OLS			WLS		
$\hat{W}$	B_i	t-test	Sig	B_i	t-test	Sig
Constant	3,1321	1.997	.047	32,238.20	2.131	.0339
B_1 *NAT*	-55,829	-12.570	.000	-53,436.97	-12.083	.000
B_2 *MARSTAT*	700	.134	.893	1,594.63	.306	.7601
B_3 *URBAN*	-4,472	-.883	.378	-5509.71	-1.127	.2605
B_4 *AGECATT*	6,039	3.757	.000	5,831.78	3.665	.0003
B_5 *EDUC*	4,116	2.311	.021	3,847.34	2.190	.0293
B_6 *ENGLISHL*	12,971	3.804	.000	13,040.51	3.951	.0001
B_7 *COMPUTRL*	7,257	2.887	.004	6,479.18	2.617	.0093
B_8 *CURRTEXP*	1,581	3.919	.000	1,472.04	3.694	.0003
R^2	.50			.50		
Source Variable				*EDUC*		

To conclude, the first correction method produces more significant results than the second. The first correction method will be the main correction method in the following sections.

7.5. Segmented Labour Market Variables

Virtually all labour market studies have shown that the labour force is segmented in some sense. In Chapter Four it was stated that there are many criteria that could be used to segment the labour market. Moreover, Osterman (1977) stated that the labour force could be segmented, effectively, into three parts: secondary, lower tier and upper tier. The previous author mentioned in his study that Piore summarised the differences between jobs in the primary and secondary markets in 1972. In fact, there are many studies of the segmentation of the labour market. The pertinent question now is not whether the labour market is segmented, but what criteria are being used? The second important question is, are there any wage differences between the segmented labour markets in the private sector of the Eastern Province? These very important questions will be answered in this section. Many standard segmented points or lines could be used, such as: 1) Saudi and non-Saudi (Nationality). 2) Job category. 3) Job skill. 4) Firm ownership. 5) Sectors. 6) Employees number. 7) Place of birth (original province of birth). 8) Wage category. There are two ways of explaining the empirical results. First, holding each sub-segmented labour market constant and then indicating all the independent variables that affect it significantly. Second, holding each independent variable constant and then indicating all the sub-segmented labour markets which are affected significantly. Both methods, will be used in this section. The organisation of this section follows the above standard segmented points.

7.5.1 Saudi and Non-Saudi (Nationality)

The Saudi labour market is segmented into two the-Saudi and non-Saudi markets. This method shows that almost all independent variables except ***AGECATT*** have some effect on Saudi wage level.

On the other hand, only three independent variables affect the non-Saudi wage level. It is apparent from the results that the wage-setting process differs substantially

between the segments. In Table 7.13, most of the ***beta*** values in the Saudi labour market are higher than in the non-Saudi labour market and this confirms that there is a wage difference between the two markets. These results should be of considerable value when initiating a wage policy and restructuring the labour market.

Table 7.13 Nationality

	Saudi		Non-Saudi	
$\hat{Ln\ W}$	B_i	Sig	B_i	Sig
Constant	8.652	.000	8.066	.000
B_1 *NAT*	-------	-----	--------	-----
B_2 *MARSTAT*	.349	.014	.041	.907
B_3 *URBAN*	-.293	.040	-.122	.237
B_4 *AGECATT*	.082	.115	.102	.001
B_5 *EDUC*	.100	.027	.091	.024
B_6 *ENGLISHL*	.241	.004	.287	.000
B_7 *COMPUTRL*	.166	.013	.094	.083
B_8 *CURRTEXP*	.030	.007	.018	.058
R^2	.44		.39	

The highest coefficient of determination, R^2, is 44 per cent for the Saudi labour market and 39 per cent for the non-Saudi labour market. This indicates that more independent variables affect the Saudi wage level than the non-Saudi wage level.

7.5.2 Job Category

Following the significant rule with the results in Table 7.14, the ***NAT*** coefficient for all job categories makes a significant contribution to the prediction of wages as a dependent variable. On the other hand, the ***MARSTAT*** coefficient for the same job categories does not make a significant contribution in predicting the dependent variable. The contributions of the other independent variables vary from one to another. For instance the coefficient of ***URBAN*** only indicates a significant effect for one category: the production category. ***AGECATT*** and ***EDUC*** have more effects than ***URBAN.***

Table 7.14 Job Category

$LnW^{\wedge}$	Professional		Administrative		Accounting & Financial	
	B_i	Sig	B_i	Sig	B_i	Sig
Constant	10.770	.000	9.349	.000	8.740	.000
B_1 *NAT*$_1$	-1.003	.000	-1.009	.000	-1.110	.000
B_2*MARSTAT*	.037	.794	.138	.439	.622	.086
B_3 *URBAN*	-.234	.085	.069	.729	-.155	.553
B_4*AGECATT*	.095	.024	.137	.020	.125	.115
B_5 *EDUC*	.007	.890	.120	.053	.336	.076
B_6*ENGLISHL*	.204	.035	.132	.353	.242	.122
B_7 *COMPUTRL*	.201	.002	.207	.120	.018	.292
B_8*CURRTEXP*	.017	.085	.035	.014	.028	.765
R^2	.59		.54		.71	

Table 7.14 Contd. (Job Category)

$LnW^{\wedge}$	Sales and Marketing		Production Worker		Other	
	B_i	Sig	B_i	Sig	B_i	Sig
Constant	9.061	.000	10.306	.000	9.135	.000
B_1 *NAT*	-1.318	.002	-1.152	.000	-.879	.013
B_2*MARSTAT*	.481	.119	-.167	.550	.153	.610
B_3 *URBAN*	.604	.241	-.541	.028	.149	.584
B_4*AGECATT*	.058	.641	.072	.529	.114	.192
B_5 *EDUC*	.311	.104	.689	.005	.104	.550
B_6*ENGLISHL*	.038	.750	-.060	.675	.232	.158
B_7 *COMPUTRL*	-.012	.724	-.002	.973	.029	.384
B_8*CURRTEXP*	.107	.489	.135	.398	.139	.044
R^2	.75		.65		.56	

AGECATT and ***EDUC*** significantly affect the administrative category. In addition, ***AGECATT*** and ***EDUC*** also significantly affect the professional and production categories respectively. Moreover, ***ENGLISHL*** and ***COMPUTRL*** make a significant contribution to the professional category. Finally, the coefficient of ***CURRTEXP*** is significant for the administrative and "other" categories. In sum, most of the jobs that

are significantly affected by the independent variables are professional and administrative. The null hypothesis would be rejected because this study proves that at least one of the independent variables has a significant effect on wage. A comparison of ***beta*** values across these job categories shows that they carry different weight from one job to another but the main ***beta*** value is ***beta*** of Nationality, ***NAT***. As a result, there is a wage difference associated with job category.

The highest coefficient of determination, R^2, is 75 per cent for a marketing job, and the lowest is 54 per cent for an administrative job. This indicates that there are some job categories that have to be paid more attention than others when policy makers are constructing wage systems or initiating wage policies in the Saudi private market.

7.5.3. Job Skill

Unskilled and unknown sub-segments of the labour market are excluded from the regression model because the former only has four cases and the latter has mixed skill levels that would produce inaccurate results.

Table 7.15 Job Skill

$LnW^{\wedge}$	Skilled		Semi-Skilled		Unskilled		Unknown	
	B_i	Sig	B_i	Sig	B_i	Sig	B_i	Sig
Constant	9.761	.000	10.466	.000	--	--	12.263	.000
B_1 *NAT*	-.913	.000	-1.127	.000	--	--	-1.391	.000
B_2 *MARSTAT*	.135	.245	.200	.191	--	--	-.0321	.756
B_3 *URBAN*	-.221	.079	-.081	.522	--	--	-.520	.012
B_4 *AGECATT*	.151	.000	.023	.669	--	--	.011	.813
B_5 $EDUC_1$	.195	.019	.319	.004	--	--	.396	.001
B_6 *ENGLISHL*	.183	.001	.002	.976	--	--	-.040	.537
B_7 *COMPUTRL*	.024	.004	.027	.038	--	--	.014	.365
B_8 *CURRTEXP*	.072	.065	.043	.466	--	--	-.021	.535
R^2	.53		.60		-----		.97	

In Table 7.15, the coefficients of ***NAT, EDUC*** and ***COMPUTRL*** have the most significant effect on the skilled and semi-skilled categories. On the other hand, there are no significant affects by the ***MARSTAT, URBAN*** and ***CURRTEXP*** coefficients.

The coefficients of the remaining independent variables only make a significant contribution in the skilled category. The skilled and semi-skilled ***beta*** values show a slight difference. Thus, the wage difference between skilled and semi-skilled is confirmed by their ***beta*** values.

The coefficient of determination, R^2, is 60 per cent for semi-skilled and 53 per cent for skilled. Therefore, the decision-makers in the decisions in the Saudi labour market should principally consider the independent variables ***NAT, EDUC*** and ***COMPUTRL,*** when introducing a wage system or policy.

Table 7.16 Firm Ownership

$LnW^{\wedge}$	Saudi Firms		Non-Saudi Firms		Joint Venture	
	B_i	Sig	B_i	Sig	B_i	Sig
Constant	9.863	.000	8.584	.176	10.004	.000
B_1 ***NAT***	-.860	.000	---	---	-1.010	.000
B_2 ***MARSTAT***	.103	.286	-.843	.649	.148	.326
B_3 ***URBAN***	-.076	.411	.425	.818	-.132	.467
B_4 ***AGECATT***	.065	.031	-.199	.602	.186	.000
B_5 ***EDUC***	.103	.002	.299	.701	.126	.007
B_6 ***ENGLISHL***	.197	.003	.295	.791	.246	.005
B_7 ***COMPUTRL***	.029	.079	-.193	.722	.087	.193
B_8 ***CURRTEXP***	.03159	.000	.238	.121	.003414	.706
R^2	.46		.91		.62	

7.5.4 Firm Ownership

There are only 10 cases in the non-Saudi firm sub-segment of the labour market. No accurate results could be obtained from just 10 cases. Thus, this sub-segment can be excluded. Table 7.16 shows that the coefficients of ***NAT, AGECATT, EDUC*** and ***ENGLISHL*** have the most significant effect on the Saudi and joint venture firm categories. There are no significant affects shown by the ***MARSTAT, URBAN*** and ***COMPUTRL*** coefficients. The coefficients of the ***CURRTEXP*** variable only make a significant contribution to the Saudi firm category. Comparing ***beta*** values between the firm ownership categories shows that there is a difference. As a result, there is a wage difference between them.

The coefficient of determination, R^2, is 62 per cent for joint venture firms and 46 per cent for Saudi firms. This indicates that 46 per cent and 62 per cent of the variation in ***Ln W^*** can be explained by the listed independent variables for Saudi and joint venture firms respectively.

7.5. 5 Economic Sectors

The second method for explaining the coefficients (see above) can be used here. Table 7.17 shows that the significant coefficients of each sub-segment of the labour market vary from one to another. For instance, the industrial category is only affected significantly by the coefficients of ***NAT, AGECATT, EDUC*** and ***ENGLISHL***.

Table 7.17 Economic Sectors

LnW^	**Industrial**		**Commercial**		**Agricultural**	
	B_i	**Sig**	B_i	**Sig**	B_i	**Sig**
Constant	10.040	.000	9.452	.000	7.987	.000
B_1 ***NAT***	-1.267	.000	-.808	.026	-.296	.186
B_2 ***MARSTAT***	.093	.591	.299	.310	-.837	.007
B_3 ***URBAN***	-.099	.584	-.311	.213	.608	.021
B_4 ***AGECATT***	.152	.003	.134	.083	.065	.418
B_5 ***EDUC***	.119	.048	.072	.396	.150	.148
B_6 ***ENGLISHL***	.039	.002	.160	.340	.641	.005
B_7 ***COMPUTRL***	.086	.307	.170	.208	.166	.190
B_8 ***CURRTEXP***	.020	.073	.013	.571	.063	.003
R^2	.60		.54		.64	

The commercial and construction sectors are affected significantly by ***NAT*** and ***AGECATT*** respectively. The fourth, fifth and sixth independent variables in the agricultural, services and "other" categories respectively do not make any significant contribution to the predicted wage. A comparison of ***beta*** values in these economic sectors shows that they differ from one sector to another but the main ***beta*** value is the ***beta*** of Nationality (***NAT***) in all sectors and the ***beta*** of ***MARSTAT*** in the agricultural sector only. As a result, wage differences exist among economic sectors.

Table 7.17 Contd. (Economic Sectors)

*LnW^*	Construction		Services		Other	
	B_i	Sig	B_i	Sig	B_i	Sig
Constant	9.179	000	8.687	.000	9.648	.000
B_1 ***NAT***	----	----	-1.089	.000	-.427	.082
B_2 ***MARSTAT***	.108	.614	.405	.041	-.364	.171
B_3 ***URBAN***	-.324	.098	.154	.476	.194	.544
B_4 ***AGECATT***	.126	.097	.129	.041	.116	.148
B_5 ***EDUC***	.184	.046	.119	.103	.149	.047
B_6 ***ENGLISHL***	.071	.674	.342	.010	.054	.758
B_7 ***COMPUTRL***	.031	.812	.134	.136	.198	.144
B_8 ***CURRTEXP***	-.016	.414	.018	.248	.060	.003
R^2	.32		.62		.66	

The highest coefficient of determination, R^2, is 66 per cent for the "other" sectors while the lowest is 32 per cent for the construction sector. If the subsidised wage policy now being applied in Saudi Arabia is to be successful, then the significant independent variables identified in this section need to be taken into account.

7.5. 6 Employment Category

In Table 7.18, all coefficients, except ***URBAN*** and ***MARSTAT,*** can be seen to make a statistically significant and unique contribution to the prediction of wage variables in the formal sector. As predicted, with the informal sector many coefficients do not make any significant contribution, these being ***MARSTAT, URBAN, EDUC*** and ***CURRTEXP***.

Note the differences in magnitude between the two sectors. For example, ***NAT*** has more effect on wages in the formal sector than in the informal sector. In general, the ***beta*** values of the formal sector are higher than the ***beta*** values of the informal sector. Thus, wage differences between the formal and informal sectors are confirmed by the differences in their ***beta*** values.

Table 7.18 Employment Category

$LnW^{\wedge}$	Less than 300 Employees (Informal Sector)		300 and more Employees (Formal Sector)	
	B_i	Sig	B_i	Sig
Constant	9.590	.000	10.391	.000
B_1 *NAT*	-.652	.000	-1.001	.000
B_2 *MARSTAT*	.150	.225	.064	.561
B_3 *URBAN*	-.230	.076	-.182	.075
B_4 *AGECATT*	.141	.000	.069	.050
B_5 *EDUC*	.026	.120	.092	.022
B_6 *ENGLISHL*	.111	.196	.226	.003
B_7 *COMPUTRL*	.157	.022	.142	.003
B_8 *CURRTEXP*	.004	.747	.029	.000
R^2	.64		.59	

The coefficient of determination, R^2, is 64 per cent for the informal sector and 59 per cent for the formal sector. This indicates that 59 per cent and 64 per cent of the variation in $Ln\ W^{\wedge}$ can be explained by the listed independent variables for the formal and informal sectors respectively.

7.5. 7 Province of Origin/Place of Birth (Discrimination Theory)

Table 7.19 shows that none of the coefficients for those born in the Southern Province makes a statistically significant contribution to the prediction of the wage variable. On the other hand, with regard to "Other" countries, they make a statistically significant contribution, except for ***MARSTAT*** and ***EDUC***. This leaves only the Eastern and Central Provinces to examine. A comparison between them might show some discrimination with regard to wages. There are three independent variables that make a significant contribution in the Eastern Province and only two in the Central Province.

Table 7.19 Province of Origin/Place of Birth

LnŴ	Eastern Province		Southern Province		Central Province		Other Countries	
	B_i	Sig	B_i	Sig	B_i	Sig	B_i	Sig
Constant	8.513	.000	12.15	.000	11.53	.000	9.762	.000
B_1 ***NAT***	-.561	.171	-1.671	.081	-2.384	.001	-.792	.000
B_2 ***MARSTAT***	.498	.008	.316	.552	.164	.389	.001	.990
B_3 ***URBAN***	.050	.816	.498	.424	.09	.738	-.191	.055
B_4 ***AGECATT***	.116	.150	-.009	.959	.189	.281	.109	.000
B_5 ***EDUC***	.155	.008	-.278	.417	.226	.032	.055	.146
B_6 ***ENGLISHL***	.346	.000	.458	.315	.131	.409	.272	.001
B_7 ***COMPUTRL***	.043	.581	-.268	.497	.023	.847	.177	.001
B_8 ***CURRTEXP***	.023	.125	.043	.277	.009	.822	.019	.033
R^2	.52		.84		.93		.45	

Comparing the ***beta*** values of the Eastern and Central Provinces shows that they differ from one province to another. For example, the ***beta*** of ***EDUC*** is higher in the Central Province than in the Eastern Province. As a result, it may be inferred that wage differences in the Saudi Eastern private labour market are caused by province of origin.

There are differences in magnitude between these two provinces. For example, ***NAT*** has more effect on wages in the Central Province than in the Eastern Province. In general, the ***beta*** values of the Central Province are higher than the ***beta*** values of the Eastern Province. Thus, wage differences between the Central and Eastern Provinces are confirmed by the difference in their ***beta*** values.

The coefficient of determination, R^2, is 93 per cent for the Central Province, 84 per cent for the Southern Province, 52 per cent for the Eastern Province and 45 per cent is for "Other" countries. The highest coefficient of determination is for the Central Province and the lowest is "Other" countries. It indicates that 93 per cent and 45 per cent of the variation in ***Ln Ŵ*** can be explained by the listed independent variables for the Central Province and "Other" countries respectively.

7.5. 8 Wage Category

The wage category base depends on an arbitrary cut-off point. It uses SR60,000 as an annual wage: if the annual wage level is equal to or larger than SR60,000, a worker is at the high wage level (formal sector), otherwise a worker is at the low wage level (informal sector). In Table 7.20 only three coefficients make a statistically significant unique contribution to the prediction of the wage variable in the higher category. These are ***NAT, AGECATT*** and ***EDUC***. On the other hand, there are four different significant coefficients, except for ***NAT,*** in the lower category. Independent variables that affect the high wage level category differ from other independents that affect the low wage level. Even ***NAT*** has a different effect at each level. The ***beta*** of ***NAT*** at the upper wage level is higher than that at the lower wage level.

Table 7.20 Wage Category

LnW^	**Lower Wage Category < SR60,000 (Informal Sector)**		**Higher Wage Category = > SR60,000 (Formal Sector)**	
	B_i	***Sig***	***B_i***	***Sig***
Constant	9.733	.000	10.771	.000
B_1 NAT	-.354	.000	-.436	.000
B_2 MARSTAT	.199	.015	.077	.438
B_3 URBAN	-.219	.006	.020	.838
B_4 AGECATT	.023	.376	.062	.040
B_5 EDUC	.048	.094	.067	.033
B_6 ENGLISHL	.140	.011	.108	.089
B_7 COMPUTRL	.029	.468	.031	.494
B_8 CURRTEXP	.009	.258	.009	.118
R^2	.25		.21	

The coefficient of determination, R^2, is 25 per cent for the lower wage level and 21 per cent for the upper wage level. This indicates that 21 per cent and 25 per cent of the variation in ***Ln W^*** can be explained by the listed independent variables for the lower and higher wage levels, respectively, in the Saudi private labour market.

7.6 The Appropriate Econometrics Model

In order to construct an appropriate econometric model for this study, three steps are necessary: 1) To build a model from suitable independent variables. 2) To segment the private labour market into Saudi and non-Saudi. 3) To apply the model from step (1) to the private labour market differentiated in step (2). These steps are explained in detail below. This should help in establishing a fairer wages structure and contribute to wages policy formulation for the Saudi private labour market. It should also help to further the Saudi government's aim of replacing non-Saudi employees at all levels by Saudi nationals (Saudiisation).

7.6.1 Building the Appropriate Econometric Model

In the previous sections of this thesis, up to eight independent variables have been used to predict Saudi private labour market wage levels. This study has identified a sub-set of independent variables that can produce a good regression wage model, by using some common methods, which sequentially add or remove variables from the model. There are some standard guidelines when taking the decision to enter or remove a variable, such as:

1. Do not enter variables into the model if there are no more variables that result in a significant increase in R^2.
2. Do not remove a variable when removal of any variable in the model results in a significant change in R^2.
3. Choose the variable that has the smallest observed significance level for the test of its partial regression coefficient. In other words, if the partial regression coefficient for a variable has an observed significance level larger than 0.05, the variable cannot be used in the model.
4. Choose the variable with the largest absolute value for the t statistic.
5. Choose the variable with the smallest residual sum of squares.
6. Consider all mentioned assumptions.

Considering all above standard points, the ***MARSTAT*** and ***URBAN*** variables are removed and the ***ANLFTWAG*** variable is added. Table 7.21 shows three regression models: Model 1 is the regression model with constant and eight main variables.

Model 2 is produced by adding ***ANLFWAG*** to Model 1, and Model 3 results from the subtraction of ***MARSTAT*** and ***URBAN*** from Model 2.

It is important to be aware that in multiple linear regression there are many statistics that are equivalent. For instance, choosing the variable that results in the largest increase in R^2 is the same as choosing the variable that has the smallest observed significance level for the test of its partial regression coefficient. Moreover, choosing the variable with the largest absolute value for the statistic means choosing a variable that results in the smallest residual sum of squares. Thus, significant values and R^2 are used here for comparison among these three regression models.

All Model 1 significant values make a statistically significant unique contribution to wage level in the Saudi private labour market, but R^2 is still low. It is known that by adding an independent variable to a regression model increases R^2. In Model 2, ***ANLFTWAG*** is added, increasing R^2 by 18 per cent (from 56 % to 74%), which represents a big difference. The significant values of ***MARSTAT*** and ***URBAN*** in Model 2 are bigger than in Model 1. Model 3 deals with those two variables by removing them from Model 2. Model 3 gives the best result, with all its significant values being less than .05 and R^2 hardly changing. This model is therefore, the most suitable wage regression model.

7.6.2 Segmenting Private Labour Market into Two Main Labour Markets

As mentioned in Section 7.5, there are many standard segmented points or lines that may be used. In Sub-section 7.5.1, Nationality, as the segmented line, is used. Using the appropriate model with this segmented line would give more accurate results than using a non-appropriate model with the same segmented line that was reported in Sub-Section 7.5.1.

7.6.3 Applying the Appropriate Model for Sub-Section 7.6.2

Table 7.22 shows the final main independent variables that affect wage levels in the Saudi private labour market. The researcher believes that this result is the final and most significant result from the analyses in this chapter. For simplicity, policy makers involved in constructing any wage system or policy or in accelerating the

Saudiisation process should consider only those independent variables shown in Table 7.22. For more details and more results they should look at other tables in this chapter.

Table 7.21 Comparing Various Regression Models

$LnW^{\wedge}$	Model 1		Model 2		Model 3 (Appropriate Model)	
	B_i	Sig	B_i	Sig	B_i	Sig
Constant	9.996	.000	9.515	.000	9.509	.000
B_1 *NAT*	-1.021	.000	-.567	.000	-.579	.000
B_2 *MARSTAT*	.132	.124	.080	.238	------	------
B_3 *URBAN*	-.167	.046	-.0738	.226	------	------
B_4 *AGECATT*	.097	.000	.059	.005	.067	.001
B_5 *EDUC*	.082	.005	.043	.064	.025	.049
B_6 *ENGLISHL*	.272	.000	.138	.002	.134	.003
B_7 *COMPUTRL*	.122	.003	.072	.029	.083	.010
B_8 *CURRTEXP*	.024	.000	.032	.000	.033	.000
B_9 *ANLFTWAG*	------	-------	.0001	.000	.001	.000
R^2	.57		.74		.74	

To summarise, there are only three independent variables, ***AGECATT, CURRTEXP*** and ***ANLFTWAG,*** which affect wage levels in the Saudi labour market. Other variables, such as ***EDUC*** and ***ENGLISHL***, that are thought to be very important in affecting wage level are unsufficient. On the other hand, in the non-Saudi labour market, ***EDUC*** and ***ENGLISHL*** are very important in affecting wage levels. Consequently, the Saudi government has for some time realised that the private sector prefers to employ non-Saudis rather than Saudis because of the former's higher skills and expectancy of lower wages. The high skills demanded by the private sector may be obtained by providing an efficient education system which is capable of producing citizens with the skills required to manage their own and the country's affairs. It has been suggested that the high wages demanded by Saudi employees could be satisfied if more Saudis were encouraged to enrol in further

education, and also by introducing wage policies that improve their productivity and satisfy their wage demands.

Table 7.22 Applying the Appropriate Model for Sub-Section 7.6.2

$LnW^{\wedge}$	Saudi			Non-Saudi		
	B_i	Standardised Coefficients	Sig	B_i	Standardised Coefficients	Sig
Constant	9.170	----	.000	8.165	----	.000
B_1 *AGECATT*	.084	.165	.037	.040	.097	.059
B_2 *EDUC*	.021	.035	.568	.072	.129	.014
B_3 *ENGLISHL*	.083	.078	.225	.201	.191	.001
B_4 *COMPUTRL*	.098	.117	.061	.035	.051	.353
B_5 *CURRTEXP*	.001	.573	.000	.001	.592	.000
B_6 *ANLFTWAG*	.035	.316	.000	.027	.205	.000
R^2	.64			.69		

In addition, the intercept of Saudi 9.170 in log form may explain the monthly grants given to all university students (Saudi and non-Saudi students). Why is this amount of money (SR800-1,000) given monthly to university students? This intercept may answer this question. Before doing so, an anti-log should be given for this amount (9.170). The anti-log amount is SR9,604.6. Thus, the predicted wage model shows that each employee needs at least SR9,604.6 annually, where all independents are constant. If this amount is divided by 12 months, then the monthly amount is 9,604.6 /12 = SR800.4, almost equal to the monthly grant for each university student.[14] On the other hand, the intercept for non-Saudis is 8.2. By following the same method, SR292 is needed monthly by each non-Saudi employee where all independents are constant.

7.7 Logistic Regression Model

7.7.1 Data Analysis Procedures

Logistic regression, a multivariate statistical technique, is an appropriate technique when the dependent variable is dichotomous. It is one of the most widely used probability models. Both continuous and categorical variables can be used as predictor variables. The Logistic regression is used to evaluate the data and test the hypotheses related to the research questions.

---

[14] It known in Saudi Arabia that each university student is given a monthly grant of is SR800 for social studies and SR1,000 for science studies.

7.7.2 Data

The data and the abbreviation of variables used here will be the same as used in the previous regression models, but with some modification. The major change will be in the wage variable as a dependent variable which should be dichotomous. It was transferred to a dummy variable by using an arbitrary SR60,000 annual wage, as a cut-off between high wage level (formal sector) and low wage level (informal sector). In another words, any annual wage value equal to or larger than SR60,000 takes the value 1, and otherwise 0.

NENGLSHL(1)*	A new level of English level with only two values, high =1 and low = 0.
NCOMPTRL(1)*	A new level of computer skills with only two values, high = 1 and low = 0.

* Confirming that value = 1 is considered.

In addition, for simplicity, the ***ENGLISHL*** and ***COMPUTRL*** variables were transferred to two categorical values (high = 1 and low = 0) to replace the four original categories (None, Beginning, Intermediate, and Advanced).

7.7.3 Coefficients for the Logistic Model using the Whole Sample in the Eastern Province

In Table 7.23, ***NAT, CURRTEXP, AGE, EDUCONT, NCOMPTRL (1)*** and ***NENGLISHL (1)*** are statistically significant predictors of being at the high wage level (formal sector) because their significant values are less then 0.05. ***MARSTAT (1)*** and ***URBAN (1)*** are not statistically significant as their significant values are larger than 0.05.

The raw coefficients in column ***B*** of Table 7.23 are interpreted as estimates of the effect of a particular variable, controlling for the other variables in the equation. Each ***B*** coefficient, "represents the change in the natural logarithm of the odds ratio, which is harder to interpret than the odds ratio" (Kraska and Larkins, 1998, p. 9). A positive ***B*** coefficient indicates that the predicted odds of being at the high wage level (formal sector) increase as the predictor increases, and a negative coefficient

indicates that the predicted odds decrease as the predictor increases. As shown in Table 7.23, all the independent variables have positive coefficients. Thus, the predicted odds of being at the high wage level increase as any independent variable increases.

Table 7. 23 Coefficients Estimates for the Whole Sample using Logistic Regression Model

Variables	B_i	Df	Sig	*Exp. B*
CONSTANT	-12.541	1	.000	.000
NAT (1)*	4.064	1	.000	58.180
MARSTAT(1)*	.514	1	.259	1.672
URBAN(1)*	.401	1	.391	1.493
CURRTEXP	.094	1	.006	1.099
AGE	.078	1	.008	1.081
EDUCONT	.249	1	.002	1.283
NCOMPTRL(1)*	1.506	1	.000	4.510
NENGLISHL(1)*	1.191	1	.046	3.290
Nagelkerke R Square	.607			

* Confirming that value = 1 is considered.

The column labelled ***Exp.B*** in Table 7.23 presents the odds ratios or the exponentiated value of the raw regression coefficient for each of the variables. These values are interpreted as the change in the odds ratio associated with a one-unit increase in each predictor variable. An odds ratio greater than 1 indicates that the odds of being at the high wage level increase when the independent variable increases. A value less than 1 indicates that the odds of being at the high wage level decrease when the independent variable increases (ibid.). All odds are greater than 1, which indicates that the odds of being at the high wage level (formal sector), increase when any independent variable listed increases.

Negelkerke R value is used to assess how well the model fits. It is similar in intent to the R^2 in a linear regression. Table 7.23 shows the ***Negelkerke R*** value. This indicates that 60.7 per cent of the variation in the outcome variable is explained by the Logistic regression model.

7.7.4 Coefficients for the Logistic Model using the Saudi Sample in the Eastern Province.

Table 7.24 shows that ***CURRTEXP, EDUCONT, NCOMPTRL (1)*** and ***NENGLISHL (1)*** are statistically significant predictors of being at the high wage level, since their significant values are less than 0.05. Age appeared to be an important predictor, but not statistically significant, of being at the high wage level. In addition, ***MARSTAT (1),*** and ***URBAN (1)*** are not statistically significant, as their significant values are larger than 0.05.

Table 7.24 Coefficients Estimates for the Saudi Sample using Logistic Regression Model

Variables	B_i	Df	Sig.	*Exp. B*
CONSTANT	-6.857	1	.001	.001
MARSTAT(1)*	.958	1	.095	2.606
URBAN(1)*	.834	1	.169	2.303
CURRTEXP	.137	1	.015	1.147
AGE	-.002	1	.963	.998
EDUCONT	.256	1	.011	1.291
NCOMPTRL(1)*	1.258	1	.011	3.520
NENGLISHL(1)*	1.117	1	.055	3.244
Nagelkerke R Square	.404			

* Confirming that value = 1 is considered.

The column labelled B_i in Table 7.24 shows that all the independent variables, except ***AGE***, have positive coefficients. Thus, the predicted odds of being at the high wage level increase as any independent variable increases except ***AGE***. On the other hand, the predicted odds of being at the high wage level decreases as ***AGE*** increases. The odds ratios or the exponentiated value of the raw regression coefficient for each of the variables are presented in the column labelled ***Exp.B*** in Table 7.24. All the odds ratios, except ***AGE***, are greater than 1, which indicates that the odds of being at the high wage level or formal sector increase, when any of the independent variables listed increases. Again ***Negelkerke R*** is used to determine how well the model fits. It is similar in intent to the R^2 in a linear regression. Table 7.24 shows that 40.4 per cent of the variation in the outcome variable is explained by the Logistic regression model.

7.7.5 Coefficients for the Logistic Model using the Non-Saudi Sample in the Eastern Province

In Table 7.25, ***MARSTAT (1)*** and ***URBAN (1)*** are shown to be not statistically significant as their significant values are larger than 0.05. On the other hand, both human capital variables, education (***EDUCONT***) and experience (***CURRTEXP***), with ***AGE, NCOMPTRL (1)*** and ***NENGLISHL*** **(1)** are statistically significant predictors of being at the high wage level (formal sector) because their significant values are less than 0.05.

The raw coefficients of ***MARSTAT (1)*** and ***URBAN (1***) raw coefficients, as shown in column B_i of Table 7.25, have negative signs. Therefore, the predicted odds of being at the high wage level decrease as any one of them increases. The predicted odds for other variables have positive signs which means that the probability of being at the high wage level increases with any one-unit increase.

Table 7.25 Coefficients Estimates for the Non-Saudi Sample using Logistic Regression Model

Variables	B_i	Df	Sig.	Exp. B
CONSTANT	-17.074	1	.415	.000
MARSTAT(1)*	-.348	1	.652	.706
URBAN(1)*	-.574	1	.397	.563
CURRTEXP	.094	1	.033	1.098
AGE	.143	1	.000	1.153
EDUCONT	.236	1	.097	1.266
NCOMPTRL(1)*	2.264	1	.003	9.618
NENGLISHL(1)*	4.252	1	.838	70.262
Nagelkerke R Square	.448			

* Confirming that value = 1 is considered.

The odds ratios value of the raw regression coefficient for each of the variables is presented in the column labelled ***Exp. B*** in Table 7.25. Most odds are greater than 1, which indicates that the odds of being at the high wage level (formal sector) increase when any independent variable listed increases. Table 7.25 shows also ***Negelkerke R***

value. It shows that 44.8 per cent of the variation in the outcome variable is explained by the Logistic regression model.

7.7.6 Probability of Being at the High Wage Level in Eastern Private Sector of Saudi Arabia.

Given the coefficients in Table 7.23, the Logistic regression equation for the probability of being at the high wage level can be written as:

$$\text{prob (being in high wage level)} = \frac{1}{1 + e^{-Z}}$$

Where

$$\mathbf{Z = -12.541 + 4.064}\textit{NAT(1)} \mathbf{+ .514}\textit{MARSTAT(1)} \mathbf{+ .401}\textit{URBAN(1)} \mathbf{+ .094}\textit{CURRTEXP} \mathbf{+ .078}\textit{AGE} \mathbf{+ .249}\textit{EDUCONT} \mathbf{+ 1.506}\textit{NCOMPTRL (1)} \mathbf{+ 1.191}\textit{NEWGLSHL(1).}$$

Applying this to some cases in our sample, listed below, we find:

Cases Number	1	9	53
NAT	Saudi =1	Non-Saudi = 0	Saudi = 1
MARSTAT	Married = 1	Married = 1	Single = 0
URBAN	Urban =1	Urban = 1	Urban = 1
CURRTEXP	19	8	1
AGE	25	35	26
EDUCONT	14	14	12
NCOMPTRL	Low = 0	High = 1	Low = 0
NENGLISHL	High = 1	High = 1	Low = 0

$$\mathbf{Z_1 = - 12.541 + 4.064(1) + .514(1) + .401C(1) + .094(19) + .078(25)}$$
$$\mathbf{+ 249(14) + 1.506(0) + 1.191(1) = .831}$$

The probability of being at the high wage level for employee number 1 in our survey is estimated to be:

$$\text{prob (being in high wage level)} = \frac{1}{1 + e^{-(.831)}} = .69$$

In general, if the estimated probability of the event is less than 0.5, we predict that the event will not occur. If the probability is greater than 0.5, it is predicted that the event will occur (SPSS, 1997). Thus, there is a probability of 0.69 that this Saudi employee with these characteristics will be at the high wage level.

$$\mathbf{Z_9 = - 12.541 + 4.064(0) + .514(1) + .401(1) + .094(8) + .078(35)}$$
$$\mathbf{+ 249(14) + 1.506(1) + 1.191(1) = -1.957}$$

$$\text{prob (being in high wage level)} = \frac{1}{1 + e^{-(-1.957)}} = .124 \approx .12$$

Based on this estimate, this non-Saudi employee with these characteristics will not be at the high wage level.

$$\mathbf{Z_{53} = - 12.541 + 4.064(1) + .514(0) + .401(1) + .094(1)}$$
$$\mathbf{+ 078(26) + .249(12) + 1.506(0) + 1.191(0) = - 2.97}$$

Based on this estimate, this Saudi employee with these characteristics will not be at the high wage level.

$$\text{prob (being in high wage level)} = \frac{1}{1 + e^{-(-2.97)}} = .045 \approx .05$$

7.8. Conclusion

This chapter was divided into five sections. Section 7.2 considered most the major multiple regression assumptions, such as sample size, outliners, multicollinearity and heteroscedasticity. Both sample size and outliners assumptions were treated directly by simple and common methods. Multicollinearity and heteroscedasticity were corrected by the natural log and WLS methods. In Section 7.3, the OLS method was used to test how background variables affect wage level. All significant values except the ***MARSTAT*** significant value, were less than 0.05, which means that those variables make a significant contribution to the prediction of the wage variable. Moreover, a dummy variable was used to test in more detail how place of birth/province of origin affects wage level. Employees born in the Northern Province receive the highest wage effect and those born in the Eastern Province receive the lowest. Wages of employees born in the Western, Centre and Southern Provinces.

and in "Other" countries were lower than those born in the Northern Province, but they decreased gradually. Section 7.4 shows that education, experience, English level and computer skills are very important in determining wage levels.

In Table 7.10, the significant column shows that all included independent variables except ***MARSTAT*** and ***URBAN*** are significant in contributing to the prediction of the wage level. Thus, their null hypothesis can be rejected. On the other hand, the null hypothesis of ***MARSTAT*** and ***URBAN*** cannot be rejected. The coefficient of determination is 0.499. This indicates that 50 per cent of the variation in $Ln\ W^{\wedge}$ can be explained by the listed independent variables. The findings of Section 7.5 strongly support the segmented labour market theory. For instance, it was shown, as the theory predicted, that the human capital model holds up very well for the upper wage level, the formal sector and some high technology economic sectors, but has little explanatory power in identifying workers at low wage levels, and those in the informal and low technology economic sectors. Labour market segmentation can have important implications for public policy. Probably one reason why Saudiisation programmes have not succeeded as hoped, is that they have not been attuned to the realities of the labour market. For example, the policies designed to augment the human capital of informal sector employees are not likely to improve their wages. The findings presented in this section suggest that an employee's wage is greatly affected by which segment of the labour market he works in. Osterman (1977) added that movements between segments or the alteration of the regulation of segments could be important matters for public concern. Section 7.5 summarised the most important results of this chapter. Section 7.6 shows that ***EDUC*** and ***ENGLISHL***, thought to be very important in affecting wage level, are not significant for Saudi employees, but are very important for non-Saudis. In Section 7.7, the Logistic regression model was used to determine what was the probability of employees being at either the high (formal sector) or low (informal sector) wage level. The probabilities of being at the high wage level for employees 1, 9, and 53 in our survey are estimated to be 0.69, 0.13 and 0.05 respectively. Moreover, the Saudi employee (case 1) has the probability of 0.69 of being at the high wage level, the non-Saudi (case 9) has only a 0.13 chance of being at the high wage level, and the Saudi employee (case 53) has little chance of being at that wage level.

Chapter Eight

Low-Wage Workers and Fair Wage Policies in the Private Sector of Saudi Arabia's Eastern Province

8.1 Low-Wage Workers

8.1.1 Overview

The determinants of wage inequality have been identified in the previous chapter of this thesis. This chapter concentrates on low-wage workers and the possible introduction of fair wage policies in the private sector. In the survey, wage data were concentrated towards the lower end of the range, as seen in Figures 8.1, 8.2 and 8.3. Thus the distribution of all workers, Saudis and non-Saudis, tends to be positively skewed (see Appendix F). These figures indicate that many non-Saudi employees and some Saudi employees are in the low wage level bracket. For instance, about 22 per cent of Saudi employees receive only SR2,000 per month, which is less than the mean (SR7,125) by SR5,125, and about 63 per cent of non-Saudi employees receive only about SR1,000, which is less than the mean (SR2,819) by SR1,819. Consequently, many employees in the Saudi labour market are low-wage workers.

Moreover, Table 8.1, which displays secondary data compiled from several reports published by the General Organisation of Saudi Insurance, shows the numbers of low- and high-wage workers in the labour market from 1985 to 1999. It gives the cut-off point for the low-wage level as RS3,000. This table shows that the proportion of low-wage workers, as a percentage of the total number of workers, was very high (about 81%) and had varied little over the selected years. The same situation applied to high-wage workers, who represented about 19 per cent of all workers. This situation should give the Saudi government cause for concern.

In the near future, many low-paid non-Saudi jobs are likely to become available to Saudis under the Saudiisation process. Therefore, the Saudi government should pay serious attention to low-wage jobs. In the past, many industrial countries focused a great deal of attention on low-wage workers. They believed that, by helping those workers, wage inequalities would be narrowed and their integration into normal society would be facilitated. Saudi policy makers could benefit from the lessons

learned by those countries. Their studies and experiences may assist in the creation of an acceptable transition from unemployment to work for many Saudis.

Table 8.1: Low- and High-Wage Workers in the Saudi Labour Market

Year	Less than 3,000 SR	%	More than 3,000 SR	%	All
1408 (1988)	3,221,867	81	743,842	19	3.965.709
1409 (1989)	2,872,069	82	645,979	18	3.518,048
1410 (1990)	2,667,034	82	599,572	18	3,226,606
1411 (1991)	2,532,725	81	575,990	23	3.108,715
1412 (1992)	2,554,191	81	586,253	19	3,140,444
1413 (1993)	2,026,921	81	468,260	19	2,495.181
1414 (1994)	2,020,085	81	476,128	19	2,496,213
1415 (1995)	2,012,943	81	482,038	19	2,494,981
1416 (1996)	2,003,177	80	494,707	20	2,497,884

Sources: Several Reports of the General Organisation for Social Insurance.

This section focuses on low-wage workers and their wage level in the private sector in Eastern Saudi Arabia. The issues to be considered in this section are:

8.1.2 Low-wage workers in other countries

8.1.3 Low-wage Saudi workers

8.1.4 Characteristics of low-wage Saudi and non-Saudi workers

8.1.5 A profile of low-wage workers in the Saudi labour market

8.1.2 Who Are the Low-Wage Workers in Other Countries?

There are many different definitions of low-wage workers. Acs, Phillips and McKenzie (2001) define the "working poor" as families whose earnings are less than twice the US federal poverty level, and in which the adults work an average of half-time or more during the year. These authors estimate that one in six non-elderly Americans lives in a poor working family. Almost all one-parent families with children and two-thirds of the working poor live in families with children and are in the low-wage workers category.

Can low-wage workers advance out of poverty? Authors who answer this question point out that the working poor are more likely to have children, less likely to be married, and tend to have significantly less education than those who are better off. Moreover, they have jobs that pay far less for equivalent work effort, are less stable, offer fewer benefits and have a lower status.

In 2001, Carnevale and Rose used the Panel Study on Income Dynamics to show earning trends over several years and how long the low-wage workers remain in poverty over time. They define low-earners more narrowly as those who earn up to $15,000, roughly the poverty level wage for a family of three. The authors distinguish between groups of low-earners: 1) young workers living in non-poor families, 2) adults who are the second wage-earner in a family, and 3) prime-age adults who are primary earners in their families.

Acs (1999) mentioned that there is no generally accepted and widely used definition of a "low-wage worker". He relies in his study on a very basic definition of the term. He indicates that any worker whose average hourly earnings in the previous calendar year, across all jobs, falls below $7.50 is deemed a low-wage worker. This definition sets the low-wage line 45 per cent above the minimum wage and about 30 per cent below the median wage for all workers in 1997. Acs referred to other studies, such as those by Edin and Lein (1997) and Pavetti and Acs (1997), who used $8 per hour to distinguish between "good and bad jobs". Acs' paper does not take into account non-wage characteristics of jobs. Moreover, in some definitions, discussions about low-wage workers include both workers and non-workers such as welfare recipients who would be low-wage workers if they had jobs.

8.1.3 The Low-Wage Saudi Workers

Although this group of workers in Saudi Arabia is very important, no particular studies of them have been undertaken. Therefore, a detailed study, such as the one in this thesis, of low-wage workers in the Eastern Province, should provide valuable information about such workers. It proved not to be an easy task to define who the Saudi low-wage workers were, as there are many obstacles to attempting such a study. In general, there is no one particular definition that fits all countries as each country depends on many different factors for defining its low-wage workers.

8.1.4 Characteristics of Low-Wage Saudi and Non-Saudi Workers

In spite of there being no generally accepted definition, there are some characteristics that do help to determine who is a Saudi low-wage worker. These include: having a low level of skill and education; having only a few years of experience; being a new entry into the labour market; having a wage level about the same as non-Saudis, and one who works in the informal sector.

Some of these characteristics have been examined, in detail, in the previous chapters. Section 7.5 indicates, however, that there are some very important independent variables, such as human capital variables, which do not affect the wage level in the Saudi labour market, particularly in the informal sector. Selecting some related segmented criteria may help to show that these important independent variables can help greatly in defining the low-wage worker in the Saudi labour market. In other words, if the human capital variables of the workers have a small or insufficient effect on the wage level, then they are low-wage workers; otherwise they are not. The segmented criteria are as follows:

1. Nationality

The Saudi labour market, as stated earlier, is segmented into two markets, Saudi and non-Saudi. In the Saudi market, all human capital variables, such as education, experience, computer skills and level of English have an effect on the wage level of the Saudi worker. On the other hand, only education and level of English have a positive effect on the wage level of non-Saudis. The experience and computer skills of low-wage workers have no positive effect on their wage level.

2. Formal and Informal Sectors

In Chapter Seven, the Saudi labour market is also seen to be segmented into informal and formal sectors. This segmentation depends on the employment category. For example, if a firm has less than 300 employees, then it is in the informal sector, otherwise it is in the formal sector. In the formal sector, both of the main human capital variables have a positive effect on the wage level. On the other hand, no effect is seen to be caused by the same human capital variables in the informal sector. The conclusion is that if there is any positive effect on the wage level by any human capital variables, then those workers are high-wage workers, otherwise they are not.

3. Wage Category

In Chapter Seven, the labour market is segmented into high- and low-wage categories. Only the education variable makes a statistically significant contribution to the wage level in the higher category. In the low-wage category, human capital variables do not have a significant effect. This indicates that many Saudi workers with high qualifications work in low-wage jobs, which means their high qualifications have no effect on their wage level.

8.1.5 A Profile of Low-Wage Workers in the Saudi Labour Market

This section examines how many workers may be considered to be low-wage and how these workers differ from all other workers in terms of their education, skills, marital status, and type of jobs and nationality.

First, it is necessary to attempt to determine what the low-wage level is. A useful conclusion, obtained from all previous definitions, concepts and tables, is that SR3,000 is a good indicator of the low-wage level. This level is used to discuss low-wage workers in the different cases presented below.

1. Size of the Problem

Table 8.2 shows that 51.8 per cent of all workers in the private sector of the Eastern Province are low-wage workers. Moreover, the distribution of Saudi and non-Saudi low-wage workers among all workers is 10 per cent and 41.8 per cent, respectively. This indicates that for four non-Saudi low-wage workers there is one Saudi low-wage worker.

Table 8.2 Distribution of Low-Wage Workers Among all Workers Surveyed

Worker Type	Number	Per cent
All Workers	330	
All Low-Wage Workers	171	51.8
Saudi Low-Wage Workers	33	10.0
Non-Saudi Low-Wage Workers	138	41.8

Table 8.3 shows that 20 per cent of all low-wage workers are Saudis and 80 per cent of this entire group are non-Saudis. Further, about 2 out of 10 are Saudi low-wage workers and about 8 out of 10 are non-Saudi low-wage workers.

Table 8.3 Distribution of Saudi and Non-Saudi Low-Wage Workers Among all Low-Wage Workers

Worker Type	Number	Per cent
Saudi Low-Wage Workers	33	20.0
Non-Saudi Low-Wage Workers	138	80.0
All Low-Wage Workers	171	100.0

2. Level of Educational Attainment

On average, in most countries, low-wage workers have considerably less education than workers in general. Surprisingly, in the private sector in Eastern Saudi Arabia, the story is different. Table 8.4 shows that while 32 per cent of low-wage workers have a high school qualification, 26 per cent of all workers have attained this level.

Table 8.4 Level of Educational Attainment by Each Type of Workers %

	Low-Wage Workers			All Workers		
	Saudi	Non-Saudi	Total	Saudi	Non-Saudi	Total
Less than High school	12.0	6.0	8.0	10.0	5.0	7.0
High School	45.0	29.0	32.0	33.0	21.0	26.0
More than High School	43.0	65.0	60.0	57.0	74.0	67.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

The percentage of low-wage workers with more than a high school qualification is 60 per cent, which is high. There is little difference between this percentage and the percentage of all workers with higher qualifications. Moreover, the difference between all workers and low-wage workers with less than high school qualifications is very small, which indicates that the results should receive more attention. This confirms the expectation that there are many workers with high qualifications at the low-wage level.

3. Level of Skill

Table 8.5 Skill Levels of Each Type of Worker %

	Low-Wage Workers			All Workers		
	Saudi	Non-Saudi	Total	Saudi	Non-Saudi	Total
Skilled	36.0	56.0	53.0	49.0	67.0	60.0
Semi-Skilled	55.0	38.0	41.0	42.0	29.0	34.0
Unskilled	6.0	0.0	1.0	3.0	0.0	1.0
Unknown	3.0	6.0	5.0	6.0	4.0	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

In general, low-wage workers have a considerably lower skill levels than better-paid workers. However, Table 8.5 shows that the situation in the Eastern Province of Saudi Arabia is different. Here, 53 per cent of low-wage workers are skilled and 41 per cent are semi-skilled, and out of a total of all workers, 60 per cent are skilled and 34 per cent are semi-skilled. These results indicate that many workers with high skills or qualifications have experienced difficulty in finding suitable employment; otherwise most of them would not be in low-wage jobs. This shows that the labour market in Saudi Arabia has a serious problem, in that skilled workers cannot find jobs which equate with their qualifications.

4. Province of Origin/Place of Birth

Taking into consideration the original place of birth of a worker might shed some light on the reason why there are so many low-wage workers in the Eastern Province. Table 8.6 shows there is a significant difference between workers born in different areas. While 14 per cent of low-wage workers are from the Eastern Province, only a small percentage of low-wage workers were born in other provinces. Thus, the idea that low-wage workers are usually from a particular province or area does apply in the Saudi private labour market. Here, discrimination exists among all workers. Saudi wage policy makers should realise that, of the many factors that can place workers in a low-wage group, place of birth/province of origin is one.

Table 8.6 Province of Origin/Place of Birth of Each Type of Worker %

	Low-Wage Workers			All Workers		
	Saudi	Non-Saudi	Total	Saudi	Non-Saudi	Total
Eastern Province	70.0	0.7	14.0	64.0	1.1	26.0
Western Province	---	---	---	5.0	0.0	2.0
Southern Province	6.0	1.5	2.4	4.0	0.0	1.6
Central Province	0.0	0.7	0.5	10.0	0.5	4.4
Other Countries	24.0	97.0	83.0	17.0	98.4	63.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

5. Urbanisation

Table 8.7 shows that most low-wage workers are located in urban areas where businesses are located, while 70 per cent of the total of low-wage workers are themselves from urban areas, and only 30 per cent of them are from rural areas.

Table 8.7 Urbanisation of Each Type of Worker %

	Low-Wage Workers			All Workers		
	Saudi	Non-Saudi	Total	Saudi	Non-Saudi	Total
Urban	73.0	69.0	70.0	83.0	75.0	78.0
Rural	27.0	31.0	30.0	17.0	25.0	22.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

The figures for all workers show a predominance of workers are who employed in urban areas. This suggests that Saudi planners should ease the pressure on the infrastructure by encouraging more firms to locate in rural areas, or at least away from the major cities. An example of a successful agricultural project is the one known as the Harrad project, which is located about 150 kilometres from the nearest city.

6. Marital Status

Table 8.8 shows that about a third of all low-wage workers, at the time of survey, were single. The situation of being a low-wage worker is not likely to be as great a

problem for them as it is for married workers. The latter (actually 65%) are likely to have less chance than single persons of relocating to better paid jobs elsewhere, even if they are available, so their chances of advancement to a higher wage level in their present occupations is limited.

Table 8.8 Marital Status of Each Type of Worker %

	Low-Wage Workers			All Workers		
	Saudi	**Non-Saudi**	**Total**	**Saudi**	**Non-Saudi**	**Total**
Single	39.0	33.0	35.0	20.0	28.0	24.0
Married	61.0	67.0	65.0	80.0	72.0	76.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Out of the total number of workers, the difference between the number of single and married is greater than in the category of low-wage workers, but still the percentage of married is high (76%). Again it can be seen that the situation is dire, especially as married workers are likely to have families to support. Therefore, a policy that improves the wages of workers would be to their advantage.

7. Job Category

Table 8.9 shows the distribution of workers according to job category. The majority of these workers are in technical, administrative and production jobs. As there is a lower percentage in other jobs, policy makers need to encourage young workers to work in the less desirable jobs by introducing some incentives.

Table 8.9 Job Category of Each Type of Worker %

	Low-Wage Workers			All Workers		
	Saudi	**Non-Saudi**	**Total**	**Saudi**	**Non-Saudi**	**Total**
Technical	18.0	38.0	34.0	35.0	43.0	39.0
Administrative	46.0	14.0	20.0	34.0	15.0	23.0
Accounting or Financial	6.0	8.0	8.0	12.0	10.0	11.0
Sales and Marketing	3.0	8.0	7.0	4.0	7.0	6.0
Production Workers	15.0	16.0	16.0	12.0	12.5	12.0
Others	12.0	16.0	15.0	4.0	12.5	9.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

There have been examples of government intervention in job placement. For example, it recently insisted on replacing non-Saudis with Saudis in jewellery shops. The success of this policy cannot be estimated at this time.

8. Age Category

Table 8.10 shows that in almost every age category there is a considerable percentage of low-wage workers. The highest are in the age category 25-29, with 27 per cent, and the category 30-34, with 23 per cent. This gives an indication that there are many younger workers in low-wage jobs. Age is related to experience and seniority. This suggests that with more years of experience, their wages should increase. The research for this thesis found this to be the case here in the Eastern Province, in particular in the formal sector.

Table 8.10 Age Category of Each Type of Worker %

Age Category	Low-Wage Workers			All Workers		
	Saudi	Non-Saudi	Total	Saudi	Non-Saudi	Total
20-24	36.0	6.0	11.7	14.0	4.0	8.0
25-29	36.0	25.0	27.0	29.0	18.0	23.0
30-34	16.0	25.0	23.0	22.0	25.0	24.0
35-39	6.0	15.0	13.0	17.0	17.0	17.0
40-44	3.0	15.0	13.0	12.0	15.0	13.0
45-49	3.0	9.0	7.6	4.0	13.0	9.4
50-54	0.0	5.0	5.0	2.0	7.0	5.0
55-59	---	---	---	0.0	0.5	0.3
60-64	---	---	---	0.0	0.5	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

8.2 Wage Policies

8.2.1 Overview

The material presented in Chapters Six and Seven, and in the previous section, reveals that wage inequalities and low-wage workers exist in the Saudi labour market, and that these are the most serious problems facing the nationals, as they obstruct the Saudiisation process and raise the Saudi unemployment rate. Although Saudi Arabia has implemented many policies, as recommended in its Five-Year Development Plans, to further Saudi employment in the labour market, none have really been successful. This is obvious from the examples given below:

Table 8.11 Reactions to Wage and Saudiisation Policies %

Policies	Employees %		Employers %	
	Agree	Disagree	Agree	Disagree
1) Applying a minimum wage policy for all employees (Saudi and non-Saudi) will assist Saudiisation.	34.8	34.8	33.1	28.8
2) Applying a minimum wage policy for Saudis only will assist Saudiisation	36.2	39.9	43.6	24.9
3) Improving wages of non-Saudi and Saudi employees in the private sector will assist Saudiisation.	50.7	16.7	49.1	18.2
4) Improving wages of Saudi employees only in the private sector will assist Saudiisation.	79.7	1.4	72.3	6.1
5) Allowing wages of non-Saudi and Saudi employees to depend on supply and demand of labour will assist Saudiisation	22.5	46.4	21.6	44.2
6) Allowing non-Saudi wages to be determined by country of origin will assist Saudiisation.	47.8	27.5	29.8	24.9
7) Charging a high fee for hiring non-Saudis in future will assist Saudiisation.	58.7	19.6	47.0	26.0
8) Allocating subsidies to employers for each Saudi worker hired will assist Saudiisation	71.7	9.4	73.5	6.1
9) Imposing income tax on all non-Saudi employees will assist Saudiisation	74.0	7.2	49.8	21.6
10) Encouraging foreign investment will assist Saudiisation	59.4	10.9	51.9	12.7
11) Reducing government restrictions on small firms will encourage them to employ more Saudi employees	62.3	7.2	61.3	7.2
12) Allocating low cost finance by the government to small firms with 70-100 % Saudi employees will assist Saudiisation	79.0	2.8	73.0	3.4
13) Allocating low cost finance by commercial banks to small firms with 70-100% Saudi employees will assist Saudiisation	74.7	3.6	77.9	2.3

N.B. The figures for Agree and Disagree do not add up to 100 per cent. This is because the number of both employers and employees who held no opinions (Neutral) on the subject were omitted from the table.

1. For many years, the government of Saudi Arabia's economic philosophy has been to spend generously on human resources (education and training) with the aim of gradually replacing non-Saudi employees with the growing numbers of Saudis. The

hope was that this policy could solve the problem of Saudi unemployment. However, in the current economic climate, it is unlikely that this will come about without some enforced regulations and policies being introduced that will benefit the labour market.

2. A few years ago, the Saudi government looked to the private sector for a solution to youth unemployment. In fact, the private sector has not achieved the government's aims. For example, the Sixth Saudi Five-Year Development Plan (1996-2000) aimed to absorb 659,900 Saudis into the private sector, as 340,000 new jobs were to be created and 319,000 expatriates were to be replaced. However, the economy fell short of the target, creating only approximately 25,000 extra jobs a year for Saudis (*MEED*, 30th June 2000).

Therefore, the reason for the lack of success in applying such policies is that none of the previous Saudi Five-Year Development Plans has correctly and clearly addressed the most important issue in the labour market – that is, wages in the private sector. The lack of suitable wages is the greatest obstacle facing Saudi youth seeking to be employed in the private sector. The Saudi private sector has been unwilling to pay Saudis the wages they demand, preferring instead to hire non-Saudi labour at a cheaper rate. On the other hand, there is little incentive for Saudis to work in low-wage jobs, usually held by non-Saudis, unless they have no other source of income. Chapters Six and Seven described the determinants of wage differentials and showed that there is a wide wage gap between Saudis and non-Saudis. Chapter Eight discusses possible wage policies that may help to reduce the wage differentials in the Saudi labour market.

Furthermore, in order to increase the Saudi presence in the private sector, Saudi decision-makers should introduce policies that affect the wage gap both directly and indirectly and which would thus help to lower Saudi unemployment, such as applying a minimum wage, offering wage subsidies or employment tax credit with hiring incentives for the long-term unemployed, changing social insurance contributions to favour employment of the low paid, part-time workers and the long-term unemployed, imposing payroll taxes on non-Saudis, targeting the long-term unemployed with "active labour market policies", modifying the benefit system to ensure that individuals are better off in work than out of work, and making use of macroeconomic potential tools such as tax and government expenditure policies.

This section has focused on possible wage and Saudiisation policies in an attempt to suggest methods for decreasing wage inequalities, for speeding up Saudiisation, and for stimulating the economy. A goal for policies aimed at the "low-wage problem" should be, ultimately, to raise the wages of low-wage workers. The issues to be discussed in section two of this chapter are:

8.2.2 Saudi wage and Saudiisation policies

8.2.3 Optimal wage and Saudiisation policies

8.2.4 Wage policy problems

Various policies designed to raise the wages of low-wage workers and decrease wage inequalities were discussed in detail in Chapter Three.

8.2.2 Saudi Wage and Saudiisation Policies

The Saudi employees, and employers' attitudes towards various suggested wage and Saudiisation policies are summarised in Table 8.11 (see page 212), and will be discussed here in order to ascertain whether their attitudes are in favour of wage policies that might be the best method for reducing the high rate of Saudi unemployment. As 181 Saudi employers and 138 Saudi employees responded to the wage attitude questions, the results should be of considerable interest and value to Saudi employers and government economists.

8.2.2.1 Minimum Wage Policies (Policies 1 and 2)

Policy 1, where only about a third of both groups believed that having a minimum wage for all employees, Saudi and non-Saudi would assist Saudiisation. This can be explained by the fact that this measure would provide encouragement not only to Saudis, but to workers in general. However, Policy 2 received a similar amount of support from employees (36%) and only slightly better from employers (44%), even though it is confined to Saudis.

Concerned at the condition of low-wage workers, many Saudi academic researchers and employees are calling for a mandatory minimum wage. This measure could tackle poverty due to low pay, and act as an incentive for those currently unemployed to seek jobs. However, many studies do not support this policy (see Chapter Three) since

it can result in an increase in the rate of unemployment as a result of higher labour costs, and because it can also mean the substitution of one cause of poverty (low wage) for another (unemployment). This suggests that a minimum wage cannot be assumed to be certain to aid Saudiisation.

Further studies concerning a minimum wage for Saudi workers could provide some useful information. The Saudi Labour and Workmen's Law gives the Council of Ministers the right to determine the minimum wage, either in general or with respect to a given area or occupation (Saudi Labour and Workmen's Law, 1969, p. 47). Up until now, there has been no minimum wage in Saudi Arabia's private sector.

There is a case for Saudi Arabia's undertaking minimum wage studies as an indication of its seriousness about fully following the ILO requirements, as labour standards are an important issue for this organisation. The ILO required all members to establish a 'system of minimum wage' which covers all groups of wage earners whose terms of employment are such that coverage would be appropriate (ILO, Minimum Wage Fixing Convention, 1970). Saudi Arabia was suspended in 1995 from the US Overseas Private Investment Corporation (OPIC) insurance programmes because of the government's lack of compliance with internationally recognised workers rights standards (US Department of State, 1998).

Zahran (1999) wrote a useful report about the minimum wage issue in Saudi Arabia. He met with academics and businessmen and asked them about their ideas and made suggestions regarding minimum wages and the Saudiisation process. In general, there were two views; one supported minimum wage legislation and believed that this would help in the Saudiisation process and the other group did not support a minimum wage and believed that it could be an obstacle to Saudiisation. Hammed Al-Mathy Vice President of the SABIC company in Al-Jubail, however, said that imposing a minimum wage might encourage national labour to work in the private sector. In addition, he suggested that this legislation should be implemented alongside other procedures, such as training programmes and improving education levels.

According to Zahran (ibid.), the Chair of the Construction Committee in the Chamber of Commerce and Industry of Eastern Province, Althabaub mentioned that minimum

wage legislation might give non-Saudis the opportunity to raise their wages. However, this might encourage employers to hire Saudi citizens, as long as they are paid the same wage. Alhamid, a member of Al-Shoura Council, said that there should be a reasonable time allowed for imposing a minimum wage in Saudi Arabia. Imposing a minimum wage might help to create more jobs for Saudis. Alhamid also pointed out that there many studies that support a minimum wage – for example, in Taiwan, where a minimum wage has been successfully applied. The problems of Taiwan and Saudi Arabia are similar in that there are limited jobs for national workers in their own country. In Saudi Arabia there are a considerable number of low-waged foreign workers. In Taiwan, many Philippinos and Indonesians work for a lower wage than indigenous workers. The Taiwan government pays $145 as a monthly wage subsidy to companies for each national hired. In addition, it intends to establish a training institution, where each trainee will be paid $290 monthly. A high minimum wage for non-national employees helps to encourage Taiwanese firms to hire national employees. Zahran has pointed out that Alhamid claimed that this legislation has assisted with the hiring of nationals and decreased unemployment in Taiwan.

Other groups, according to Zahran, did not support a minimum wage for the following reasons. The owner of the Consulting Centre for Studies and Finance, Aldakhail, believes that it would hinder the Saudiisation process. Nevertheless, he supports wage subsidies from the Training Fund for on-the-job training. Alsahalwi, Dean of Industrial Management at King Fahad University, was of the opinion that imposing minimum wage legislation in Saudi Arabia's labour market might not help in the Saudiisation of the labour market.

A valuable study by Athman, on the possibility of a minimum wage policy in Saudi Arabia, appeared in the *Saudi Economic Magazine* (2000). It referred to many issues which are relevant to the present study, such as:

- The Saudi Labour Force Council authorised a team from King Saud University to undertake a study related to this issue.
- The minimum wage is one of many factors that could raise the cost of labour; which can result in less profit for a firm and, consequently, less employment.
- A minimum wage encourages many students to leave school and go to work. Setting different levels of minimum wage could encourage many teenagers to stay

on at school. Different levels of minimum wage are applied in the UK and the US successfully.

- Setting a minimum wage depends on the cost of basic necessities in Saudi Arabia.
- Applying a minimum wage in Saudi Arabia depends on many factors. For instance, a minimum wage should be applied to some jobs that Saudis are not at present interested in undertaking. This should encourage Saudis to work in certain occupations, such as domestic/cleaning work, driving, retailing, hotels, security, restaurants and manual work.
- There are differences in wages between the public and private sectors in Saudi Arabia. Public employees receive higher wages for working fewer hours, whereas in the private sector they receive lower wages for longer working hours.
- The minimum wage needs to apply to both Saudi and non-Saudi workers. Work permits, allowances and transportation costs should be considered when applying this policy. These costs will distinguish between Saudi and non-Saudi minimum wage levels.

Al-Hazemi (1999), General Secretary of the Saudi Manpower Council, confirmed that low wages cause greater turnover among Saudi employees. He indicated that transport firms face a shortage of Saudi drivers because wages are low. A National Training Fund would help to overcome many obstacles facing Saudi employers as it should result in more skilled labour becoming available.

Al-Saudani and Al-Kair (2001) mentioned that there is a wage difference between Saudi and non-Saudi employees. They suggested that this wage gap might be narrowed by certain wage policies, such as a minimum wage. Moreover, they pointed out that the *Al-Yamamah Magazine* (2000) mentioned that some Saudis ask for a minimum wage to be adjusted so as to be in line with the cost of living. They suggested SR2,000 ($533) as a basis for a minimum wage.

Saudi Arabia should follow the other countries such as those in Europe. The Council of Europe set a decency threshold at £228.68 ($360) per week in 1995 (Atkinson, Livesey and Milward, 1998). Moreover, George Bain, Chairman of the UK Low Pay Commission, said, "It heralds a fundamental change to the labour market in the UK.

There will be a floor to wages for the first time in this country, eradicating the worst cases of exploitation".

In conclusion, it was found that the attitudes of both Saudi employees and employers, and others, in the above-mentioned studies, indicate that there is considerable opposition to applying a minimum wage to the whole Saudi Arabian labour market. This suggests that a minimum wage cannot be assumed to be the only means of furthering Saudiisation.

8.2.2.2 Policies for Improving Wages (Policies 3 and 4)

These policies indicate that there should be systematic adjustments to reforming the wage levels for workers (both Saudis and non-Saudis, or only Saudis) in the Saudi private sector. Reforming wage levels usually raises the current wage to a higher level or increases wage rates in a better systematic process. To this researcher's knowledge, no study has been made by government or private concerns regarding improving wage levels in the private sector of Saudi Arabia, except for a few studies concerning the prospect of introducing a minimum wage. In most countries, the unions are involved mainly with wage rates, but in Saudi Arabia the law prohibits labour unions. This prohibition prevents employees being involved in wage reform in the private or the public sector.

With regard to Policy 3, it is noted that about 50 per cent of employees and employers believe that improving the wages of non-Saudi and Saudi employees in the private sector will assist Saudiisation. At first glance it may seem odd that giving support to this policy could aid Saudiisation, but, on further consideration, it appears that by increasing/improving both sets of workers' wages the Saudis would no longer differentiate between their wages and those of non-Saudis, and that this, in turn, would make the jobs more attractive to Saudis than hitherto.

Policy 4, which would improve wages only for Saudis, was supported by a greater number (over 70%) of both employees and employers. This appears understandable, if Saudis are to be given more encouragement to take on such work and non-Saudis are to be given less encouragement. Certainly, more Saudis earning satisfactory wages would aid Saudiisation and, ultimately, decrease the under-employment of Saudis.

However, introducing such a policy could cause a widening of the wage gap between Saudis and non-Saudis, which is not in agreement with International Labour Organisation regulations.

From the analysis of the reaction to Policies 3 and 4, it may be concluded that Saudi Arabia has not introduced wage policies for the following reasons: 1) Until now there has no study been carried out and no solution put forward as to how to narrow the wage differentials between Saudi and non-Saudi workers and to provide a basis for improving wages in the private sector. 2) These policies would not help Saudiisation, if they applied only to Saudis, because firms would be less inclined to employ them. 3) Applying these policies only to Saudis would fall foul of the International Labour Organisation requirement of equal treatment in terms of wage rates (ILO, Discrimination Convention, 1958).

8.2.2.3 Segmented Labour Market Policies (Policies 5 and 6)

The labour market in Saudi Arabia has a dual nature, dealing in Saudi and non-Saudi labour. In this labour market, the Saudi workers, though with less experience and possibly lower productivity, demand higher wages than those paid to foreign workers. Saudis prefer white-collar jobs, and resist manual work, especially dirty and hazardous work. On the other hand, in the non-Saudi market, the workers are highly productive and accept low wages. In other words, each market has its own structure for the supply and demand of workers.

The introduction of both Policies 5 and 6 would not help the Saudiisation process, as the private sector has been unwilling to pay Saudis the salaries they want and, consequently, has had to rely on non-Saudis. The current salary levels in the labour market of Saudi Arabia do not encourage Saudis to work in private firms and will not encourage them to take on the same job, for the same pay, as the expatriates. Many non-Saudis accept low wages because they can still earn more in Saudi Arabia than they could in their own countries.

Policy 5, which is to allow the wages of non-Saudi and Saudi employees depend on the supply of and demand for labour in order to assist Saudiisation, received support from only just over 22 per cent of both employees and employers. This is

understandable, for if there is an abundance of workers available and no distinction can be made between non-Saudis and Saudis, employers would have no incentive to engage Saudis if they prefer non-Saudi workers. In such circumstances, the process of Saudiisation is unlikely to progress.

In the case of Policy 6, almost 48 per cent of Saudi employees support the introduction of such a policy, but only 30 per cent of employers are in favour. The discrepancy could be explained by suggesting that some employers will be aware that the country of origin alone is not a reliable determinant of a potential employee's capabilities, and may present other difficulties, such as employees doing the same job in Saudi Arabia, but being paid at different rates, thus causing employee dissatisfaction, and also reluctance to take on jobs in the first place.

8.2.2.4 A Tighter Immigration Policy (Policy 7)

The Seventh Development Plan (2000-2004) shows that despite a tighter government policy aimed to reduce the continuous inflow of non-Saudis into the country, their numbers increased by 1.5 per cent over the period of the Sixth Development Plan (1995-2000). Hamad Ibn Abdullah Al-Hidaithy, Director General of Riyadh's Labour Office, pointed out that the increase in the number of non-Saudi workers might be even higher than this figure. He indicated that the private sector is employing Saudi youth at a weekly average rate of 1,800, and each month 8,000 graduates were employed with the help of the Labour Office. On the other hand, the office issues 20,000 work permits weekly (*Arab News*, 21st October 2001). This figure indicates that non-Saudi workers enter the labour market at 11 times the rate at which Saudi workers are employed. The Saudi government employs many methods to curtail non-Saudi employment, including applying a high fee for work permits and requiring quotas or prohibitions for some professions. For instance, fees are required as follows. 1) Entrance visas for work with private companies and establishments owned by Saudis and non-Saudis cost SR1,000 ($267) per person. 2) Fees for an entrance visa for visiting Saudi and non-Saudi companies are set at SR200 ($53.4) per person. 3) A work permit fee of SR100 ($26.7) is charged to all expatriate workers, and a residence permit is issued and renewed subject to obtaining a work permit. 4) A fee of SR500 ($133) is charged to every applicant for a residence permit. 5) The sponsorship transfer fees are as follows: a) SR2,000 ($534) for the first transfer; b) SR4.000

($1,068) for the second transfer; and c) SR6,000 ($1,602) for the third transfer. The government is preparing to prohibit non-Saudis from working in 147 professions (*Arab News*, 4th November 2002). These methods should help to prevent local employers from hiring non-Saudi workers for certain jobs in the private sector and, at the same time, create more job opportunities for Saudis.

Policy 7 shows that employers are 11 percentage points less supportive of the policy than employees. This could be an obstacle to employing non-Saudis who are better qualified than Saudis. A positive reaction from 47 per cent of the employers is unexpected, because if Saudi employers feel it necessary to employ non-Saudis, this would increase their labour costs. The fact that only nearly 59 per cent of employees were in favour of such a policy is again surprising, as the application of this policy could mean fewer non-Saudis being employed and therefore more work being available to Saudis. It was expected that the employees' agreement with the policy's aim would be much higher.

8.2.2.5 Subsidies Policy (Policy 8)

The Saudi government, by means of the Human Resources Development Fund (HRDF) has started to apply wage subsidies. The role of the HRDF is to help new Saudi entrants to the labour market. The HRDF's main goal is to support the Saudiisation programme. Its objectives, as mentioned in its leaflet, are:

1. To provide grants for qualifying, training and recruiting national manpower in the private sector;
2. To contribute to the cost of qualifying and training national manpower in private sector jobs;
3. To pay a percentage of the salaries of those who are recruited into the private sector, and
4. To support the financing of field programmes.

The methods employed by the HRDF to support training and recruitment are as follows. First, employment is tied to training for employees who need it: a) The HRDF pays 75 per cent of the employee's salary and allowances during the on-the-job training period, which does not exceed two years, and SR1,500 ($400) monthly.

while the recruiting organisation bears the cost of training. b) The HRDF pays, for one year, 50 per cent of the employee's salary after being trained on the job, where the support does not exceed SR2,000 ($533) monthly for each employee.

Secondly, for direct employment of the newly trained employee the HRDF pays, 50 per cent of the newly recruited employee's salary for two years, if he/she has been trained by one of the training centres recognised by the HRDF, who has not been employed before, and where the HRDF support does not exceed SR2,000 ($533) monthly for each employee.

It also supports field programmes, projects, research and studies aimed at replacing foreign labour in the Saudi market. The HRDF's activities are funded from the SR150 ($40) which is added to the fund by every work permit (Iqama) issued or renewed. Its programmes are applicable to all Saudi men and women. This policy may be criticised by questioning what will happen when the subsidy programme period is ended for the Saudi employee and employer. The director of this fund, Al-Sahlawi, mentioned that Saudi workers, at least in the short term, will be more expensive to employ than foreign workers in some areas, which would make the private sector better disposed towards Saudiisation. (Ba-Isa, 2002). He meant that, in the long term, the Saudi marginal labour product should increase and offset the high wage, and it may be possible for trained Saudi workers to provide a higher marginal labour product than the non-Saudi worker in the long term.

Policy 8, if instigated, would subsidise employers for each Saudi worker hired, with the aim of assisting Saudiisation. Over 70 per cent of both employees and employers showed support for this policy. Reasons can be found to justify this high figure. Employers would have more incentive to employ Saudis, thereby increasing the Saudiisation of the workforce. For employees, it would make work available which was formerly done principally by non-Saudis.

8.2.2.6 Income Tax Policy (Policy 9)

The tax law is part of Saudi Arabia's attempt to reform its economy and diversify state revenues away from oil sales, which at present account for 80 per cent of its income. The IMF recommends that Saudi Arabia to speed up the implementation of a

proposed income tax on non-Saudi workers, and also to extend the tax to Saudis (*Arab News*, 26th October 2002). In fact, on 6th of May 2002, a 10 per cent income tax for expatriates was proposed. *Arab News* reported that the Shoura (Consultative) Council approved draft legislation requiring foreigners to pay 10 per cent of their monthly salary in income tax. The Council suggests 10 per cent be levied on monthly earnings exceeding SR3,000 ($800). This tax would be imposed on all non-Saudi workers, except for nationals of countries with which Saudi Arabia has agreements to prevent double taxation. This draft legislation has to be approved by a majority of the Shoura members before it is presented to the Prime Minister for final endorsement.

This policy seems to be an attempt to introduce various domestic taxes with the purpose of diversifying the government's income and increasing the Saudi employment rate in the country. However, it may be criticised on many grounds. For example, many non-Saudis, both semi-skilled and skilled, will go back to their own countries, and this could have a negative impact on the Saudi economy, unless it is possible to substitute qualified Saudis for expatriates during the two years before the government aims to implement fully this policy. *Arab News* confirmed the government's view that this policy may be seen as a way of bridging the gap between the wages of Saudis and non-Saudis, thus encouraging the employment of locals and reducing the jobless rate (ibid.).

The private sector may look differently at this income tax policy. It considers this policy as an obstacle imposed by the government. The employers will compare this policy with the various incentives provided by a number of neighbouring countries, notably the United Arab Emirates (UAE), where there is no income taxation on expatriates. As a result, this will definitely have a negative impact on both employers and the economy, and might make businesses move abroad where conditions are more attractive for generating profits.

It should be made clear to the Shoura Council that though this policy may help to diversify the government's sources of income, on other hand it may not really help to decrease Saudi unemployment or improve the economy.

The reaction to the idea of imposing income tax on all non-Saudis (Policy 9) showed the largest difference between the views of employees (74% in favour) and employers (almost 50% in favour) i.e., 24 percentage points. The main reason for employers showing a lower amount of support could be that by taxing low-wage workers, fewer non-Saudis would seek employment in Saudi Arabia and, consequently, certain jobs, in particular menial ones, would not be filled, as Saudis are reluctant to do such work.

8.2.2.7 Direct Foreign Investment (Policy 10)

The Kingdom is serious about restructuring what is at present a state-dominated economy. Saudi Arabia's Council of Ministers approved a new Foreign Investment Law on April 10th, 2000. This new law allows foreigners to have 100 per cent ownership of projects, as well as of the property required for the project. It also provides the same incentives as those given to national companies. For example, projects that are 100 per cent foreign-owned will be eligible for loans from the Saudi Industrial Development Fund. Investors will also be able to hold investment licences in more than one type of activity and foreign investors and their non-Saudi workers will be sponsored under the auspices of the newly licensed firm. The corporate tax rate for foreign companies with profits over SR 100,000 is reduced from 45 per cent to 30 per cent (US–Saudi Arabian Business Council, 2002). Moreover, this is the first time the government has considered opening the natural gas sector to foreign firms. It has also worked on the appropriate laws and regulations to increase transparency.

Would foreign investment help the Saudiisation programme or would it lead to more immigration? *MEED* (2000) reported that Foreign Direct Investment (FDI) has not had a significant impact on employment levels, a finding that was confirmed by a Saudi American Bank (SAMBA) study. Saudi Arabia has attracted only a total of about $5 billion in FDI over the past 25 years, creating 54,000 jobs. The government is hoping for further job creation in the petrochemical sector. In fact, having only a few large petrochemical projects is not providing an effective path for the creation of jobs. These projects are very capital intensive with a high degree of technology. On the other hand, it is more likely that opportunities for job creation will come from the small firms that will grow to support the large energy intensive projects (ibid.).

Regarding Policy 10, the difference in view between the employees and employers was only about 7 percentage points, with 50 per cent of each group in favour of a policy being introduced to encourage foreign investment, as mean of furthering Saudiisation. Both parties will be aware that the government wants the private sector to be the main organ of growth, as there is much less scope for the public sector to absorb local entrants to the workforce. For the private sector to advance, foreign investment is needed to supplement any finance available from Saudi private sources. As stated above, foreign direct investment has not produced the hoped-for increase in either money or jobs over the past 25 years. The total number of jobs created by joint ventures set up in the Kingdom is estimated at just 21,000 (ibid.). However, an influx foreign capital will not necessarily result in new job opportunities for Saudis. This realisation probably accounts for the fact that neither employees nor employers gave Policy 10 their complete support.

8.2.2.8 Small Firm Policies (Policies 11, 12 and 13)

The Saudi government has recently recognised lately the importance of small firms. Many discussions and meetings have underlined the importance of setting up small companies which will help to reduce the high Saudi unemployment rate. The Saudi Ministry of Finance and National Economy in conjunction with the World Bank organised a workshop on SMEs in Riyadh. At this gathering, Dr. Mohammed Abdelkarim Sulayman, head of Research Studies at the country's Manpower Council, talked about the need to support SMEs to boost Saudi national employment. He indicated that owing to their small capital and low wages they are unable to absorb the most major proportion of the national manpower. This encourages the recruitment of foreign workers at the expense of national workers, thus exacerbating the country's labour problem. (Al Khouri, 1999).

Many studies indicate that the development of the SMEs sector is very important for job creation in the Kingdom. Small businesses make up 85 per cent of all business activity in the Kingdom and employ over three million people in the private sector. This sector needs to be enhanced by providing help in many areas, such as in securing bank loans, training workers, overcoming the scarcity of skilled labour, increasing productivity and marketing constraints, and reducing mismanagement (Bashir, 2002). These issues were commented on by *Arab News*, which pointed out that small firm

owners were seeking exposure to overseas practices (ibid.): that the Riyadh Chamber of Commerce and Industry (RCCI) had been in an attempt with the Saudi Credit Bank to arrange credit facilities ranging from SR100,000 ($26,666.66) to SR500,000 ($133,333.33) for a variety of small businesses; that Japanese teams had been brought in to explore SMEs manpower projects (Hassan, *Arab News*, 11th March 2002); that the Saudi government had agreed to set up an institution to provide financing for the SMEs; and that Saudi teams were to visit India to study the SMEs there (Hassan, *Arab News*, 7th October 2002).

Policy 11, which would reduce government restrictions on small firms, so as to encourage them to employ more Saudi employees, was supported by a similar number of employees and employers, i.e., just over 60 per cent each. These small firms complain about the unnecessary amount of government interference in the organisation and daily progress of their firms. They find that the amount of paper-work which has to be completed and the frequent changes in legislation are both time-consuming and uneconomic. This situation is not limited to Saudi Arabia – many firms in the EU have the same complaints, that government interference restricts firm expansion and reduces profits. (as reported in several issues of the *Financial Times* in 2001 and 2002).

With regard to Policy 12, over 70 per cent of employees and employers supported this policy of supplying low-cost government finance to small firms. According to Javid Hassan, writing in *Arab News* on 11th March 2002, one of the major problems for small and medium establishment (SMEs) is inadequate financial support.

In a survey by the SMEs Development Centre in 2000 of 60 per cent of the SMEs located in the Eastern Province of Saudi Arabia, over 75 per cent of the enterprises surveyed reported problems in marketing. Therefore, help both with finance and information is essential for SMEs, as they are vital for job creation in the Kingdom and the furtherance of the Saudiisation programme.

Policy 13, which aims to make low-cost commercial bank loans available to small firms with 70-100 per cent Saudi employees, to assist in furthering Saudiisation, met with well over 70 per cent support from both employees and employers. As was

reported in the discussion on Policy 12, small businesses are a major source of employment in the Kingdom, making up 85 per cent of all business activity and employing over 3 million of the sector's 4 million employees (Bashir, 2002). Clearly, the government's introduction of this policy could assist small firms with their financial difficulties. Analysts cite the inability to secure bank loans, a lack of trained staff, the scarcity of skilled labour, productivity and marketing constraints, mismanagement and excessive overheads, as the main problems facing small businesses in the Kingdom (ibid.).

This policy would provide support and assistance that would enable these firms to expand their investments and become acquainted with the latest in business technology. This would reflect positively on the local market and, consequently, encourage small firms to employ more Saudis.

In conclusion, it appears that small businesses in Saudi Arabia need to have more financial assistance from both government and private banks and have fewer restrictions imposed on their activities. These measures will help to speed up the Saudiisation process (Al-Khouri, 2002).

8.2.2 Optimal Wage and Saudiisation Policies

It is very difficult to choose which are the best or the most commonly suggested wage and Saudiisation policies, but by analysing these policies closely and studying their implications it might be possible to assess their relative merits. For simplicity, and as the first step, the suggested policies will be ranked, then put into categories of above or below the 50 per cent base line in order to show the importance of each policy. In other words, if Saudi positive attitudes towards any policy are above 50 per cent then this policy will be in the more strongly supported category; otherwise, it will be put into the less supported category. This will be taken as a guide to acceptance of the policy. The second step is to use the previously mentioned opinions, as discussed in Section 8.2.2, to help in identifying the more efficient policies.

Table 8.12 shows strong support from both Saudi employees and employers for programmes and polices that help Saudi citizens to find suitable jobs. The survey indicates that Saudis in the Eastern Province are concerned about helping new

entrants. This table shows that both the Saudi employees and employers agreed strongly on six policies - 4, 8, 10, 11, 12 and 13 - which would improve wages for Saudis, introduce wage subsidies, encourage foreign direct investment, and support small firms (see the shaded boxes). Moreover, they gave some support to six other polices - 1, 2, 3, 5, 6 and 7 - which introduce a minimum wage, increase wages for both non-Saudis and Saudis, improve segmented labour market policies, and tighten immigration controls. If Policies 9 (income tax policy) and 4 (improving wages of Saudi employees) are excluded because of their controversial nature, and Policy 7 is added because of its positive contribution to the Saudiisation process, then Policies 7, 8, 10, 11, 12 and 13 are the policies most recommended by Saudi employees and employers in the survey. In other words, a tighter immigration policy, a wage subsidies policy, a foreign investment policy and policies that assist small firms appear to be the most effective policies for the Saudi labour market.

Table 8.12 Ranking the Wage and Saudiisation Policies

Employees' Reactions				Employers' Reactions			
Ranking	**Policies**	**%**	**50 % Base**	**Ranking**	**Policies**	**%**	**50 % Base**
1	4	79.7	**Over 50 % (Strong Policies)**	1	13	77.9	**Over 50 % (Strong Policies)**
2	12	79.0		2	8	73.5	
3	13	74.7		3	4	72.3	
4	9	74.0		4	12	73.0	
5	8	71.7		5	11	61.3	
6	11	62.3		6	10	51.9	
7	10	59.4		7	9	49.8	**Less than 50 % (Some Support)**
8	7	58.7		8	3	49.1	
9	3	50.7		9	7	47.0	
10	6	47.8	**Less than 50 % (Some Support)**	10	2	43.6	
11	2	36.2		11	1	33.1	
12	1	34.8		12	6	29.8	
13	5	22.5		13	5	21.6	

8.2.4 Wage Policy Problems

The basic problem is that if wages are raised by any of the above recommended policies, Saudi firms may become less competitive, even in their own home market. Government subsidies could help, but a government cannot allow such subsidies to continue without a time limit.

The wage policies suggested in this study are aimed at providing assistance for the Saudi unemployed, low-wage workers, and new entrants to the job market. Although suggested wage polices will raise wages directly or indirectly, neither a subsidy policy nor other suggested wage polices are intended to impose a higher wage burden on firms in Saudi Arabia. However, any new wage regulation is an obstacle to the main aim of any firm, that is, of maximising profit. For instance, if a minimum wage is imposed by the government, many Saudi firms will lay off workers in order to cover their higher labour costs (labour wages).

It seems that the only way forward is through government intervention. Any government with the ability to raise funds should be able to design good programmes or policies to stimulate the employment level of its labour market. However, the situation is difficult for Saudi Arabia, which, owing to its oil revenues, was once financially able to operate such programmes, but which has now accumulated a large deficit, and is therefore no longer able to fund these programmes adequately. Imposing taxes is the only solution left to the Saudi government to support such wage programmes. The Saudi government is now faced with the challenge of a huge deficit and a high level of unemployment. A huge deficit puts the government in a critical position with its citizens. It would have to impose a particular tax to support the policies referred to here, in order to create more jobs for Saudis.

In determining how such programmes could be applied in the country, Stiglitz's (1993) classification of who is poor and who is a low-wage worker could provide the government with some useful insights. Programmes of the Saudi government should be aimed at reducing inequality by preventing poverty and providing a safety net for the very poor. The poor include those who are not working and those on low wages. Those not working can be grouped into at least three categories: people who cannot work, either because they are too old or too disabled; individuals who cannot find work because there is a shortage of jobs; and people who do not choose to work because the type of work is unattractive to them. Although most developed countries have assistance programmes that support such people, Saudi Arabia, as a middle income economy, only has pension funds that support the first category. Thus, it has to examine the scope for wider programmes in the light of its ability to finance them. For the time being, imposing tax is the main method of financing assistance

programmes. For instance, the Human Resources Capital Fund in Saudi Arabia gets its funds from Iqama fees. This fee is SR150 ($40), and is levied on each work permit given to a non-Saudi worker. In addition, the Saudi government can raise more funds for assistance programmes by, for example, reallocating education expenditure, imposing value added taxes on consumption, or even imposing income tax.

8.3 Conclusion

Section 8.1 highlighted who the low-wage workers are, and their wage level, in the private sector of the Eastern Province. It showed that there is no universal definition of low-wage workers but that there are some characteristics that help to generalise who they are. Some of these characteristics are: low skills and education; few years of experience; recent entrants into the labour market; and employment in the informal sector.

The profile section of low-wage workers in the private sector of the Eastern Province reveals that over 51.8 per cent of all workers are low-wage workers. Generally, five out of ten workers receive less than SR3,000 ($800) in the Eastern private sector. This group constitutes a significant share of the workforce in this province, and most low-wage workers, unlike those in other countries, are skilled, married, live in urban areas and have a high level of education. Consequently, a reasonable goal for policies aimed at the "low-wage problem" is to raise the wages of low-wage workers. (Policies aimed at raising the wages of these workers are explained in detail in Chapter Three).

This section confirmed that wage inequalities, an unsystematic wage structure, and low-wage workers exist in the Eastern Province of Saudi Arabia. The section dealing with Saudi wage policy summarises the relevant literature and suggests policies and programmes that may help in confronting these important wage issues and unemployment. It focuses on several important wage polices that could decrease wage inequality and offer a reasonable wage for low-wage workers so as to lift them out of poverty. It is difficult to choose which are the best or the most effective wage policies for the Saudi labour market, especially if they are related to the other wage policies described in Chapter Three. Since 181 Saudi employers and 138 Saudi employees responded to the wage attitude questions, the results of this survey should be

beneficial to planners. The figures shown in Table 8.12 suggest that Policies 7, 8, 10, 11, 12 and 13 would be the most effective policies for the Saudi labour market.

The final section of this chapter, which deals with basic labour market problems, is of major importance. If wages are raised, Saudi firms may become less competitive, even in their own home market. Government subsidies could help, but the government cannot allow such subsidies to continue indefinitely. Moreover, there is no intention to impose a higher wage burden on any firm in the Saudi private sector. It seems that imposing various taxes is the only solution left for the Saudi government, so as to enable it to provide adequate support for any wage policy that might stimulate employment, particularly of its own nationals.

Chapter Nine

Conclusion

9.1 Introduction

The statement of the problem indicates that the high cost of wages for employing Saudis relative to non-Saudis is an obstacle when seeking to further Saudiisation in the Saudi private sector. Therefore, many theories of wage inequality have been applied in an attempt to explain the main reasons why different employees have different wages and which factors affect wages significantly. Among these theories, three have been prominent: 1) The human capital theory, which explains wage inequality in terms of individual qualities, 2) The segmented labour market theory, which uses various criteria to divide the market into segments, was applied to the Saudi labour market to determine whether a wage gap exists between the formal and informal sectors, and 3) The discrimination theory, which maintains that if employees with the same economic qualifications receive different wages, the differences systematically correlate with the non-economic characteristics of the employees.

Chapters Six and Seven showed that wage inequalities in the Eastern labour market and the factors affecting the wages in the formal sector often vary from those in the informal sector. Chapter Eight indicated that low-wage workers in Saudi Arabia differ from similar groups in other countries, and also analysed the wage and Saudiisation policies that are needed to decrease wage inequality. The present chapter resumes all these important results, as follows:

9.2 Descriptive and Inferential (Analytical) Statistics

This section summarises the results of the statistical analysis described in Chapter Six.

9.2.1 Summary of Respondents' Background Variables

The main findings relating to category and the continuous variables are summarised in Table 9.1. These are:

1. Nationality: 66 per cent of the Saudi sample are at the upper wage level and only 34 per cent are at the lower level. Hence, the percentage of Saudis at the upper

wage level is double the percentage of Saudis at the lower level. On the other hand, about 86 per cent of the non-Saudi sample are at the lower wage level and only 14 per cent of this sample are at the upper wage level.

Table 9.1 Summary of Respondents' Background Variables Table

Variables	Cross-Tabulation				Parametric Test	Non-Parametric Test
	Saudi Wage %		Non-Saudi Wage %			
	Lower (1)	Upper (2)	Lower (1)	Upper (2)		
Nationality Saudi Non-Saudi	34.0 ---	66.0 ---	--- 86.0	--- 14.0	Test: Independent Sample Test Result: significant	Test: Mann-Whitney U Test Result: Significant
Marital Status Single Married	51.9 28.8	48.1 71.2	94.3 82.7	5.7 17.3	Test: Independent Sample Test Result: Significant	Test: Mann-Whitney U Test Result: Significant
Urbanisation Urban Rural	29.6 52.2	70.4 47.8	84.6 85.9	15.4 14.1	Test: Independent Sample Test Result: Significant	Test: Mann-Whitney U Test Result: Significant
Age Category 20-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64	73.7 33.3 35.5 13.0 6.3 50.0 33.3 --- ---	26.3 66.7 64.5 87.0 93.8 50.0 66.7 --- ---	100.0 100.0 95.8 87.5 78.6 60.0 71.4 --- 100.0	--- --- 4.2 12.5 21.4 40.0 28.6 100.0 ---	Test: ANOVA Result: Significant	Test: Kruskal-Wallis Test Result: Significant
Province of Origin/Place of Birth Eastern Province Western Province Southern Province Northern Province Central Province Other Country	40.0 --- 15.4 --- 15.4 47.6	60.0 100.0 84.6 100.0 84.6 52.4	100.0 --- 100.0 --- 1000 85.6	--- --- --- --- --- 14.4	Test: ANOVA Result: Significant	Test: Kruskal-Wallis Test Result: Significant
Occupational Category Professional or Technical Administrator Accounting or Financial Sales and Marketing Production Worker Others	22.9 44.7 12.5 50.0 33.3 80.0	77.1 55.3 87.5 50.0 66.7 20.0	83.1 79.3 78.9 100.0 95.8 91.7	16.9 20.7 21.1 --- 4.2 8.3	Test: ANOVA Result: Significant	Test: Kruskal-Wallis Test Result: Significant
Level of Skill Professional/Skilled Semi-Skilled Unskilled Unknown	29.4 39.7 66.7 12.5	70.6 60.3 33.3 87.5	79.1 100.0 --- 100.0	20.9 --- --- ---	Test: ANOVA Result: Not Significant	Test: Kruskal-Wallis Test Result: Not Significant
Age (As a continuous variable)	---	---	---	----	Test: Pearson Correlation Result: Medium Positive	Test: Spearman's rho Correlation Result: Medium Positive

This indicates that the first step in the further development of the Saudiisation process is to take account of the present wage levels and to close the gap between the upper and lower wage categories. Both parametric and non-parametric tests show that there is a statistically significant difference between the annual wages of Saudi and non-Saudi employees.

2. Marital Status: Nearly 52 per cent of Saudis working at the lower wage level are single and just over 71 per cent of married Saudis are at the upper wage level. For non-Saudis the picture is different. Here, 94 per cent of single persons and 83 per cent of married persons are at the lower wage level. This leaves only a small percentage of non-Saudis at the upper wage level. That there is a significant difference in the mean of the annual wage variable for single and married groups is shown when parametric and non-parametric tests are applied.

3. Urbanisation: Table 9.1 shows that most of the Saudi employees who live in urban areas are at the upper wage level and more than half of the Saudi employees who live in rural areas are at the lower wage level. On the other hand, there is a small difference when non-Saudi employees are examined according to the urban/rural areas. Applying the parametric and non-parametric test to the sample shows that there is a significant difference between the current annual wage of urban and rural groups in the Eastern Province of Saudi Arabia.

4. Age Category: The table shows that 74 per cent of Saudi employees aged 20-24 years are at the lower wage level and only 26 per cent of the same age category are at the upper one. Hence, the percentage of lower-paid Saudi employees is triple the percentage of higher-paid Saudi employees in the 20-24 years category. This indicates that most Saudis entering the labour market start with a low wage. The percentages are different for the 25-29 and over 29 age groups. The increasing percentages at the upper wage level and the decreasing percentages at the lower level for the higher age groups for Saudi employees indicate that Saudi employees in the Eastern Province are getting wealthier as they grow older, although this situation may not continue. Most non-Saudi employees, on the other hand, over the entire age range, are in the lower wage category. It is worthy of

note that the non-Saudi percentage also decreases at the lower wage level and increases at the upper wage level the longer they stay in the Eastern private sector. The ANOVA and its alternative test show that there is a significant difference in the mean scores of the annual wage variable for all age ranges.

5. Province of Origin/Place of Birth: Saudi employees born in the Eastern Province scored the lowest at the upper wage level and had the highest percentages at the lower wage level. By contrast, Saudi from other provinces obtained the lowest and the highest percentages at the lower and upper wage levels, respectively. This was not the case with to non-nationals. Both parametric and non-parametric tests indicate that there are statistically significant differences with regard to the place of birth variable. This suggests the possibility of wage discrimination between various groups of Saudi employees.

6. Occupational Category: Most Saudis who work either as professionals, administrators or accountants, and some who are senior production workers, are at the upper wage level, while the rest are at the lower wage level. On the other hand, most non-Saudi employees are at the lower wage level, no matter what kind of occupational category they are in. The ANOVA and its alternative test show that there is a difference in wages according to job (occupational) category.

7. Level of Skill: At the upper wage level, the percentage of skilled and semi-skilled Saudis is higher than the percentage of unskilled Saudis. By contrast, the percentage of semi-skilled and "other" non-Saudis is higher than the percentage of skilled non-Saudis at the lower wage level. Both the parametric and non-parametric tests show that there is not a statistically significant difference in the continuous variable across the skill levels.

8. Age (as a Continuous Variable): The Pearson product-moment and Spearman rank order correlation tests show the strength and direction of the linear relationship between age and wage variables. They show that there is a medium positive correlation between age and wage variables.

9.2.2 Summary of Human Capital Variables

1. Education: Table 9.2 shows that often the percentages of Saudis at the upper wage level are higher than the percentages of the same group at the lower wage level of all levels of education except the primary and Master degree levels. With higher educational qualifications, the percentage at the lower wage level usually decreases, whereas it increases at the upper wage level. On the other hand, a higher percentage of non-Saudis are at the lower wage level than the upper. With higher educational qualifications the percentage of non-Saudis at the lower wage level decreases and the percentage at the upper wage level increases. The ANOVA and Kruskal-Wallis tests show that there is a statistically significant difference in the wage variable across education levels.

2. Education (Continuous): Education is considered as a continuous variable. Its results are the same as for Education as a categorical variable. In addition, the Pearson and Spearman correlation tests show that there is a medium positive correlation between the wage variable and the number of years of education.

3. Level of English: Table 9.2 shows that with a higher English level for both Saudi and non-Saudi, the percentage at the lower wage level decreases, but increases at the upper wage level. Both parametric and non-parametric tests show that there is a statistically significant difference in the wage variable across the four English levels.

4. Level of Computer Skills: The percentage of those at the upper wage level increases with an increase in computer skills for both Saudi and non-Saudi employees, and the percentages decrease with an increase in computer skills for both nationalities at the lower wage level. The ANOVA and Kruskal-Wallis tests show that there is a difference in wage levels in relation to the level of computer skills.

5. Experience: The Pearson and Spearman correlation tests show that there is a medium positive correlation between wage variable and experience variables.

Table 9.2 Summary of Human Capital Variables

Variables	Cross-Tabulation				Parametric Test	Non-Parametric Test
	Saudi Wage %		Non-Saudi Wage %			
	Lower (1)	Upper (2)	Lower (1)	Upper (2)		
Education (Category)					Test: ANOVA	Test: Kruskal-Wallis Test
Primary	100.0	---	100.0	---		
Elementary	38.5	61.5	100.0	---		
High	48.9	51.1	96.6	2.4		Result: Significant
Diploma	28.1	71.9	88.9	11.1	Result: Significant	
Bachelor of science	6.3	93.8	81.6	18.4		
Bachelor of Art	45.5	54.5	84.2	15.8		
Master's Degree	66.7	33.3	60.0	40.0		
Ph.D. Degree	---	---	---	100.0		
Education (Continuos) [15]					Test: Pearson Correlation	Test: Spearman's rho Correlation
6 Years of Schooling	100.0	---	100.0	---		
9 Years of Schooling	38.5	61.5	100.0	---		
12 Years of Schooling	48.9	51.1	97.6	2.4	Result: Medium Positive	Result: Medium Positive
14 Years of Schooling	28.1	71.9	88.9	11.1		
16 Years of Schooling	45.5	54.5	84.2	15.8		
17 Years of Schooling	6.3	93.8	81.6	18.4		
19 Years of Schooling	66.7	33.3	60.0	40.0		
22 Years of Schooling	---	---	---	100.0		
Level of English					Test: ANOVA	Test: Kruskal-Wallis Test
None	100.0	---	100.0	---		
Beginner	66.7	33.3	100.0	---		
Intermediate	34.7	65.3	96.0	4.0	Result: Significant	Result: Significant
Advanced	12.2	87.8	68.1	31.9		
Computer Skills					Test: ANOVA	Test: Kruskal-Wallis Test
None	69.2	30.8	97.6	2.4		
Beginner	50.0	50.0	95.7	4.3		
Intermediate	24.6	75.4	80.0	20.0	Result: Significant	Result: Significant
Advanced	18.8	81.3	71.8	28.2		
Current Experience (Continuous Variable)	---	---	---	---	Test: Pearson Correlation Result: Medium Positive	Test: Spearman's rho Correlation Result: Medium Positive

9.2.3 Segmented Labour Market Variables

1. Firm Ownership: Table 9.3 shows that there are higher percentages of non-Saudi employees at the lower wage level than at the upper wage level in both Saudi and non-Saudi firms. On the other hand, only a slight difference is found between upper and lower levels among Saudi employees in Saudi firms. In addition, there

[15]For more information on years of schooling see Chapter Five.

are higher percentages of Saudi and non-Saudi employees who work in joint ventures at the upper wage level than there are at the lower wage level. Both parametric and non-parametric tests show that there is a statistically significant difference in the wage variable across the three firm ownership groups.

2. Type of Firm: at the lower wage level, there is a high percentage of Saudi employees in the commercial, agricultural and services sectors only, but a high percentage of non-Saudi employees in all sectors. Hence, at the upper wage level, percentages of non-Saudi employees are low in all sectors except the industrial, and high percentages of Saudi employees are found in the industrial, financial and transportation sectors. There is a statistically significant difference in the wage variable across the sectors, as confirmed by parametric and non-parametric tests.

3. Number of Employees: Table 9.3 shows that percentages of Saudi and non-Saudi both at the upper wage level are greater in the formal sector than in the informal. On the other hand, their percentages at the low wage level are greater in the informal sector than in the formal. The ANOVA and Kruskal-Wallis tests confirmed that there is a statistically significant difference in the wage variable across the employees' groups.

4. Firm Grade: In all grades, the percentages of non-Saudis at the lower wage level are higher than at the upper level. On the other hand, for Saudis, the percentages at the upper wage level are much higher than the percentages at the lower level except for low grade. Both parametric and non-parametric tests show that there is a statistically significant difference in the wage variable across firm grades.

9.3 Regression Models

This section provides more empirical evidence for the structure, determinants, and differences in wages in the Eastern Province private labour market by using the multiple regression models and the Logistic regression model. Sections 9.3.1 and 9.3.2 show how background and human capital variables affect wage levels. Section 9.3.3 takes the previously mentioned variables and places them in standard segmented lines.

Table 9.3 Summary of Segmented Labour Market Variables

Variables	Cross-Tabulation				Parametric Test	Non-Parametric Test
	Saudi Wage %		Non-Saudi Wage %			
	Low (1)	High (2)	Low (1)	High (2)		
Firm Ownership					Test: ANOVA	Test: Kruskal-Wallis Test
Owned by Saudi	49.4	50.6	91.8	8.2		
Owned by Non-Saudi	---	---	80.0	20.0		
Joint Venture	13.3	86.7	47.8	52.2	Result: Significant	Result: Significant
Type of Firm					Test: ANOVA	Test: Kruskal-Wallis Test
Industrial	19.2	80.8	67.6	32.4		
Commercial	62.5	37.5	90.0	10.0		
Agricultural	61.5	38.5	81.8	18.2	Result: Significant	Result: Significant
Finance and Insurance	25.0	75.0	100.0	---		
Transportation	---	100.0	80.0	20.0		
Construction	---	---	97.3	2.7		
Services	40.0	60.0	90.9	9.1		
Others	87.5	12.5	84.2	15.8		
Number of Employees (20)					Test: ANOVA	Test: Kruskal-Wallis Test
= < 20 Employees	83.3	16.7	92.3	7.7		
> 20 Employees	31.3	68.7	84.9	15.1	Result: Significant	Result: Significant
Number of Employees (40)					Test: ANOVA	Test: Kruskal-Wallis Test
= < 40 Employees	75.0	25.0	92.0	8.0		
> 40 Employees	31.0	69.0	83.8	12.2	Result: Significant	Result: Significant
Number of Employees (500)					Test: ANOVA	Test: Kruskal-Wallis Test
= < 500 Employees	54.2	22.5	89.7	10.3		
> 500 Employees	22.5	77.5	80.0	20.0	Result: Significant	Result: Significant
Firm Grade					Test: ANOVA	Test: Kruskal-Wallis Test
High	27.5	72.5	76.7	23.3		
Medium	34.0	66.0	84.4	16.0		
Low	87.5	12.5	86.4	13.6	Result: Significant	Result: Significant
Unclassified	40.0	60.0	91.5	8.5		

9.3.1 Summary of Respondents' Background Variables

1. In Table 7.4, the linear regression model shows that the largest ***beta*** coefficient is B_1, that is for Nationality (***NAT***). All significant values in this table except the ***MARSTAT*** significant value, are less than .05, which means that those variables make a significant contribution to the prediction of the wage variable. R^2 indicates that ***NAT***, ***MARSTAT***, ***URBAN***, ***PBIRTH*** and ***AGE*** can explain 36 per cent of the variation in predicted wage variable.

2. Using a dummy variable for ***PBIRTH*** helps to determine which place of birth/province of origin, in the Saudi Arabian Provinces has the largest effect on wage level. Tables 7.5 and 7.6 indicate that there is a wage difference between Saudi employees themselves that is due to place of origin. Saudi employees born in the Northern Province receive the highest wage while those born in the Eastern Province receive the lowest. The ***MARSTAT***, ***DUMYSOTH*** and ***DUMYOTHR*** coefficients do not contribute significantly to the model being considered. R^2, the coefficient of determination, indicates that about 40 per cent of the variation in wage variable can be explained by the listed independent variables.

3. Transforming the wage variable to the natural log gives good results. ***MARSTAT*** is insignificant, but after transformation it becomes significant. R^2 is 41 per cent. This indicates that 41 per cent of the variation in the natural log wage variable can be explained by all the background variables. Comparing OLS and OLS using the natural log, ***Ln,*** for the wage variable, shows that some of the corresponding t-test scores rose higher, and R^2 rose from 36 per cent to 41 per cent. This indicates that OLS using the natural log has provided a more efficient estimate of the slope parameters.

4. Using Weighted Least Squares (WLS) to eliminate heteroscedasticity in our original background regression model gives good results. A comparison of OLS and WLS results shows that the corresponding t-test values rose higher, which indicates that the WLS transformation model has generated a more efficient estimate of the slope parameters, although R^2 has fallen from 36 per cent to 31 per cent.

9.3.2 Summary of Respondents' Background and Human Capital Variables

1. All included independent variables, except for ***MARSTAT*** and ***URBAN***, are significant in contributing to the prediction of the wage level. R^2 indicates that about 50 per cent of the variation in wage variable can be explained by the listed independent variables.

2. Using the natural log for the wage variable gives good results. The ***Ln*** wage regression model shows that all independent variables make a statistically significant contribution to the wage variable. A comparison of OLS with OLS using the natural log for the wage variable reveals that some of the corresponding t-test scores rose higher. This indicates that OLS using the natural log has provided a more efficient estimate of the slope parameters. It has also caused R^2 to rise from 50 per cent to 57 per cent.

3. Using Weighted Least Squares (WLS) to eliminate heteroscedasticity in the human capital regression model gives good results. A comparison of OLS and WLS results shows some of the corresponding t-test values are slightly higher and others less so, but R^2 does not change. Thus, using the natural log for the wage variable gives more significant results than the WLS method.

9.3.3 Segmented Labour Market

1. Saudi and non-Saudi (Nationality): In the Saudi and non-Saudi markets, almost all previously mentioned independent variables, except for ***AGECATT***, have some effect on the Saudi wage level, and only three independent variables (***AGECATT***, ***EDUC***, and ***ENGLISHL***) affect the non-Saudi wage level. R^2 for the Saudi market is higher than for the non-Saudi market. This indicates that more independent variables affect the Saudi wage level than the non-Saudi wage level.

2. Job Category: Using the coefficient of ***NAT*** for all job categories makes a significant contribution to the prediction of wages as a dependent variable. On the other hand, the ***MARSTAT*** coefficient for the same job categories does not make a significant contribution in predicting the dependent variable. The contributions made by the other independent variables vary in significance. Comparing the ***beta*** values among the job categories reveals that they carry different weights from one job to another, but that the main one is the nationality ***beta***. The highest R^2 is 75 per cent for the marketing job category and the lowest is 54 per cent for the administrator category. In addition, there are more insignificant independent variables tan significant ones. This result should be paid more attention by those designing wage structures and setting a wage policy in the Saudi private market.

3. Job Skill: The ***NAT***, ***EDUC*** and ***COMPUTRL*** coefficients have the most significant effect in the skilled and semi-skilled categories. On the other hand, there are no significant effects of the ***MARSTAT***, ***URBAN*** and ***CURRTEXP*** coefficients when applied to the models. The remaining coefficients of other independent variables only make a significant contribution to the skilled category. The determination coefficient of semi-skilled (60 %) is higher than R^2 for skilled. In general, ***NAT***, ***EDUC*** and ***COMPUTRL*** should be considered when introducing a new wage policy. Note that the unskilled and unknown sub-segments of the labour markets are excluded because the first contains only a few cases and the second has a mixed skilled level that would produce unreliable results.

4. Firm Ownership: ***NAT***, ***AGECATT***, ***EDUC*** and ***ENGLISHL*** coefficients appear to have the most significant effect on the Saudi and joint venture firm categories. On the other hand, the ***MARSTAT***, ***URBAN*** and ***COMPUTRL*** coefficients proved to have no significant effect on these two categories. The coefficients of the other independent variables only make a significant contribution to the Saudi firm category. Thus, when comparing ***beta*** values, it may be seen that there is a wage difference between Saudi and joint venture firms. The coefficient of determination for both these firm categories shows that there is a 46 per cent for Saudi and 62 per cent for joint ventures variation in predicted wage level. This can be explained by the listed independent variables. Note that the non-Saudi category is excluded because it contains few cases.

5. Economic Sector: When comparing the ***beta*** values across the various economic sectors it can be seen that they differ from one sector to another, but the highest ***beta*** value belongs to nationality in all sectors, and the highest ***beta*** value for ***MARSTAT*** is in the agricultural sector. This confirms that wage differences exist in the economic sector. In addition, the highest determination coefficient, R^2, is 66 per cent for what is termed "other" sectors and the lowest is 32 per cent for the construction sector, which indicates that the independent variables have more effect in the "other" sectors than in the construction sector.

6. Employment Category: In the formal sector, all coefficients except ***MARSTAT*** and ***URBAN*** make a statistically significant unique contribution to the prediction of the wage variable. However, in the informal sector, there are many coefficients which do not make any significant contribution, such as ***MARSTAT***, ***URBAN***, ***EDUC*** and ***CURRTEXP***. ***Beta*** values for the formal and the informal sectors confirm the wage differences between them. In the formal and informal sectors, determinations of 59 per cent and 64 per cent indicate that variations in the predicted wage variable can be explained by independent variables.

7. Province of Origin/Place of Birth (Discrimination Theory): in the Southern Province, none of the coefficients makes a statistically significant contribution to the predicted wage variable except ***NAT***. When comparing the ***beta*** values of the Eastern and Central Provinces, it can be seen that they differ from one another. This indicates that the wage difference might be due to employees' place of birth. The coefficient of determination (94 per cent) for the Central Province is higher than that of the Eastern Province (52 per cent).

8. Wage Category: Most listed independent variables which affect the high wage level are different from those which affect the low wage level. The ***beta*** value of ***NAT*** at the higher wage level is higher than at the lower wage level. For lower and higher wage levels, the coefficients of determination in the Eastern private labour market of 21 per cent and 25 per cent respectively indicate that the variation in predicted wage level may be explained by listed independent variables.

9. The appropriate econometric model shows that only ***AGECATT***, ***CURRTEXP*** and ***ANLFTWAG*** affect wage levels in the Saudi labour market. ***EDUC*** and ***ENGLISHL*** were thought to be highly influential in affecting the Saudi wage level but this proved not to be so. However, they did have a very substantial effect on the wage level in the non-Saudi labour market of the Eastern Province.

Table 9.4 The Significance of the Segmented Variables

Variables	Segmented Variables	B_1	B_2	B_3	B_4	B_5	B_6	B_7	B_8	R^2
Nationality	Saudis	---	S	S	NS	S	S	S	S	44 %
	Non-Saudis	---	NS	NS	S	S	S	NS	NS	39 %
Job Category	Professional	S	NS	NS	S	NS	S	S	NS	59 %
	Administrative	S	NS	NS	S	S	NS	NS	S	54 %
	Accounting and Financial	S	NS	NS	NS	NS	NS	NS	NS	71 %
	Sales and Marketing	S	NS	NS	NS	NS	NS	NS	NS	75 %
	Production	S	NS	S	NS	S	NS	NS	NS	65 %
	Others	S	NS	NS	NS	NS	NS	NS	S	56 %
Job Skill	Skilled	S	NS	NS	S	S	S	S	NS	53 %
	Semi-Skilled	S	NS	NS	NS	S	NS	S	NS	60 %
Firm Ownership	Saudi Firms	S	NS	NS	S	S	S	NS	S	46 %
	Joint Venture	S	NS	NS	S	S	S	NS	NS	62 %
Economic Sectors	Industrial	S	NS	NS	S	S	S	NS	NS	60 %
	Commercial	S	NS	NS	NS	NS	NS	NS	NS	54 %
	Agricultural	NS	S	S	NS	NS	S	NS	S	64 %
	Construction	---	NS	NS	NS	S	NS	NS	NS	32 %
	Services	S	S	NS	S	NS	S	NS	NS	62 %
	Other	NS	NS	NS	NS	S	NS	NS	S	66 %
Employment Category	Less than 300 Employees (Informal sector)	S	NS	NS	S	NS	NS	S	NS	64 %
	300 and more Employees (Formal Sector)	S	NS	NS	S	S	S	S	S	59 %
Province of Origin/Place of (Discrimination Theory)	Eastern Province	NS	S	NS	NS	S	S	NS	NS	52 %
	Southern Province	S	NS	NS	NS	NS	NS	NS	NS	84 %
	Central Province	S	NS	NS	NS	S	NS	NS	NS	93 %
	Other Countries	S	NS	NS	S	NS	S	S	S	45 %
Wage Category	Lower Wage Category (Informal Sector)	S	S	S	NS	NS	S	NS	NS	25 %
	Higher Wage Category (Formal Sector)	S	NS	NS	S	S	NS	NS	NS	21 %
Total S		19	5	4	12	15	13	7	8	
Total NS		4	21	22	14	11	13	19	18	
Ranking		1	7	8	4	2	3	6	5	

Abbreviations: S = Significant, NS = Not Significant, B_1= ***beta*** of ***NAT***, B_2 = ***beta*** of ***MARSTAT***, B_3 ***beta*** of ***URBAN***, B_4 ***beta*** of ***AGECATT***, B_5 = ***beta*** of ***EDUC***, B_6 = ***beta*** of ***ENGLISHL***, B_7 ***beta*** of ***COMPUTRL***, B_8 = ***beta*** of ***CURRTEXP***.

9.3.3.1 Ranking the Importance of the Variables

Various statistical tests have been used in this study, the results of which are displayed. This section ranks the importance of the variables, and then goes on to discuss the application of some variables in line with related studies. The ***beta*** columns in Table 9.4 summarise the significance of each independent variable used. This table shows also how many times each variable proves to be significant and/or insignificant. Table 9.5, the significance level is used to rank the variables. The number of times a variable is proved significant is totalled, and the total is used to rank the variables. For example, B_1 (***NAT***) is shown to be significant 19 times and insignificant only 4 times. Thus, the nationality variable is ranked as being in the first rank and it is, therefore, the most significant variable with regard to wage differentials in Saudi Arabia's Eastern private labour market. On the other hand, ***URBAN*** is only found to be significant 4 times, and so is placed in the last position. Comparing these results with others is of great value to this study. For instance:

Nationality: the result of this study shows that there were significant differences in the wage based on an employee's nationality. These results match those of Heisler (1989) and Kadah (1996). Heisler described the labour force in Riyadh in 1986, and found that wages were significantly affected by the nationality variable in the capital of Saudi Arabia. Kadah found in his multi-regression model that the nationality factor played the most important role in the determination of an individual's earnings in Saudi Arabia.

The rates of return to human capital variables compare with the findings of Becker (1964), Freeman (1975), Pascharopoulos (1981) and NCPA (1996), in showing that in general higher wages are obtained by those with higher levels of schooling and training and lower wages by those with a lower level of schooling and training.

Table 9.5 Ranking the Importance of the Variables

	Beta	Ranking	Number of Significant	Number of Insignificant
Nat	B_1	1	19	4
EDUC	B_5	2	15	11
ENGLISHL	B_6	3	13	13
AGECATT	B_4	4	12	14
CURRTEXP	B_8	5	8	18
COMPUTRL	B_7	6	7	19
MARSTAT	B_2	7	5	21
URBAN	B_3	8	4	22

9.3.4 Logistic Model

The Logistic regression model was used to determine the probability of who was likely to be at the high or low wage levels. Applying this regression to some cases in the sample, as listed in Table 9.6, gives these results: the probabilities of being at a high wage level for employee cases 1, 9, and 53 in our survey, are estimated to be 0.69, 0.13 and 0.05 respectively.

Table 9.6 Logistic Model Results

Cases Number	1	9	53
NAT	Saudi =1	Non-Saudi = 0	Saudi = 1
MARSTAT	Married = 1	Married = 1	Single = 0
URBAN	City =1	City = 1	City = 1
CURRTEXP	19	8	1
AGE	25	35	26
EDUCONT	14	14	12
NCOMPTRL	Low = 0	High = 1	Low = 0
NENGLISHL	High = 1	High = 1	Low = 0
Logistic Regression Results	.69	.13	.05

Therefore, the Saudi employee (case 1) has a probability of 0.69 of being at the high wage level; whereas the non-Saudi (case 9) has only a 0.13 chance of being at the high wage level, and the Saudi (case 53) has little chance of being at the high wage level.

9.4 Low-Wage Workers and Fair Wage Policies in the Private Sector in Eastern Province of Saudi Arabia

1. Section 8.1 has shown that there is no particular definition which can be applied to low-wage workers. However, there are certain factors which may be used to

construct a generalisation, such as less skill and education, few years of experience, new entry into the labour market, and working in the informal sector.

2. The profile of a low-wage worker used here reveals that over 51.8 per cent of all workers in the Eastern private sector of Saudi Arabia are low-wage workers. In general, five out of ten workers receive less than SR3,000 in this sector. Most of this group are skilled, married, live in urban areas, and have a high standard of education. This differs from the findings for similar groups in other countries.

3. Consequently, a reasonable goal for policies aimed at the "low-wage problem" is to raise the wages of low-wage workers. Section 8.1 confirmed that wage inequalities and low-wage workers exist in the Eastern Province of Saudi Arabia. In order to decrease wage inequality, a Saudi wage policy needs to be aimed at achieving a reasonable wage for current low-wage workers, so as to lift them out of poverty. However, it will be difficult to choose the wage policies best-suited to the Saudi labour market. A consideration of this study's findings regarding the attitudes of Saudi employers and employees towards wage policies would be of considerable assistance in producing/designing a generally accepted policy. Both Saudi employees and employers strongly support a tighter immigration policy, a wage subsidy policy, a foreign investment policy, and investment policies for SMEs as the most effective policies for the Saudi labour market.

4. Finally, in attempting to solve the basic wage problems, it seems, from the results obtained in this study, that imposing various taxes is the only solution left for the Saudi government to support any wage policies aimed at stimulating employment. It is also confirmed that there is no intention to impose a higher wage burden on any firm in the Saudi private sector. Thus, Saudi firms should be enabled to become more competitive.

9.5 Employment Measures and Policy Implications

In Chapters Six and Seven of this study, human capital variables, such as education, English skills, computer skills and work experience, are shown to be the most important determinants of wage inequalities in the formal private sector of the

Eastern Province. The Kingdom needs to focus on these human capital variables with the aim not only of reducing wage inequality in this sector but also as a platform from which to launch other methods and policies, suggested earlier. for achieving the Saudiisation of the workforce.

This study has also revealed in Chapter Eight that almost half the workers in the Eastern Province are low-wage workers. In fact, over 52 per cent of all workers in the private sector are low-wage workers. Moreover, most of the low-wage workers in the Eastern Province are married, live in urban areas, are skilled and have high educational qualifications. In these respects they differ from similar groups in other countries. This supports the idea, put forward earlier in this study, that some human capital variables are inadequate in determining wage levels in the informal private sector. In response to this unusual situation, the Saudi government should try to construct a policy that will increase the earnings of this type of low-wage worker. Determinants of wage inequality in the present study will provide valuable information in forming a policy for workers with low wages.

As a result of this study's findings, several possible policy recommendations are discussed. If implemented efficiently, such policies should speed up the narrowing of the wage gap among workers in the formal sector, between the formal and the informal sectors, and between Saudi and non-Saudi workers, decrease the unemployment rate for Saudis and stimulate the Saudiisation process. In addition, the improved returns from labour should encourage new Saudi entrants to the labour market to take up jobs formerly held by non-Saudis.

Section 8.2 showed that certain policies dealing with immigration, wage subsidies, and foreign investment, and those applicable to small firms, are suitable methods for achieving the government's aim of Saudiisation. It is recommended that a minimum wage policy should be included as well (though employers and employees were found to be only just over 30 per cent in favour). However, as regards a minimum wage being enforced for all workers, problems are envisaged, particularly with regard to Saudiisation. If a suitable minimum wage rate is introduced for both non-Saudis and Saudis, the cost of their labour would be the same. Therefore if for some

unspecified reason the employer preferred, or was hostile towards, the employment of non-Saudis, then obviously this would affect Saudi employment (Saudiisation). However, from a humanitarian point of view, and in accordance with the requirement of the International Labour Organisation, no distinction should be made, as both types of worker should be paid at the same rate for the same work. The main argument in favour of a minimum wage is that it will help reduce poverty, reduce wage differentials, and induce those who are voluntarily unemployed to enter the labour market so that they can be excluded from the proposed unemployment benefits suggested by the ILO (Shammary, *Arab News*, 2002). Firms will have a greater interest in retaining and training Saudi employees when they have to pay a minimum wage. Weighing up the needs of the state for Saudi nationals to be employed, a minimum wage for Saudis is essential.

If small businesses, which provide the majority of employment in Saudi Arabia, find that the minimum wage puts too great a burden on their business, then government support is necessary in the form of subsidies. Clearly, paying subsidies is not a viable long-term prospect for any government; therefore, it should be viewed only as an interim measure. Other measures will need to be introduced to offset this expenditure. This could include the introduction of income tax as recommended by the IMF (*Arab News*, 26th October 2002), encouraging foreign investment (though employers were found to be only just over 50 per cent in favour), and encouraging the introduction of modern technology and innovative business practices.

In addition, there are many other relevant suggestions, which may be put forward for guiding policies designed to improve significantly the employment and wage prospects of Saudi workers:

1. All Saudis who can work should be helped to enter the labour market and succeed in it. They should be helped towards finding a good job that provides benefits, training, opportunities for advancement and a satisfactory wage.
2. Providing more public subsidies for Saudi low-wage workers, such as childcare, good health facilities, and the opportunity for their children to receive a higher education. This policy should make it possible for such workers to have a better

standard of living, encourage people to gain work experience, and increase their human capital.

3. Providing unemployment insurance systems that will enable more Saudi workers in the low wage category to receive financial support when temporarily out of work. This should enable them to re-enter employment when work comes available, quickly and effectively. Dr. Sameer Rizwan, advisor to the Director General of the International Labour Organisation for development policies said, "Saudi officials have informed the ILO of their plan to launch the programme" (Shammary, *Arab News*, 2002). This programme should, also, make it easier to ascertain the true extent of unemployment.
4. Employers should be encouraged to hire Saudis with skills, and also those with low skills, with the object of training them, by introducing policies which would make training less costly for employees.
5. Applying polices that would help low-wage workers to be trained on-site would help employers, who could hire and train them to improve the quality of available work.
6. The role of low-wage jobs in the economy should be clear. Low-wage jobs do allow employers to supply goods and services to consumers at low cost.
7. Changing mentalities and attitudes with regard to working long hours, refusing trainee jobs and demanding high wages. Restructuring some "foreigners' jobs" may help change Saudi attitudes. Certain jobs could be privatised. For example, truck-driving jobs could be redefined as small businesses by financing the driver to obtain his own truck. His wages become the difference between revenue from carrying freight and the costs of operating the truck, not hourly or monthly wages (*Migration News*, November 2001).
8. Subsidising investments in labour-saving technology can also help to eliminate and redefine "foreigners' jobs". Automatic car washes, for example, serve this purpose (ibid.). In general, the challenge is not only to create jobs, but also to develop new attitudes towards technical and blue-collar jobs, making them more socially acceptable.
9. Providing database projects that would bring together the characteristics of both employers and prospective employees: their numbers, nationalities, academic qualifications and the types of job and their location. Employers would be able to

state what jobs are available and their requirements. Job-seekers should have access to this database. This should solve the problem of an imperfect system of information regarding the labour market in the country.

10. Encouraging Saudi investment in the home country, rather than overseas.
11. Applying most of the recommendations for small firms in the private sector, and the Saudiisation of the workforce, as mentioned in the Seventh Five Years Development Plan (see Chapter One).
12. Providing a similar National Insurance plan to cover all workers in the public, semi-public and private sectors. This would protect workers. It would provide them with unemployment benefits and free health services.

Establishing a minimum wage is very important for the Saudi labour market. Further studies are needed in order to apply this policy to:

- Saudi or non-Saudi workers, or both.
- Both male and female.
- Particular sectors, especially those attractive to Saudis.
- Particular occupations.

In conclusion, Saudi Arabia is faced with a number of problems, both financial and social, which need to be addressed. From this detailed study, it has been found that the government has reason to be concerned about the prospects of the reduction in oil revenues, which at present are the mainstay of the economy, the rise in the national deficit, and the lack of opportunities for employment for Saudis. Added to these problems, differentials in wage levels are unsatisfactory, and high qualifications do not necessarily correspond with appropriate levels of income. Dissatisfaction with the present wages offered for certain jobs discourages Saudis from doing them, and the number of non-Saudis is restricted by the number of work permits available for such jobs, which could adversely affect the economy. Therefore, as a way of addressing the troublesome situation and, at the same time, speeding up the government's aim of Saudiisation, the author of this thesis recommends the establishment of a minimum wage level, even though some economists have reservations about its effectiveness, as he believes that, in the Saudi situation, it should prove effective in the long term. In the West, particularly in the UK, the introduction of a minimum wage is only a recent

measure. However, industrialisation has only occurred in Saudi Arabia since the 1970s and has had to be carried out quickly, by means of the importation of foreign workers, both skilled and unskilled (the latter to take on necessary menial work). Therefore, the solutions to Saudi Arabia's present difficulties may not be the same as those which have been appropriate in the West. Different measures, or measures taken in a different order from that which has proved effective in countries with a long history of industrialisation, are required, and instead of leaving a minimum wage until a late in the day, the government of Saudi Arabia should introduce this step at a much earlier stage of industrial development.

9.6 The Limitations of the Study

The present study is limited in several respects. As a result of these limitations, further research is needed, as outlined below:

1. Data availability: The data used in this study were collected by the researcher himself. In order to collect sufficient data, the researcher had to conduct fieldwork in Saudi Arabia that took over four months. Some of the data acquired for the questionnaire were considered by some respondents to be private and confidential. The researcher confronted this problem at both individual and firm levels. For instance, some Saudi administrators did not allow the questionnaires to be distributed to their employees. Moreover, some employees thought that the researcher had no right to ask these kinds of question. Therefore, the lack of response in some cases could have had some effect on the final results. However, the researcher believes this effect to have been minimal.

2. Data Location: The survey was restricted to the labour market of the Eastern Province of Saudi Arabia. It would be more beneficial if future research could be based on a survey of the whole country. However, the centre of the Saudi oil industry and Saudi Arabia's major source of revenue is to be fond in the Eastern Province. This makes the study of this area of considerable importance to the economy of Saudi Arabia.

3. This study covers only male employees in the Eastern Province. It does not cover female employees because a very small percentage of females work in the private sector. Most of them work in education and the health services.

4. In this study, industries, occupations and numbers of employees are broadly categorised. The findings may not apply fully to the entire of Saudi Arabian industrial scene or to wage determination processes elsewhere. For instance, more information is needed about the size of firms (assets, sales, capital and profit), and proportion of foreign capital invested.

However, the findings of this thesis should prove invaluable for future policy makers and provide fertile ground for related studies encompassing the whole of Saudi Arabia's economy. The methods employed here should also prove of value to those researching employment problems elsewhere.

Bibliography

Abdurhman, M. A. (1988), "A Comparison of Wage Levels in the Public and Private Sectors in Saudi Arabia". *Journal of King Saud University*. Vol. 13, No. 1, pp. 65-92 (in Arabic).

Acs, G. (1999), *Helping Low-Wage Workers: Policies for the Future, Washington, May*. Washington, The Urban Institute. [online] Available from: www.dol.gov. [accessed 4th January 2001].

Acs, G., Phillips K. R., and McKenzie, D. (2001), Playing by the Rules, but Losing the Game: Americans in Low-Income Working Families. In: Kazis, R. and Miller, M. S. eds. *Low-Wage Workers in the New Economy*. Washington: The Urban Institute Press, pp. 21-44.

Al-Abaid, A. A. S, and Atiah, A. (1994), *Economics of Saudi Arabia*. Riyadh: Dar Alam Al-Katib (in Arabic).

Al-Ajaji, A. (1995), *Obstacles to the Employment of Male Saudi University Graduates by the Private Sector in Saudi Arabia*. Unpublished PhD dissertation, George Washington University.

Al-Bahlal, A. A. (1996), *An Exploratory Analysis of Human Resource Planning in the Saudi Arabian Private Sector*. Unpublished PhD dissertation, Liverpool John Moores University.

Al-Dosary, A. S. (1991), *Towards the Reduction of Foreign Workers in Saudi Arabia*. Unpublished PhD dissertation, University of Michigan, Kalamazoo.

Aleissa, I. M. (1989), *The Political Economy of Saudi Arabia: Investment in Human Capital and the Economics of Higher Education*. Unpublished PhD dissertation, University of Denver.

Al-Farsy, F. (1999), *Modernity and Tradition: The Saudi Equation*. Channel Islands: Knight Communication Ltd.

Al-Haj, T. (1997), *Microeconomics Analysis*. Amman: Dar Al-Massira (in Arabic).

Al-Hajri, S. H. (1994), *Job Characteristics, Job Satisfaction, Work-related Values, Organisation Commitment, and Job Involvement among Saudi Workers in the Private Sector*. Unpublished PhD dissertation, Iowa State University.

Al-Hammed, A. (1996), "Saudiisation with Its Cost and Production". *Al-Aswaq Magazine*, February, pp. 30-35 (in Arabic).

Al-Hazemi, H. (1999), "Saudiisation". *Al-Iktisad Monthly Economic Magazine*, Vol. 31, No. 310, pp. 38-40, Eastern Province: Chamber of Commerce and Industry (in Arabic).

Al-Kahtany, A. S. (1998), *Organisational Commitment: A Gross-National Comparison of Arab and Non-Arab Employees in Saudi Petrochemical Companies.* Unpublished PhD dissertation, University of North Texas. Denton, Texas.

Al-Khouri, R. (1999), "Kingdom Come". *Yemen Times*, 5th- 11th April. Vol. 9. No.14,. [online] Available from: www.yementimes.com/99/iss14'1&d.htm. [accessed 20th December 2002].

Al-Qudis, S. (1989), "Returns to Education, Sectoral Pay Differentials and Determinants in Kuwait". *Economics of Education Review*, Vol.8. No.3. pp.263-276.

Al-Salamah, A. H. (1994), *Employee Perceptions in Multinational Companies: A Case Study of the Saudi Arabian Basic Industries Corporation.* Unpublished PhD dissertation, Durham University.

Al-Saudani, A., and Al-Kair, A. (2001), "The Future of Saudiisation and the Growth of Labour Production". *Public Administration Periodical,* April, Vol. 41. No.1. pp.1-55 (in Arabic).

Al-Saud, A. F. T. (2002), "Small and Medium Scale Enterprises Colloquium". *Al-Madinah Newspaper*, 29th December, No. 14494 (in Arabic).

Al-Towaijri, H. A. (1992), *The Labour Market in Saudi Arabia: Family Effects, Compensating Wages Differentials, and Selectivity Bias.* Unpublished PhD dissertation, University of Oregon.

Arab News (2001), "Saudiisation Drive Paying Off". 21st October, Jeddah.

Arab News (2002), "IMF Urges Kingdom to Speed up Reforms". 26th October. Jeddah.

Arab News (2002), "More Jobs for Saudis Urged". 4th November, Jeddah.
Arabia. Riyadh: King Saud University Press (in Arabic).

Arrow, K. (1973), "Higher Education as Filter". *Journal of Public Economics*. August, Vol. 2, pp. 193-216.

Ashenfelter, O and Layard, R eds. (1986), *Handbook of Labour Economies.* Volumes I and II. Amsterdam: Elsevier Science Publishing Company. INC.

Athman, A. A. (2000), "The Policy of a Minimum Wage". *Saudi Economic Magazine*, Second year, Vol. 4, pp. 53-69 (in Arabic).

Atkinson, B., Livesey, F., and Milward, B. (1998), *Applied Economics.* Hampshire: Macmillan Press Ltd..

Bach, G. L. (1974), *Economics: An Introduction to Analysis and Policy*. 8th ed. Hall, Englewood Cliffs, NJ: Prentice-Hall.

Backman, Jules (1959), *Wage Determination.* New York: Van Nostrand.

Ba-Isa, M. Y. (2002), "3,500 Saudis Recruited under HRDF Programme: Al-Sahlawi". *Arab News*, 9th June, Jeddah.

Baron, J. N., and Bielby, W.T. (1980), "Bringing the Firms Back In: Stratification, Segmentation, and Organiztion of Work". *American Sociological Review*, Vol. 45, pp. 737-65.

Bartel, A. P. (1979), "The Migration Decision: What Role Does Job Mobility Pay?". *American Economic Review*, December, Vol. 69, No. 5, pp. 775-786.

Bashir, A. W. (2002), "Small Firms Owners Seek Exposure to Overseas Practices". *Arab News*, 15th February, Jeddah.

Becker, G. S. (1962), "Investment in Human Capital: A Theoretical Analysis". *Journal of Political Economy*, Vol. 70, No. 5, Part 2, Supplements, pp. S9-S49.

Becker, G. S. (1964), *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education.* New York: National Bureau of Economic Research.

Becker, G. S. (1971), *The Economics of Discrimination.* 2nd ed., Chicago: University of Chicago Press.

Berndt, E. R. (1990), *The Practice of Econometrics Classic and Contemporary.* New York: Addison-Wesely Publishing Company.

Bibb, R., and Form, W. (1977), "The Effects of Industrial, Occupational, and Sex Stratification on Wages in Blue-Collar Markets". *Social Forces*, Vol. 55, pp. 974-96.

Bin-Abied, A., and Al-Gawad, N. (1998), "Wages, Employment and the Public Budget". Riyadh: King Saud University, Business College, Research Department (in Arabic).

Blair Area Chamber of Commerce (2001), "Business Development". *BBC News*, 27th November. [online] Available from: www.blairchamber.org [accessed 10th June 2001].

Boissiere, M. Knight, J. B. and Sabot, R.H. (1985), "Earnings, Schooling, Ability, and Cognitive Skills". *The American Economics Review,* December, Vol.75, No. 5, pp. 1016-1030.

Borjas, G. (1994), "The Economics of Immigration", *Journal of Economic Literatur.* December, Vol. 32, No. 4, pp. 1667-1717.

Borland, J., Hirschberg, J. and Lye, J. (1999), *Computer Knowledge and Earnings: Evidence for Australia.* Department of Economics. University of Melbourne. Australia.

Bourland, B. (2002), "The Saudi Economy in 2002". *Saudi Economy Survey*. 20th February.

British National Export Committee for Middle East Trade (BNEC) (1970). *The Market for Household Goods in Saudi Arabia.* Industrial Export Survey.

Brown, W. S. (1991), *Introducing Econometrics.* St. Paul, MN: West Publishing Company.

Card, D. and Krueger, A. (1994), "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania". *American Economic Review*, September, Vol. 84, pp. 772-793.

Carnevale, A. P., and Rose, S. J. (2001), "Who Are They? Do They Have a Way Out?" In: Kazis, R. and Miller, M. S. eds. *Low-Wage Workers in the New Economy.* Washington: The Urban Institute Press, pp. 45-66.

Chiswick, B. R. (1978), "The Effect of Americanisation on the Earnings of Foreign-born Men". *Journal of Political Economy*, Vol. 86, No. 5, pp. 897-921.

Chiswick, B. R. (1986), "Is the New Immigration Less Skilled Than the Old?". *Journal of Labour Economics*, Vol. 4, No. 2, pp. 168-192.

Dahlan, A. S. (1993), *Saudi Arabia: Golden Business.* Riyadh.

Davidson, J. (1898), *The Bargain Theory of Wages.* New York: G. P. Putnam.

De Araujo, T. P. (1994), *Earnings, Education and Segmented Labour Markets in Brazil: A Comparison between Recife and Sao Paulo.* Unpublished PhD dissertation, University of London, London.

Dickens, W. T. and Katz, L. F. (1986), *Inter-industry Wage Differences and Industry Characteristics*. National Bureau of Economics Research, NBER Working Paper No. 2014, September.

Dilnot, A., and McCare, J. (2000), *The Family Credit System and Working Families Tax Credit in the United Kingdom.* Paris: OECD Economic Studies. [online] Available from: www.oeck.org [accessed 15th June 2001].

Dustmann, C., Micklewright, J., Rajah, N. and Smith, S. (1996), "Earning and Learning: Educational Policy and the Growth of Part-Time Work by Full-Time Pupils". *Fiscal Studies*, Vol. 17, No. 1, pp. 79-103.

Ehrenberg, R., and Smith, R. (1994), *Modern Labour Economics.* New York.

El-Beshir, Z.A., and Auda, A. A. (1980s), *Labour Mobility in the Kingdom of Saudi Arabia.* Riyadh: King Saudi University (in Arabic).

Eurostat (1997), *Minimum Wages: A Comparative Study.* [online] Available from: http://europa.eu.int [accessed 10th June 2001].

Fapohunda, O. J., and Lubell, H. (1978), *Lagos: Urban Development and Employment.* Geneva: International Labour Organisation, pp. 57-58.

Financial Times. [online] Available from: www.news.ft.com/home uk' [accessed 6th January 2003].

Fleisher, B.M., and Kniesner, T. J. (1984), *Labour Economics: Theory, Evidence and Policy.* 3rd ed. New Jersey: Englewood Cliffs.

Freeman, R. B. (1975), "Overinvestment in College Training". *Journal of Human Resources,* Vol. 10, No. 3, pp. 287-311.

Freeman, R. B. (1976), "A Cobweb Model of the Supply and Starting Salary of New Engineers". *Industrial and Labour Relations Review*, January, Vol. 29, No. 2, pp. 236-248.

Freund, J. E. (1979), *Modern Elementary Statistics.* 5th ed. Englewood Cliffs, New Jersey: Prentice-Hall, INC.

Georgia Institute of Technology (1975), *An International Compilation of Small-Scale Industry Definitions.* Atlanta.

Gujarati, D. N. (1988), *Basic Econometrics.* 2nd ed. New York: McGraw-Hill Publishing Company.

Gujarati, D. N. (1999), *Essentials of Econometrics.* 2nd ed. New York: Irwin/McGraw-Hill Publishing Company.

Hanoch, G. (1967), "An Economic Analysis of Earnings and Schooling". *The Journal of Human Resources*, Vol. 2, No. 3, pp 310-329.

Hansen, W. L. (1963), "Total and Private Rates of Return to Investment in Schooling". *Journal of Political Economy*, Vol. 71, No. 2, pp. 128-140. Harper Collins.

Hashimoto, M. (1982), "Minimum Wage Effects on Training on the Job". *American Economic Review*, December, Vol. 72, No. 5, pp. 1070-1087.

Hassan, J. (2002) "Two Saudi Teams to Visit India to Study SMEs". *Arab News*, 7th October, Jeddah.

Hassan, J. (2002), "Japanese Teams to Explore SMEs. Manpower Projects". *Arab News,* 11th March, Jeddah.

Heisler, D. W. (1989), *Nationality and Wages in 1986 in Riyadh, Kingdom of Saudi Arabia.* Unpublished PhD dissertation, University of Pennsylvania.

Hicks, J. (1963), *The Theory of Wages.* London: Macmillan.

Human Resources Development Canada, *Wages Subsidies*. [online] Available from: www.hrdc.drhc.ge.ca/dept.guide.ei6 [accessed 10th November 2001].

Hussey, J. and Hussey, R. (1997), *Business Research.* Hampshire: Macmillan Press Ltd.

Income Data Services of the Economics Department of the OECD (1997), "Employment in Europe". *European Industrial Relations Review*, National Submission to the OECD Secretary. [online] available from: www.oeck.org [accessed 15th June 2001].

Info-Prod Research (Middle East) Ltd., Ipr (1999), *Saudi Arabia.* [online] Available from: www.infoprod.co.il/country/Saudi/htm [accessed 11th June 2001].

International Labour Organisation (1958), *Discrimination (Employment and Occupation) Convention*, No. C111, Geneva.

International Labour Organisation (1972), *Employment, Income and Equality: A Strategy for Increasing Productive Employment in Kenya*, Geneva.

International Labour Organisation (1997), *Twelfth Asian Regional Meeting Report of the Director-General*, Bangkok.

International Labour Organisation (1998), *Employment of Filipino Workers in Saudi Arabia*, Chapter 5, Government and Labour Law and Administration, Geneva.

Jackson, J.M. (1970), *Wages and Labour Economics.* London: McGraw-Hill.

Joint Economic Committee (1995), *50 Years of Research on the Minimum Wage.* Congress of the United States, Talking Points, 15th February.

Kadah, A. H. (1996), *Determination of Individual's Earnings in Saudi Arabia.* Unpublished PhD dissertation, University of Oklahoma.

Kallacheck, E., and Raines, F. (1976), "The Structure of Wage Differentials among Mature Male Workers". *Journal of Human Resources*, Vol. 35, pp. 484-506.

Kallerberg, A.L., Wallace, M. and Althauser, R. P. (1981), "Economic Segmentation, Work Power, and Income Inequality". *American Journal of Sociology*, Vol. 87, pp. 651-83.

Katz, L. F. and Krueger, A. B. (1992), "The Effect of the Minimum Wage on the Fast Food Industry". *Industrial and Labour Relations Review*, October, Vol.46, No.1, pp. 6-21.

Katz, L. F. and Murphy, K. M. (1992), "Changes in Relative Wages, 1963-1987: Supply and Demand Factors". *Quarterly Journal of Economics*, February, Vol. 107, No. 1, pp. 35-78.

Kraska, M. F. and Larkins, J. R (1998), "Factors affecting Master Sergeants' Completion of Community College of the Air Force AAS Degree Requirements". *Journal of Industrial Teacher Education*, Vol. 36, No.3. [online] available from www.scholar.lib.vt.edu/ejournals/JITY/v36n3/kraska.html.[accessed 20th June 2001].

Labour Standards Act (1938-1996), *History of Federal Minimum Wage*. [online] Available from: www.dol.gov/esa/public/nimwage/chart/html [accessed 17 November 2000].

Lazear, E. (1979), "The Narrowing of Black-White Wage Differential is Illusory". *American Economic Review*, September, Vol.69, No. 4, pp. 553-564.

Lindauer, D. and Sabot, R. H. (1983), "The Public/Private Wage Differential in a Poor Urban Economy". *Journal of Development Economics*, Vol. 12, pp. 137-152.

Low Pay commission (LPC), UK. [online]
Available from: www.lowpay.gov.uk/lowpay. [accessed 19th February 2000].

Lubell, H. and McCallum, D. (1978), *Bogota: Urban Development and Employment*. International Labour Organisation, Geneva.

Lynch, L. (1992), "Private-Sector Training and the Earnings of Young Workers". *The American Economic Review*, Vol.82, No. 1, pp. 299-312.

Mahdi, S. (2000), *Saudiisation and the Structure of the Labour Market in Saudi Arabia*. Economics Paper 24, University of Hertfordshire, UK.

Marcouiller, D., De Castilla, V. R. and Woodruff, C. (1995), *Formal Measures of the Informal Sector Wage Gap in Mexico, El Salvador, and Peru*. Boston College, Department of Economics.

Marshall, A. (1890), *Principles of Economics*. London: Macmillan.

Marx, K. (1867), *Capital* (abridged). New York: Modern Library.

Mattila, P. J. (1973), "The Effect of Extending Minimum Wages to Cover Household Maids". *Journal of Human Resources*, Summer, Vol. 8, No. 3, pp. 365-382.

Mazumdar, Dipak (1976), "The Urban Informal Sector". *World Development*, August, Vol.4, No.8, pp.655-679.

Mazumdar, Dipak (1981), *The Urban Labour Market and Income Distribution: A Study of Malaysia*. New York: Oxford University Press and Washington: World Bank.

McAllister, H. E. (1975), *Elements of Business and Economic Statistics: Learning by Objectives*. New York: John Wiley & Sons, Inc.

McConnell, C. R. (1970), *Perspectives on Wage Determination: A Book of Readings*. New York: McGraw-Hill.

McConnell, C. R. and Bure, S. L. (1992), *Contemporary Labour Economics*. 3rd ed. New York: McGraw-Hill.

Middle East Business Weekly (*MEED*) (2000), "Job, Job, Job". *The Middle East Business Weekly*, 30th June.

Migration News (2001), "Middle East: Renationalisation". Vol. 8, No. 11.

Mill, J. S. (1878), *Principles of Political Economy*. 5th ed. New York: D. Appleton.

Mince, J. (1976), "Unemployment Effects of Minimum Wages". *Journal of Political Economy*, August, Vol. 84, No.4, Part 2, pp. S87-S104.

Mincer, J. (1957), *A Study of Personal Income Distribution*. Unpublished PhD dissertation, Columbia University.

Mincer, J. (1958), "Investment in Human Capital and Personal Income Distribution". *Journal of Political Economy*, Vol. 66, No. 4, pp. 281-302.

Mincer, J. (1962), "On-the-Job Training: Costs, Returns, and Some Implications". *Journal of Political Economy*, Vol. 70, No. 5, Part 2, pp. S50-S79.

Mincer, J. (1974), *Schooling, Experience, and Earning*. New York: National Bureau of Economic Research.

Mincer, J. (1976), "Unemployment Effects of Minimum Wages". *Journal of Political Economy*, Supplement, Vol. 84, No. 4, Part 2, pp. S87-S104

Ministry of Finance and National Economy (1992), *Statistical Yearbook*. Central Department of Statistics, Riyadh (in Arabic).

Ministry of Finance and National Economy (1996), *Statistical Yearbook*. Central Department of Statistics, Riyadh (in Arabic).

Ministry of Finance and National Economy (1999), *Statistical Yearbook*. Central Department of Statistics, Riyadh (in Arabic).

Murphy, K. M. and Welch, F. (1990), "Empirical Age-Earnings Profiles". *Journal of Labour Economics*, April, Vol. 8, No. 2, pp. 202-229.

Nabti, F. G. (1980), *Manpower, Education, and Economic Development in the Kingdom of Saudi Arabia.* Unpublished PhD dissertation. Stanford University.

Nachmias, C. F. and Nachmias, D. (1996), *Research Methods in the Social Sciences.* 5th ed., London: St Martin's Press.

National Centre for Policy Analysis (NCPA) (1996), "Degree-Based Earnings Gap Grows Quickly". *USA Today*, Article by Beth Belton, 16th February.

NCPA (1996), "Good-Bye College, Hello Job Market, Is College Worth It?". *Investor's Business Daily*, 12th June.

Neal, D. (1996), *Who Are the Low-Wage Workers?.* Employment Policies Institute. Chicago: University of Chicago.

NCPA (1997), "Workers Need Skill, Not College". *Investor's Business Daily*, Article by John Hood, 15th April.

Neal, D. and Sherwin, R. (1998), *Theories of the Distribution of Labour Earnings.* NBER Working Paper Series, No.6378.

OECD (1995), *OECD Economic Surveys: United Kingdom.* Paris.

OECD (1997), *OECD Submission to the UK Low Pay Commission.* Economic Department, Working Papers, No. 185, OCDE/GD (97) p. 206.

OECD (2000), *OECD Economic Studies*, Vol. II, No. 31, Paris.

Oosterbeek, H. (1997), "Returns from Computer Use: A Simple Test on the Productivity Interpretation". *Economics Letters*, Vol. 55, pp. 273-277.

Osterman, P. (1975), "An Empirical Study of Labour Market Segmentation". *Industrial and Labour Relations Review*, Vol. 28, pp. 508-23.

Pallant, J. (2001), *SPSS Survival Manual.* Buckingham, Philadelphia: Open University Press.

Park, Se-Il (1980), *Wages in Korea: Determination of the Wage Levels and the Wage Structure in a Dualistic Labour Market.* Unpublished PhD dissertation, Cornell University.

PE INVUXON Ltd. (1998), *Cost of Living Index.* Richmond, Surrey, England.

Polachek, S. W. (1993), *The Economics of Earnings.* Cambridge: Cambridge University Press.

Presley, J (2000), *The SABIERC Economic Report on Saudi Arabia.* The Saudi British Bank and the Saudi Arabia Business Information and Economic Research Centre (SABIERC).

Psacharopoulos, G. and Layard, R. (1979). "Human Capital and Earnings: British Evidence and a Critique". *The Review of Economic Studies*, Vol. 3, No.144, pp. 485-503.

Psacharopoulos, G. (1981), "The Roles of Education, Skill and Parental Income in Determining Wages". *Comparative Education*, Vol. 17, No.3, pp.321-341.

Raff, D. M. G. and Summers, L. H. (1987), "Did Henry Ford Pay Efficiency Wages?". *Journal of Labour Economics*, Vol. 5. No. 4, Part 2, pp. S57-S86.

Reid, F. (1979), "The Effect of Controls on the Rate of Wage Change in Canada". *The Canadian Journal of Economics*, May, Vol. XII, No. 2. pp. 214-227.

Ricardo, D. (1911), *The Principles of Political Economy and Taxation* (abridged; originally published in 1817). New York: Dutton.

Richards, A. and Waterbury, J. (1996), *A Political Economy of the Middle East*. 2nd ed., Washington, DC: Westview Press.

Rischall, I. C. (1999), *The Roles of Education, Skill and Parental Income in Determining Wages*. Hamilton, Ontario: McMaster University, Department of Economics, Canada.

Riyadh Chamber of Commerce and Industry (RCCI) (1995), *Wage Differentials in the Private Sector*. Riyadh.

Roscoe, J.T. (1975), *Fundamental Research Statistics for the Behavioural Sciences*. 2nd ed., New York: Holt Reinehart & Winston.

Sahelian Department (1989), *Urban Informal Sector in the Sahel*. Infrastructure Operations, Africa Region, Working Papers.

Sahling, L. G. and Smith, S. P. (1983), "Regional Wage Differentials: Has the South Risen Again?". *Review of Economies and Statistics*, February, Vol. 65, No. 1, pp. 131-135.

Sahota, G. S. (1978), "Theories of Personal Income Distribution: A Survey". *Journal of Economic Literature*, March, Vol. XVI, pp. 1-55.

Said, M. (1995), "Public Sector Employment and Labour Markets in Arab Countries: Development and Policy Implication". *Economic Research Forum*, Working Paper, July, Vol. 2, No. 2.

Said, M. (1999), "The Distribution of Gender Differentials and Public Sector Wage Premia in Egypt". *Economic Research Forum*, Working Paper Series No. 9925.

Sakellariou, C. N. (1995), *Human Capital and Industry Wage Structure in Guatemala*. Singapore: Nanyang Technological University.

Saudi Arabian Monetary Agency (SAMA) (1998). *Prices and Cost of Living*. Annual Report, No. 34. Riyadh: Research and Statistics Department.

SAMA (2001), *Thirty-Seventh Annual Report 1422H (2001G)*. Riyadh: Research and Statistics Department.

Santago, G., Corbo, V. and Stelcner, M. (1983). "Earnings Determination and Labour Markets". *Journal of Development Economics*, Vol. 12. pp.251-266.

Santos, M. (1979), *The Shared Space: The Two Circuits of the Urban Economy in Underdeveloped Countries*. London: Methuen.

Saudi British Bank (SABB) (2000), *Prospects For The Saudi Economy: 2002*. Riyadh: The Saudi British Bank.

Saudi Chambers Council (1992), *Economics of Small Firms*. Riyadh (in Arabic).

Saudi General Organisation for Social Insurance (1988-1996). *Annual Statistical Reports*. Riyadh (in Arabic).

Saudi Labour and Workmen Law (1981), *Protection and Social Services*. Chapter VII, Article No. 143, p. 47.

Saudi Labour and Workmen Law (1981), *Protection of Wages*. Chapter VI, Article No. 115, p. 139.

Schultz, T. W. (1960), "Capital Formation by Education". *The Journal of Political Economy,* Vol. 68, No. 6, pp. 571-583.

Schultz, T. W. (1961), "Investment in Human Capital". *American Economic Reviews*, March, Vol. 51, No.1, pp.1-17.

Shammary, H. (2002), "Move to Put Jobless on the Dole". *Arab News*, 26th November, Jeddah.

Sirageldin, I. A., Sherbin N. A. and Serageldin M. I. (1984), *Saudi Arabia in Transition, The Challenges of a Changing Labour Market*. Oxford: Oxford University Press.

Sjaastad, L. A (1962), "The Cost and Returns of Human Migration". *Journal of Political Economy*, Vol. 70, No. 5, Part 2, pp. 80-93.

Smith, A. (1973), *The Wealth of Nations* (first published in 1776). Reprinted Edition. New York: Random House.

Spence, M. A. (1973), "Job Market Signalling". *Quarterly Journal of Economics*. Vol. 87, No. 3, pp.355-374.

Spence, M. A. (1974), *Market Signalling: Informational Transfer in Hiring and Related Screening Processes.* Cambridge, Mass.: Harvard University Press.

SPSS (1997), *Professional Statistics 7.5.* Chicago, IL.

SPSS (1999), *Advanced Models 10.0.* Chicago, IL

SPSS (1999), *Regression Models 10.0.* Chicago, IL.

SPSS (1999), *SPSS Base 10.0 User's Guide.* Chicago, IL.

SPSS (1999), *SPSS Trends 10.0.* Chicago, IL.

Stiglitz, J. (1973), "Approach to the Economics of Discrimination". *American Economic Review,* May, Vol.63, No. 6, pp. 287-295.

Stiglitz, J. (1993), *Economics.* Norton, New York: Stanford University.

Stockton, J. R. (1966), *Business and Economic Statistics.* Cincinnati: South-Western Publishing Company.

Suliman, A. A. (1974), *Wages and Labour Problesm in Saud Arabia.* Al-Kaurtum: Al-Kaurtum University Press (in Arabic).

Tansel, A. (1999), "Formal Versus Informal Sector Choice of Wage Earners and Their Wages in Turkey". *Economic Research Forum*, Working Paper Series No. 9927.

Tansel, A. (1998), "Public-Private Employment Choice: Wage Differentials and Gender in Turkey". *Economic Research Forum*, Working Paper Series No. 9913.

Thailand (1994), *Division-in-charge: Social Statistics Division.* Social Research Branch, and Social Indicators Sector. [online] Available from: www.nso.go.th/eng/stat/repart/ablts.htm [accessed 5th November 2001].

The Seventh Saudi Five-Year Development Plan (2000-2004). Riyadh: Ministry of Planning.

The Sixth Saudi Five-Year Development Plan (1995-2000). Riyadh: Ministry of Planning.

Tolbert, C. M.II, Horan, P. M., and Becker, E. M. (1980), "The Structure of Economic Segmentation: A Dual Economy Approach". *American Journal of Sociology*, Vol. 85, pp.1095-1116.

US Department of State (1998), Available online on: www.state.gov [accessed 10 December 2002].

US Department of State (1998), *Saudi Arabia Country Report on Human Rights Practices for 1997,* Released by the Bureau of Democracy, Human Rights and Labour, 30th January.

US–Saudi Arabian Business Council (2002). *U.S.–Saudi Energy and Economic Relations in Global Perspective,* 22nd April. [online] Available from: www.us-saudi-business.org/tuwiir%speech.htm

UK Employment Rights Act (1996 s.27), *Meaning of Wages.* UK. Low Pay Commission, First Report. [online] Available from: www.lowpay.gov.uk/er/lowpay/recommen.htm [accessed 19th November 2000].

Van der Gaag, V. J. and Vijverberg, W. (1989), Wage Determinants in Cole d'Ivoire: Experience, Credentials, and Human Capital. *Economic Development and Cultural Chance,* Vol. 37, No. 2, pp.371-381.

Van der Gaag, V. J. and Vijverberg, W. (1988) A Switching Regression Model for Wage Determinants in the Public and Private Sectors of a Developing Country. *The Review of Economics and Statistics*, May, Vol. 70, No. 2, pp. 244-252.

Walker, R. and Wiseman M. (1997), "The Possibility of a British Earned Income Tax Credit". *Fiscal Studies,* Vol. 18, No. 4, pp. 401-425.

Welfare Information Network Website, *Employment Subsidies.* [online] Available from: www.welfarinfo.org/subpri.htm [accessed 11th November 2001].

Zahran, A. Z. (January 1999), "The Minimum Wage". *Monthly Economic Magazine*, Vol. 31, no.310, pp. 26-36, Eastern Province: Chamber of Commerce and Industry (in Arabic).

Zikmund, W. G. (2000), *Business Research Methods.* 6th ed. Fort Worth: Dryden Press and Harcourt College Publishers.

Appendix A: The Meaning of Wages in the UK Employment Rights Act 1996 s.27 (ERA 1996 s.27)

(1) In this Part "wages", in relation to a worker, means any sum payable to the worker in connection with his employment, including-

(a) Any fee, bonus, commission, holiday pay or other emolument referable to his employment, whether payable under his contractor or otherwise.

(b) Statutory sick pays under Part XI of the Social Security Contributions and Benefits Act 1992,

(c) Statutory maternity pay under Part XII of that Act,

(d) A guarantee payment (under section 28 of this Act)

(e) Any payment for time off under Part VI of this Act or section 169 of the Trade Union and Labour Relations (Consolidation) Act 1992 (payment for time off for carrying out trade union duties etc.),

(f) Remuneration on suspension or medical grounds under section 64 of this Act and remuneration on suspension on maternity grounds under section 68 of this Act,

(g) Any sum payable in pursuance of and order for reinstatement of re-engagement under section 113 of this Act,

(h) Any sum payable in pursuance of an order for the continuation of a contract of employment under section 130 of this Act or section 164 of the Trade Union and Labour Relations (Consolidation) Act 1992, and

(j) Remuneration under a protective award under section 189 of that Act,

But excluding any payments within subsection (2).

(2) Those payments are-

(a) Any payment by way of an advance under an agreement for a loan or by way of an advance of wages (but without prejudice to the application of section 13 to any deduction made from the worker's wages in respect of any such advance),

(b) Any payment in respect of expenses incurred by the worker in carrying out his employment

(c) Any payment by way of a pension, allowance or gratuity in connection with the worker's retirement or as compensation for loss of office,

(d) Any payment to the worker otherwise that in his capacity as a worker.

(3) Where any payment in the nature of a non-contractual bonus is (for any reason) made to a worker by his employer, the amount of the payment shall for the purpose of this Part-

(a) Be treated as wages of the worker, and

(b) Be treated as payable to him as such on the day on which the payment is made.

(4) In this part "gross amount", in relation to any wages payable to a worker, means the total amount of those wages before deductions of whatever nature.

(5) For the purposes of this Part any monetary value attaching to any payment of benefit in kind furnished to a worker by his employer shall not be treated as wages for the worker except in the case of any voucher, stamp or similar document which is-

(a) Of a fixed value expressed in monetary terms, and

(b) Capable of being exchanged (whether on its own or together with other vouchers, stamps or documents, and whether immediately or only after a time) for money, goods or services (or for any combination of two or more of those things).

Appendix B: Questionnaires

Appendix B1:

Employee's Questionnaire

The Employees in Private Sector should complete this questionnaire

استبيان خاص بالعامل أو الموظف في القطاع الخاص

Covering Letter

Dear Participant

This questionnaire is part of my academic research for my Ph.D. degree in Economics from the University of Durham, United Kingdom. My purpose is to learn more about the wage structure in Saudi Arabia's private companies. You have been selected at random to participate in this survey – thus your opinions will represent the opinions of thousands of people much like yourself.

The information you provide will contribute to an important study and may also be used to influence positively employment policies. I **promise you confidentiality as under academic ethics your information will not be revealed and will only be used for the purpose of this study**. Therefore, you don't have to give your name.

I appreciate your willingness to help me in my research efforts. I believe that you will find the questionnaire both interesting and informative and I look forward to receiving your reply.

Sincerely yours

Researcher
Abdullah Bohaimed
University of Durham, United Kingdom.
Imam University, KSA

Correspondence address

Abdullah Bohaimed
Imam University, KSA, Al-Hassa
College of Sharea's and Islamic Science
Business Department, Economics Unit
P.O. Box: 1730, Al-Hassa 31982
Abdulla.bohaimed@dur.ac.uk
Abdullahuk@hotmail.com

Part One: Personal Information

Please tick the appropriate box

1- Nationality

Saudi	Non-Saudi

2 - Marital Status

Single	Married

3 - In what type of area do you live?

Urban , City	Rural , Small Town , Village

4 - Age.

15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 or Over

5 – Province of Origin/Place of Birth.

Eastern Province	Western Province	Southern Province	Northern Province	Central Province	Other Province (Specify)

6 - Education level.

Primary School	Elementary School	High School	Diploma	Bachelor of Science	Bachelor of Art	Masters Degree	Ph.D. Degree

7 - Level of English.

None	Beginner	Intermediate	Advanced

8 - Level of Computer Skill.

None	Beginner	Intermediate	Advanced

9 - Occupational Category.

Professional or Technical	Administrative	Accounting or Financial	Sales / Marketing	Production Worker	Other (specify)

10 - What is your current occupation?

Professional and Technical Jobs				Administrative Jobs			
Civil Engineer		Welder		General Manager		Warehouse Manager	
Architect		Blacksmith		Deputy General Manager		Secretary	
Electrical Engineer				Administrator		Computer Engineer	
Mechanical Engineer		Mechanic		Director of Finance		Computer Operator	
Construction Inspector		Maintenance		Chief Accountant		Pursuer representative	
Surveyor		Drawer/Artist		Accountant		Market Representative	
Production Manager		Programmer		Entry Clerk/Book Keeper		Administrative Staff	
Project Manager		Engineer		Treasurer		Operator	
Electrical Technician		Inspector		Purchases Manager		House Keeper Janitor	
Aluminium Technician		Filing s Employees		Sales Manager		Cook/Chef	
A/C Technician		Electrical Inspector		Purchases Representative		Teller	
Machine Technician		Farmer		Sales Representative		Expeditor	
Carpenter		Machinist		Public Relations Manager		Driver	
Painter		Heavy Equipment Driver		Branch Manager		Porter Escort	
Plumber/ Pipe Fitter		Other (Specify)		Typist		Other (Specify)	

11 - Level of Occupational Skill.

Professional / Skilled	Semi-Skilled	Unskilled	I Don't Know

Please answer the following questions

12 - How many years of experience do you have in your present position?
.....Years.

13 - How many years of previous experience before present occupation?
.....Years.

14 - What is your age?
.....Years.

15 - In which year did you start your first job?
.....

16 - What is your country of origin?
.....

17 - What is the name of your city or village?

.....

Part Two : Company Information (Firm)

Please tick in the appropriate box

1 -Firm Ownership

Owned by Saudis	Owned by non-Saudis	Owned by Saudis and non-Saudis (Joint Venture)

2 - Type of firm

Industrial	Commercial	Agricultural	Finance and Insurance	Transportation	Construction	Services	Other (specify)

3 - Approximate number of employees

1-9	10-19	20-39	40-59	60-79	80-99	100 -199	200 -299	300 -399	400 -499	500 - more

4 - Please answer the following questions

	Yes	No	Some	Don't know
1 - Is your wage (salary) transferred directly to your personal bank account?				
2 - Do you receive your (salary) on a specific date every month?				
3 - Do most employees in your company have a computer (PC)?				
4 - Do most employees in your company have a mail box?				
5 - Do you feel that your current job is secure?				
6 - Do you get regular promotion?				
7 -Does your firm offer a continuous training programme for its employees?				
8 - Does your firm offer training programmes for Saudi students?				
9 - Is your firm listed in the Saudi Social Insurance Directory?				
10 - Does your firm consider itself to be a monopoly firm (there are few other firms in the market producing a similar product and services)?				
11 - Does your firm consider itself to be in competition (there are more firms in the market producing the same product and services)?				
12- Does your company use computers, communication facilities and the internet?				

Please answer the following questions

5 - What is the location of your firm?

.....

6- Does your firm have a clear official wage system?

Yes	No
	If you have answered NO please circle as many of the following reasons that apply

1- The firm follows the Saudi Labour and Workmen Law.
2- The firm is small.
3- The firm is new to the market.
4- Other (please specify)

.....

.....(You can continue overleaf)

Part Three : Salaries and Wages

1 - Please circle the figure that is closest to your salary. (In Saudi Riyals).

Less than 600 600 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200 3400 3600 3800 4000 4200 4400 4600 4800 5000 5200 5400 5600 5800 5800 6000 6200 6400 6600 6800 7000 7200 7400 7600 7800 8000 8200 8400 8600 8800 9000 9200 9400 9600 9800 10000 10200 10400 10600 10800 11000 11200 11400 11600 11800 12000 12200 12400 12600 12800 13000 13200 13400 13600 13800 14000 14200 14400 14600 14800 15000 greater than 15000 other (specify) .....

2 - What should be the starting salary in the private sector?

	Less than 1000 SR	1000 - 1500 SR	1501 - 2000 SR	2001 - 3000 SR	3001 - 4000 SR	4001 - 5000 SR	5001 - 6000 SR	More than 6000 SR	Other (specify)
1. Saudis with less than high school degree.									
2. Non-Saudis with less than high school degree.									
3. Saudis with high school degree.									
4. Non-Saudis with high school degree.									
5. Saudis with college degree.									
6. Non-Saudis with college degree.									

3 - What kind of payment system does your firm follow in paying your wage?

Time Rate (daily, weekly, monthly)	Piece Rate (Piece , quantity of production)	Other Rate or Other System (please specify)

4 - What is your current <u>monthly wage</u> (salary)?
.....SR.

5 - What is your current monthly wage <u>without</u> fringe benefits?
.....SR.

6 - How much was your <u>starting</u> (first) wage (salary)?
.....SR.

Part Four : Fringe Benefits

Please tick the appropriate box:

1 - Does your firm offer fringe benefit for its employees?

	Yes	No	Some of the Employees
1- Subsidised accommodation or accommodation allowance.			
2 - Furniture allowance.			
3 - Utility allowance.			
4 - Loan.			
5 - Subsidised travel tickets.			
6 - Subsidised meals.			
7 - Transportation allowance.			
8 - Car.			
9 - Gross reward when finishing labour contract period.			
10 - Encouragement reward and annual bonus.			
11- Social allowance for dependants.			
12- Unemployment compensation.			
13 - Health Insurance.			
14 - Cost of living allowance.			
15 - Scarcity allowance.			
16 - Overtime allowance.			
17 - Danger area allowance.			
18 - Higher wage than competitors.			
19- Annual leave.			
20 - Nursery.			

2 - What is your firm's grade or level in the Saudi Chamber of Commerce and Industry list?

Excellent Grade	First Grade	Second Grade	Third Grade	Other Grade	Don't Know

Part Five: Wage/Salary Satisfaction.

Please tick in the appropriate box:

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. Regulations and procedures of your company pay structure are satisfactory.					
2. The way your supervisor/ director deals with your promotion is satisfactory.					
3. Your salary compensates for the working conditions of your job.					
4. Your salary compensates for the working hours of your job.					
5. Your salary compensates for the scheduling of shifts.					
6. Your salary compensates temperature inside the firm buildings.					
7. Your salary compensates for the nature and kind of job.					
8. The salary you obtain is satisfactory.					
9. Promotional chances available are satisfactory.					
10. Your salary is adequate for the responsibilities you have.					
11. Your salary covers your personal needs.					
12. Your family is satisfied with your salary.					
13. The comparison of your salary with the salary of those who practise jobs similar to yours in other companies is satisfactory.					
14. The degree to which your supervisor/ director accepts your suggestions on company pay structure is satisfactory.					
15. The methods that supervisors follow to solve problems of late payments of salary are satisfactory.					

This Section should only be completed by Saudi

Employees

Part Six : Saudiisation

Please tick the appropriate box:

Note: Saudiisation means substitute Saudis with non-Saudis.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
1 - Applying a minimum wage policy for all employees (Saudi and non-Saudi) will assist Saudiisation.					
2 - Applying a minimum wage policy for Saudis only will assist Saudiisation.					
3 - Improving wages of non-Saudi and Saudi employees in the private sector will assist Saudiisation.					
4 - Improving wages of Saudi employees only in the private sector will assist Saudiisation.					
5 - Allowing Wages of non-Saudi and Saudi employees to depend on supply and demand of labour will assist Saudiisation.					
6 - Allowing non-Saudi wages to be determined by country of origin will assist Saudiisation.					
7 - Charging a high fee for hiring non-Saudis in future will assist Saudiisation.					
8 - Allocating subsidies to employers for each Saudi worker hired will assist Saudiisation.					
9 - Imposing income tax on all non-Saudi employees will assist Saudiisation.					
10 - Encouraging foreign investment will assist Saudiisation					
11 - Removing government restrictions on small firms will encourage them to employ more Saudi employees.					
12 - Allocating low cost finance by the government to small firms with 70-100 % Saudi employees will assist Saudiisation.					
13 - Allocating low cost finance by commercial banks to small firms with 70-100% Saudi employees will assist Saudiisation					

14 - Please add any other information you would like to give concerning your company's pay structure, whether positive or negative, not already addressed in this questionnaire.

.....

.....

.....

.....

.....

.....

.....

Note: if you would like to receive a summary report of the results of this study please write your name and address in the space provided:

.....

.....

.....

.....

Researcher:
Abdullah Bohaimed
University of Durham, United Kingdom.
Imam University, KSA

Correspondence address: -

Abdullah Bohaimed
Imam University, KSA, Al-Hassa
College of Sharea's and Islamic Science
Business Department, Economics Unit
P.O. Box: 1730, Al-Hassa 31982
Abdulla.bohaimed@dur.ac.uk
Abdullahuk@hotmail.com

Appendix B2:
Employee's Questionnaire (In Arabic)
The employee in private sector should fill in this questionnaire

استبيان خاص بالعامل أو الموظف في القطاع الخاص

بسم الله الرحمن الرحيم

أخي الموظف في شركات ومؤسسات القطاع الخاص حفظه الله

السلام عليكم ورحمة الله وبركاته وبعد

يعتبر هذا الاستبيان متطلبا أساسيا لحصولي على درجة الدكتوراه في تخصص الاقتصاد من جامعة درم بالمملكة المتحدة (University of Durham) . إن الهدف الأساسي من هذا الاستبيان هو دراسة هيكل الأجور لشركات ومؤسسات القطاع الخاص وتحديد العوامل التي تؤثر على أجور العمال والموظفين في هذه الشركات والمؤسسات .

أخي الكريم ... كما تعلم بأن موضوع الأجور في الشركات والمؤسسات الخاصة من الأمور الهامة جدا في الوقت الحالي لذا آمل منك تزويدي بأكبر قدر ممكن من المعلومات لكي تخرج هذه الدراسة بالشكل المطلوب والتي ربما تساهم بشكل إيجابي في وضع سياسات العمل والعمال ونظام الأجور في المملكة العربية السعودية.

أخي ... إن إجابتك على هذا الاستبيان سوف تكون ذات قيمة بالغة , ونلتزم دينيا وأدبيا بسرية هذه المعلومات وأنها غير قابلة للنشر نهائيا وسوف تعامل فقط لغرض الدراسة . لذا لا تذكر اسمك نهائيا في هذا الاستبيان

أخوكم **الباحث** :

عبد الله إبراهيم بوحيمد

المحاضر بقسم إدارة الأعمال/ شعبة الاقتصاد/ جامعة الأمام

وطالب بمرحلة الدكتوراه في جامعة درم/ بريطانيا

العنوان المباشر للمراسلة

المحاضر عبد الله إبراهيم بوحيمد

جامعة الأمام محمد بن سعود / فرع الأحساء

كلية الشريعة والدراسات الإسلامية بالأحساء

قسم إدارة الأعمال / شعبة الاقتصاد

صندوق بريد : 1730

الرمز البريدي : 31982 الأحساء

abdulla.bohaimed@dur.ac.uk (إنجليزي فقط)

abdullahuk@hotmail (عربي وإنجليزي)

استبيان خاص بالعامل والموظف في شركات ومؤسسات القطاع الخاص

القسم الأول: النواحي الشخصية

تعليمات الإجابة : فضلا أختر الإجابة المناسبة

1 - الجنسية

سعودي	غير سعودي

2 - الحالة الاجتماعية

متزوج	أعزب

3 - هل تعيش في المدينة أو في الريف؟

المدينة	الريف (القرية / الهجرة)

4 - العمر

15- 19	20- 24	25- 29	30- 34	35- 39	40- 44	45- 49	50- 54	55- 59	60- 64	65- فأكثر

5 - مكان الميلاد

المنطقة الشرقية	المنطقة الغربية	المنطقة الجنوبية	المنطقة الشمالية	المنطقة الوسطى	منطقة أخري (فضلا أذكرها)

6 - المستوى التعليمي

الابتدائي	المتوسط	الثانوي	دبلوم	جامعي (أدبي)	جامعي (علمي)	ماجستير	دكتوراه

7 - ما هو مستواك في اللغة الإنجليزية ؟

لا أجيد اللغة الانجليزيه	مبتدئ	متوسط	متقدم

8 - ما هو مستواك في استخدام الحاسب الآلي؟

لا أجيد استخدام الحاسب الآلي	مبتدئ	متوسط	متقدم

9 - ما هو تصنيف وظيفتك الحالية؟

مهني / فني	أداري	محاسب / مالية	مبيعات / تسويق	الإنتاج	أخرى (أذكرها)

10 - ما هو اسم وظيفتك الحالية؟

وظائف إدارية وتشمل				وظائف فنية وتشمل			
مدير عام		أمين مستودع		مهندس مدني		بناء	
نائب مدير عام		سكرتير		مهندس معماري		حداد	
مدير شؤون الموظفين		مهندس كمبيوتر		مهندس كهربائي		ميكانيكي	
مدير مالي		مشغل كمبيوتر		مهندس ميكانيكي		مدير صيانة	
رئيس حسابات		معقب		مراقب إنشاءات		رسام	
محاسب		مدير تسويق		مساح		مبرمج	
كاتب حسابات		أداري		مدير إنتاج		مهندس	
أمين صندوق		مأمور سنترال		مدير مشروع		مشرف	
مدير مشتريات		فراش		فني كهرباء		عامل خراطة	
مدير مبيعات		طباخ		فني ألمونيوم		مراقب كهربائي	
مندوب مشتريات		محصل		فني تكييف		مزارع	
مندوب مبيعات		مراسل		فني تشغيل آلات		مشغل آلة	
مدير علاقات عامة		سائق		نجار		سائق معدات ثقيلة	
مدير فرع		حارس		دهان		فني حاسب ألي	
طابع آلة كاتبة		وظيفة أخرى(أذكرها		سباك		وظيفة أخرى(أذكرها)	
				فني لحام			

11 - ما هو مستوى المهارة الوظيفية لديك؟

محترف / ماهر	شبه ماهر	غير ماهر	لا اعلم

تعليمات الإجابة: فضلا أجب على الأسئلة التالية

12- ما هي سنوات الخبرة لديك في العمل الحالي؟

..... سنة

13 - ما هي سنوات الخبرة لديك قبل العمل الحالي؟

..... سنة

14 - من فضلك ما هو عمرك؟

..... سنة

15 - في أي سنة بدأت حياتك العملية (أو في أي عام حصلت على وظيفتك الأولى)؟

.....

16 - ما هو أسم بلدك الأصلي؟

.....

17 - ما هو أسم المدينة أو القرية أو الهجرة التي تعيش فيها؟

.....

القسم الثاني: معلومات عن الشركة أو المؤسسة التي تعمل بها

تعليمات الإجابة: فضلا اختر الإجابة المناسبة

1- ملكية الشركة (أو المؤسسة)

سعودية 100 % (مملوكة بالكامل لشخص سعودي أو شركاء سعوديين)	أجنبية 100% (مملوكة بالكامل لشخص أو شركاء غير سعوديين)	مشتركة (مملوكة لشركاء سعوديين وغير سعوديين)

2 - في أي تخصص تعمل الشركة (أو المؤسسة) التي تعمل بها؟

الصناعة	التجارة	الزراعة	مالي وتأمين	المواصلات	المقاولات	الخدمات	أخرى (اذكرها)

3 – ما هو عدد العمال في الشركة (أو المؤسسة) التي تعمل بها تقريبا ؟

9-1	19 -10	39-20	59-40	79-60	99-80	199-100	399-200	499-400	500-فأكثر

4 – فضلا اجب عن الأسئلة التالية ؟

	نعم	لا	أحيانا	لا أعلم
1 – هل أجرك الشهري (الراتب) يحول مباشرة إلى حسابك بالبنك؟				
2 – هل تستلم أجرك الشهري (الراتب) في يوم محدد كل شهر؟				
3 – هل لديك جهاز حاسب آلي خاص بك في مكان العمل؟				
4 – هل لديك صندوق بريد خاص بك في مكان العمل؟				
5 – هل تشعر بالأمان في وظيفتك الحالية؟				
6 – هل تحصل علي زيادة في الأجر الشهري (الراتب) بشكل اعتيادي؟				
7 – هل الشركة أو المؤسسة تقوم بإعداد برامج تدريب لموظفيها وهم على راس العمل ؟				
8 – هل الشركة أو المؤسسة التي تعمل بها تقدم برامج تدريب للطلاب لكي تمكنهم من التدريب على راس العمل؟				
9 – هل الشركة أو المؤسسة تدخل ضمن نظام التأمينات الاجتماعية.				
10 – هل الشركة تعتبر شبه احتكارية (أي هناك عدد قليل من الشركات في نفس المجال في السوق).				
11 – هل الشركة تعتبر شبه تنافسية (أي هناك عدد كبير من الشركات في نفس المجال في السوق).				
12– هل تستخدم الشركة الحاسبات الآلية و أجهزة الاتصالات والفاكس وشبكة الإنترنت؟				

تعليمات الإجابة: فضلا أجب عن الأسئلة التالية :

5 – مكان العمل (أي موقع الشركة (أو المؤسسة) التي أنت تعمل به).

.....

6 – هل لدى الشركة (أو المؤسسة) التي تعمل فيها نظام رسمي وواضح للأجور؟

نعم	لا
	إذا كانت الإجابة لا من فضلك ضع دائرة على الأسباب التالية (تستطيع اختيار أكثر من جواب)

1- الشركة تعتمد على نظام العمل السعودي.

2- الشركة صغيرة

3- الشركة جديدة

4- أسباب أخرى فضلا اذكرها

.....

.....

القسم الثالث:الرواتب والأجور

تعليمات الإجابة: فضلا أختر الإجابة المناسبة

1 – من فضلك ضع دائرة حول اقرب رقم لأجرك الشهري (الراتب). علما بأن الراتب يدفع بالريال السعودي.

اقل من 600 ريال	600	800	1000	1200	1400	1600	1800	2000	2200
2400	2600	2800	3000	3200	3400	3600	3800	4000	4200
4400	4600	4800	5000	5200	5400	5600	5800	6000	6200
6400	6600	6800	7000	7200	7400	7600	7800	8000	8200
8400	8600	9000	9200	9400	9600	9800	10000	10200	10400
10600	10800	11000	11200	11400	11600	11800	12000	12200	12400
12600	12800	13000	13200	13400	14600	14800	15000	اكبر من 15000	

راتب غير مذكور حدد من فضلك .....ريال

2 – ما هو أفضل أجر مبدئي يعطى للعامل في القطاع الخاص عند استلامه أول وظيفة؟

	اقل من 1000 ريال	1000 1500– ريال	1501 2000 – ريال	2001- 3000 ريال	3001 – 4000 ريال	4000 – 5000 ريال	5000 – 6000 ريال	اكثر من 6000 ريال	أجر مختلف (ما هو من فضلك)
1-سعودي لديه اقل من الشهادة الثانوية									
2- غير سعودي لديه اقل من الثانوية									
3- سعودي حاصل على الشهادة الثانوية									
4- غير سعودي حاصل على الشهادة الثانوية									
5- سعودي حاصل على الشهادة الجامعية									
6- غير سعودي حاصل على الشهادة الجامعية									

3 – ما هو النظام الذي تتبعه الشركة في تقديم أجرك الحالي؟

نظام الأجر الزمني (يوميا,أسبوعيا ,شهريا)	نظام الأجر التشجيعي (الأجر بالإنتاج, بالقطعة....)	نظام أخر (ما هو من فضلك)

تعليمات الإجابة : فضلا اجب على الأسئلة التالية.

4- ما هو أجرك الشهري في الوقت الحاضر؟

..... ريال

5 – ما هو أجرك الشهري بدون المميزات الإضافية تقريبا (كبدل النقل والسكن والمعيشة.....)؟

.....ريال

6 – ما هو أجرك الشهري تقريبا عندما بدأت أول عمل لك؟

..... ريال

القسم الرابع : المميزات الإضافية

تعليمات الإجابة: فضلا أختر الإجابة المناسبة.

1 – هل تقدم الشركة (أو المؤسسة) المميزات الإضافية التالية للعمال والموظفين؟

	نعم	لا	يعطى فقط لبعض العمال
1 – سكن مجاني أو بإيجار رمزي			
2 – مخصصات تأثيث السكن			
3 – مخصصات مقابل نفقات الخدمات العامة (كالكهرباء والغاز والماء)			
4 – قروض ميسرة			
5 – تذاكر سفر مجانية أو بسعر رمزي			
6 – وجبات غذائية مجانية أو بسعر رمزي			
7 – بدل نقل ومواصلات			
8 – سيارة			
9 – مكافأة إجمالية عند انتهاء مدة الخدمة للعامل			
10 – مكافأة تشجيعية ومنحة سنوية			
11 – علاوة اجتماعية عن الزوجة والأبناء			
12 – تعويض عن البطالة (أي تعويض العامل أو الموظف بمبلغ معين نتيجة الاستغناء عن خدمته في الشركة)			
13 – التأمين الصحي			
14 – بدل غلاء المعيشة			
15 – بدل ندرة			
16 – بدل عمل إضافي			
17 – بدل إصابة أو خطر			
18 – أجر أعلى من الأجر المتعارف عليه في السوق أو الذي يعطى من قبل الشركات الأخرى في نفس المجال			
19 – أجازه سنوية (لمدة ثلاثة – ستة أسابيع)			
20 – دار للحضانة			

2 – ما هي درجة الشركة (أو المؤسسة) حسب تصنيف الغرفة التجارية الصناعية التابعة لها الشركة؟

الدرجة الممتازة	الدرجة الأولي	الدرجة الثانية	الدرجة الثالثة	درجة أخرى (اذكرها)	درجة علمية أو دولية (أذكرها)

القسم الخامس: قسم مدى الرضا عن الأجور والرواتب في القطاع الخاص

تعليمات الإجابة : فضلا أختر الإجابة المناسبة:

1- أرجو توضيح درجة الرضا لديك عن التالي؟

	مناسب بدرجة عالية جدا	مناسب بدرجة عالية	مناسب بدرجة معقولة	مناسب بقدر محدود	مناسب بقدر ضئيل جدا
1- مدي الرضا عن الإجراءات واللوائح التي تحدد هيكل الرواتب (سلم الرواتب) في الشركة التي تعمل فيها					
2 – مدى الرضا عن الطريقة التي يتعامل بها مديرك المباشر أو المشرف العام في موضوع الزيادات على الأجور.					
3 – مدى تناسب أجرك مع ظروف العمل التي تقوم به					
4 – مدى تناسب أجرك مع عدد ساعات العمل التي تعملها					
5 – مدى تناسب أجرك مع جدول العمل غير الصباحي					
6 – مدى تناسب أجرك مع درجة حرارة مكان العمل					
7 – مدى تناسب أجرك مع طبيعة العمل الذي تقوم به					
8- مدى رضاك عن الأجر الذي تحصل عليه					
9 – مدى الفرص المتاحة للحصول على الزيادة في الأجر					
10 – مدى تناسب آجرك مع المسئولية التي لديك					
11 – مدى تناسب أجرك مع احتياجاتك					
12 – مدى رضا عائلتك عن مستوى أجرك في الشركة					
13 – مدى رضاك عن أجرك بالمقارنة مع الأجور التي تعطي لنفس وظيفتك في الشركات الأخرى					
14 – مدى قبول مديرك أو المشرف العام على اقتراحاتك بخصوص التعديل الجديد لهيكل الأجور (سلم الأجور) بالشركة					
15 – مدى الرضا عن الطريقة التي يتعامل فيها مديرك أو المشرف العام في حل مشاكل الأجور المتأخرة					

هذا القسم خاص بالعمال والموظفين السعوديين فقط

القسم السادس:السعودة

تعليمات الإجابة: فضلا أختر الإجابة المناسبة

1- أرجو توضيح وجهة نظرك عن التالي؟

إيضاح: السعودة: إحلال العمل السعودي محل العامل غير السعودي

	موافق بشدة	موافق	موافق إلى حد ما	غير موافق	غير موافق بشدة
1-العمل بسياسة الحد الأدنى للأجور على جميع السعوديين و غير السعوديين سوف يساعد على زيادة نسبة السعودة					
2- العمل بسياسة الحد الأدنى للأجور على السعوديين فقط سوف يساعد على زيادة نسبة السعودة					
3- العمل على تنظيم وتعديل أجور السعوديين وغير السعوديين بشكل أفضل في القطاع الخاص سوف يساعد على زيادة نسبة السعودة					
4 - العمل على تنظيم وتعديل أجور السعوديين بشكل أفضل في القطاع الخاص سوف يساعد على زيادة نسبة السعودة					
5 -العمل على ترك أجر العامل السعودي وغير السعودي يتحدد حسب العرض والطلب سوف يساعد على زيادة نسبة السعودة					
6 -العمل على تحديد أجور غير السعوديين حسب بلد العامل سوف يساعد على زيادة نسبة السعودة					
7- العمل على أن يقوم صاحب العمل بدفع مبلغ معين مقطوع للدولة عن كل عامل غير سعودي سوف يساعد على زيادة نسبة السعودة					
8 - العمل على أن تقوم الدولة بإعطاء صاحب العمل مبلغ تشجيعي مقطوع عن كل عامل سعودي يقوم بتوظيفه سوف يساعد على زيادة نسبة السعودة					
9 - العمل بسياسة الضرائب على الدخل للعمال غير السعوديين سوف يساعد على زيادة نسبة السعودة					
10 - العمل على جذب الاستثمار الأجنبي سوف يساعد على زيادة نسبة السعودة.					
11 - العمل على تسهيل الإجراءات الحكومية للشركات والمؤسسات سوف يساعد على زيادة نسبة السعودة					
12 -العمل على تسهيل إجراءات التمويل من قبل المؤسسات المالية للشركات والمؤسسات الصغيرة التي توظف نسبة 70 % إلى 100 % من العمال السعوديين سوف يساعد على زيادة نسبة السعودة					
13- العمل على تسهيل تقديم الإعانات الحكومية للشركات والمؤسسات الصغيرة التي توظف نسبة 70% إلى 100 % من العمال السعوديين سوف يساعد على زيادة نسبة السعودة					

2 - هل تحبذ أي تعديل أو إضافة نقاط ترغب أضافتها بخصوص هيكل(سلم) الأجور في الشركة التي تعمل بها أو بخصوص العوامل التي تحدد مستوى الأجور. سواء نقاط إيجابية أو سلبية

.....

.....

.....

.....

.....

ملاحظة: *في حالة رغبتكم بتزويدك بنتائج هذا البحث أرجو ذكر اسمك وعنوانك كاملا وسوف نقوم بكل سعادة بتزويدكم بالمطلوب.*

.....

.....

.....

وتم بحمد الله

شكرا جزيلا والسلام عليكم ورحمة الله وبركاته

أخوكم الباحث:

عبد الله أبن إبراهيم بوحيمد

العنوان المباشر للمراسلة

الخاص :عبد الله إبراهيم بوحيمد

جامعة الأمام محمد بن سعود / فرع الأحســـاء

كلية الشريعة والدراسات الإسلامية الأحســـاء

قسم إدارة الأعمال / شعبة الاقتصاد

صندوق بريد : 1730

الرمز البريدي : 31982 الأحســـاء

abdulla.bohaimed@dur**.ac.uk** (إنجليزي فقط)

abdullahuk@hotmail (عربي وإنجليزي)

Appendix B3:
Employer's Questionnaire
The owner of the firm or the person in charge of the firm should complete this questionnaire

(استبيان خاص بصاحب العمل أو المسؤول المباشر عن مهام العمل)

Covering Letter

Dear Participant

This questionnaire is part of my academic research for my Ph.D. degree in Economics from the University of Durham, United Kingdom. My purpose is to learn more about the wage structure in Saudi Arabia's private companies. You have been selected at random to participate in this survey – thus your opinions will represent the opinions of thousands of people much like yourself.

The information you provide will contribute to an important study and may also be used to influence positively employment policies. **I promise you confidentiality as under academic ethics your information will not be revealed and will only be used for the purpose of this study**. Therefore, you don't have to give your name.

I appreciate your willingness to help me in my research efforts. I believe that you will find the questionnaire both interesting and informative and I look forward to receiving your reply.

Sincerely yours

Researcher
Abdullah Bohaimed
University of Durham, United Kingdom.
Imam University, KSA

Correspondence address

Abdullah Bohaimed
Imam University, KSA, Al-Hassa
College of Sharea's and Islamic Science
Business Department, Economics Unit
P.O. Box: 1730, Al-Hassa 31982
Abdulla.bohaimed@dur.ac.uk
Abdullahuk@hotmail.com

The owner of the firm or the person in charge of the firm should fill in this questionnaire

(استبيان خاص بصاحب العمل أو المسؤول المباشر عن مهام العمل)

Part Two : Company Information (Firm)

Please tick in the appropriate box then answer the other questions

1 - Ownership

Owned by Saudis	Owned by non-Saudis	Owned by Saudis and non-Saudis (Joint Venture)

2 - Location

Dammam	Al Khubar	Al Dhahran	Al Jubaill	Al Kafji	Al Qatif	Ras Tannora	Abqaiq
Al Safaniay	Safwa	Sihat	Al Hofuf	Mubarraz	Salwa	Haradh	Other (specify)

3 - Type of firm

Industrial	Commercial	Agricultural	Finance and Insurance	Transportation	Construction	Services	Other (specify)

4 - Grade or level of firm in the on Saudi Chamber of Commerce and Industry list

Excellent Grade	First Grade	Second Grade	Third Grade	Other Grade (specify)	Don't Know

5 - Approximate number of employees

1-9	10-19	20-39	40-59	60-79	80-99	100 -199	200 -299	300 -399	400 -499	500 - more

6 - Does your firm have a clear official wage system?

Yes	No
	If you have answered NO please circle as many of the following reasons that apply

5- The firm follows the Saudi Labour and Workmen Law.

6- The firm is small.

7- The firm is new to the market.

8- Other (please specify)

.....

.....

.....

..... (You can continue overleaf)

7 - Please answer the following questions

	Yes	No	Some	Don't know
1 - Is your wage (salary) transferred directly to your personal bank account?				
2 - Do you receive your (salary) on a specific date every month?				
3 - Do most employees in your company have a computer (PC)?				
4 - Do most employees in your company have a mail box?				
5 - Do you feel that your current job is secure?				
6 - Do you get regular promotion?				
7 -Does your firm offer a continuous training programme for its employees?				
8 - Does your firm offer training programmes for Saudi students?				
9 - Is your firm listed in the Saudi Social Insurance Directory?				
10 - Does your firm consider itself to be a monopoly firm (there are few other firms in the market producing similar products and services)?				
11 - Does your firm consider itself to be in competition (there are more firms in the market producing the same product and services)?				
12- Does your company use computers, communication facilities and the internet?				

8 - Does your firm offer fringe benefits for its employees?

	Yes	No	Some of the Employees
1- Subsidised accommodation or accommodation allowance.			
2 - Furniture allowance.			
3 - Utility allowance.			
4 - Loan.			
5 - Subsidised travel tickets.			
6 - Subsidised meals.			
7 - Transportation allowance.			
8 - Car.			
9 - Gross reward when finishing labour contract period.			
10 - Encouragement reward and annual bonus.			
11- Social allowance for dependants.			
12- Unemployment compensation.			
13 - Health Insurance.			
14 - Cost of living allowance.			
15 - Scarcity allowance.			
16 - Overtime allowance.			
17 - Danger area allowance.			
18 - Higher wage than competitors.			
19- Annual leave			
20 - Nursery			

9 - Please answer all questions ((This question should only Completed by Saudi respondents))

Note: Saudiisation means substituting Saudis with non-Saudis.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
1 - Applying a minimum wage policy for all employees (Saudi and non-Saudi) will assist Saudiisation.					
2 - Applying a minimum wage policy for Saudis only will assist Saudiisation.					
3 - Improving wages of non-Saudi and Saudi employees in the private sector will assist Saudiisation.					
4 - Improving wages of Saudi employees only in the private sector will assist Saudiisation.					
5 -Allowing Wages of non-Saudi and Saudi employees to depend on supply and demand of labour will assist Saudiisation.					
6 - Allowing non-Saudi wages to be determined by country of origin will assist Saudiisation.					
7 - Charing a high fee for hiring non-Saudis in future will assist Saudiisation.					
8 - Allocating subsidies to employers for each Saudi worker hired will assist Saudiisation.					
9 - Imposing income tax on all non-Saudi employees will assist Saudiisation.					
10 - Encouraging foreign investment will assist Saudiisation					
11 - Removing government restrictions on small firms will encourage them to employ more Saudi employees.					
12 - Allocating low cost finance by the government to small firms with 70-100 % Saudi employees will assist Saudiisation.					
13 - Allocating low cost finance by commercial banks to small firms with 70-100% Saudi employees will assist Saudiisation					

10- Nationality

Saudi	Non-Saudi

11 - What should be the starting salary in the private sector?

	Less than 1000 SR	1000 - 1500 SR	1501 - 2000 SR	2001 - 3000 SR	3001 - 4000 SR	4001 - 5000 SR	5001 - 6000 SR	More than 6000 SR	Other (specify)
1. Saudis with less than high school degree.									
2. Non-Saudis with less than high school degree.									
3. Saudis with high school degree.									
4. Non-Saudis with high school degree.									
5. Saudis with college degree.									
6. Non Saudis with college degree.									

12 - Please add any other information you would like to give concerning your company's pay structure, whether positive or negative, not already addressed in this questionnaire.

.....

.....

.....(You can continue overleaf)

Note: if you would like to receive a summary report of the results of this study, please write your name and address in the space provided:

.....

.....

.....

.....

Researcher:
Abdullah Bohaimed
University of Durham, United Kingdom.
Imam University, KSA

Correspondence address: -
Abdullah Bohaimed
Imam University, KSA, Al-Hassa
College of Sharea'a and Islamic Science
Business Department, Economics Unit
P.O. Box: 1730, Al-Hassa 31982
Abdulla.bohaimed@dur.ac.uk
Abdullahuk@hotmail.com

Appendix B4:
Employer's Questionnaire (In Arabic)

استبيان خاص بصاحب الشركة (المؤسسة) أو المسؤول المباشر عن مهام العمل بالشركة

بسم الله الرحمن الرحيم

أخي صاحب الشركة (أو المؤسسة) حفظه الله

أخي المسؤول عن مهام العمل بالشركة حفظه الله

السلام عليكم ورحمة الله وبركاته وبعد

يعتبر هذا الاستبيان متطلبا أساسيا لحصولي على درجة الدكتوراه في تخصص الاقتصاد من جامعة درم بالمملكة المتحدة (University of Durham) . إن الهدف الأساسي من هذا الاستبيان هو دراسة هيكل الأجور لشركات ومؤسسات القطاع الخاص وتحديد العوامل التي تؤثر على أجور العمال والموظفين في هذه الشركات والمؤسسات .

أخي الكريم ... كما تعلم بأن موضوع الأجور في الشركات والمؤسسات الخاصة من الأمور الهامة جدا في الوقت الحالي لذا آمل منك تزويدي بأكبر قدر ممكن من المعلومات لكي تخرج هذه الدراسة بالشكل المطلوب والتي ربما تساهم بشكل إيجابي في وضع سياسات العمل والعمال ونظام الأجور في المملكة العربية السعودية.

أخي ... إن إجابتك على هذا الاستبيان سوف تكون ذات قيمة بالغة , ونلتزم دينيا وأدبيا بسرية هذه المعلومات وأنها غير قابلة للنشر نهائيا وسوف تعامل فقط لغرض الدراسة . لذا لا تذكر اسمك نهائيا في هذا الاستبيان

أخوكم **الباحث :**

عبد الله إبراهيم بوحيمد

المحاضر بقسم إدارة الأعمال/ شعبة الاقتصاد/ جامعة الأمام

وطالب بمرحلة الدكتوراه في جامعة درم/ بريطانيا

العنوان المباشر للمراسلة

عبد الله إبراهيم بوحيمد

جامعة الأمام محمد بن سعود / فرع الأحساء

كلية الشريعة والدراسات الإسلامية بالأحساء

قسم إدارة الأعمال / شعبة الاقتصاد

صندوق بريد 1730

الرمز البريدي : 31982 الأحساء

abdulla.bohaimed *a* dur.ac.uk (إنجليزي فقط)

abdullahuk *a* hotmail (عربي وإنجليزي)

تعليمات الإجابة: فضلا أختر الإجابة المناسبة

1- ملكية الشركة (أو المؤسسة)

سعودية 100 % (مملوكة بالكامل لشخص سعودي أو شركاء سعوديين)	أجنبية 100% (مملوكة بالكامل لشخص أو شركاء غير سعوديين)	مشتركة (مملوكة لشركاء سعوديين وغير سعوديين)

2- مكان الشركة (أو المؤسسة)

الدمام	الخبر	الظهران	الجبيل	الخفجي	القطيف	رأس تنوره	ابقيق
السفانية	صفوى	سيهات	الهفوف	المبرز	سلوى	حرض	أخرى (فضلا أذكرها)

3- في أي تخصص تعمل الشركة (أو المؤسسة) التي تعمل بها؟

الصناعة	التجارة	الزراعة	مالي وتأمين	المواصلات	المقاولات	الخدمات	أخرى (اذكرها)

4 - ما هي درجة الشركة (أو المؤسسة) حسب تصنيف الغرفة التجارية الصناعية التابعة لها الشركة؟

الدرجة الممتازة	الدرجة الأولي	الدرجة الثانية	الدرجة الثالثة	درجة أخرى مثلا علمية أو دولية	لا أعلم

5 - ما هو عدد العمال في الشركة (أو المؤسسة) التي تعمل بها تقريبا ؟

9-1	19 -10	39 -20	59-40	79-60	99-80	199-100	399-200	499-400	00 فأكثر

6 - هل لدى الشركة (أو المؤسسة) التي تعمل فيها نظام رسمي وواضح للأجور؟

نعم	لا

إذا كانت الإجابة لا من فضلك ضع دائرة على الأسباب التالية (تستطيع اختيار أكثر من جواب)

5- الشركة تعتمد علي نظام العمل السعودي.

6- الشركة صغيرة

7- الشركة جديدة

8- أسباب أخري فضلا أذكرها

.....

.....

.....(تستطيع استخدام خلف الورقة للإضافة)

7 – فضلا اجب عن الأسئلة التالية ؟

	نعم	لا	أحيانا	لا أعلم
1 – هل أجرك الشهري (الراتب) يحول مباشرة إلى حسابك بالبنك؟				
2 – هل تستلم أجرك الشهري (راتب) في يوم محدد كل شهر؟				
3 – هل لديك جهاز حاسب آلي خاص بك في مكان العمل؟				
4 – هل لديك صندوق بريد خاص بك في مكان العمل؟				
5 – هل تشعر بالأمان في وظيفتك الحالية؟				
6 – هل تحصل على زيادة في الأجر الشهري (الراتب) بشكل اعتيادي؟				
7 – هل الشركة أو المؤسسة تقوم بإعداد برامج تدريب لموظفيها وهم على راس العمل ؟				
8 – هل الشركة أو المؤسسة التي تعمل بها تقدم برامج تدريب للطلاب لكي تمكنهم من التدريب على راس العمل؟				
9 – هل الشركة أو المؤسسة تدخل ضمن نظام التأمينات الاجتماعية.				
10 – هل الشركة تعتبر شبه احتكارية (أي هناك عدد قليل من الشركات في نفس المجال في السوق).				
11 – هل الشركة تعتبر شبه تنافسية (أي هناك عدد كبير من الشركات في نفس المجال في السوق).				
12– هل تستخدم الشركة الحاسبات الآلية و أجهزة الاتصالات والفاكس وشبكة الإنترنت؟				

8 – هل تقدم الشركة (أو المؤسسة) المميزات الإضافية التالية للعمال والموظفين؟

	نعم	لا	يعطى فقط لبعض العمال
1 – سكن مجاني أو بإيجار رمزي			
2 – مخصصات لتأثيث السكن			
3 – مخصصات مقابل نفقات الخدمات العامة (كالكهرباء والغاز والماء)			
4 – قروض ميسرة			
5 – تذاكر سفر مجانية أو بسعر رمزي			
6 – وجبات غذائية مجانية أو بسعر رمزي			
7 – بدل نقل ومواصلات			
8 – سيارة			
9 – مكافأة إجمالية عند انتهاء مدة الخدمة للعامل			
10 – مكافأة تشجيعية ومنحة سنوية			
11 – علاوة اجتماعية عن الزوجة والأبناء			
12 – تعويض عن البطالة (أي تعويض العامل أو الموظف بمبلغ معين نتيجة الاستغناء عن خدمته في الشركة)			
13 – التأمين الصحي			
14 – بدل غلاء المعيشة			
15 – بدل ندرة			
16 – بدل عمل إضافي			
17 – بدل إصابة أو خطر			
18 – أجر أعلى من الأجر المتعارف عليه في السوق أو الذي يعطى من قبل الشركات الأخرى في نفس المجال			
19 – أجره سنوية (لمدة ثلاثة – ستة أسابيع)			
20 – دار للحضانة			

9 – اختر الإجابة المناسبة لمجموعة الأسئلة التالية: (**هذا السؤال خاص بالسعودي فقط)**

يقصد بالسعودة: حلول العمل السعودي محل العمل غير السعودي

	موافق بشدة	موافق	موافق إلى حد ما	غير موافق	غير موافق بشدة
1- العمل بسياسة الحد الأدنى للأجور على جميع السعوديين و غير السعوديين سوف يساعد على زيادة نسبة السعودة.					
2- العمل بسياسة الحد الأدنى للأجور على السعوديين فقط سوف يساعد على زيادة نسبة السعودة					
3- العمل على تنظيم وتعديل أجور السعوديين وغير السعوديين بشكل أفضل في القطاع الخاص سوف يساعد على زيادة نسبة السعودة.					
4 – العمل على تنظيم وتعديل أجور السعوديين بشكل أفضل في القطاع الخاص سوف يساعد على زيادة نسبة السعودة.					
5 -العمل على ترك أجر العامل السعودي وغير السعودي يتحدد حسب العرض والطلب سوف يساعد على زيادة نسبة السعودة.					
6 -العمل على تحديد أجور غير السعوديين حسب بلد العامل سوف يساعد على زيادة نسبة السعودة.					
7 – العمل على أن يقوم صاحب العمل بدفع مبلغ معين مقطوع للدولة عن كل عامل غير سعودي سوف يساعد على زيادة نسبة السعودة.					
8 – العمل على أن تقوم الدولة بإعطاء صاحب العمل مبلغ تشجيعي مقطوع عن كل عامل سعودي يقوم بتوظيفه سوف يساعد على زيادة نسبة السعودة.					
9 – العمل بسياسة الضرائب على الدخل للعمال غير السعوديين سوف يساعد على زيادة نسبة السعودة.					
10 – العمل على جذب الاستثمار الأجنبي سوف يساعد على زيادة نسبة السعودة.					
11 – العمل على تسهيل الإجراءات الحكومية للشركات والمؤسسات سوف يساعد على زيادة نسبة السعودة.					
12 -العمل على تسهيل إجراءات التمويل من قبل المؤسسات المالية للشركات و المؤسسات الصغيرة التي توظف نسبة 70 % إلى 100 % من العمال السعوديين سوف يساعد على زيادة نسبة السعودة.					
13- العمل على تسهيل تقديم الإعانات الحكومية للشركات والمؤسسات الصغيرة التي توظف نسبة 70% إلى 100 % من العمال السعوديين سوف يساعد على زيادة نسبة السعودة					

10- الجنسية

سعودي	غير سعودي

11 - ما هو أقل أجر شهري يعطى للعامل في القطاع الخاص عند استلامه أول وظيفة؟

	أقل من 1000 ريال	1000 – 1500 ريال	1501 – 2000 ريال	2001 – 3000 ريال	3001 – 4000 ريال	4000 – 5000 ريال	5000 – 6000 ريال	اكثر من 6000 ريال	أجر مختلف (ما هو من فضلك)
1-سعودي لديه أقل من شهادة ثانوية									
2- غير سعودي لديه أقل من ثانوية									
3- سعودي حاصل على شهادة ثانوية									
4- غير سعودي حاصل على الشهادة الثانوية									
5- سعودي حاصل على الشهادة الجامعية									
6- غير سعودي حاصل على الشهادة الجامعية									

12 - هل لديك أي تعليق أو إضافة نقاط ترغب أضافتها بخصوص هيكل(سلم) الأجور في الشركة التي تعمل بها أو بخصوص العوامل التي تحدد مستوى الأجور. سواء نقاط إيجابية أو سلبية

.....

.....

.....

ملاحظة: *في حالة رغبتكم بترويدك بنتائج هذا البحث أرجو ذكر اسمك وعنوانك كاملا وسوف نقوم بكل سعادة بترويدكم بالمطلوب.*

.....

.....

.....

أخوكم الباحث:عبد الله أبن إبراهيم بوحيمد

محاضر بقسم إدارة الأعمال /شعبة الاقتصاد/ جامعة الأمام فرع الاحساء

وطالب بمرحلة الدكتوراه جامعة درم بالمملكة المتحدة البريطانية

العنوان المباشر للمراسلة

محاضر عبد الله إبراهيم بوحيمد
جامعة الأمام محمد بن سعود / فرع الأحساء
كلية الشريعة والدراسات الإسلامية الأحساء
قسم إدارة الأعمال / شعبة الاقتصاد
صندوق بريد : 1730
الرمز البريدي : 31982 الأحساء
abdulla.bohaimed *a* dur**ac.uk** . (إنجليزي فقط)
abdullahuk*@* hotmail (عربي وإنجليزي)

Appendix C: List of Abbreviations

AGE	Age
AGECATT	Age Category
ANLFTWAG	Current and Starting/First Wage Variables
ANLFTWAG	Current and starting/first wage variables
COMPUTRL	Level of Computer Skill
CURRTEXP	How many years of experience do you have in your present position?
DUMYCNTR	Dummy variable for the Central Province
DUMYEAST	Dummy variable for the Eastern Province
DUMYNRTH	Dummy variable for the Northern Province
DUMYOTHR	Dummy variable for the Others Province
DUMYSOTH	Dummy variable for the Southern Province
DUMYWEST	Dummy variable for the Western Province
EDUC	Education Level
EDUCONT	Education Years
ENGLISHL	Level of English
FIRMGRAD	What is your firm's grade or level in the Saudi Chamber of Commerce and Industry List?, or Firm classification
FIRMOWNR	Firm Ownership
FIRMTYPE	Type of Firm
JOBCATT	Occupational Category
JOSSKILL	Level of Occupational skill
MARSTAT	Marital Status
NAT	Nationality
PBIRTH	Province of Origin/Place of Birth/ Original Province of the Individual/ Place of Origin
PREVEXP	How many years of previous experience before present occupation?
URBAN	In What Type of Area Do you Live? (Urban or Rural)
W	Annual Wage
WWFB	What is your current monthly wage without fringe benefits?

Meaning of Transformed Variables Abbreviations	
EMYCAT20	Employees Category: Number 1 means less than 20 employees and number 2 means more than 20 employees.
EMYC40AT40	Employees Category: Number 1 means less than 40 employees and number 2 means more than 40 employees.
EMYCAT500	Employees Category: Number 1 means less than 500 employees and number 2 means more than 500 employees.
Ln W	Natural Annual Wage
W2CT	Annual Wage for Two Levels: Number 1 means Lower Wage Level and Number 2 means Upper Wage Level

Appendix D: Tables for Chapter Six

6.2. Respondents' Background Information Table

6.2.1. Nationality of Employees

II. W2CT*NAT Cross-Tabulation Table

W2CT*Nat Cross-tabulation

W2CT	NAT		Total
	Saudi	Non-Saudi	
Lower Wage Level = 1	46	165	211
Higher Wage Level = 2	91	27	118
Total	137	192	329

III-I. W*NAT Independent Sample Test Table

Independent Sample Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig	t	df	Significant (2-tailed)	Mean Difference
W	Equal variance Assumed	44.278	.000	10.306	327	.000	56140.529
	Equal variance not assumed			9.573	210.531	.000	56140.529

III-II. W*NAT Mann-Whitney U Test Table

Test Statistics[a]

	W
Mann-Whitney U	4827
Significant (2-tailed)	.000

a. Grouping Variable: NAT

6.2.2. Marital Status

II. W2CT*MARSTAT*NAT Cross-Tabulation Table

W2CT*MARSTAT*NAT Cross-tabulation

NAT				MARSTAT		Total
				Single	Married	
Saudi	W2CT	1	Count	14	32	46
			% within MARSTAT	51.9%	28.8%	33.3%
		2	Count	13	79	92
			% within MARSTAT	48.1%	71.2%	66.7%
	Total		Count	27	111	138
			% within MARSTAT	100.0%	100.0%	100.0%
Non-Saudi	W2Ct	1	Count	50	115	165
			% within MARSTAT	94.3%	82.7%	85.9%
		2	Count	3	24	27
			% within MARSTAT	5.7%	17.3%	14.1%
	Total		Count	53	139	192
			% within MARSTAT	100.0%	100.0%	100.0%

III-I. W*MARSTAT Independent Sample Test Table

Independent Sample Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig	t	df	Significant (2-tailed)	Mean Difference
W	Equal variance Assumed	23.578	.000	-4.522	327	.000	-31609.72
	Equal variance Not assumed			-5.711	217.974	.000	-20701.8

III-II. W*MARSTAT Mann-Whitney U Test Table

Test Statistics[a]

	W
Mann-Whitney U	5973.000
Significant (2-tailed)	.000

a. Grouping Variable: MARSTAT

6.2.3. Urbanisation

II. W2CT*URBAN*NAT Cross-Tabulation Table

W2CT*URBAN*NAT Cross-tabulation

NAT				URBAN		Total
				Urban	Rural	
Saudi	W2CT	1	Count	34	12	46
			% within MARSTAT	29.6%	52.2%	33.3%
		2	Count	81	11	92
			% within MARSTAT	70.4%	47.8%	66.7%
	Total		Count	115	23	138
			% within MARSTAT	100.0%	100.0%	100.0%
Non-Saudi	W2Ct	1	Count	121	165	165
			% within MARSTAT	84.6%	85.9	85.9%
		2	Count	22	27	27
			% within MARSTAT	15.4%	14.1%	14.1%
	Total		Count	143	192	192
			% within MARSTAT	100.0%	100.0%	100.0%

III-I. W*URBAN Independent Sample Test Table

Independent Sample Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig	t	df	Significant (2-tailed)	Mean Difference
W	Equal variance Assumed	10.669	.001	3.620	327	.000	26538.267
	Equal variance not assumed			4.450	164.692	.000	26538.267

III-II. W*URBAN Mann-Whitney U Test Table

Test Statistics[a]

	W
Mann-Whitney U	5961.000
Significant (2-tailed)	.000

a. Grouping Variable: URBAN

6.2.4. Age Category

II. W2CT*AGECATT*NAT Cross-Tabulation

W2CT*AGECATT*NAT Cross-tabulation

NAT				AGECATT									Total
				20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	
Saudi	W2CT	1	Count	14	13	11	3	1	3	1	—	—	46
			% within MARSTAT	73.7%	33.3%	35.5%	13.0%	6.3%	50.0%	33.3%	—	—	33.6%
		2	Count	5	26	20	20	15	3	2	—	—	91
			% within MARSTAT	26.3%	66.7%	64.5%	87.0%	93.8%	50.0%	66.7%	—	—	66.4%
	Total		Count	19	39	31	23	16	6	3	—	—	137
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%	—	—	100%
Non-Saudi	W2CT	1	Count	8	35	46	28	22	15	10	—	1	165
			% within MARSTAT	100%	100%	95.8	87.5%	78.6%	60.0%	71.4%	—	100%	85.9%
		2	Count	—	—	2	4	6	10	4	1	—	27
			% within MARSTAT	—	—	4.2%	12.5%	21.4%	40.0%	28.6%	100%	—	14.1%
	Total		Count	8	35	48	32	28	25	14	1	1	192
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

III-I. W*AGECATT*NAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	8	4.731	.000
Within Groups	320		
Total	328		

III-II. W*AGECATT*NAT Kruskal-Wallis Test Table

Test Statistics[a,b]

	W
Chi-Square	16.720
Df	8
Significant	.033

a. Kruskal Wallis Test
b. Grouping Variable: AGECATT

6.2.5. Province of Origin/Place of Birth

II. W2CT*PBIRTH*NAT Cross-Tabulation Table

W2CT* PBIRTH*NAT Cross-tabulation

NAT				PBIRTH						Total
				Eastern Province	Western Province	Southern Province	Northern Province	Central Province	Other country	
Saudi	W2CT	1	Count	32	—	2	—	2	10	46
			% within MARSTAT	40.0%	—	15.4%	—	15.4%	47.7%	33.3%
		2	Count	48	5	11	5	11	11	91
			% within MARSTAT	60.0%	100%	84.6%	100%	84.6%	52.4%	66.4%
	Total		Count	80	5	13	5	13	21	137
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%
Non-Saudi	W2CT	1	Count	2	—	2	—	1	160	165
			% within MARSTAT	100%	—	100%	—	100%	85.6%	85.9%
		2	Count	—	—	—	—	—	27	27
			% within MARSTAT	—	—	—	—	—	14.4%	14.1%
	Total		Count	2	—	2	—	1	187	192
			% within MARSTAT	100%	—	100%	—	100%	100%	100%

III-I. W*PBIRTH*NAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	5	19.740	.000
Within Groups	323		
Total	328		

III-II. W* PBIRTH*NAT Kruskal-Wallis Test Table

Test Statistics[a,b]

	W
Chi-Square	83.321
Df	5
Significant	.000

a. Kruskal Wallis Test

b. Grouping Variable: PBIRTH

6.2.6. Occupational Category

II. W2CT*JOBCATT*NAT Cross-Tabulation Table

W2CT*JOBCAT*NAT Cross-tabulation

NAT				Professional of Technical	Administr-ative	Accounting or Financial	Sales and Marketing	Production Worker	Other	Total
Saudi	W2CT	1	Count	11	21	2	3	5	4	46
			% within MARSTAT	22.9%	44.7%	12.5%	50%	33.3%	80%	33.6%
		2	Count	37	26	14	3	10	1	91
			% within MARSTAT	77.1%	55.3%	87.5%	50%	66.7%	20%	66.4%
	Total		Count	48	47	16	6	15	5	137
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%
Non-Saudi	W2CT	1	Count	69	23	15	13	23	22	165
			% within MARSTAT	83.1%	79.3	78.9%	100%	95.8%	91.7%	85.9%
		2	Count	14	6	4	—	1	2	27
			% within MARSTAT	16.9%	20.7%	21.2%	—	4.2%	8.3%	14.1%
	Total		Count	83	29	19	13	24	24	192
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%

III-I. W*JOBCATT*NAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	5	3.767	.000
Within Groups	323		
Total	328		

III-II. W*JOBCATT*NAT Kruskal-Wallis Test Table

Test Statistics[a, b]

	W
Chi-Square	83.321
Df	5
Significant	.000

a. Kruskal Wallis Test

b. Grouping Variable: JOBCATT

6.2.8. Level of Occupational Skill

II. W2CT*JOB SKILL*NAT Cross-Tabulation Table

W2CT*JOBSKILL*NAT Cross-tabulation

NAT				JOBSKILL				Total
				Professional/ Skilled	Semi-Skilled	Unskilled	Unknown	
Saudi	W2CT	1	Count	20	23	2	1	46
			% within MARSTAT	29.4%	39.7%	66.7%	12.5%	33.3%
		2	Count	48	35	1	7	91
			% within MARSTAT	70.6%	60.3%	33.3%	87.5%	66.4%
	Total		Count	68	58	3	8	137
			% within MARSTAT	100.0%	100.0%	100.0%	100.0%	100.0%
Non-Saudi	W2CT	1	Count	102	55	—	8	165
			% within MARSTAT	79.1%	100.0	—	100.0%	85.9%
		2	Count	27	—	—	—	27
			% within MARSTAT	20.9%	—	—	—	14.1%
	Total		Count	129	55	—	8	192
			% within MARSTAT	100.0%	100.0%	—	100.0	100.0%

III-I. W*JOBSKILL*NAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	3	.674	.569
Within Groups	325		
Total	328		

III-II. W*JOBSKILL*NAT Kruskal-Wallis Test Table

Test Statistics[a, b]

	W
Chi-Square	2.027
Df	3
Significant	.567

a. Kruskal Wallis Test

b. Grouping Variable: JOBSKILL

6.2.9 Age

III-I. W*AGE Pearson Correlation Table

Correlation

		Age	W
AGE	Pearson Correlation	1.0	.208**
	Sig. (2-Tailed)	.	.000
	N	329	328
W	Pearson Correlation	.208**	1.0
	Sig. (2-Tailed)	.000	.
	N	328	329

** Correlation is significant at the 0.01 level (2-tailed).

III-II. W*AGE Spearman's rho Table

Correlation

		Age	W
AGE	Pearson Correlation	1.0	.203**
	Sig. (2-Tailed)	.	.000
	N	329	328
W	Pearson Correlation	.203**	1.0
	Sig. (2-Tailed)	.000	.
	N	328	329

** Correlation is significant at the 0.01 level (2-tailed).

6.3 Human Capital Variable Tables

6.3.1 Education (as Category Variable)

II. W2CT*EDUC*NAT Cross-Tabulation Table

W2CT*EDUC*NAT Cross-tabulation

NAT				EDUC								Total
				Primary School	Elementary School	High School	Diploma	Bachelor of Science	Bachel-or of Art	Master Degree	Ph.D. Degree	
Saudi	W2CT	1	Count	1	5	22	9	2	5	2	—	46
			% within MARSTAT	100%	38.5%	48.9%	28.1%	6.3%	45.5%	66.7%	—	33.6%
		2	Count	—	8	23	23	30	6	1	—	91
			% within MARSTAT	—	61.5%	51.1%	71.9%	93.8%	54.5%	33.3%	—	66.4%
	Total		Count	1	13	45	32	32	11	3	—	137
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%	—	100%
Non-Saudi	W2CT	1	Count	5	4	40	32	62	16	6	—	165
			% within MARSTAT	100%	100%	97.6	88.9%	81.6%	84.2%	60%	—	85.9%
		2	Count	—	—	1	4	14	3	4	1	27
			% within MARSTAT	—	—	2.4%	11.1%	18.4%	15.8%	40%	100%	14.1%
	Total		Count	5	4	41	36	78	19	10	1	192
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%	100%	100%

III-I W*EDUC*NAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	7	2.171	.037
Within Groups	321		
Total	328		

III-II W*EDUC*NAT Kruskal-Wallis Test Table

Test Statistics[a, b]

	W
Chi-Square	26.811
Df	7
Significant	.000

a. Kruskal Wallis Test

b. Grouping Variable: EDUC

6.3.1i. Education (as Continuous Variable)

IIi. W2CT*EDUC*NAT Cross-Tabulation Table

W2CT*EDUC*NAT Cross-tabulation

NAT				EDUC								Total
				6	9	12	14	16	17	19	22	
Saudi	W2CT	1	Count	1	5	22	9	5	2	2	—	46
			% within MARSTAT	100%	38.5%	48.9%	28.1%	45.5%	6.3%	66.7%	—	33.6%
		2	Count	—	8	23	23	6	30	1	—	91
			% within MARSTAT	—	61.5%	51.1%	71.9%	54.5%	93.8%	33.3%	—	66.4%
	Total		Count	1	13	45	32	11	32	3	—	137
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%	—	100%
Non-Saudi	W2CT	1	Count	5	4	40	32	16	62	6	—	165
			% within MARSTAT	100%	100	97.6%	88.9%	84.2%	81.6%	60%	—	85.9%
		2	Count	—	—	1	4	3	14	4	1	27
			% within MARSTAT	—	—	2.4%	11.1%	15.85	18.4%	40%	100%	14.1%
	Total		Count	5	4	41	36	19	76	10	1	192
			% within MARSTAT	100%	100%	100%	100%	100%	100%	100%	100%	100%

III-Ii. W*EDUCONT Pearson Correlation Table

Correlation

		W	EDUCONT
W	Pearson Correlation	1.0	.162**
	Sig. (2-Tailed)	.	.000
	N	329	329
EDUCONT	Pearson Correlation	.162**	1.0
	Sig. (2-Tailed)	.000	.
	N	329	330

** Correlation is significant at the 0.01 level (2-tailed).

III-IIi. W*EDUCONT Spearman's rho Table

Correlation

		W	EDUCONT
W	Pearson Correlation	1.0	.227**
	Sig. (2-Tailed)	.	.000
	N	329	329
EDUCONT	Pearson Correlation	.227**	1.0
	Sig. (2-Tailed)	.000	.
	N	329	330

** Correlation is significant at the 0.01 level (2-tailed).

6.3.2. Level of English

II. W2CT*ENGLISHL*NAT Cross-Tabulation Table

W2CT*ENGLISHL*NAT Cross-Tabulation

NAT				ENGLISHL				Total
				None	Beginner	Intermediate	Advanced	
Saudi	W2CT	1	Count	3	12	26	5	46
			% within MARSTAT	100%	66.7%	34.7%	12.2%	100%
		2	Count	—	6	49	36	91
			% within MARSTAT	—	33.3%	65.3%	87.8%	66.4%
	Total		Count	3	18	75	41	137
			% within MARSTAT	100%	100%	100%	100%	100%
Non-Saudi	W2CT	1	Count	4	17	95	49	165
			% within MARSTAT	100%	100%	96%	68.1%	85.9%
		2	Count	—	—	4	23	27
			% within MARSTAT	—	—	4%	31.9%	14.1%
	Total		Count	4	17	99	72	192
			% within MARSTAT	100%	100%	100%	100%	100%

III-I. W*ENGLISHL*NAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	3	13.190	.000
Within Groups	325		
Total	328		

III-II. W*ENGLISHL*NAT Kruskal-Wallis Test Table

Test Statistics[a, b]

	W
Chi-Square	47.003
Df	3
Significant	.000

a. Kruskal Wallis Test

b. Grouping Variable: ENGLISHL

6.3.3 Level of Computer Skills

II. W2CT*COMPUTRL*NAT Cross-Tabulation Table

W2CT*COMPUTRL*NAT Cross-tabulation

NAT				COMPUTRL				Total
				None	Beginner	Intermediate	Advanced	
Saudi	W2CT	1	Count	9	15	15	6	45
			% within MARSTAT	69.2%	50%	24.6%	18.8%	33.1%
		2	Count	4	15	46	26	91
			% within MARSTAT	30.8%	50%	75.4%	81.3%	66.9%
	Total		Count	13	30	61	31	136
			% within MARSTAT	100%	100%	100%	100%	100%
Non-Saudi	W2CT	1	Count	40	45	52	28	165
			% within MARSTAT	97.6%	95.7%	80%	71.8%	85.9%
		2	Count	1	2	13	11	27
			% within MARSTAT	2.4%	4.3%	20%	28.2%	14.1%
	Total		Count	41	47	65	39	192
			% within MARSTAT	100%	100%	100%	100%	100%

III-I. W*COMPUTRL*NAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	3	18.001	.000
Within Groups	324		
Total	327		

III-II. W*COMPUTRL*NAT Kruskal-Wallis Test Table

Test Statistics[a, b]

	W
Chi-Square	11.863
Df	1
Significant	.001

a. Kruskal Wallis Test
b. Grouping Variable: COMPUTRL

6.3.4. Experience

III-I. W*CURRTEXP Pearson Correlation Table

Correlation

		W	CURRTEXP
W	Pearson Correlation	1.0	.302**
	Sig. (2-Tailed)	.	.000
	N	329	329
CURRTEXP	Pearson Correlation	.302**	1.0
	Sig. (2-Tailed)	.000	.
	N	329	330

** Correlation is significant at the 0.01 level (2-tailed).

III.Ii. W*CURRTEXP Spearman's rho Table

Correlation

		W	CURRTEXP
W	Pearson Correlation	1.0	.282**
	Sig. (2-Tailed)	.	.000
	N	329	329
CURRTEXP	Pearson Correlation	.282**	1.0
	Sig. (2-Tailed)	.000	.
	N	329	330

** Correlation is significant at the 0.01 level (2-tailed).

III-II. W*PREVEXP Pearson Correlation Table

Correlation

		W	PREVEXP
W	Pearson Correlation	1.0	.302**
	Sig. (2-Tailed)	.	.000
	N	329	329
PREVEXP	Pearson Correlation	.302**	1.0
	Sig. (2-Tailed)	.000	.
	N	329	330

** Correlation is significant at the 0.01 level (2-tailed).

III-IIi. W*PREVEXP Spearman's rho Table

Correlation

		W	PREVEXP
W	Pearson Correlation	1.0	.282**
	Sig. (2-Tailed)	.	.000
	N	329	329
PREVEXP	Pearson Correlation	.282**	1.0
	Sig. (2-Tailed)	.000	.
	N	329	330

** Correlation is significant at the 0.01 level (2-tailed).

6.4 Segmented Labour Market Variables

6.4.1 Firm Ownership

II. W2CT*FIRMOWNR Cross-Tabulation Table

W2CT*FIRMOWNR*NAT Cross-Tabulation

NAT				FIRMOWNR			Total
				Owned by Saudis	Owned by Non-Saudis	Joint Venture	
Saudi	W2CT	1	Count	38	—	8	46
			% within MARSTAT	49.4%	—	13.3%	33.6%
		2	Count	39	—	52	91
			% within MARSTAT	50.6%	—	86.7%	66.4%
	Total		Count	77	—	60	137
			% within MARSTAT	100%	—	100%	100%
Non-Saudi	W2CT	1	Count	146	8	11	165
			% within MARSTAT	91.8%	80%	47.8%	85.9%
		2	Count	13	2	12	27
			% within MARSTAT	8.2%	20%	52.2%	14.1%
	Total		Count	159	10	23	192
			% within MARSTAT	100%	100%	100%	100%

III-I. W*FIRMOWNR ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	2	60.148	.000
Within Groups	326		
Total	328		

III-II. W*FIRMOWNR Kruskal-Wallis Test Table

Test Statistics[a, b]

	W
Chi-Square	85.747
Df	2
Significant	.000

a. Kruskal Wallis Test

b. Grouping Variable: FIRMOWNR

6.4.2. Type of Firm

II. W2CT*FIRMTYPE*NAT Cross-Tabulation Table

W2CT*FIRMTYPE*NAT Cross-tabulation

NAT				FIRMTYPE								Total
				Industr-ial	Comm e-rcial	Agricu ltural	Finance and Insuranc e	Transpo-rtation	Constru-ction	Services	Others	
Saudi	W2-CT	1	Count % within MARSTAT	15 19.2%	5 60.5%	8 61.5%	1 25%	— —	— —	10 40°•	7 87.5°•	46 33.6°•
		2	Count % within MARSTAT	63 80.8%	3 37.5%	5 38.5%	3 75%	1 100%	— —	15 60°•	1 12.5°•	91 66.4°•
	Total		Count % within MARSTAT	78 100%	8 100%	13 100%	4 100%	1 100%	— —	25 100°•	8 100°•	137 100°•
Non-Saudi	W2-CT	1	Count % within MARSTAT	23 67.6%	27 90%	18 81.8%	1 100%	4 80%	36 97.3°•	40 90°•	16 84.2°•	165 85.9°•
		2	Count % within MARSTAT	11 32.4%	3 10%	4 18.2%	— —	1 20%	1 2.7°•	4 9.1°•	3 15.8°•	27 14.1°•
	Total		Count % within MARSTAT	34 100%	30 100%	22 100%	1 100%	5 100%	37 100°•	44 100°•	19 100°•	192 100°•

III-I. W*FIRMTYPE ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	7	14.281	.000
Within Groups	321		
Total	328		

III-II. W*FIRMTYPE Kruskal-Wallis Test Table

Test Statistics[a, b]

	W
Chi-Square	85.747
Df	2
Significant	.000

a. Kruskal Wallis Test
b. Grouping Variable: FIRMTYPE

6.4.3 Number of Employees

IIi. W2CT*EMYCAT20*NAT Cross-Tabulation Table

W2CT*EMYCAT20*NAT Cross-Tabulation

NAT				ENYCAT20		Total
				1	2	
Saudi	W2CT	1	Count	5	41	46
			% within MARSTAT	83.3%	31.3%	33.6%
		2	Count	1	90	91
			% within MARSTAT	16.7%	68.7%	66.4%
	Total		Count	6	131	137
			% within MARSTAT	100%	100%	100%
Non-Saudi	W2CT	1	Count	24	141	165
			% within MARSTAT	92.3%	84.9%	85.9%
		2	Count	2	25	27
			% within MARSTAT	7.7%	15.1%	14.1%
	Total		Count	26	166	192
			% within MARSTAT	100%	100%	100%

IIii. W2CT*EMYCAT40*NAT Cross-Tabulation Table

W2CT*EMYCAT40*NAT Cross-Tabulation

NAT				ENYCAT40		Total
				1	2	
Saudi	W2CT	1	Count	6	40	46
			% within MARSTAT	75%	31%	33.6%
		2	Count	2	89	91
			% within MARSTAT	25%	69%	66.4%
	Total		Count	8	129	137
			% within MARSTAT	100%	100%	100%
Non-Saudi	W2CT	1	Count	46	119	165
			% within MARSTAT	92%	83.8%	85.9%
		2	Count	4	23	27
			% within MARSTAT	8%	16.2%	14.1%
	Total		Count	50	142	192
			% within MARSTAT	100%	100%	100%

IIiii. W2CT*EMYCAT500*NAT Cross-Tabulation Table

W2CT*EMYCAT500*NAT Cross-Tabulation

NAT				ENYCAT500		Total
				1	2	
Saudi	W2CT	1	Count	26	20	46
			% within MARSTAT	54.2%	22.5%	33.6%
		2	Count	22	69	91
			% within MARSTAT	45.8%	77.5%	66.4%
	Total		Count	48	89	137
			% within MARSTAT	100%	100%	100%
Non-Saudi	W2CT	1	Count	105	60	165
			% within MARSTAT	89.7%	80%	85.9%
		2	Count	12	15	27
			% within MARSTAT	10.3%	20%	14.1%
	Total		Count	117	75	192
			% within MARSTAT	100%	100%	100%

III-I. W*EMYCAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	**11**	**8.129**	**.000**
Within Groups	**317**		
Total	**328**		

III-II. W*EMYCAT Kruskal-Wallis Test Table

Test Statistics[a, b]

	W2CT
Chi-Square	**85.747**
Df	**2**
Significant	**.000**

a. **Kruskal Wallis Test**
b. **Grouping Variable: EMYCAT**

6.4.4 Firm Grade

II. W2CT*FIRMGRAD*NAT Cross-Tabulation Table

W2CT*FIRMGRAD*NAT Cross-Tabulation

NAT				FIRMGRAD				Total
				High	Mediu m	Low	Unknown	
Saudi	W2CT	1	Count	22	15	7	2	46
			% within MARST AT	27.5	34	87.5	40	33.6
		2	Count	58	29	1	3	91
			% within MARST AT	72.5	66	12.5	60	66.4
	Total		Count	80	44	8	5	137
			% within MARST AT	100	100	100	100	100
Non-Saudi	W2CT	1	Count	33	38	19	75	165
			% within MARST AT	76.7	85	86	91.5	85.9
		2	Count	10	7	3	7	27
			% within MARST AT	23.3	16	14	8.5	14.1
	Total		Count	43	45	22	82	192
			% within MARST AT	100	100	100	100	100

III-I. W*FIRMGRAD*NAT ANOVA Table

ANOVA

W

	df	F	Significant
Between Groups	5	12.716	.000
Within Groups	323		
Total	328		

III-II. W*FIRMGRAD*NAT Kruskal-Wallis Test Table

Test Statistics[a, b]

	W2CT
Chi-Square	53.947
Df	5
Significant	.005

a. Kruskal Wallis Test

b. Grouping Variable: FIRMGRAD

6.5 Current and First Salary Variables

III-I. W*ANLFTWAG Pearson Correlation Table

Correlation

		W	*ANLFTWAG*
W	**Pearson Correlation**	**1.0**	**.321****
	Sig. (2-Tailed)	**.**	**.000**
	N	**329**	**316**
ANLFTWAG	**Pearson Correlation**	**.321****	**1.0**
	Sig. (2-Tailed)	**.000**	**.**
	N	**316**	**317**

**** Correlation is significant at the 0.01 level (2-tailed).**

III-II. W*ANLFTWAG Spearman's rho Table

Correlation

		W	*ANLFTWAG*
W	**Pearson Correlation**	**1.0**	**.841****
	Sig. (2-Tailed)	**.**	**.000**
	N	**329**	**316**
ANLFTWAG	**Pearson Correlation**	**.841****	**1.0**
	Sig. (2-Tailed)	**.000**	**.**
	N	**316**	**317**

**** Correlation is significant at the 0.01 level (2-tailed).**

Appendix E: Figures for Chapter Seven

Figure 7.1

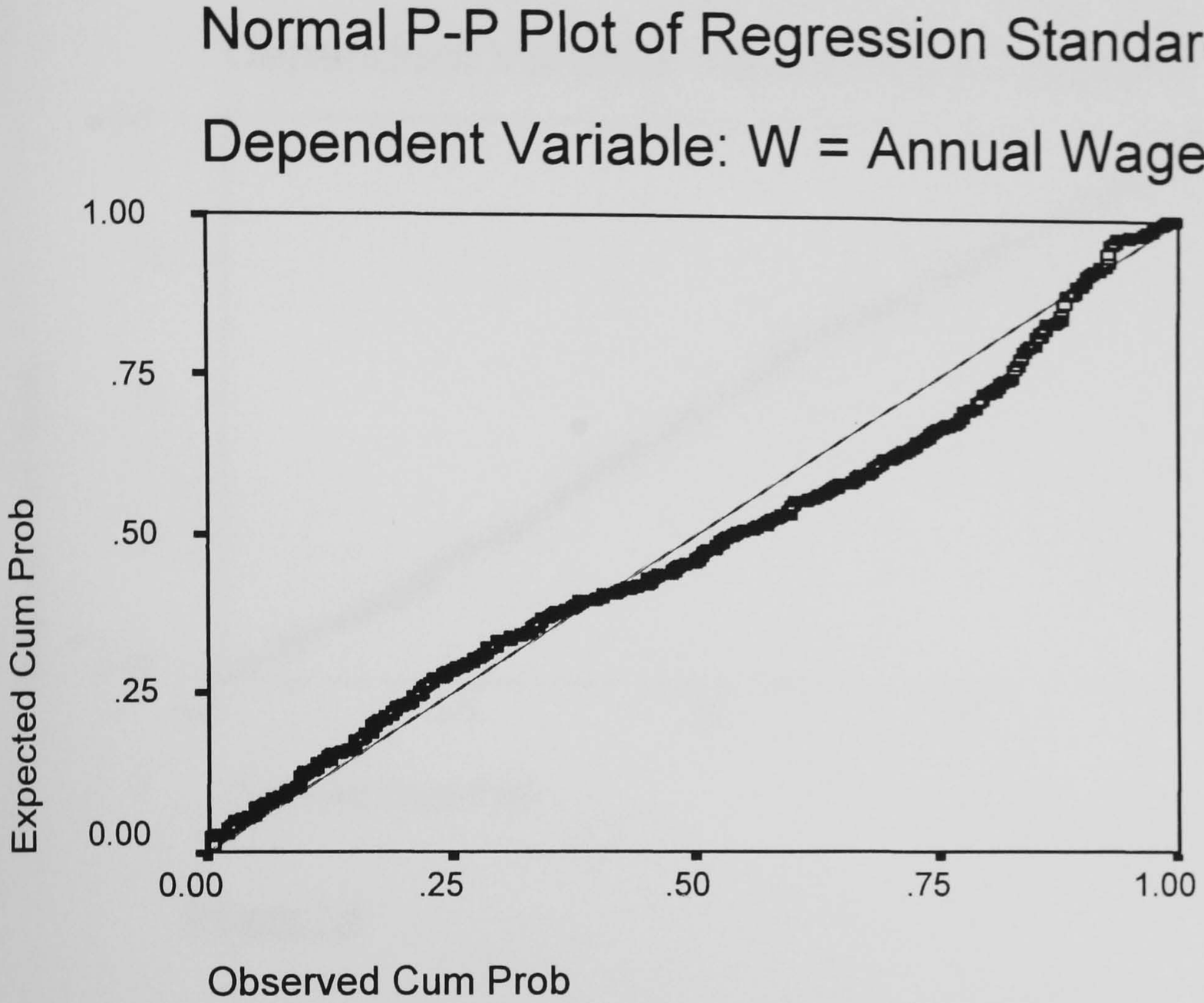


Figure 7.2

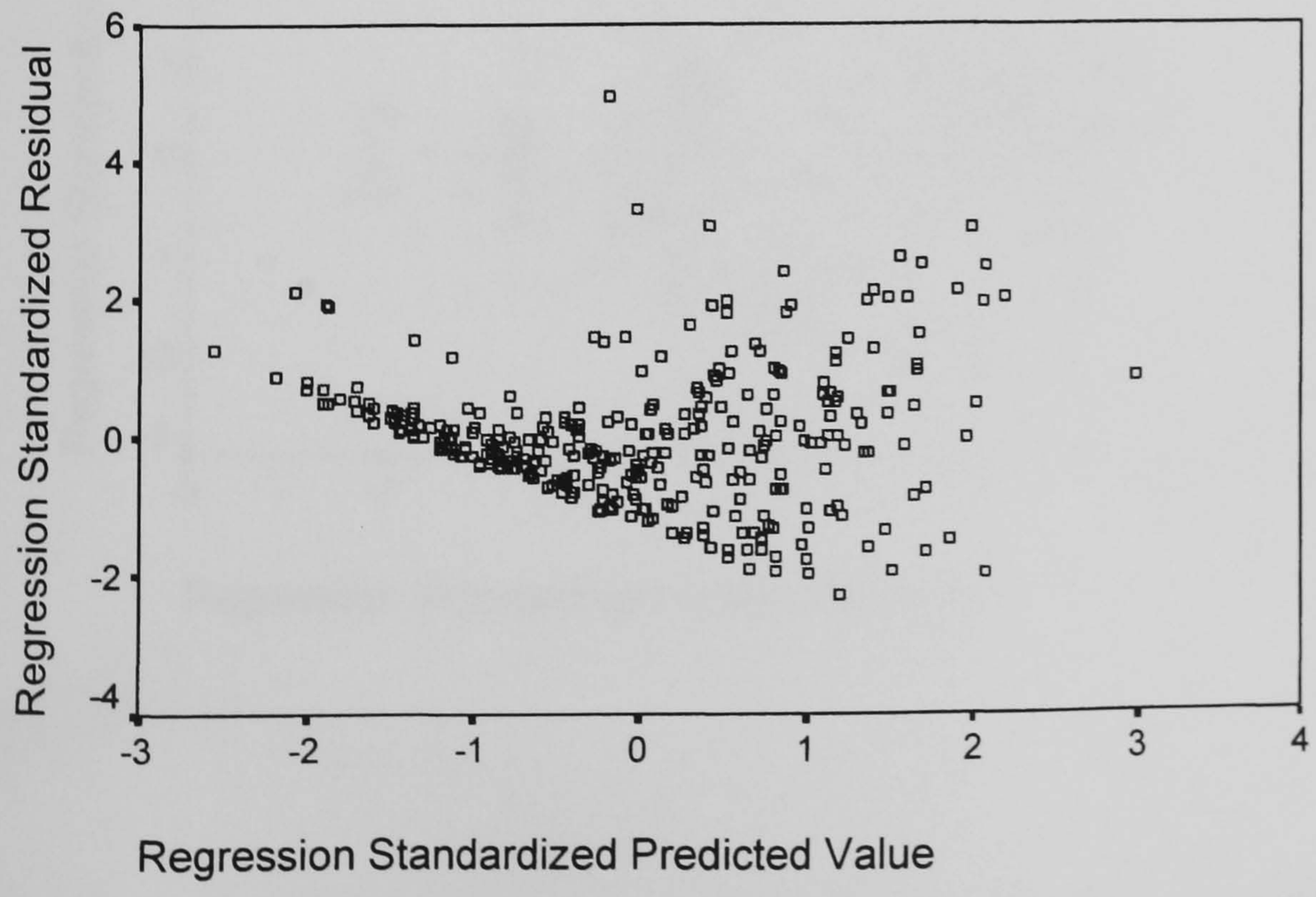


Figure 7.3

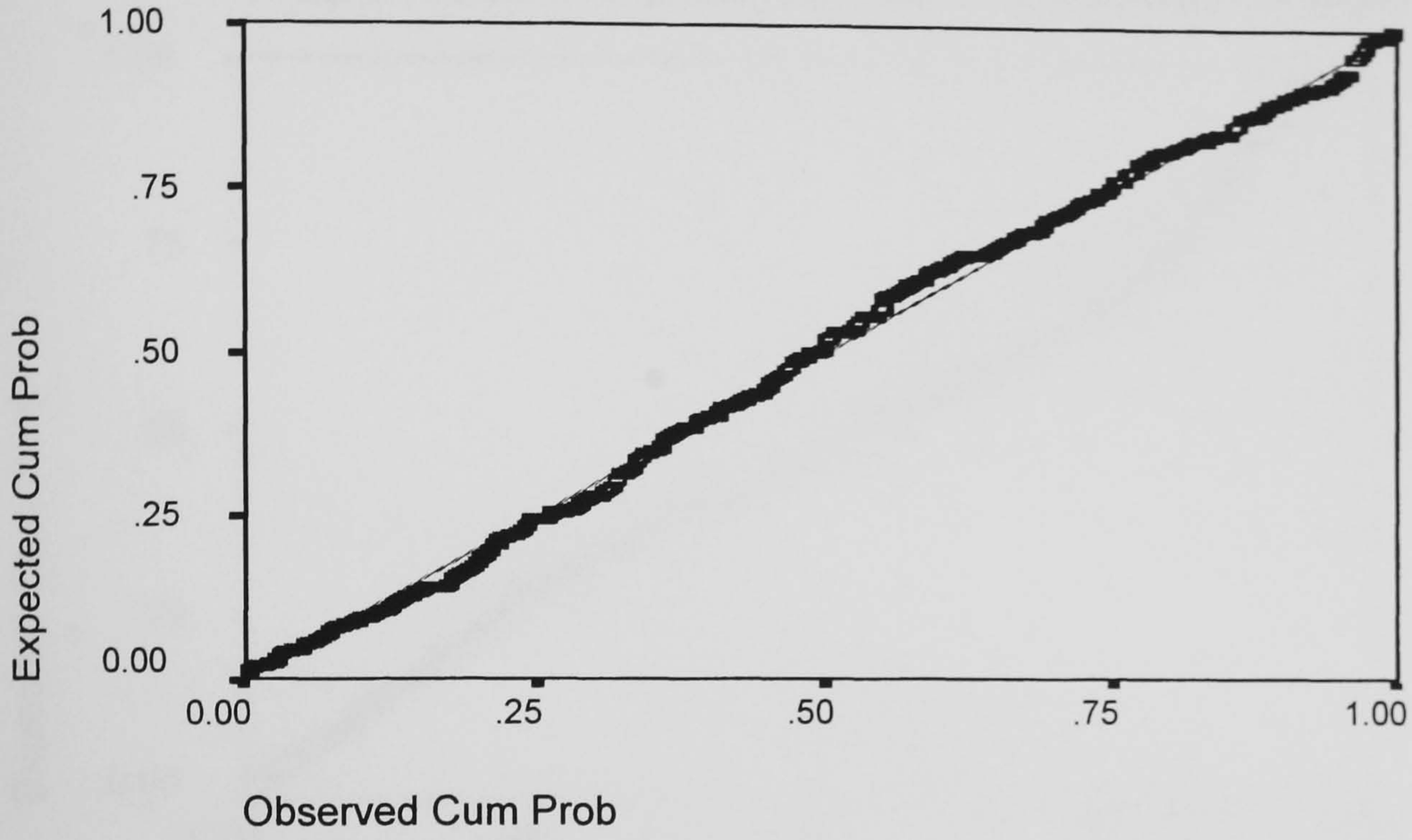


Figure 7.4

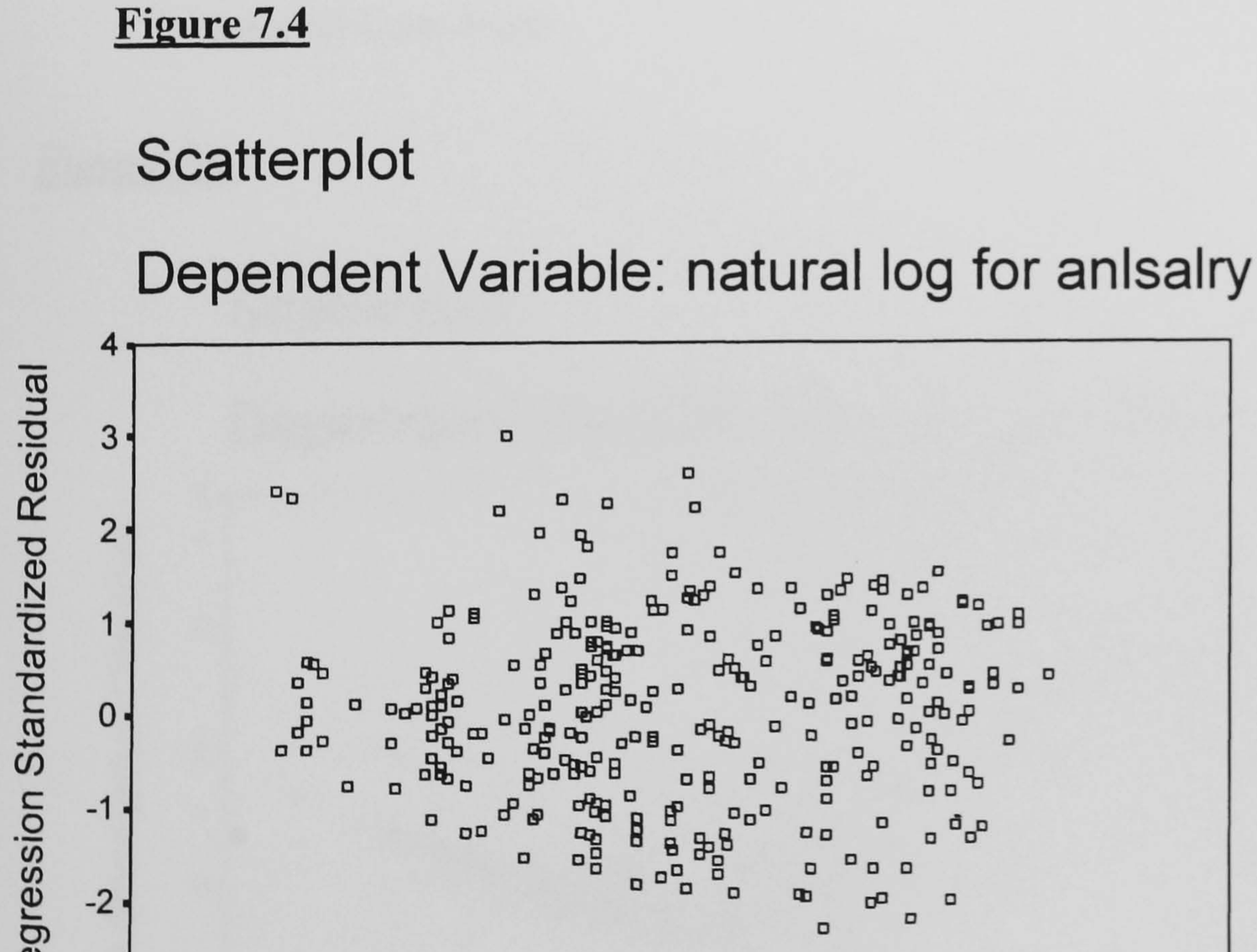


Figure 7.5

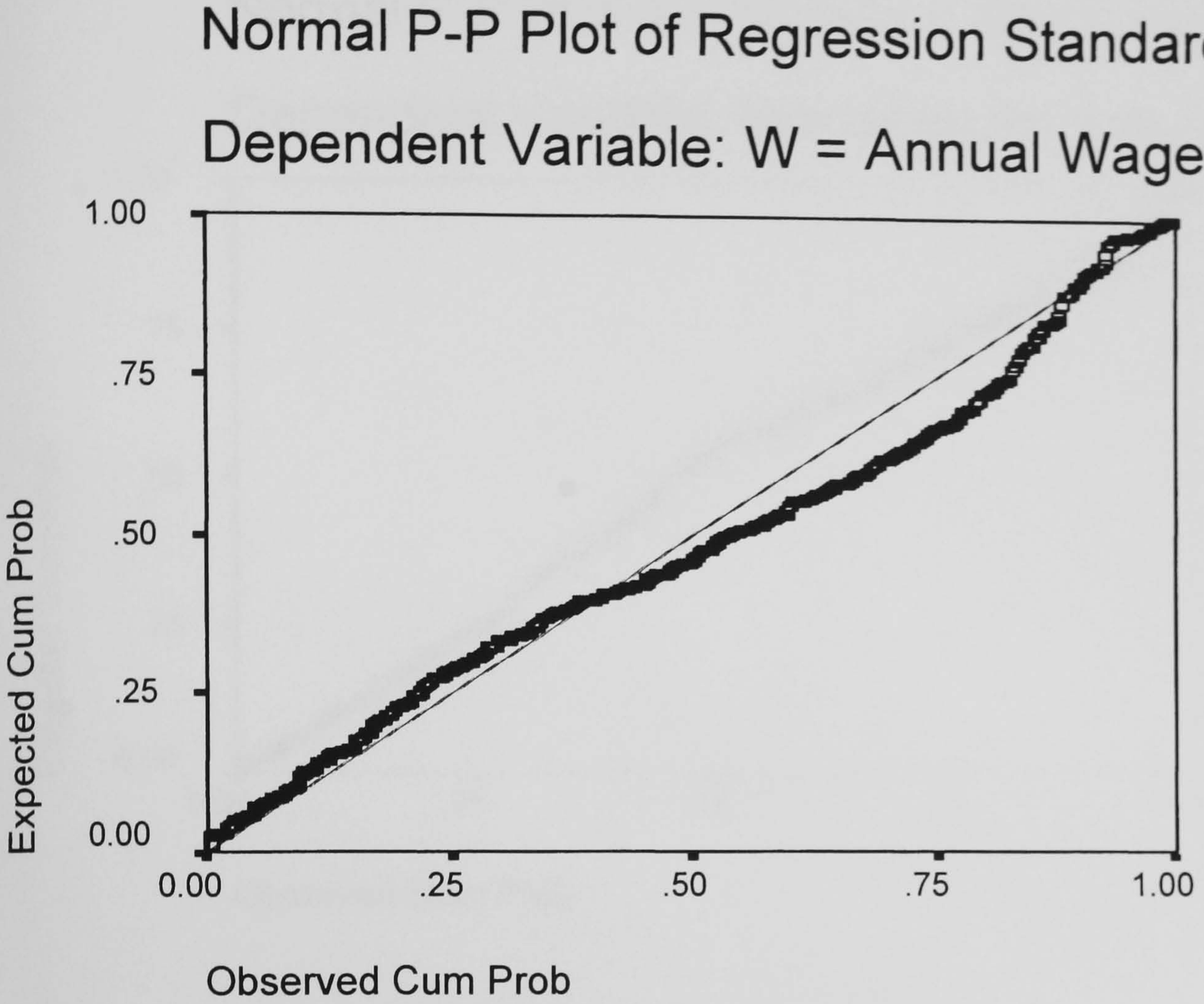


Figure 7.6

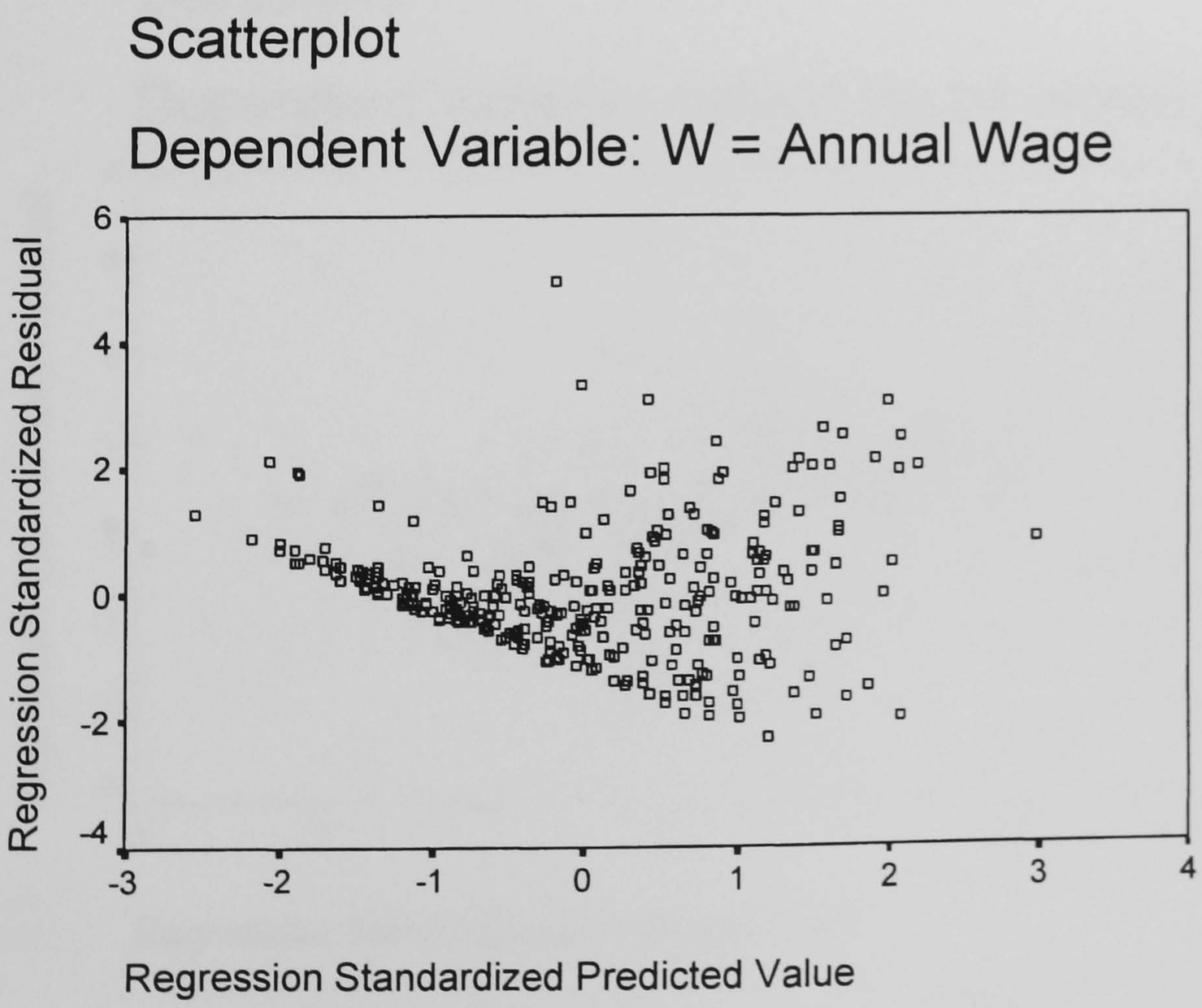


Figure 7.7

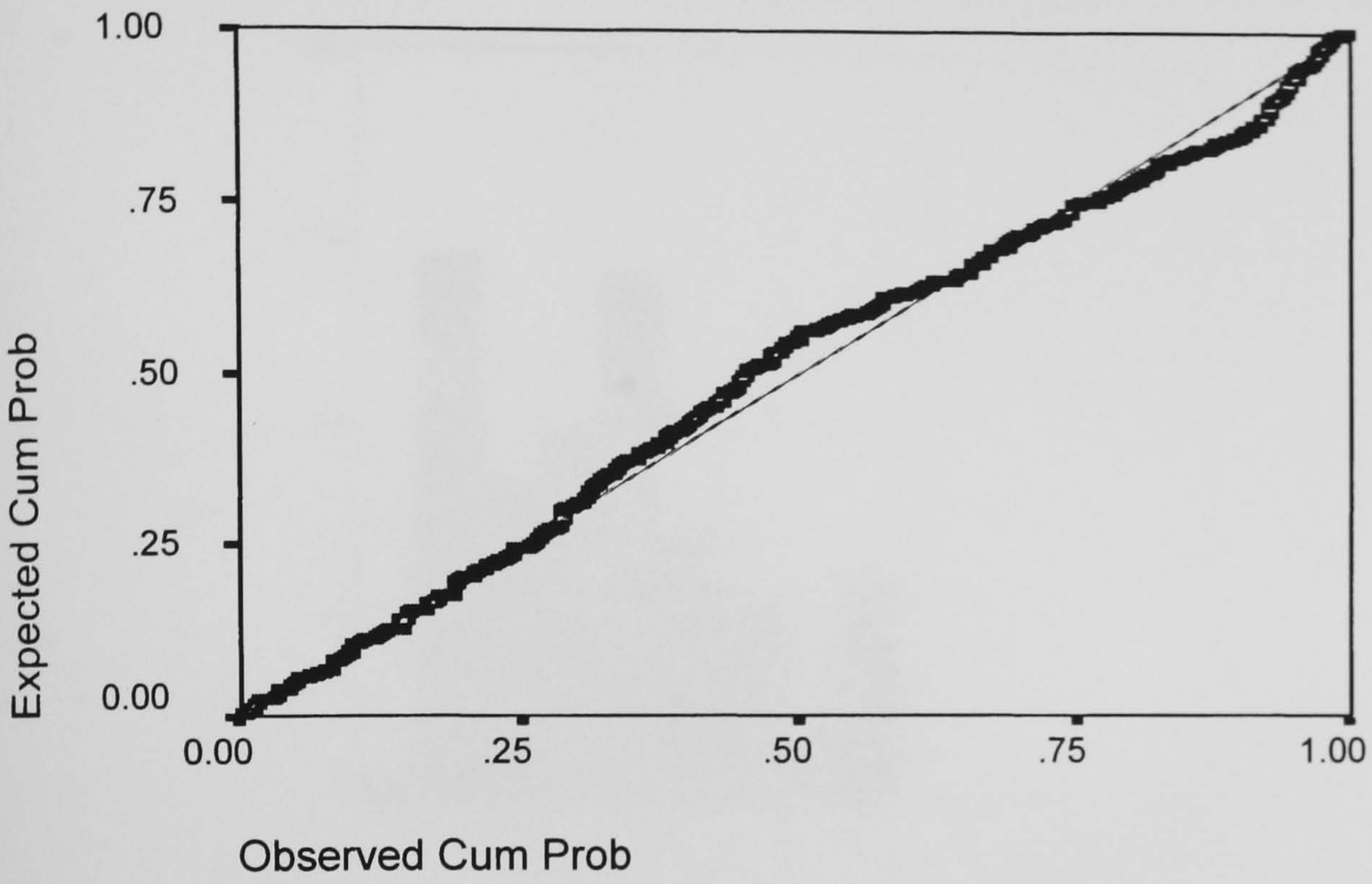
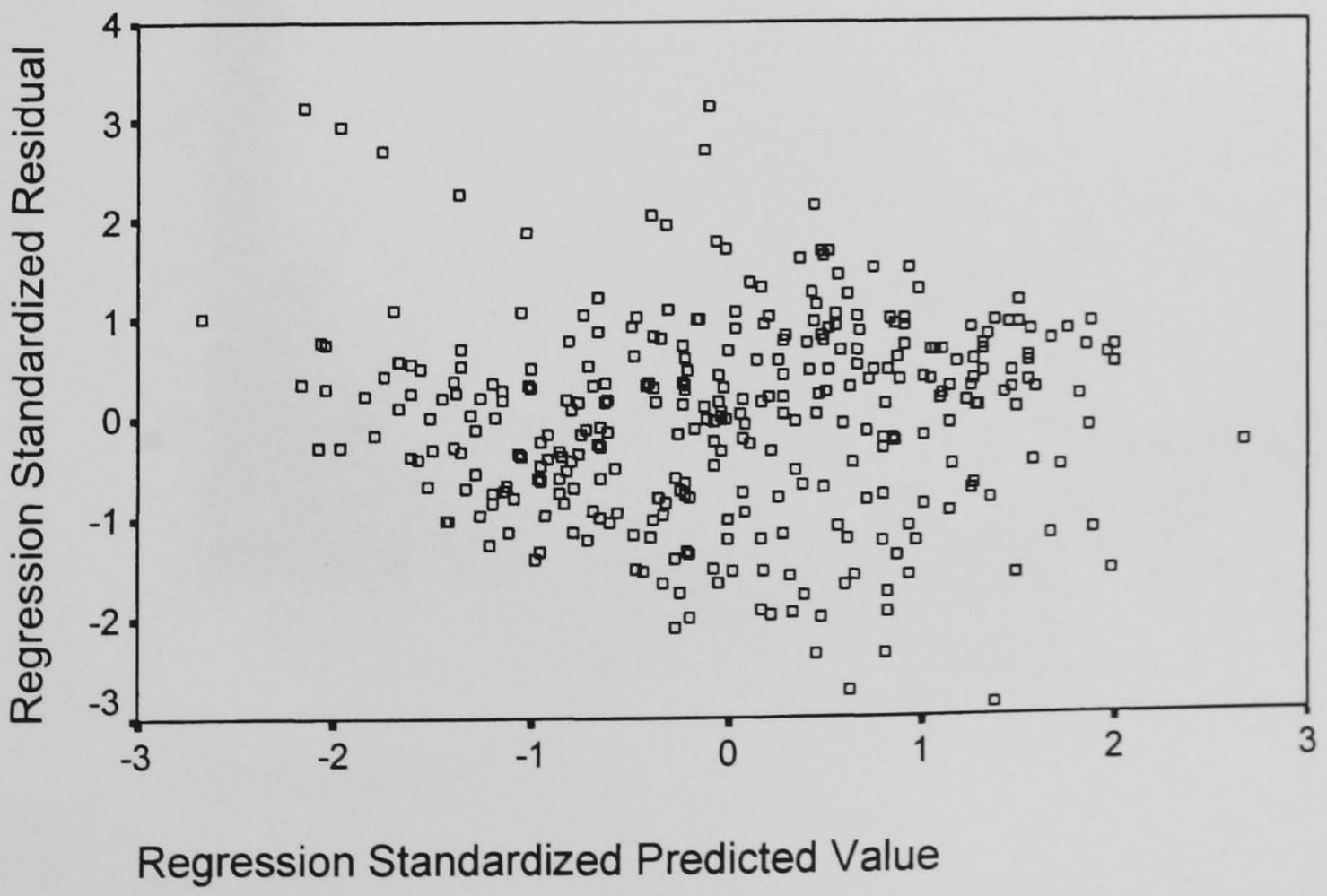


Figure 7.8



Appendix F: Figures for Chapter Eight

Figures 8.1 Histogram for Saudi Employees

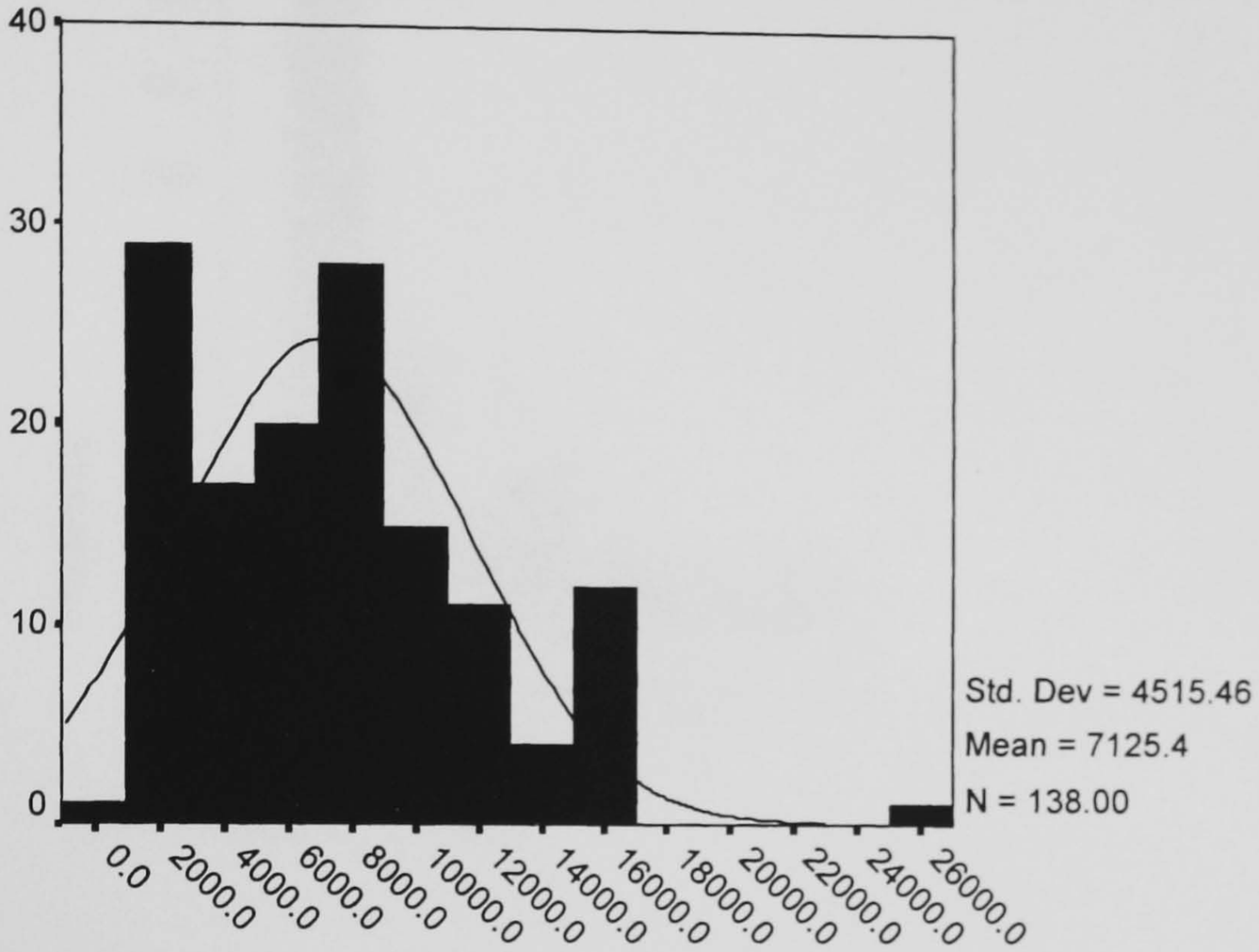


Figure 8.2 Histogram for Non-Saudi Employees

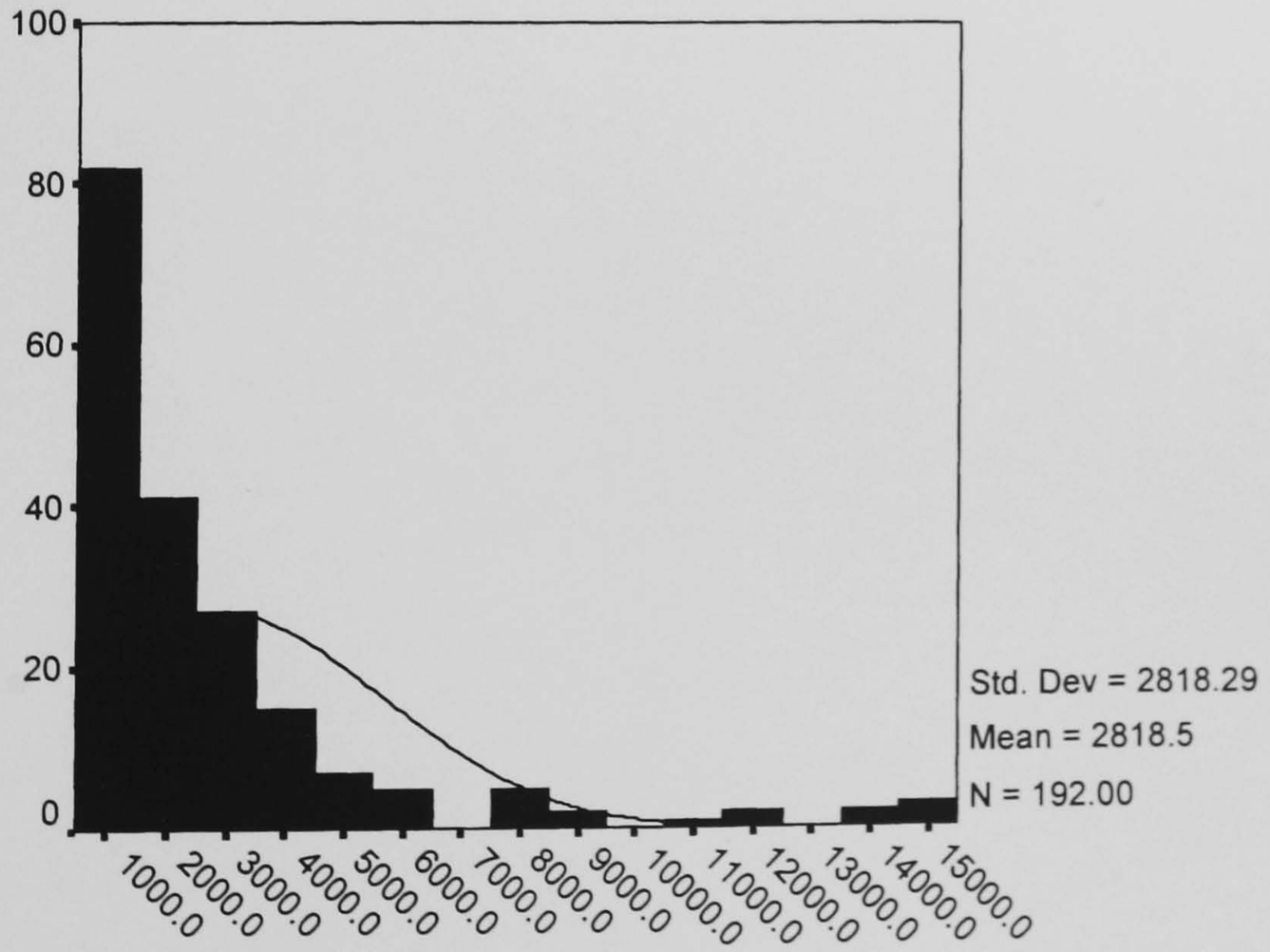


Figure 8.3 Histogram for Saudi and Non-Saudi Employees