CORPORATE GOVERNANCE: THE EFFECTS
OF BOARD CHARACTERISTICS,
INFORMATION TECHNOLOGY MATURITY
AND TRANSPARENCY ON COMPANY
PERFORMANCE

By

Sinan DÜZTAŞ

Supervisor
Prof. Dr. İ. Atilla DİCLE

Submitted to the Graduate Institute of Social Sciences
In partial fulfilment of the requirements for the degree of
Doctor of Philosophy (Management and Organisation)

İSTANBUL, 2008
CORPORATE GOVERNANCE: THE EFFECTS OF BOARD CHARACTERISTICS, INFORMATION TECHNOLOGY MATURITY AND TRANSPARENCY ON COMPANY PERFORMANCE

By

Sinan DÜZTAŞ

Supervisor
Prof. Dr. İ. Atilla DİCLE

Submitted to the Graduate Institute of Social Sciences
In partial fulfilment of the requirements for the degree of
Doctor of Philosophy (Management and Organisation)

İSTANBUL, 2008
DOKTORA TEZ SAVUNMA TUTANAĞI

27.06.2008

SOSYAL HİLIMLER ENSTİTÜSÜ MÜDÜRLÜĞÜNE,

İşletme Ana Bilim Dalı, "YÖNETİM VE ORGANİZASYON" Bilim Dalı doktora öğrencilerinden Sinan DOĞTAŞ 2547 Sayılı YÖK Yasası ve Yeditepe Üniversitesi Lisansüstü Yönetmeliğine uyan olarak 27.06.2008 tarihinde saat 11:00 "de "TEZ SAVUNMA" toplandırılsına alınmıştır. 2 saat süren konuş, ve sora-çevap seansı jürimiz tarafından değerlendirilmiştir, adil geçen aday oyuşu ile BAŞARILI / BAŞARISIZ

Bu tutanakın taraflıdırca üç nüsha olarak 27.06.2008 tarihinde ve saat ............. de imzalanmıştır.

Bilgi edinilmesini ve gereğini saygılarımıza arz ederiz.

Prof. Dr. Atilla DICLE (Danışman)
Yeditepe Ü., İşletme Bölümü

Prof. Dr. İsmail ANAR
Yeditepe Ü., İletişim Fakültesi

Doç. Dr. Meltem YAHYAĞIL
Yeditepe Ü., İşletme Bölümü

Prof. Dr. Gürhan GÜRBÜZ
Marmara Üniversitesi

Prof. Dr. Ulku Dicle

(*) Lisansüstü Eğitim-Öğretim Yönetmeliğinin 73. Maddesine istinaden oyuşu / oyuşu ile tezin düzeltmeleri yapmaya kabul edildi.
# TABLE OF CONTENTS

**LIST OF ABBREVIATIONS** .......................................................................................... iii
**LIST OF FIGURES** ....................................................................................................... iv
**LIST OF TABLES** ......................................................................................................... v
**ACKNOWLEDGEMENTS** .............................................................................................. vii
**ABSTRACT** ..................................................................................................................... ix
**ÖZET** .............................................................................................................................. x

1. **INTRODUCTION** ........................................................................................................ 11
   1.1 Purpose of the Study .............................................................................................. 13
   1.2 Importance of the Study ........................................................................................ 13

2. **LITERATURE REVIEW** ............................................................................................ 16
   2.1 Corporate Governance .......................................................................................... 16
      2.1.1 Background ...................................................................................................... 16
      2.1.2 Definition of Corporate Governance ............................................................. 19
      2.1.3 Legislating For Good Governance ................................................................. 21
   2.2 Theories about Corporate Governance .................................................................. 28
      2.2.1 Agency Theory ................................................................................................ 28
      2.2.2 Stewardship Theory ....................................................................................... 33
      2.2.3 Contrasting Approaches to Governance ......................................................... 38
      2.2.4 Resource Dependence Theory ....................................................................... 39
      2.2.5 Signaling Theory ............................................................................................. 40
   2.3 Roles and Responsibilities ...................................................................................... 41
      2.3.1 The Board of Directors .................................................................................. 41
      2.3.2 The CEO and Management .......................................................................... 43
      2.3.3 Relationships with Stakeholders ................................................................... 44
   2.4 Board Operations ................................................................................................... 46
      2.4.1 Management Development and Succession .................................................... 48
      2.4.2 Board and Committee Evaluation .................................................................. 49
   2.5 Accountability ......................................................................................................... 49
   2.6 Corporate Social Responsibility, Business Ethics and Corporate Governance .......... 51
   2.7 Audit Committees .................................................................................................. 52
   2.8 Corporate Ethics .................................................................................................... 53
   2.9 Corporate Governance Rating Systems .................................................................. 53
   2.10 Board Structure, Information Technology, Transparency and Company Performance .......................................................... 56
      2.10.1 Corporate Governance and Company Performance ....................................... 56
      2.10.2 Board of Directors Structure ....................................................................... 59
      2.10.3 Transparency ................................................................................................ 75
      2.10.4 Information Technology ............................................................................... 78
   2.11 Corporate Governance in Turkey ......................................................................... 81

3. **RESEARCH DESIGN AND METHODOLOGY** ....................................................... 85
   3.1 Objectives and the Scope of the Research .............................................................. 85
   3.2 Research Outline ................................................................................................... 85
   3.3 Research Framework ............................................................................................ 86
      3.3.1 Board structure .............................................................................................. 87
      3.3.2 Transparency and Disclosure ....................................................................... 88
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3.3 Information Technology Maturity</td>
<td>90</td>
</tr>
<tr>
<td>3.3.4 Company Performance</td>
<td>93</td>
</tr>
<tr>
<td>3.4 Data Collection Method and Instrument</td>
<td>95</td>
</tr>
<tr>
<td>3.5 Sampling</td>
<td>101</td>
</tr>
<tr>
<td>3.6 Data Analysis Method</td>
<td>102</td>
</tr>
<tr>
<td>3.7 Definition of Key Terms</td>
<td>107</td>
</tr>
<tr>
<td>3.8 Hypotheses</td>
<td>109</td>
</tr>
<tr>
<td>4. ANALYSIS OF THE RESULTS</td>
<td>121</td>
</tr>
<tr>
<td>4.1 Reliability of Results</td>
<td>121</td>
</tr>
<tr>
<td>4.2 Research Results</td>
<td>124</td>
</tr>
<tr>
<td>4.3 Hypotheses Tests</td>
<td>143</td>
</tr>
<tr>
<td>4.4 Interpretation of Findings</td>
<td>166</td>
</tr>
<tr>
<td>5. CONCLUSION AND RECOMMENDATIONS</td>
<td>177</td>
</tr>
<tr>
<td>5.1 The Contributions and Limitations of the Study</td>
<td>179</td>
</tr>
<tr>
<td>5.1.1 Contributions to the Literature</td>
<td>179</td>
</tr>
<tr>
<td>5.1.2 Contributions to Business</td>
<td>179</td>
</tr>
<tr>
<td>5.1.3 Limitations</td>
<td>180</td>
</tr>
<tr>
<td>5.2 Recommendations for Future Research</td>
<td>181</td>
</tr>
<tr>
<td>5.2.1 The Essence</td>
<td>182</td>
</tr>
<tr>
<td>6. REFERENCES</td>
<td>183</td>
</tr>
<tr>
<td>7. APPENDIX – A</td>
<td>200</td>
</tr>
<tr>
<td>8. APPENDIX – B</td>
<td>203</td>
</tr>
<tr>
<td>9. APPENDIX - C</td>
<td>208</td>
</tr>
<tr>
<td>10. BIOGRAPHY</td>
<td>211</td>
</tr>
</tbody>
</table>
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/M</td>
<td>Book-to-Market (B/M) ratio</td>
</tr>
<tr>
<td>CAR</td>
<td>Cumulative Abnormal Returns</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CFO</td>
<td>Chief Finance Officer</td>
</tr>
<tr>
<td>CG</td>
<td>Corporate Governance</td>
</tr>
<tr>
<td>CGFT</td>
<td>Corporate Governance Forum of Turkey</td>
</tr>
<tr>
<td>CPA</td>
<td>Certified Public Accountant</td>
</tr>
<tr>
<td>DVFA</td>
<td>Society of Investment Professionals</td>
</tr>
<tr>
<td>FRC</td>
<td>Financial Reporting Council</td>
</tr>
<tr>
<td>ICGN</td>
<td>International Corporate Governance Network</td>
</tr>
<tr>
<td>IMKB</td>
<td>Istanbul Stock Exchange</td>
</tr>
<tr>
<td>IS</td>
<td>Information Systems</td>
</tr>
<tr>
<td>ISE</td>
<td>Istanbul Stock Exchange</td>
</tr>
<tr>
<td>ISS</td>
<td>Institutional Shareholder Services</td>
</tr>
<tr>
<td>NED</td>
<td>Non Executive Director</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on Asset</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>Standard and Poor’s</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>YTL</td>
<td>New Turkish Lira</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 2.1 Principal’s choice agent vs. steward………………………………………………..35
Figure 2.2 Contrasting approaches to corporate governance…………………………………..38
Figure 3.1 Initial research model……………………………………………………………….86
Figure 3.2 Initial research model………………………………………………………………110
Figure 4.1 IT maturity questionnaire – Demographics (Age)………………………………..125
Figure 4.2 IT maturity questionnaire – Demographics (Gender)……………………………..126
Figure 4.3 IT maturity questionnaire – Demographics (Education)………………………….127
Figure 4.4 IT maturity questionnaire – Organisational Structure…………………………..128
Figure 4.5 IT maturity questionnaire – Sector………………………………………………….129
Figure 4.6 IT maturity questionnaire – Industry……………………………………………….131
Figure 4.7 IT maturity questionnaire – Factors and Sub-Concepts………………………….137
Figure 4.8 Reliability test for Factor1…………………………………………………………135
Figure 4.9 Reliability for Factor2……………………………………………………………..136
Figure 4.10 Reliability test for Factor3…………………………………………………………137
Figure 4.11 Reliability for Factor4……………………………………………………………..138
Figure 4.12 CEO/Chairman duality distribution……………………………………………….140
Figure 4.13 Board size distribution…………………………………………………………….141
Figure 4.14 Outsider board member distribution……………………………………………….142
Figure 4.15 Revised research model…………………………………………………………..167
Figure 4.16 Revised research model – Main correlations results…………………………….168
Figure 4.17 Results for moderating effects of transparency and IT maturity………………….169
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Three highest profiles and most critical sections of SOX</td>
<td>37</td>
</tr>
<tr>
<td>2.2</td>
<td>Agency vs. stewardship theory comparison</td>
<td>38</td>
</tr>
<tr>
<td>2.3</td>
<td>Five dimensions of accountability</td>
<td>50</td>
</tr>
<tr>
<td>2.4</td>
<td>Carroll’s “Pyramid of Corporate Social Responsibility”</td>
<td>52</td>
</tr>
<tr>
<td>2.5</td>
<td>Classification of the criteria used by corporate governance and board-rating systems</td>
<td>55</td>
</tr>
<tr>
<td>3.1</td>
<td>Board structure data collection template</td>
<td>96</td>
</tr>
<tr>
<td>3.2</td>
<td>IT maturity questionnaire – IT related questions</td>
<td>98</td>
</tr>
<tr>
<td>3.3</td>
<td>Sample of 105 transparency and disclosure attributes</td>
<td>99</td>
</tr>
<tr>
<td>3.4</td>
<td>Thomson Financials’ quotation for historical company data</td>
<td>100</td>
</tr>
<tr>
<td>3.5</td>
<td>Correlation types and coefficients</td>
<td>106</td>
</tr>
<tr>
<td>3.6</td>
<td>Australian board characteristics compared with USA and UK boards</td>
<td>114</td>
</tr>
<tr>
<td>3.7</td>
<td>Guideline recommendations in different countries</td>
<td>117</td>
</tr>
<tr>
<td>3.8</td>
<td>Statistical methods used for hypothesis testing</td>
<td>120</td>
</tr>
<tr>
<td>4.1</td>
<td>Reliability Test result for initial questionnaires</td>
<td>121</td>
</tr>
<tr>
<td>4.2</td>
<td>Reliability results for final study – IT maturity questionnaire</td>
<td>123</td>
</tr>
<tr>
<td>4.3</td>
<td>IT maturity questionnaire – Demographics (Age)</td>
<td>124</td>
</tr>
<tr>
<td>4.4</td>
<td>IT maturity questionnaire – Demographics(Gender)</td>
<td>125</td>
</tr>
<tr>
<td>4.5</td>
<td>IT maturity questionnaire – Demographics(Education)</td>
<td>126</td>
</tr>
<tr>
<td>4.6</td>
<td>IT maturity questionnaire – Organisation Structure</td>
<td>128</td>
</tr>
<tr>
<td>4.7</td>
<td>IT maturity questionnaire – Sector</td>
<td>129</td>
</tr>
<tr>
<td>4.8</td>
<td>IT maturity questionnaire – Industry</td>
<td>130</td>
</tr>
<tr>
<td>4.9</td>
<td>IT questionnaire - KMO and Bartlett’s Test</td>
<td>131</td>
</tr>
<tr>
<td>4.10</td>
<td>IT maturity questionnaire – Total Variance Explained</td>
<td>132</td>
</tr>
<tr>
<td>4.11</td>
<td>IT questionnaire – Factor analysis - Rotated Component Matrix</td>
<td>133</td>
</tr>
<tr>
<td>4.12</td>
<td>IT questionnaire – Component Transformation Matrix</td>
<td>135</td>
</tr>
<tr>
<td>4.13</td>
<td>CEO/Chairman duality, board size, and outsider board members’ means</td>
<td>139</td>
</tr>
<tr>
<td>4.14</td>
<td>CEO/Chairman duality frequency statistics</td>
<td>139</td>
</tr>
<tr>
<td>4.15</td>
<td>Board size frequency statistics</td>
<td>140</td>
</tr>
<tr>
<td>4.16</td>
<td>Outsider board members frequency statistics</td>
<td>142</td>
</tr>
<tr>
<td>4.17</td>
<td>CEO/Chairman duality and Tobin Q means and standard deviations</td>
<td>143</td>
</tr>
<tr>
<td>4.18</td>
<td>Correlation of CEO/Chairman duality and Tobin Q</td>
<td>143</td>
</tr>
<tr>
<td>4.19</td>
<td>CEO/Chairman duality and ROA means and standard deviations</td>
<td>143</td>
</tr>
<tr>
<td>4.20</td>
<td>Correlation of CEO/Chairman duality and ROA</td>
<td>144</td>
</tr>
<tr>
<td>4.21</td>
<td>CEO/Chairman duality and Tobin’s Q means and standard deviations</td>
<td>144</td>
</tr>
<tr>
<td>4.22</td>
<td>Correlation of board size and Tobin’s Q</td>
<td>145</td>
</tr>
<tr>
<td>4.23</td>
<td>Board size and ROA means and standard deviations</td>
<td>145</td>
</tr>
<tr>
<td>4.24</td>
<td>Correlation of board size and ROA</td>
<td>145</td>
</tr>
<tr>
<td>4.25</td>
<td>Outsider director ratio and Tobin’s Q means and standard deviations</td>
<td>146</td>
</tr>
<tr>
<td>4.26</td>
<td>Correlation of outsider director Ratio and Tobin’s Q</td>
<td>146</td>
</tr>
<tr>
<td>4.27</td>
<td>Outsider director ratio and ROA means and standard deviations</td>
<td>147</td>
</tr>
<tr>
<td>4.28</td>
<td>Correlation of outsider director Ratio and ROA</td>
<td>147</td>
</tr>
<tr>
<td>4.29</td>
<td>“CEO member of board” and Tobin’s Q means and standard deviations</td>
<td>147</td>
</tr>
<tr>
<td>4.30</td>
<td>Correlation of “CEO member of Board” and Tobin’s Q</td>
<td>148</td>
</tr>
</tbody>
</table>
Table 4.31 “CEO member of Board” and Tobin’s Q means and standard deviations......148
Table 4.32 Correlation of “CEO member of Board” and Tobin’s Q...............................148
Table 4.33 Correlation of board size and outsider board members...............................149
Table 4.34 Correlation of degree of transparency and IT maturity factors..........................150
Table 4.35 IT maturity and degree of transparency regression test – variables entered/removed....................................................151
Table 4.36 IT maturity and degree of transparency regression test – Model summary..............151
Table 4.37 IT maturity and degree of transparency regression test–Anova test results..............152
Table 4.38 IT maturity and degree of transparency regression test – Coefficients.................152
Table 4.39 IT maturity and degree of transparency regression test–Excluded variables............153
Table 4.40 IT maturity and degree of transparency regression test –
Collinearity Diagnostics .................................................................................................153
Table 4.41 IT maturity and degree of transparency regression test – Residuals Results..............154
Table 4.42 Regression results for H4A – Variables entered/removed..............................154
Table 4.43 Regression results for H4A – Model Summary..............................................155
Table 4.44 Regression results for H4A –Anova Results.................................................156
Table 4.45 Regression results for H4A – Coefficients....................................................157
Table 4.46 Regression results for H4A – Excluded Variables...........................................158
Table 4.47 Regression results for H4A –Collinearity Diagnostics......................................158
Table 4.48 Correlations between board dimensions and Tobin Q....................................159
Table 4.49 Correlations between board dimensions and ROA..........................................160
Table 4.50 Partial correlations between board dimensions and ROA
(Controlling for IT Maturity Factors).............................................................................160
Table 4.51 Partial Correlations between board dimensions and Tobin Q
(Controlling for IT Maturity Factors).............................................................................161
Table 4.52 Partial correlations between board dimensions and Tobin Q
(Controlling for Degree of Transparency)......................................................................162
Table 4.53 Partial Correlations between board dimensions and ROA
(Controlling for Degree of Transparency).......................................................................163
Table 4.54 Correlation between CEO/Chairman duality and transparency dimensions......164
Table 4.55 Correlation between board size and transparency dimensions...........................165
Table 4.56 Correlation between outsider director ratio and transparency dimensions.......166
ACKNOWLEDGEMENTS

A journey is easier when you travel together. Studying as a member of a cohort helped me very much to keep moving in the right direction to finalise my Ph.D. journey. This dissertation is the result of more than six years of work whereby I have been accompanied and supported by many people. It is a pleasure now that I have the opportunity to express my gratitude to all of them.

First I would like to thank my supervisor Prof. Dr. İ. Atilla Dicle. He has provided me continual inspiration, assistance, support and motivation to complete this study. His integral view on research has made a deep impression on me. I must say that he is the one of the most influential people in my life. I believe I am very lucky to have had the chance to attend his classes and work with him on my MBA thesis and PHD dissertations. I would also like to thank Prof. Dr. Ülkü Dicle for her support throughout my study.

I would like to thank my thesis committee member Assoc. Prof. Dr. Mehmet Yahyagil for his 24/7 support, advice and availability. His contribution was very significant, especially for the analysis and methodology parts of my dissertation.

I would like to thank Assoc. Prof. Dr. Necla V. Geyikdağ for bringing an independent and distinct perspective to my dissertation and for her suggestions from the start of this study.

Special thanks to Prof.Dr. Ahmet Serpil, Dr. M. Atilla Öner, and Dr. Lebriz Fikes Tosuner. Their support throughout my study has been invaluable.

I am thankful to Prof. Dr. İstemel Demirag, from Queen’s University Belfast, for challenging my hypotheses and advising me during the thesis process. I would also like to thank Amra Balic from Standard and Poor’s for his help.

I am greatly indebted and thankful to Mehmet Dudaroğlu for his guidance, support and help in both my academic and social life. I also want to thank his wife Serpil Dudaroğlu for
showing us the other dimensions of life and giving us the needed support and encouragement.

I also extend my gratitude to my friends who are part of the cohort: Ömer Livvarçin, Hakkı Yıldırımaz, Özgür Zan, İbrahim Uzpeder, Senem Göl, Gönül Demirel, Özlem Kunday, Orhan Sezgin, Murat Onuk, Çağlar Gulsen, Abdulkadir Kırmızı, Baybars Soyak, and Yusuf Can Erdem at Yeditepe University.

Finally, I am grateful to my wife Ayşegül for her love, support and patience during my Ph.D. study. I dedicate this dissertation to my large family, my wife Ayşegül, my mother Melek, my mother-in-law Lale, my father İsmail, my father-in law Tahir, my sister Medine, my brother Mithat, and finally my brother-in-law Taner. Their endless love, support and patience have always been and will always be main source of my energy.

Sinan Düztaş
ABSTRACT

Corporate boards worldwide have attracted a great deal of attention in the past decade because of corporate failures and concerns about the performance of corporations and the way they are governed. Therefore, there have been significant changes in the regulations, and relationships between management, boards, and shareholders.

The corporate governance literature in emerging countries is limited. Turkey, as an emerging market, has attracted increasing numbers of foreign investors in the last ten years. The level and quality of corporate governance and company performance are among the most important criteria for investors on the Istanbul Stock Exchange (ISE). Board structure and transparency are among the main building blocks of the corporate governance mechanism.

This study is an attempt to develop a conceptual model of relationships based on the dimensions of board characteristics, transparency, information technology, and company performance. It is also an empirical analysis of the corporate governance dimensions of high and low-performing companies. The empirical phase of the research is based on the data gathered from the ISE companies.

The study also empirically examines the moderating effects of transparency and information technology on board structure and company performance. It aims to analyse corporate governance, information technology and company performance relationships in ISE companies in Turkey. This study also investigates the role of information technology and transparency to explain the relationship between board structure and company performance. As part of the study, the correlation between information technology and transparency is also investigated.

Finally, the study investigates the relationship between board structure (CEO/Chairman duality, board size and outsider director ratio) and transparency.

**Keywords:** Corporate Governance, Firm Performance, Board structure, Transparency, IT Maturity, Turkey, Emerging Markets
KURUMSAL YÖNETİM: YÖNETİM KURULU
KARAKTERİSTİKLERİ, BİLGİ TEKNOLOJİSİ OLGUNLUĞU VE ŞEFFAFLIĞİN SÎRKET PERFORMANSINA ETKİLERİ

ÖZET

Şirket yönetim kurulları son 10 yılda şirket başarısızlıklarını, performanslarını ve yönetim sorunları gibi nedenlerle dünya çapında büyük ilgi çekmektedir. Bu alanda yapılan yeni düzenlemeler ile yönetim, yönetim kurulu ve hissedarlar arasındaki ilişkilerde çarpıcı değişiklikler olmuştur.


Bu çalışma yönetim kurulu karakteristikleri, şeffaflık, bilgi teknolojisi ve şirket performansı boyutları ve aralarındaki ilişkiler üzerine kurulu bir kurumsal model oluşturma girişimidir. Model iyi ve kötü performans gösteren şirketlerin kurumsal yönetim boyutlarının analizini öngörmektedir. Bu çalışmanın ampirik fazı İMKB şirketlerinden toplanan verilere dayandırılmıştır.

Çalışma ayrıca şeffaflık ile bilgi teknolojisi olgunluğunun, yönetim kurulu yapısı ve şirket performansı arasındaki ilişkideki etkilerini ampirik olarak incelemektedir. Çalışmanın amacı, Türkiye’deki kurumsal yönetim, bilgi teknolojisi ve şirket performansı arasındaki ilişkileri İMKB şirketleri üzerinde analiz etmek ve açıklamaktır. Çalışmada, bilgi teknolojisi ve şeffaflığın, yönetim kurulu yapısı ve şirket performansı arasındaki ilişkili açıklamada rolü irdelenmektedir. Çalışma, ayrıca bilgi teknolojisi ve şeffaflık arasındaki ilişkideki ısk tutmaktadır.

Son olarak, bu çalışma yönetim kurulu yapısı (genel müdür ve yönetim kurulu başkanının aynı kişi olması durumu, yönetim kurulu üye sayısı, ve bağımsız üye oranı) ve şeffaflık arasındaki ilişkini incelemektedir.

Anahtar Kelimeler: Kurumsal Yönetim, Firma Performansı, Yönetim Kurulu Yapısı, Şeffaflık, Bilgi Teknolojisi Olgunluğu, Türkiye, Gelişen Piyasalar
1. INTRODUCTION

There has been increased public and academic discussion of issues related to corporate governance in most countries with active capital markets. Corporate boards worldwide have been attracting a great deal of attention in the past decade because of corporate failures and concerns about the performance of corporations and the way they are governed. Both firms and regulators are considering how best to ensure good corporate governance. There have been significant changes in the regulations, and relationships between management, boards, and shareholders.

The integrity of corporations, financial institutions and markets is essential to maintaining confidence and economic activity, and to protecting the interests of stakeholders. Corporate failures and scandals have called into question the veracity of published financial information and have compelled governments to take policy initiatives of a legal or regulatory kind. Examples are cited from the USA (Enron, World Com and Tyco), the UK (the collapse of Maxwell publishing group), Germany (the cases of Holtzman, Berliner Bank, and HIH), Korea (the widespread banking distress in 1997), Australia (Ansett Airlines and One Tel), France (Credit Lyonnais and Vivendi), and Switzerland (Swissair). Especially the collapse of Enron in the USA in 2001 increased the importance of corporate governance both in the USA and other countries (Demirag, 2005).

Yeh, Lee, and Ko (2002) state that major contributions of corporate governance to the company include enhancing performance and preventing fraud. According to the research by Black et al. (2002), companies with better corporate governance have better performance than companies with poor corporate governance. A sound corporate governance structure not only provides useful information to investors and creditors to reduce information asymmetry but also helps the company to improve performance.
In 2003, Turkey's Capital Markets Board (CMB) issued its “Corporate Governance Principles,” assigning new roles and duties, and imposing a structure on boards of directors. In 2005, CMB updated the corporate governance principles. The publication of corporate governance principles and plans for a new corporate governance index for the Istanbul Stock Exchange (ISE) is encouraging.

The aim of this study is to analyse the corporate governance (board structure, and transparency), information technology and company performance dimensions and relationships for a sample of publicly traded companies in Turkey. ISE companies are studied to find empirical evidence for the research. The scope of the study comprises the following analyses:

- Consistent estimation of the relationship between corporate governance and performance, by taking into account the inter-relationships among corporate governance, corporate performance, transparency and information technology (IT) maturity.

- Analysing whether transparency and IT maturity moderate the relationship between board structure and company performance. Return on Assets (ROA) is used in addition to Tobin’s Q for performance measurement. The last two years’ data are used to have more consistent and reliable performance measures.

- Investigating IT maturity and corporate governance (specifically with transparency) correlation. The transparency dimension also includes the company disclosures.

- Contributing to the knowledge base related with board structure and IT maturity of companies traded at the Istanbul Stock Exchange, such as finding average board size, average outsider directors, number of companies having a CEO (chief executive officer)/chairman duality.
Instead of considering just a single measure of governance, as some of the prior studies in the literature have done, this study considers two different governance measures; (1) board characteristics and (2) transparency and disclosure.

This study is one of the most comprehensive studies done in Turkey on corporate governance. Besides the above factors, it differs from the other studies by introducing a new analysis to measure moderating effects of transparency and IT maturity. It also includes information technology effects on the governance dimensions (specifically transparency). Moreover, this study is expected to contribute to the corporate governance literature in emerging countries, specifically in countries having concentric and family ownership industry structure.

1.1 Purpose of the Study

This study aims at developing a conceptual model to investigate the relationships among the dimensions of board structure, transparency, information technology, and company performance. The thesis also studies empirical analysis of the corporate governance dimensions of high and low-performing companies, as well as the moderating effects of transparency and information technology on board structure and company performance by an extension of the empirical research.

1.2 Importance of the Study

This study is important because

i. It investigates the board structure, transparency, information technology maturity and company performance relationships in Turkey, specifically for the Istanbul Stock Exchange-quoted companies.

ii. There are very few empirical studies that exist on corporate governance concepts analysing the performance, board structure and transparency concepts in Turkey. In addition, the scopes of these studies are too narrow. Firstly, there are only few studies conducted on ISE companies. Secondly, the sample size of this study is fairly large
compared to similar studies in Turkey and the rest of the world. Thirdly, this study analyses two dimensions (board structure, and transparency) of corporate governance in a single study. Finally, it uses two different performance measures (ROA, and Tobin’s Q) for company performance.

iii. Although there are studies which have researched the effects of board structure on company performance both in and outside of Turkey, this study introduces an additional analysis for measuring the moderating effects of information technology and transparency in the corporate governance and performance framework.

iv. It is the first study that we are aware of which investigates the correlation between corporate governance and IT maturity.

v. Since Turkish firms are mostly family-owned or state-owned, they operate in a different legal and regulatory environment and their ownership structure is more concentrated (lower number of shareholders) than the firms analyzed in the foreign literature for board structure and performance relationships. This study helps to understand the corporate governance practices in countries like Turkey.

vi. This study contributes to the corporate governance literature in emerging markets specifically in countries having concentric and family ownership structures.

vii. This study brings two important dimensions into focus: transparency and information technology maturity. It is expected that the study will trigger series of similar research inside and outside Turkey.

viii. This study indirectly shows degree of transparency and information technology maturity of ISE quoted companies. Though very limited, the literature shows that information technology improves the transparency of organisations. This study should
also contribute to the existing literature in this area by providing empirical support for the magnitude of the correlation.

ix. This study provides useful statistics to understand the board structure of the Istanbul Stock Exchange companies, i.e., average board size, average outsider directors, number of companies having a CEO/Chairman duality.
2. LITERATURE REVIEW

The first section of this chapter includes a comprehensive literature review of concepts and theories related to corporate governance. The following section reviews the literature on the concepts of board structure, transparency, information technology, and company performance. The corporate governance environment and practices in Turkey also are reviewed in this section.

2.1 Corporate Governance

2.1.1 Background

The collapse of Enron in the USA in December 2001 has had a particularly significant role in increasing the importance of corporate governance both in the USA and in other parts of the world. Since the 1930s, organisational scholars have developed theoretical frameworks related to corporate governance along such dimensions as transaction costs, institutional isomorphism, and behaviour of agents, occupational communities, resource dependence, and stakeholder management (Demirag, 2005).

The collapse of Enron highlighted three major issues. First, the company had a corporate culture that encouraged its staff to influence public policy-makers with respect to the deregulation or privatization of the USA energy sector. Second, the company both instructed and led its accounting firm to carry out ‘dubious’ financial transactions, which ultimately led to the collapse of Enron and may have ended Andersen as an independent firm, especially regarding its core business of accounting. The third outcome of the Enron debacle is the most significant. Enron has plunged the USA financial markets into chaos and brought to light the need for drastic reforms that most certainly would not have been made had the company continued to operate. Regulatory agencies are investigating and most probably will recommend wide-scale reforms (Clark and Demirag, 2002).
Strong governance has long been considered crucial for enhancing the long-term value of stakeholders in the business environment. In the new technology-driven information age, strong corporate governance is more than good business practice — it is an indispensable component of market discipline (Levitt, 2000b). Recent demands of investors and others for greater accountability from corporate boards and audit committees will likely further enhance the quality of managerial stewardship and eventually lead to more efficient capital markets (Cohen et al., 2002).

Sound corporate governance practices have become critical to worldwide efforts to stabilize and strengthen global capital markets and protect investors. They help companies to improve their performance and attract investment. Corporate governance enables corporations to realize their corporate objectives, protect shareholder rights, meet legal requirements and demonstrate to a wider public how they are conducting their business (International Chamber of Commerce, 2006).

Clearly, running a business requires funds. Once funds are supplied, what is to prevent managers from taking advantage of all other company stakeholders which includes, for example, shareholders and the public? This is the problem of separation of ownership and control; it has also been termed the agency problem of the relationship between the principal and the agents. In theory, the shareholders elect a board of directors to represent their interests. But the managers may subvert this process. If boards are ineffectual, what are the other mechanisms that can help (Weston et al., 2001)? Corporate governance tries to answer the above questions.

Morck and Steier (2004, p.21) state that “Each corporation has a CEO who dictates corporate policies and strategies to largely passive boards of directors. The true owners of America’s great corporations, millions of middle class shareholders, each owning a few hundred or a few thousand shares, are disorganized and generally powerless. Only a handful of institutional investors accumulate large stakes – 3 or even 5% of an occasional large firm’s stock – that give them voices loud enough to carry into corporate boardrooms. Corporate CEOs use or
abuse their considerable powers in accordance with their individual political, social, and economic beliefs.”

In 1999, the OECD issued a set of corporate governance standards and guidelines to help governments in their efforts to evaluate and improve the legal, institutional and regulatory framework for corporate governance in their countries, and to provide guidance and suggestions for stock exchanges, investors, firms, and other parties that have a role in the process of developing good corporate governance (OECD, 1999). After publication of these standards and guidelines, almost every country issued its own corporate governance standards.

The principal objective of a business enterprise is to generate economic returns to its owners. Although the link between the forms of governance and economic performance is debated, good corporate governance practices provide an important framework for a timely response by a corporation’s board of directors to situations that may directly affect stockholder value. Corporate governance is not an abstract goal, but rather exists to serve corporate purposes by providing a structure within which stockholders, directors and management can pursue most effectively the objectives of the corporation. The absence of good corporate governance, even in a corporation that is performing well financially, may imply vulnerability for stockholders because the corporation is not optimally positioned to deal with financial or management challenges that may arise (The Business Roundtable, 2005).

Effective corporate governance requires a proactive, focused state of mind on the part of directors, the CEO and senior management, all of whom must be committed to business success through maintenance of the highest standards of responsibility and ethics. Good governance is far more than a "check list” of minimum board and management policies and duties. Even the most thoughtful and well-drafted policies and procedures are destined to fail if directors and management are not committed to enforcing them in practice. A good corporate governance structure is a working system for principled goal setting, effective decision-making and appropriate monitoring of compliance and performance. Through such a vibrant and responsive structure, the CEO, the management team and the board of directors
can interact effectively and respond quickly to changing circumstances within a framework of solid corporate values, to provide enduring value to the stockholders who invest in the enterprise (The Business Roundtable, 2005).

2.1.2 Definition of Corporate Governance

There are different definitions for corporate governance. The most widely used definition is the one given by OECD, which states that “Corporate governance is the system by which business corporations are directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among different participants in the corporation, such as the board, managers, shareholders and other stakeholders, and spells out the rules and procedures for making decisions on corporate affairs. By doing this, it also provides the structure through which the company objectives are set, and the means through which those objectives and monitoring performance are attained” (OECD, 1999, p.76).

In its 2004 update, the OECD describes what corporate governance involves and provides: “Corporate governance involves a set of relationships between a company’s management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders and should facilitate effective monitoring. The presence of an effective corporate governance system, within an individual company and across an economy as a whole, helps to provide a degree of confidence that is necessary for the proper functioning of a market economy. As a result, the cost of capital is lower and firms are encouraged to use resources more efficiently, thereby underpinning growth (OECD, 2004, p.11)”.

Different definitions more or less have the same meaning even though they emphasize different aspects of corporate governance.
Here are some definitions taken from the literature:

“Corporate governance comprises a country’s private and public institutions (both formal and informal) which together govern the relationship between the people who manage corporations (corporate insiders) and all others who invest resources in corporations in the country” (Oman et al., 2003, p.45).

The Encyclopedia about corporate governance (Encycogov) emphasises the importance of corporate governance for the economic health of corporations and society in general. So it gives an economics-oriented definition of it. "Corporate governance is a field in economics that investigates how to secure/motivate efficient management of corporations by the use of incentive mechanisms, such as contracts, organisational designs and legislation. This is often limited to the question of improving financial performance, for example, how the corporate owners can secure/motivate that the corporate managers will deliver a competitive rate of return" (Encycogov, 2005).

Consistent with the above definition, Shleifer and Vishny (1997, p. 737) state that “corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment.”

The International Chamber of Commerce provides a corporate-specific definition of corporate governance: “Corporate governance is the relationship between corporate managers, directors and the providers of equity, people and institutions who save and invest their capital to earn a return. It ensures that the board of directors is accountable for the pursuit of corporate objectives. And the corporation itself conforms to the law and regulation” (ICCWBO, 2005).

The author suggests the introduction to the literature of a new definition of corporate governance: “Corporate governance is a mechanism for ensuring the stakeholders of corporations for its well-being, fairness, social responsibility, transparency and accountability.”
2.1.3 Legislating For Good Governance

Legal framework is an important determinant of corporate structure and behaviour. While company law, governing, for example, duties of directors, is obviously relevant, there are numerous other areas in which lawmaking is important, including regulation of financial reporting, competition law, labour law and employment law. It has been much debated whether direct legal controls over governance mechanisms, such as board composition, hinder enterprise (Spira, 2001). On the other hand, indirect regulation through, for example, rules on financial disclosure are considered essential to maintaining fairness and transparency in financial markets. Such rules, and adherence to them, directly underpin public confidence in corporate enterprises, and are particularly important as share ownership (both individually and through institutional funds) becomes more pervasive. Countries that fall into the social–institutional model of governance have generally been characterized by weaker financial reporting regimes than those where the shareholder–agency model prevails, in which wider share ownership and shareholder activism exist (Morrison, 2004).

Government acts, such as the Sarbanes-Oxley act of 2002, have encouraged companies to develop highly accountable ethical and financial standards in order to avoid penalties.

The Sarbanes-Oxley Act of 2002

The Sarbanes-Oxley Act of 2002 (SOX), introduced in the USA in the aftermath of Enron, has fundamental governance implications for listed American companies, their foreign subsidiaries and foreign companies that have USA listings. It applies to all Securities and Exchange Commission (SEC)-registered organisations, irrespective of where their trading activities are geographically based. The SOX is different from the UK's Combined Code, and from codes of corporate governance adopted elsewhere in the OECD, in that compliance is mandatory, rather than based on “comply or explain.” This aspect, combined with significant potential sanctions for individual directors, is driving SOX compliance requirements through the supply chain (Stanwick, 2006).
The Sarbanes-Oxley Act affects many roles within a corporation including: directors, top management, auditors, accountants and financial analysts. The key goals of the Sarbanes-Oxley Act of 2002 are to:

- Enhance financial disclosures
- Enhance auditor independence
- Improve corporate governance
- Protect public company employees, whistleblowers and shareholders
- Increase accountability of corporate executives
- Deter and punish fraudulent behaviour

The act is designed to protect the interests of investors and further the public interest in the preparation of informative, reliable, and independent audit reports for companies the securities of which are sold to, and held by and for, public investors (Carpenter, 2004).

While the Act lays down detailed requirements for the governance of organisations, the three highest profile and most critical sections – which were implemented in phases - are 302, 404 and 409. Table 2.1 summarises these sections.
Table 2.1 Three highest profile and most critical sections of SOX (Stanwick, 2006)

<table>
<thead>
<tr>
<th>Required</th>
<th>302</th>
<th>404</th>
<th>409</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required:</td>
<td>Quarterly certification of financial reports</td>
<td>Management annually certify internal controls</td>
<td>Monitor operational risks</td>
</tr>
<tr>
<td></td>
<td>Disclosure of all known control deficiencies</td>
<td>Independent accountant must attest report</td>
<td>Material event reporting</td>
</tr>
<tr>
<td></td>
<td>Disclose acts of fraud</td>
<td>Quarterly change reviews</td>
<td>‘Real-time’ implications – 4 business days for report to be filed</td>
</tr>
<tr>
<td>Responsible</td>
<td>• CEO</td>
<td>• Management</td>
<td>• Management</td>
</tr>
<tr>
<td></td>
<td>• CFO</td>
<td>• Independent auditor</td>
<td>• Independent auditor</td>
</tr>
</tbody>
</table>

Highlights of the Sarbanes-Oxley Act

There are a number of provisions in the Sarbanes-Oxley Act that have both an immediate and long-term impact on how firms are monitored in the United States. Each publicly traded firm must be accountable to a government-appointed Public Company Oversight Board, which is comprised of five members who are “financially literate.” Of the five members of the oversight board, two must be Certified Public Accountants (CPAs). The oversight board creates and approves the guidelines used by external auditors in their review of financial information pertaining to the firm.

The Sarbanes-Oxley Act also requires that the external (independent) auditors who review the financial statements of the firms are restricted to performing audit-based functions. Contrary
to what was acceptable in the past, external auditors are not allowed to perform bookkeeping functions, nor are they allowed to do non-audit based consulting.

The firm’s audit committee must pre-approve all the services provided by the external auditors. In addition, the lead audit partner and the partner responsible for the audit must change at least once every five years for the same client. One of the most critical components of the Sarbanes-Oxley Act was the requirement that both the firm’s CEO and Chief Finance Officer (CFO) must certify all annual and quarterly reports sent to the Securities and Exchange Commission (SEC). This was a significant change in the past policy of the SEC. Based on the certification process by the CEO and CFO; the CEO no longer can plead ignorance as a defence for inaccurate financial statements. This provision states that the CEO and CFO are guilty of fraud if they certify inaccurate financial results regardless whether they knew the results were false or not. In addition, the CEO and the CFO are required to forfeit any financial gain that has occurred through bonuses and/or profits based on inaccurate financial results. In addition, all of the board members and the top executives of the firm must report to the SEC all stock transactions within two business days. It is also the fiduciary duty of the firm’s lawyers to report to the board of directors any violations of securities fraud. Another common practice which was now banned by the Sarbanes-Oxley Act is the issuing of personal loans to any director or top executive by the firm (Stanwick, 2006).

From a reporting perspective, the Sarbanes-Oxley Act requires that every publicly traded company include in its annual report a description of the firm’s internal controls. Although not explicitly stated, the requirement has been interpreted to mean not only financial controls, but also operational and information technology controls. In addition, an external auditor must review the internal control procedures of the firm. It is also a requirement that each firm develops and make available a corporate code of ethics which has to be at least applicable to the firm’s top executives.

In addition, firms are required to hold separate directors meetings where the CEO is not present. This allows for a more explicit separation of the influence the CEO has on the agenda.
and the direction of the board meetings. In direct response to Enron’s manipulation of financial statements, the Act requires the firm to report, in detail, all off-balance-sheet transactions.

The Sarbanes-Oxley Act has also significantly increased the severity of the penalties for managers if they are found in violation of the Act. Any employee of the company can receive a prison sentence of up to 20 years if they are found guilty of destroying, altering and/or falsifying any financial or audit information (SOX, 2007).

**UK Combined Code on Corporate Governance**

UK incorporated companies listed on the UK Stock Exchange are subject to the Combined Code on corporate governance. The most recent (2003) version of the Code combines the Cadbury and Greenbury reports on corporate governance, the Turnbull Report on Internal Control (revised and republished as the Turnbull Guidance in 2005), the Smith Guidance on Audit Committees and elements of the Higgs Report. The Financial Reporting Council (FRC) is the independent UK regulator responsible for the Combined Code. The FRC is also responsible for the statutory oversight and regulation of auditors and of the professional accountancy and actuarial bodies.

The UK Combined Code works on what is known as a “comply or explain” basis; in other words, companies may choose not to comply with specific provisions but, in that case, will have to provide a proper public explanation of their decision (FRC, 2007).

**OECD’s Principles of Corporate Governance Framework**

The OECD Principles of Corporate Governance were published in 1999, but it was not until after the Enron and WorldCom debacles, and the USA Sarbanes Oxley response in 2002, that most other OECD countries made a determined effort to adopt codes of corporate governance. Countries that have a current membership in OECD include the founding members of Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Italy, Luxembourg, the
Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom and the United States. Additional members of the OECD include: Japan, Finland, Australia, New Zealand, Mexico, Czech Republic, Hungary, Poland, Korea and the Slovak Republic (Stanwick, 2006).

With the exception of the USA, individual OECD countries have all adopted corporate governance codes that work on the “comply or explain” principle. The USA Sarbanes Oxley Act works on the basis of “comply or be punished.” One of the impacts of SOX is that companies directly affected by it are requiring their partners and suppliers to certify conformance to SOX because that gives them greater certainty of ongoing compliance themselves.

In 2004, the Organisation for Economic Cooperation and Development (OECD) revised the original principles of corporate governance established in 1999. The OECD’s Principles of Corporate Governance include the requirement that the framework of the country adopting the principles have transparency and encourage efficient markets. In addition, the framework of member countries should support the laws of the local government and the framework needs to identify the specific responsibilities of the firm’s managers.

Furthermore, any framework established by an OECD member should protect and support the rights of the firm’s shareholders. It is also imperative that the corporate governance framework support the fair treatment of each individual shareholder.

It is expected that under the rubric of fair treatment all shares carry the same voting rights and all investors should have access to the same information. The framework should ensure that insider trading is not permitted or carried out. In addition, the framework should include the requirement that every board member needs to disclose any potential conflicts of interest. It is also proposed by the OECD that any corporate governance framework established by a member should encourage co-operation between the firm and the shareholder to encourage shared wealth.
In addition, the corporate governance framework should allow the shareholders the opportunity to correct any direct or indirect violations of their rights. Furthermore, it needs to have a performance-enhancing system in place to encourage employee participation, and should allow any shareholder the right to present their concerns about illegal or unethical activity without any constraints.

The framework adopted by the OECD member should ensure timely and accurate disclosures of relevant information pertaining to the firm. The firm must also disclose complete financial results and the overall objectives of the firm. In addition, the framework must also require the firm to disclose the compensation policy for top executives and board members, the potential risk issues the firm currently faces or anticipates may occur in the future, the detailed results of the firm’s external audit and the verification by the firm that the information released is based on formal accounting standards.

The OECD recommends that every member’s corporate governance framework incorporate the board of directors’ strategic focus in their disclosures. This would include, but not be limited to, the review of the monitoring and the decision making activities of the firm’s management. The framework must explicitly state that the board of directors is directly accountable to the firm and its shareholders. The board of directors is also responsible for ensuring that the firm has established and implemented a training program to support high ethical standards within the firm. It is also expected that within the OECD member’s corporate governance framework a detailed process outlining the selection and the compensation and evaluation of the board of directors is disclosed to shareholders. The board of directors is ultimately responsible for ensuring the integrity of the financial information disclosed by the firm. The board of directors also needs to have a “sufficient” number of independent board members who are not executives of the firm (OECD, 2007).

**European Commission Action Plan**

In February 2000, the President of the Commission to the European Parliament stated that the establishment of new governance requirements is one of the critical objectives of the
Commission. In 2002, the following framework for the European Commission’s Action Plan was established (Ecares, 2003):

- Improving the ability of shareholders to vote, in particular, across countries;
- Setting minimum standards for director independence;
- Requiring the publishing of an annual corporate governance statement;
- Creating nomination, remuneration and audit committees;
- Confirming directors’ collective responsibility for financial statements;
- Studying the move to a “shareholder democracy” by imposing “one-share-one-vote” (abolishing system B2)
- Increasing structural flexibility by giving all companies a choice between different board structures (as is already the case in Italy and France);
- Stiffening sanctions for directors (special investigation by courts/regulator at instigation of minority shareholders, “wrongful trading rule,” EU-wide director disqualifications);
- Studying the potential for abuses in/by pyramidal groups and their delisting (Commission of the European Communities, 2003).

2.2 Theories about Corporate Governance

Managers of large, modern publicly held corporations are typically not the owners. In fact, most of today’s top managers own only nominal amounts of stocks in the corporations they manage. The real owners (shareholders) elect boards of directors who hire managers as their agents to run the firm’s day-to-day activities. Once hired, such questions as “how trustworthy are these executives?” “Do they put themselves or the firm first?” can be asked (Wheelen and Hunger, 2004). There are several theories developed to deal with such questions.

2.2.1 Agency Theory

The origins of the agency theory can be traced back to Adam Smith (1776) and his discussion of the problem of the separation of ownership and control. He suggested that managers of
other people’s money cannot be expected to “watch over it with the same anxious vigilance” one would expect from owners and that “negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company” (Smith, 1776).

Neoclassical economics argues that the aggregation of both profit-maximizing firms (supply) and rational consumers (demand) result in equilibrium in perfectly competitive markets. Perfectly competitive markets require relative homogeneity of firms and consumers because any type of differentiation will result in the possibility of excess returns. In economics, it is presumed that market price determines the equilibrium in an instantaneous fashion. However, while firms are profit maximizing, they are not free to set their own prices. In perfectly competitive markets, a firm that charges too much will lose customers to its nearest competitors until it is either forced to lower the price to the market clearing price, or go out of business (Mas-Colell et al., 1995).

Organisational economists – and agency theorists in particular – are interested in the market for corporate control, examining how inefficiencies arise and how they can be corrected. In other words, they are interested in studying the role that power and politics plays in the efficient functioning of firms and markets (Barney et al., 1996).

Micro-economists use agency theory to study the problems of motivating and controlling cooperative action (Scott, 1998). Their primary focus is the situation where one party (the principal) seeks some outcome but requires the assistance of an agent to carry out the necessary activities (e.g., supervisor-subordinate). It is assumed that both parties are motivated by self-interest and that these interests may diverge (Scott, 1998).

As suggested in the classic study by Berle and Means (1932), top managers are, in effect, “hired hands” who may very likely be more interested in their personal welfare than in that of the shareholders. For example, management might emphasize strategies, such as acquisitions, that increase the size of the firm (to become more powerful and to demand increased pay and benefits) or that diversify the firm into unrelated businesses (to reduce short-term risk and to
allow them to put less effort into a core product line that may be facing difficulty) but that result in a reduction in dividends and/or stock price.

The language employed by agency theory pertains to the situation – one that is basic to the structure of all organisations – in which one party (termed the “principal”) seeks to achieve some outcome but requires the assistance of another (termed the “agent”) to carry out a necessary activity (Scott, 1998):

- Agency theory describes organisations as a nexus of contracts among self-interested principals and agents, including managers, stockholders and board of directors, and argues that the contractual arrangements that survive are those that best solve the problem of minimizing agency costs (Eisenhardt, 1989).

- Agency theory is “a theory of the ownership (or capital) structure of the firm” (Jensen and Meckling, 1976a).

- Agency theory seeks to understand the causes and consequences of goal incongruence and principal-agent problems (Barney et al., 1996).

- The key idea is that principal-agent relationships should reflect efficient organisation of information and risk bearing costs (Eisenhardt, 1989).

- Agency theory differs from Transaction Cost Economics in its intra-organisational emphasis on the risk attitudes of principals and agents (Eisenhardt, 1989).

Agents usually know more about the tasks than the principals (information asymmetry). Principals seek to gain information (by inspection or evaluation), and to develop incentive systems to ensure agent actions in the principal's interests. Agency theorists attempt to design the most cost-effective information systems.

Agency theory states that organisations are needed to help monitor and give incentives to agents doing coordinated, cooperative work. Cooperative situations involving complex tasks
give rise to hierarchical structures (Scott, 1998). When ownership is concentrated in one principal, contracts are needed to define obligations and incentives, especially those in the periphery of the organisation. "Agency theory, recognising the costs of monitoring systems, stresses the need to design incentive systems that will induce all participants to contribute their fair share to the common enterprise (Scott, 1998).

The central problems and concerns of agency theory:

- The central dilemma investigated by agency theorists is how to get the agent to act in the best interests of the principal when the agent has an informational advantage over the principal and divergent goals or interests.
- Agency problems occur whenever the principal delegates authority to the agent, and the welfare of the principal is affected by the choices of the agent (Arrow, 1985).
- The delegation of decision-making authority from the principal to the agent is problematic because:
  - The interests of the principal and the agent will typically diverge;
  - The principal cannot perfectly and cost effectively monitor the agent’s actions;
  - The principal cannot perfectly and cost effectively monitor and acquire the information available to or possessed by the agent (Barney et al., 1996).

Weaknesses and Limitations of the Agency Theory

The following points summarise the weaknesses and limitations of the agency theory.

- Agency theory is largely an asocial conceptualization: actors are self interested and atomistic, and the market is largely uninfluenced by social relations. In addition, behaviour is motivated solely by pecuniary self-interest, and cooperation indicates a contract among self-interested parties. But managerial action, like all social action, is embedded in ongoing social structures and is not entirely determined by economic incentives and information asymmetries (Granovetter, 1985). For example, agency theory seems to adopt an unrealistic view of humans and organisations as being
primarily motivated by financial gain (Barney et al., 1996; Hirsch et al., 1990). But we know from behavioural research that individuals are also motivated by status, community, etc. Even if you accept the premise that individuals are rational, self-interested and opportunistic, there is no discussion of the role of non-pecuniary incentives such as prestigious awards that could potentially serve as effective mechanisms for the reduction of agency problems.

- A more philosophical critique by Perrow (1971) and others argues that agency theory has an inherent investor focus (Hirsch et al., 1990). But the criticism is true of most organisational economics research. However, Barney et al. (1996) argue that the focus is neutral and can be applied to a variety of contexts.

- Agency theory assumes that both behaviour and consequences are relatively homogeneous and easily monitored, which may not hold true in the real world. Where one is homogenous, but not the other, the decision is simple. But in a complex web of dyadic relationships, for example, the simplicity of the dichotomous choice between monitoring and providing incentives to regulate behaviour or outcomes is ineffective (O'Donnell, 2000). Moreover, guarding against opportunistic behaviour can result in stifling initiative, creativity, entrepreneurship and innovation within firms, a cost that is often ignored by agency theorists (Davis et al., 1997).

- Theories of power and conflict would likely support the possibility that principals can exercise control or provide incentives to align agent behaviour. For example, conflict theories have argued that workers can be co-opted into unconsciously working toward serving managerial interests (Burawoy, 1979). A similar argument can be extended to the managerial-owner relationship. Similarly, the goals of managers and owners may be aligned either because the manager is from the same caste or social class as the owner, or because the managers have been socialized into their current positions through their educational and professional experience (Zeitlin, 1974; Zeitlin and Ratcliff, 1988).
2.2.2 Stewardship Theory

Stewardship theory is based on a model of man where a steward perceives greater utility in cooperative, pro-organisational behaviour than in self-serving behaviour; the theory assumes a strong relationship between organisational success and a principal’s satisfaction. Hence, a steward overcomes the trade-off by believing that working towards organisational, collective ends meet personal needs. Empowering governance mechanisms are appropriate for the model of man to which stewardship theorists adhere. Therefore, control lowers a steward’s motivation and undermines pro-organisational behaviour (Davis et al., 1997).

In contrast to agency theory, stewardship theory suggests that executives tend to be more motivated to act in the best interest of the corporation than in their own self interest. Whereas agency theory focuses on extrinsic rewards that serve such lower-level needs as pay and security, stewardship theory focuses on the higher-order needs, such as achievement and self-actualization. Stewardship theory argues that, over time, senior executives tend to view the corporation as an extension of themselves. Rather than the use of firm for their own ends, the executives are more interested in guaranteeing the continued life and success of the corporation. The relationship between the board and top management is thus one of principle and steward, not principle and agent (“hired hand”). Stewardship theory notes that in a widely held corporation, the shareholder is free to sell his/her stock at any time. A diversified investor may care little about risk at the company level, preferring that management assume extraordinary risk so long as the return is adequate. Because executives in a firm cannot easily leave their jobs when in difficulty, they are more interested in a merely satisfactory return and put heavy emphasis on the firm’s continued survival. Thus, stewardship theory would argue that in many instances, top management may care more about a company’s long-term success than do more short-term oriented shareholders (Monks and Minow, 2004).

Empirical researchers, depending on whether they assume managers to be agents or stewards, have arrived at different conclusions, with which they attempt to validate a single best way for corporate governance. Hence, authors discuss situational and psychological mechanisms underlying the two models of man: agent and steward (Davis et al., 1997). Table 2.2
summarizes the agency and stewardship theories. An explanation of psychological and situational mechanisms follows.

Table 2.2 Agency vs. Stewardship theory comparison (Davis et al, 1997)

<table>
<thead>
<tr>
<th></th>
<th>Agency Theory</th>
<th>Stewardship Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model of Man</td>
<td>Economic-man</td>
<td>Self-actualizing man</td>
</tr>
<tr>
<td>Behaviour</td>
<td>Self-serving</td>
<td>Collective serving</td>
</tr>
<tr>
<td></td>
<td><strong>Psychological Mechanisms</strong></td>
<td></td>
</tr>
<tr>
<td>Motivation</td>
<td>Lower order/economic needs (physiological, security, economic)</td>
<td>Higher order needs (growth, achievement, self-actualization)</td>
</tr>
<tr>
<td></td>
<td>Extrinsic</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>Social Comparison</td>
<td>Other managers</td>
<td>Principal</td>
</tr>
<tr>
<td>Identification</td>
<td>Low value commitment</td>
<td>High value commitment</td>
</tr>
<tr>
<td>Power</td>
<td>Institutional, legitimate, coercive</td>
<td>Personal (expert, referent)</td>
</tr>
<tr>
<td></td>
<td><strong>Situational Mechanisms</strong></td>
<td></td>
</tr>
<tr>
<td>Management Philosophy</td>
<td>Control oriented</td>
<td>Involvement oriented (Lawler)</td>
</tr>
<tr>
<td>- Risk Orientation</td>
<td>Control mechanisms</td>
<td>Trust</td>
</tr>
<tr>
<td>- Time Frame</td>
<td>Short term</td>
<td>Long Term</td>
</tr>
<tr>
<td>- Objective</td>
<td>Cost control</td>
<td>Performance Enhancement</td>
</tr>
<tr>
<td>Cultural Differences</td>
<td>Individualism</td>
<td>Collectivism</td>
</tr>
<tr>
<td></td>
<td>High power distance</td>
<td>Low power distance</td>
</tr>
</tbody>
</table>
Psychological Factors

Psychological factors can be examined under the following titles to distinguish stewards and agents.

Motivation

Extrinsic rewards are the focus in agency theory while intrinsic rewards have the priority in stewardship theory. Extrinsic rewards are quantifiable in terms of money and/or market value, whereas intrinsic rewards are not quantifiable but present opportunities for growth, achievement, affiliation and self-actualization.

The focus of intrinsic rewards is higher-order needs, which are presented to the literature through such as need theories as Maslow’s hierarchy, Alderfer’s growth need, and David McClelland’s and Douglas McGregor’s achievement and affiliation needs.

Another motivation model, Hackman and Oldham’s job characteristics model, mediates the relationship between task characteristics and internal motivation. Assumptions of stewardship theory coincide with this model that assumes that increasing the internal work motivation leads to better performance and job satisfaction.

Identification

Attribution of organisational success contributes to manager’s self-image and self-concept according to various scholars. This argument is in line with stewardship theory. A similar concept is organisational commitment, which comprises the desire to remain in the organisation and value commitment, which is the belief and acceptance of the organisation’s goals (Mayer and Schoorman, 1992). While value commitment is closely related to identification, it does not have economic utility in agency theory since it is not part of an exchange agreement between agent and principal.

Use of Power
French and Raven (1959) categorize the bases of social power as follows: coercive, legitimate, reward, expert and referent power. Gibson et al. (1991) reduce the bases of power to institutional/organisational power and personal power. Influence within the context of agent-principal relationship is achieved via institutional power, whereas personal power is not affected by formal roles in the organisation and is the basis of influence in a principal-steward relationship.

**Situational Factors**

Situational factors include management philosophy and culture which are explained as follows:

**Management Philosophy**

Among the advocates of economic man were Simon, Cyert and March in 1950s and early 1960s. Contrary to these scholars, Argyris advocated normative models of organisation. The model of man assumptions drives management philosophies and management systems which reinforce organisational behaviour consistent with those assumptions.

**Culture**

Figure 2.1 categorizes the principal’s and manager’s choice as agent or steward dimensions. This is particularly commensurate with Geert Hofstede five cultural dimensions. Geert Hofstede conducted perhaps the most comprehensive study of how values in the workplace are influenced by culture. He analyzed a large data base of employee values scores collected by IBM between 1967 and 1973, covering more than 70 countries, from which he first used only the 40 largest and then extended the analysis to include 50 countries and three regions. Hofstede developed a model that identifies four primary dimensions to assist in differentiating cultures: power distance, individualism, masculinity, and uncertainty avoidance.
Geert Hofstede added a fifth dimension after conducting an additional international study with a survey instrument developed with Chinese employees and managers. That dimension, based on Confucian dynamism, is long-term oriented and was applied to 23 countries. Two of these dimensions are especially related to agent/steward and manager/principle relationships.

**Figure 2.1 Principal’s choice agent vs. steward** (Davis et al., 1997)

**Individualism-collectivism:** Collectivist cultures are more conducive to the emergence of stewardship relationship. Individualistic cultures facilitate agency relationships.

**Power distance:** Because high power distance cultures support and legitimize the inherent inequality between principal and agent, they enable agency relationships to develop. Low power distance culture members emphasize equality of principal and manager, hence the development of stewardship relationship.

Agency relationship is designed to minimize potential losses to each party. Only when both parties subordinate their personal goals to that of the collective, will they mutually choose a stewardship theory.
2.2.3 Contrasting Approaches to Governance

Rooted in economics and finance, agency theory uses a control approach aimed at curbing self-serving behaviour of managers (agents) that may negatively impact owners’ (principals) wealth (Eisenhardt, 1989). Stewardship theory details a collaborative approach, tapping insights from sociology and psychology. Proponents of this approach strive to enhance board-management ties and decision-making by empowering managers (stewards) of the firm. To elaborate control-collaboration tensions, Sundaramurthy and Levis (2003) listed assumptions and prescriptions of each approach (Figure 2.2).

<table>
<thead>
<tr>
<th>Control</th>
<th>Theoretical basis</th>
<th>Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency theory</td>
<td>Assumptions</td>
<td>Stewardship theory</td>
</tr>
<tr>
<td>(economics and finance)</td>
<td></td>
<td>(sociology and psychology)</td>
</tr>
<tr>
<td>Individualist Opportunism</td>
<td>Human tendencies</td>
<td>Collectivist</td>
</tr>
<tr>
<td>Extrinsic</td>
<td>Motivation</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Goal conflict</td>
<td>Management-owner relations</td>
<td>Intrinsic</td>
</tr>
<tr>
<td>(risk differential)</td>
<td></td>
<td>Goal alignment</td>
</tr>
<tr>
<td>Distrust</td>
<td></td>
<td>(firm identification)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trust</td>
</tr>
<tr>
<td></td>
<td>Prescriptions</td>
<td></td>
</tr>
<tr>
<td>Discipline and monitor</td>
<td>Board’s primary role</td>
<td>Service and advise</td>
</tr>
<tr>
<td>Outsiders</td>
<td>Board structure</td>
<td></td>
</tr>
<tr>
<td>Nonduality</td>
<td></td>
<td>Insiders, social ties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CEO duality</td>
</tr>
<tr>
<td>Reduces goal conflict, avoids increasing risk differential</td>
<td>Executive stock ownership</td>
<td>Fosters firm identification and long-term relations</td>
</tr>
<tr>
<td>Constrains self serving behavior</td>
<td>Market for corporate control</td>
<td>Curbs psychological commitment</td>
</tr>
</tbody>
</table>

Figure 2.2 Contrasting approaches to corporate governance (Sundaramurthy and Levis, 2003)

Control and collaborative approaches promote alternative “models of man.” Their fundamental assumptions expose varied and interwoven aspects of human tendencies, motivation, and management-owner relations. Control advocates accentuate the challenges of
individualism and the value of extrinsic motivation (Sundaramurthy and Levis, 2003). Grounded in these assumptions, each approach prescribes certain board roles and structures.

A control approach stresses discipline. The board is the ultimate internal monitor whose most important role is to scrutinize the highest decision-makers within the firm. Outside directors, those detached from management and daily operations, facilitate objectivity, while separate CEO and chair positions provide further checks and balances (Sundaramurthy and Levis, 2003).

A collaborative approach, in contrast, stresses service, calling for boards to advise and enhance strategy formulation. Board-management social ties foster trust, helping executives to engage less in impression management and to seek greater input from directors. Likewise, directors may offer more candid feedback, confident that executives will consider their views. Structurally, insiders are valued for their operational expertise, while CEO-chairs provide a unity of command that may clarify decision-making authority, reduce role conflict, and reassure shareholders (Sundaramurthy and Levis 2003).

These approaches also offer varied insights into the means of encouraging effective management. For instance, control approach values stock ownership as an internal bonding mechanism by tying executives’ rewards to firm performance (Sundaramurthy and Levis 2003). Yet advocates warn that excessive stock ownership widens the risk differential, intensifying managers’ aversion to risk taking. The market for corporate control, however, may constrain self-serving behaviour by providing an arena in which different teams compete to manage a firm’s resources (Jensen and Ruback, 1983).

2.2.4 Resource Dependence Theory

There is one additional theory used in corporate governance research, namely, resource dependence theory (Pfeffer and Salancik, 1978). The central thesis of this third approach is that organisations attempt to exert control over their environment by co-opting the resources
needed to survive. The concept of co-optation has important implications for the role of the board and its structure.

Boards are important boundary spanners. They can be used as a mechanism to form links with the external environment. Inter-organisational linkages, such as the appointment of outside directors and board interlocks, can be used to manage environmental contingencies. Directors who are prestigious in their professions and communities can be a source of timely information for executives. They become involved in helping the organisation by influencing their other constituencies on behalf of the focal organisation (Price 1963). According to Pfeffer and Salancik (1978), "when an organisation appoints an individual to a board, it expects the individual will come to support the organisation, will concern himself with its problems, will favourably present it to others, and will try to aid it." This assistance is believed to raise organisational performance, and increase returns to shareholders. Pfeffer (1972) has made the case that the board's co-optation role, in which he includes establishing contacts and raising funds, best explains board composition. His evidence shows that board size and type of outside director are related to an organisation's needs for capital and the degree of regulation in its environment.

2.2.5 Signaling Theory

Recent accounting scandals have renewed attention to corporate transparency. According to signaling theory, under information asymmetry, corporations with superior information transparency signal better corporate governance. Prior research also indicates that corporations that have better corporate governance signal better performance (Chiang, 2005).

Spence (1973) stated that if information asymmetry exists between a company’s managers and investors, the company can provide information to the investors in order to eliminate the asymmetry. In other words, if information asymmetry exists, there is no way for the investor to understand the real situation of the company’s operations. Prior research indicates that investors rely on the information sent out from the company to make investment decisions (Poitevin, 1990; Ravid and Saring, 1991). In practice, companies with good operating
performance often disclose information to the public to promote positive impressions of their company.

2.3 Roles and Responsibilities

There are actors in corporate governance who have different roles and responsibilities. The main actors are the board of directors, top management and stakeholders (specifically shareholders and regulatory bodies will be concentrated in the context of this study). An effective system of corporate governance provides the framework within which the board and management address their respective responsibilities (Business Roundtable, 2005).

2.3.1 The Board of Directors

Boards of directors are a crucial part of the corporate structure. They are the link between the people who provide capital (the shareholders) and the people who use that capital to create value (the managers). This means that boards are the overlap between the small, powerful group that runs the company and a huge, diffuse, and relatively powerless group that simply wishes to see the company run well (Business Roundtable, 2005).

The single major challenge addressed by corporate governance is how to grant managers enormous discretionary power over the conduct of the business while holding them accountable for the use of that power. A company’s owners may number in the tens of thousands, diffused worldwide. So shareholders are granted the right to elect representatives to oversee the management of the company on their behalf. Directors are representatives of owners (or, in closely held companies, the owners themselves), whose purpose under law is to safeguard the assets of the corporation (Monks and Minow, 2004).

According to Business Roundtable (2005):

- The business of a corporation is managed under the direction of the corporation’s board. The board delegates to the CEO — and through the CEO to other senior management — the authority and responsibility for managing the everyday affairs of the corporation. Directors monitor management on behalf of the corporation’s shareholders.
• Making decisions regarding the selection, compensation and evaluation of a well-qualified and ethical CEO is the single most important function of the board.

• Directors bring to the corporation a range of experience, knowledge and judgment. Directors should not represent the interests of particular constituencies.

• Effective directors maintain an attitude of constructive scepticism; they ask incisive, probing questions and require accurate, honest answers; they act with integrity and diligence; and they demonstrate a commitment to the corporation, its business plans and long-term shareholder value.

• In performing its oversight function, the board is entitled to rely on the advice, reports and opinions of management, counsel, auditors and expert advisers.

Given the board’s oversight role, shareholders and other constituencies can reasonably expect that directors will exercise vigorous and diligent oversight of a corporation’s affairs.

The board’s oversight function carries with it a number of specific responsibilities in addition to that of selecting and overseeing the CEO. These responsibilities include:

• Planning for management development and succession.

• Understanding, reviewing and monitoring the implementation of the corporation’s strategic plans.

• Understanding and approving annual operating plans and budgets.

• Focusing on the integrity and clarity of the corporation’s financial statements and financial reporting.

• Advising management on significant issues facing the corporation.

• Reviewing and approving significant corporate actions.

• Reviewing management’s plans for business resiliency.

• Nominating directors and committee members and overseeing effective corporate governance.

• Overseeing legal and ethical compliance.
2.3.2 The CEO and Management

Business Roundtable (2005) summarizes the roles and responsibilities of the CEO and management as below:

- It is the responsibility of the CEO and senior management, under the CEO’s direction, to operate the corporation in an effective and ethical manner. As part of its operational responsibility, senior management is charged with:
  - Operating the corporation.
  - Strategic planning.
  - Annual operating plans and budgets.
  - Selecting qualified management, and establishing an effective organisational structure.
  - Identifying and managing risks.
  - Accurate and transparent financial reporting and disclosures.

- The CEO and senior management are responsible for operating the corporation in an ethical manner as follows:
  - A CEO of integrity. The CEO should be a person of integrity who takes responsibility for the corporation adhering to the highest ethical standards.
  - A strong, ethical “tone at the top.” The CEO and senior management should set a “tone at the top” that establishes a culture of legal compliance and integrity communicated to personnel at all levels of the corporation.
  - An effective compliance program. Senior management should take responsibility for implementing and managing an effective compliance program relating to legal and ethical conduct.
2.3.3 Relationships with Stakeholders

According to Business Roundtable (2002), corporations are often said to have obligations to stockholders and to other constituencies, including employees, the communities in which they do business, and the government. But these obligations are best viewed as part of the paramount duty to optimize long-term stockholder value. Stockholder value is enhanced when a corporation treats its employees well, serves its customers well, maintains good relationships with suppliers, and has a reputation for civic responsibility and legal compliance.

Shareholders

Basic shareholder rights should include the right to: 1) secure methods of ownership registration; 2) convey or transfer shares; 3) obtain relevant and material information on the corporation on a timely and regular basis; 4) participate and vote in general shareholder meetings; 5) elect and remove members of the board; and 6) share in the profits of the corporation (OECD, 2004).

Shareholders should have the right to participate in, and to be sufficiently informed on, decisions concerning fundamental corporate changes such as: 1) amendments to the statutes, or articles of incorporation or similar governing documents of the company; 2) the authorization of additional shares; and 3) extraordinary transactions, including the transfer of all or substantially all assets, that in effect result in the sale of the company (OECD, 2004).

According to OECD principles (OECD, 2004):

- Corporations have a responsibility to communicate effectively and candidly with stockholders. The goal of stockholder communications should be to help stockholders understand the business, risk profile, financial condition, and operating performance and trends of the corporation.
- Corporations communicate with investors and other constituencies not only in proxy statements, annual and other reports and formal stockholder meetings, but in many
other ways. All of these communications should provide consistency, clarity and candour.

- In planning communications with stockholders and investors, corporations should consider:
  - Candour. Directors and management should never mislead or misinform stockholders about the corporation's operations or financial condition.
  - Need for timely disclosure. In an age of instant communication, there is an increasing need for corporations to disclose significant information closer to the time when it arises and becomes available.
  - Ultimate goal of stockholder communications. Whatever the substance of the communication, the corporation's ultimate goal should be to furnish information that is honest, intelligible, meaningful, timely and broadly disseminated, and that gives investors a realistic picture of the corporation's financial condition and results of operations through the eyes of management.

- Because stockholders have a particular interest in the amount and nature of equity compensation paid to directors and senior management, corporations should obtain stockholder approval of new stock option and restricted stock plans in which directors or executive officers participate.

**Employees**

It is in a corporation's best interest to treat employees fairly and equitably. Corporations should have in place policies and practices that provide employees with compensation, including benefits, that are appropriate given the nature of the corporation's business and employees' job responsibilities and geographic locations.

When corporations offer retirement, healthcare, insurance and other benefit plans, employees should be fully informed of the terms of those plans. Corporations should have in place mechanisms for employees to alert management and the board to allegations of misconduct without fear of retribution. Corporations should communicate honestly with their employees.
about corporate operations and financial performance. Technology makes communicating with employees quicker, easier and less expensive. Corporations should take advantage of technological advances to enhance dissemination of information to employees.

**Communities**

Corporations have obligations to be good citizens of the local, national and international communities in which they do business. Failure to meet these obligations can result in damage to the corporation, both in immediate economic terms and in longer-term reputation value.

A corporation should be a good citizen and contribute to the communities in which it operates by making charitable contributions and by encouraging its directors, managers and employees to form relationships with those communities. A corporation also should be active in promoting awareness of health, safety and environmental issues, including any issues that relate to the specific types of business in which the corporation is engaged.

**Government**

Corporations, like all citizens, must act within the law. The penalties for serious violations of law can be extremely severe, even life-threatening, for corporations. Compliance is not only appropriate; it is essential. Management should take reasonable steps to develop, implement and maintain effective legal compliance programs and the board should periodically review such efforts to gain reasonable assurance that they are effective.

Corporations have an important perspective to contribute to the public policy dialogue and should be actively involved in discussions about the development, enactment and revision of the laws and regulations that impact their businesses and that affect the communities in which they operate and their employees reside.

**2.4 Board Operations**

Business Roundtable (2005) summarizes the board operations as follows:
Serving on a board requires significant time and attention on the part of directors. They must participate in board meetings, review relevant materials, serve on board committees, and prepare for meetings and discussions with management. In addition, directors must spend the time needed and meet as frequently as necessary to properly discharge their responsibilities.

Directors should receive incentives to focus on long-term shareholder value. Including equity as part of directors’ compensation helps align the interests of directors with those of the corporation’s shareholders. Accordingly, a meaningful portion of a director’s compensation should be in the form of long-term equity. In this regard, corporations increasingly are providing the long-term equity component of directors’ compensation in the form of restricted stock, rather than stock options, to better align directors’ interests with those of shareholders.

The board’s independent or non-management directors should have the opportunity to meet regularly in executive session, outside the presence of the CEO and any other management directors, in accordance with applicable listing standards.

Many board responsibilities may be delegated to committees to permit directors to address key areas in more depth. Regardless of whether the board grants plenary power to its committees with respect to particular issues or prefers to take recommendations from its committees, committees should keep the full board informed of their activities. Corporations benefit greatly from the collective wisdom of the entire board acting as a deliberative body, and the interaction between committees and the full board should reflect this principle.

The board’s agenda must be carefully planned yet flexible enough to accommodate emergencies and unexpected developments. The chairman of the board should work with the lead director (when the corporation has one) in setting the agenda and should be responsive to individual directors’ requests to add items to the agenda and open to suggestions for improving the agenda. It is important that the agenda and meeting schedule permit adequate time for discussion and a healthy give-and-take between board members and management.
• Board agendas should be structured to allow time for open discussion. Board members should have full access to senior management.

• The board must have accurate, complete information to do its job; the quality of information received by the board directly affects its ability to perform its oversight function effectively. Directors should receive and review information from a variety of sources, including management, board committees, outside experts, auditor presentations, and analyst and media reports. The board should be provided with information before board and committee meetings, with sufficient time to review and reflect on key issues and to request supplemental information as necessary.

• Corporations should have an orientation process for new directors that are designed to familiarize them with the corporation’s business, industry and corporate governance practices. Common practices include briefings from senior management, on-site visits to the corporation’s facilities, informal meetings with other directors and written materials.

• Where appropriate, boards and board committees should seek advice from outside advisers independent of management with respect to matters within their responsibility. For example, there may be technical aspects of the corporation’s business — such as risk assessment and risk management — or conflict of interest situations for which the board or a committee determines that additional expert advice would be useful. Similarly, many compensation committees engage their own compensation consultants.

2.4.1 Management Development and Succession

Business Roundtable (2005) summarizes the management development and succession below:

• Long-term planning for CEO and senior management development and succession is one of the board’s most important functions. The board, its corporate governance committee or another committee of independent directors should identify and regularly update the qualities and characteristics necessary for an effective CEO.

• Emergency succession planning also is critical. Working with the CEO, the board or committee should see that plans are in place for contingencies such as the departure,
death or disability of the CEO or other members of senior management to facilitate the
transition to both interim and longer term leadership in the event of an untimely
vacancy.

• Under the oversight of an independent committee or the lead director, the board should
annually review the performance of the CEO and participate with the CEO in the
evaluation of members of senior management. All non-management members of the
board should participate with the CEO in senior management evaluations.

2.4.2 Board and Committee Evaluation

Business Roundtable (2005) summarizes the board and committee evaluation:

• The board should have an effective mechanism for evaluating performance on a
continuing basis. Meaningful board evaluation requires an assessment of the
effectiveness of the full board, the operations of board committees and the
contributions of individual directors.

• Planning for the departure of directors and the designation of new board members is
essential. The board should plan ahead for changes in membership, and it should have
written criteria for director candidates that should be re-evaluated periodically. The
board also should establish procedures for the retirement or replacement of board
members. These procedures may, for example, include a mandatory retirement age, a
term limit and/or a requirement that directors who change their primary employment
tender a board resignation, providing an opportunity for the governance committee to
consider the desirability of their continued service on the board.

2.5 Accountability

Corporate governance is concerned with the structures and processes associated with, for
example, production, decision-making and control within an organisation. Accountability,
which is a sub-set of governance, involves the monitoring, evaluation and control of
organisational agents to ensure that they behave in the interests of shareholders and other
stakeholders (Keasey and Wright 1993).
Accountability is answerability to higher authorities who sit at the apex of institutional chains of command and to directly involved stakeholders, for performance that involves delegation of authority to act (Kearns, 1996). Accountability, however, involves surprisingly complex answers to apparently simple questions such as: who is accountable?, to whom?, for what?, and how?

Table 2.3 presents five “dimensions” of accountability and identifies the types of accountability that government agencies should be expected to establish and maintain in each dimension. Most government accountability methods have been limited to external control methods aimed at securing compliance in the legal, political and hierarchical dimensions (Dicke and Ott, 2002).

Table 2.3 Five dimensions of accountability (Dicke and Ott, 1999)

<table>
<thead>
<tr>
<th>Legal</th>
<th>Bureaucratic Hierarchical</th>
<th>Political</th>
<th>Professional</th>
<th>Moral/Ethical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasks are carried out in accordance with constitutional principles, laws, or contractual obligations, Binding sanctions are available</td>
<td>Hierarchical relationships, close supervision</td>
<td>Demand for Responsiveness</td>
<td>Those with expertise exercise discretion, Individual experts are answerable for their decisions and actions</td>
<td>Standards of good behavior arise from conscience, organizational norms and standards, and concern for the general welfare</td>
</tr>
</tbody>
</table>
2.6 Corporate Social Responsibility, Business Ethics and Corporate Governance

It is widely argued that businesses have obligations that go beyond profit maximization and that businesses should make a positive contribution to society (Boatright, 2003; Carroll, 1999; Fisher, 2004; Robbins et al., 2003; Shaw and Barry, 2004).

According to Epstein (1987), corporate social responsibility “relates primarily to achieving outcomes from organisational decisions concerning specific issues or problems which (by some normative standard) have beneficial rather than adverse effects upon pertinent corporate stakeholders.” It involves bringing corporate behaviour up to a level where it is congruent with the prevailing social norms, values, and expectations (Boatright, 2003). Corporate social responsibility encompasses those expectations society has of organisations at a given point in time. They are “the behaviour and norms that society expects business to follow” (Carroll, 1999). Society expects businesses to make a profit and obey the law and, in addition, to behave in certain ways and conform to the ethical norms of society.

These behaviour and practices go beyond the requirements of the law, and appear to be constantly expanding (Carroll, 1999). The relationship between corporate social responsibility and business ethics can be characterized in various ways. Carroll’s “Pyramid of Corporate Social Responsibility” (1991), one of the most widely cited approaches, identifies four levels of corporate responsibilities: economic, legal, ethical and discretionary.
Table 2.4 Carroll’s “pyramid of corporate social responsibility” (Carroll, 2003)

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Societal Expectation</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Required</td>
<td>Be profitable. Maximize sales, minimize costs, etc.</td>
</tr>
<tr>
<td>Legal</td>
<td>Required</td>
<td>Obey laws and regulations.</td>
</tr>
<tr>
<td>Ethical</td>
<td>Expected</td>
<td>Do what is right, fair and just.</td>
</tr>
<tr>
<td>Discretionary</td>
<td>Desired/ Expected</td>
<td>Be a good corporate citizen.</td>
</tr>
</tbody>
</table>

More recently, Schwartz and Carroll (2003) proposed a three-domain account of corporate social responsibility. These domains are consistent with the earlier model except that philanthropy is no longer a discrete category. In both models, ethics is one aspect of the corporate social responsibilities of business. As pointed out above, corporate governance is concerned with the processes by which organisations are directed, controlled and held accountable and requires balancing the interests of various stakeholders and society as a whole with the economic goals of the organisation. While corporate governance is concerned with all of the dimensions of corporate social responsibility identified above, it is the way that ethics is dealt with at the governance level, which is the focus of this paper. In other words, we focus on organisational approaches to ethics at the level of corporate governance (Bonn and Fisher, 2005).

2.7 Audit Committees

There has been growing recognition in recent years of the importance of corporate governance in ensuring sound financial reporting and deterring fraud. The audit serves as a monitoring device and is thus part of the corporate governance mosaic (Cohen et al., 2002).
Levitt (2000a) argued that "audit committees play an indispensable role in challenging those practices that have the potential to undermine the quality of financial reporting." In addition, by performing the attest verification function, auditors are a significant part of a firm's monitoring system and thus can also be considered an essential component of the corporate governance mosaic. Therefore, in principle, auditors must work with other actors in the corporate governance mosaic to ensure that stakeholders receive the highest quality financial reports as well as help to protect the interests of current and future shareholders and investors. For instance, the auditor must work with the audit committee to assess and promote financial reporting quality (Cohen et al., 2002).

2.8 Corporate Ethics

Today's directors are considered to have responsibilities, not just to shareholders, but to employees, suppliers, customers and the communities in which they do business. They have to deal with often competing claims from new constituencies, such as the environmental movement, women's groups and minority rights groups. In addition, they must recognize the imperative of a sharper definition of corporate ethics.

In contrast to the business world of the 1980s-sometimes described by the media as a decade in which avarice and self-interest ballooned as quickly as ethics shrank-more attention is being paid to the need for a clearer focus on business ethics. Moreover, a few corporations are finding that "business as usual" is not particularly good business at all (Brown, 1994).

2.9 Corporate Governance Rating Systems

The development of corporate governance rating systems is driven by the need to compare corporate governance structures and practices between countries and companies. Indeed, there is a rising demand from investors for tools to help them judge the level of corporate governance as part of their investment strategy. Remarkably, the available rating systems use different methodologies and weighting in measuring the level of corporate governance and they take varying approaches to reach their final conclusions. However, a company’s board structure and processes is one of the three minimum categories found in all corporate
governance rating systems. Appendix - C provides a detailed overview of the criteria used in assessing boards of directors as part of the overall corporate governance rating systems. Besides these overall rating systems, specific board ratings have also emerged. Since 1996, Business Week magazine publishes its ranking of the best and worst boards in Corporate America (Bryne and Melcher, 1996).

The comparison of the rating systems reveals a large variety of the detailed set of criteria used to assess boards of directors. This variety concerns both the number and the content of the indicators. The differences in focus can, to a large extent, be explained by the underlying principles. Most of the rating systems rely on the internationally recognized corporate governance principles and codes (e.g. OECD, ICGN, World Bank), completed with national recommendations (Van den Berghe and Levrau, 2003). In particular, the latter may differ from one country to another. This is also reflected in the rating systems concerned. For example, the corporate governance scorecard developed by DVFA includes specific criteria relating to the two-tier board structure and the co-determination found in Germany. Furthermore, the differences in focus can also be explained by the varying quality of the legal environment. In some emerging countries, corporate governance rating systems intercept the weak legal environment by including criteria not fully covered by law. For example, corporate governance scoring system of CLSA Asia-Pacific Markets, Asian’s leading independent brokerage and investment group, includes a whole set of measures a company must take to prevent and punish mismanagement.

A more in-depth examination of the rating systems entails a division of the main criteria in three categories:

a. criteria used by (almost) two rating systems,

b. criteria found in some of the rating systems and

c. criteria exceptionally included.
The classification is presented on Table 2.5. For example, category1 used independence of outsider directors, board committees, and director and executive compensation for classifying its corporate governance rating system.

Table 2.5 Classification of the criteria used by corporate governance and board rating systems  
(Berghe and Levrau, 2004)

<table>
<thead>
<tr>
<th>Category 1</th>
<th>Category 2</th>
<th>Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independence of outside directors</td>
<td>Board size</td>
<td>Access to information</td>
</tr>
<tr>
<td>Board committees</td>
<td>Board leadership structure</td>
<td>Age limitation</td>
</tr>
<tr>
<td>Director and executive compensation</td>
<td>Role of the board</td>
<td>Board review</td>
</tr>
<tr>
<td></td>
<td>Frequency of board meetings</td>
<td>Education/training</td>
</tr>
</tbody>
</table>

Almost all rating systems pay attention – explicitly or implicitly – to board independence. This is not a surprise given the fact that the independent board is the cornerstone of the actual corporate governance debate. It is widely recognised that independent directors have an important role to play, especially in those areas where there is a potential for conflicts of interest, such as financial control, nomination and remuneration. Consequently, criteria concerning the selection and election of those directors are also included.

One theme that is consistent in all rating systems is board committees. Many arguments can be put forward to demonstrate that the installation of board committees leads to a more effective operation of the board. The audit committee receives particularly high priority. Emphasis is also placed on director and executive compensation, including stock option plans and stock ownership. The extent to which the remuneration of directors is linked to financial or other performance measures is, however, fairly controversial.

Moderate priority is given to board size and board leadership structure. A limitation of the minimum and maximum number of board members is advocated. Furthermore, there is an outspoken preference for a separation of the positions of chairman and CEO. Some rating
systems also include specific criteria for CEO succession. The role of the board and, more specifically, the division of tasks between management and the board of directors also receives less attention. While the distribution of responsibilities in a two-tier board structure is perhaps straightforward, it is vaguer in a unitary board model. In general, boards of directors are supposed to direct the company and not to manage it.

Some rating systems include the frequency of board meetings as a criterion. After all, an active board implies a minimum number of board meetings. Moreover, the agenda of the board meetings or the opportunity to meet without the presence of inside directors is also taken into account.

Minimal emphasis is placed on access to information, including both the availability of information from management and the possibility to consult outside advisers. The same counts for age limits regarding the directors’ terms of office. Finally, board review and directors’ education receive the least attention. A formal evaluation of the board of directors, at least annually, is seen as a means to improve its working. Training of directors is highlighted because of the growing demand of professionalism and the increasing complexity of tasks (Berghe and Levrau, 2004).

2.10 Board Structure, Information Technology, Transparency and Company Performance

2.10.1 Corporate Governance and Company Performance

A number of prior academic studies have focused on the link between corporate governance and corporate performance. The establishment of such a link is not straightforward. There are some divergences among findings which could be attributable to the fact that different regulations, country legal environment differences, market conditions, government policies, different measures of corporate governance and corporate performance were used in different studies (Patterson, 1998; 2000). Patterson surveyed some of the major studies on corporate governance and corporate performance conducted from 1982 to 2000 and found that both the terms “corporate governance” and “corporate performance” were elusive because of the
different ways in which different studies defined and proxied “corporate governance” and “corporate performance.” This has resulted in “an array or matrix of different definitions of governance matched against different measures of performance” (Brancato, 2000). A summary of the various measures of corporate governance and corporate performance used in prior studies is presented below.

**Measures of Corporate Performance**

Patterson (2000) noted that different measures of corporate performance were employed in different studies and the most common performance measures were:

- Combined stock market and accounting measures, like Tobin’s Q or the ratio of market-to-book values,
- Stock market measures, such as the cumulative abnormal returns (CAR) and
- Accounting-based measures, i.e., figures and ratios from the financial statements such as return-on-equity (ROE), return-on-assets (ROA).

The unavailability of many variables comprising the theoretical Tobin’s Q used in studies by Lindenberg and Ross (1981) and Morck et al. (1988) prevent similar calculations being used in this study. Instead, we employed Chung and Pruitt’s (1994) alternative formula for approximating Tobin’s Q:

\[
\text{Tobin's Q} = \frac{\text{market value of common stock} + \text{book value of preferred stock} + \text{book value of long term debt}}{\text{book value of total assets}}
\]

As an alternative measure for Tobin’s Q, we considered several measures that are common and well accepted in previous literature as proxies for performance. We follow, among others,

An indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on investment."

\[
\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}
\]

Finally, as both ROA and Tobin’s Q are subject to short-term fluctuations, we employed a two-year average for the years 2005 and 2006.

**Measures of Corporate Governance**

Similarly, different studies have used a variety of measures to proxy for “corporate governance.” For example, some studies have employed various board characteristics such as board size, composition, the quality of directors, and board leadership as proxies for corporate governance.

Some studies proxied shareholder ownership as an indicator of active corporate governance, while some others used more specific activities such as shareholder proposals. This list could be extended to include the dimensions below.

- Board characteristics
  - Board size
  - Quality of directors
  - Chief executive officer (CEO) duality
  - Board composition
- Board activity
- Directors’ ownership
- Transparency/disclosure behaviour/structure
- Concentrated shareholder ownership
- Shareholder intervention
  - Shareholder proposals
  - Target lists for shareholder intervention by activist shareholders
- Cross-country rankings on corporate governance
- Social Responsibility
- Accountability
- Others including opinion rankings by investors or experts

Yeh et al. (2002) state that major contributions of corporate governance to the company include enhancing operating performance and preventing fraud. According to the research of Black, Jang, and Kan (2002), companies with better corporate governance have better operating performance than companies with poor corporate governance. A sound corporate governance structure not only provides useful information to investors and creditors to reduce information asymmetry but also helps the company to improve operations. According to related literature, major corporate governance indicators include the structure of the board of directors, the structure of ownership, and information transparency. These indicators are discussed in detail below.

2.10.2 Board of Directors Structure

The board of directors is the top executive unit of a company and is charged with the responsibility of supervising operations of the company’s management.

The following measures were used to assess board composition and structure:
- Total number of directors (board size).
- Number of executive and non-executive directors (NEDs)
- Proportion of NEDs in relation to total board and to number of executive Directors.
• Tenure of chairman, executives (average) and NEDs (average) and all directors.
• Pay (average).
• Percentage of equity held (beneficially) by all directors.
• Chairman/CEO separation.
• Chairman: executive or non-executive.
• Audit Committee’s existence.
• Remuneration committee’s existence.

In this study the following measures of corporate governance are studied:

• CEO - Chairman duality
• Insider/outside members
• Size of board of directors
• Transparency and disclosure

CEO - Chairman Duality

CEO/Chairman duality is a corporate governance issue that combines aspects of the CEO position with the board of directors and structures CEO/board chairperson roles. Under the independent structure, two individuals serve in these roles. In the alternative, CEO duality, these roles are held simultaneously by one party. The latter structure is quite common in USA, with approximately 80% of large firms employing the dual structure (Lorsch, 1989).

The adoption of this structure represents the exercise of power by the CEO. Hambrick noted that holding multiple titles, as in the case of the dual structure, "tends to be a sign of power accumulation and power hoarding" (Fortune, 1991). He commented further on the negative effects of this collection of power through titles calling it “the Idi Amin phenomenon,” in reference to the former Ugandan leader who assigned himself approximately a dozen top-brass positions in his country. If maintaining control is imperative for founders, it seems likely that the founder CEO would elect to serve concurrently as board chairperson. To do otherwise invites some risk of divided authority. By holding both of these powerful organisational
positions, founders virtually assure that both management and the board do not challenge or constrain their actions.

There is some consistency that the choice of these structures could be strongly related to corporate performance (Rechner and Dalton, 1991). Dayton (1984) noted that the chairman ensures the independence of the board—a condition that cannot exist when there is an all-powerful chairman/CEO who controls the agenda, the presentations, the discussions, and often the selection of the directors themselves.

Evidence supporting the separation of CEO from chairmanship is summarised below:

- Sundaramurthy et al. (1997) analyzed 261 Standard and Poor’s (S&P) 500 firms in the USA that adopted 486 anti-takeover provisions for the period 1984-1988. It was found that, although the adoption of anti-takeover provisions would negatively affect stock price performance, such negative market reactions would be less prominent when the positions of CEO and chairman were separated. This suggests that the monitoring role of the chairman seemed to have an effect on the market reaction to anti-takeover provisions.

- Daily and Dalton (1994) examined the relationship between board leadership structure and corporate bankruptcy. They investigated 57 matched-pair USA bankrupt and non-bankrupt firms during a ten-year period from 1972 to 1982. Results showed that bankrupt firms (53.8%) had a greater incidence of the joint CEO-Chairman structure than surviving firms (37.5%). This showed that firms which separated the roles of CEO and chairman would have a higher chance of survival, suggesting that board leadership is an important variable in firm performance.

- Gul and Leung (2002), using 385 observations from Hong Kong companies for the year 1996, examined whether a separate CEO structure was associated with higher voluntary corporate disclosure. The results, after controlling for firm size, family ownership and other important variables, showed that CEO duality was associated with lower levels of voluntary corporate disclosure.
• Tsui et al. (2001), using 650 observations from Hong Kong companies for the years 1994 to 1996, found that non-CEO-dominated boards are associated with lower audit fees after controlling for firm size, profitability and other important variables. Since independent corporate boards provide more effective internal control, there is lower control risk and lower audit effort that translates to lower audit fees.

• In late 2004, a study by Richard Bernstein, chief USA strategist at Merrill Lynch, received a great deal of attention in the media. Bernstein’s study concluded that companies which have ‘‘split’’ the roles of Chairman and CEO perform better than those companies which have the same individual in both positions. In this regard, Institutional Shareholder Services (ISS) reported that in the past decade, companies with different people serving as chairman and CEO have outperformed those that combine the roles, according to Richard Bernstein. Of the 100 largest companies in the S&P 500 Index, corporations that split the roles have posted a 22 % annual return since 1994, outpacing the 18 % return earned by firms that did not.

• Brickley et al. (1997) investigated this issue by using a 1988 dataset of 661 USA firms. They found that firms that combine the roles tend to be larger, with older CEOs who have longer tenure and greater amounts of share ownership, than firms that separate the jobs. Additionally, combined role firms pay their CEO/chairman more than split role firms pay their CEO, and have lower market to book ratios than split role firms. However, Brickley et al. (1997) find no evidence that combining the roles in one person has any detrimental effect on firm performance. In fact, they find the firms that had a single CEO/chairman perform better than firms that divide the positions. Consistent with this, they observe a negative stock market reaction to announcements that firms were to split the roles. In the UK, Dedman and Lin (2002), using event study methodology, find no evidence of a positive share price reaction to the news that firms are to split the roles of CEO and chairman. This suggests that the division of the roles does not add value to the firms that have complied with the Code, or that those firms for whom such a division would add value, have failed to comply.
The following studies failed to find conclusive evidence supporting the separation of CEO and chairman on the board:

- Dalton et al. (1998) performed a meta-analysis on 31 empirical studies of board leadership structure (69 samples with a total number of observation = 12,915) and their relationships to firm financial performance (both on market performance indicators and accounting performance indicators). No significant correlation was documented between the two variables, suggesting that separating the roles of CEO and chairman might not lead to better firm performance.

- Daily and Dalton (1993) examined the effects of CEO duality, board composition and firm performance for 186 small listed companies in the USA. They found that the separation of the roles of CEO and chairman had no significant relationship with either accounting (measured by return on assets and return on equity) or market (measured by price/earnings ratio) performance.

- Rechner and Dalton (1989) compared shareholder returns of 141 Fortune 500 firms with and without CEO duality from 1978 to 1983. Though it is argued that the “dual role represented a prima facie case of conflict of interests,” no differences in company performance were found for the two groups of firms, suggesting that there might not be a significant association between CEO duality and firm performance.

Simpson and Gleason's research (1999) on banking firms investigated the ownership by directors and officers, ownership by the CEO, number of directors, percentage of inside directors, and CEO duality aspects of ownership and governance. The research was inspired by the recent research on corporate governance and the need to understand the internal processes behind the financial decisions that result in bank failures. The empirical tests indicated a lower probability of financial distress when one person is both the CEO and chairman of the board, but the other factors did not have significant effect.

Recent corporate scandals have made many USA boards question the wisdom of combining the chairman and CEO positions. But a knee-jerk decision to adopt the British model of
separating the two top jobs without understanding the model's complexities is hardly the answer. According to Lorsch and Zelleke (2005), corporate governance across the Atlantic has its own characteristic problems. For example, although a separate chairman makes the board more independent of the CEO, the arrangement can lead to confusion regarding the company leadership. Lorsch and Zelleke (2005) further stated that poor relationship between the chairman and CEO can easily lead to conflicts and power struggles. USA boards need independent leadership, but achieving such leadership by splitting the two positions is not necessarily a clear improvement over the USA model. Instead, they argue, for most large USA companies, the addition of a competent lead director or presiding director will likely strike the right balance between effective governance and leadership (Lorsch and Zelleke, 2005.)

**Insider/Outsider Members**

Prior studies have classified board members into two broad groups: insiders and outsiders. Insiders are directors who are firm employees, retired employees, or family members of the firm’s employees. The remaining directors, outsiders, can be further subdivided into affiliate and independent directors. Affiliate directors are non-employee board members with existing or potential business ties to the firm (Daily et al., 1998). Affiliate directors often have conflicts of interests due to their current and expected future business relationship with the firm, thereby impairing their ability to monitor and discipline (Anderson and Reeb, 2004).

Inside directors generally have a greater understanding of the company’s operations and, therefore, can enhance the efficiency of the board of directors and the precision of their decisions. However, independent directors are more professional in business operations and can more easily achieve the supervising function, reduce the possibility of collusion of top executives, and prevent the abuse of company resources, thus improving operating performance (Chiang, 2005).

The structure of the board of directors is an important area of concern in corporate governance research. Board composition refers to the distinction between inside and outside directors and
is traditionally operationalised as the percentage of outside directors (i.e., those not in the direct employ of the organisation) on the board. It may be noted, however, that alternative definitions of outside directors have been utilized (Pfeffer, 1972).

According to Pfeffer and Salancik (1978) there are three areas in which board composition is posited to affect firm performance: service, resource acquisition, and control. These three perspectives are not necessarily considered to be mutually exclusive. The service component suggests that outside board members provide counsel and advice to the CEO not necessarily available from inside directors. Beyond that, outside board members may, by virtue of their own experience, accomplishment, and exposure, enhance the reputation of the firm (Daily and Dalton 1993).

According to Capital Markets Board of Turkey, “a member of the board who fulfils the below-mentioned requirements may qualify as an ‘independent member’:

a- Not to have any direct or indirect relationship of interest in terms of employment, capital or trade and commerce between the company, its subsidiaries, affiliates or any other group company and himself/herself, his/her spouse and his/her blood or affinity relatives by up to the third degree within the last two years,
b- Not to be previously elected to the board of directors as a representative of a certain group of shareholders,
c- Not to be employed in a company, primarily for the audit and consultant firm, which undertakes full or partial activity or organization of the company under a contract and not to have a managing position therein within the last two years,
d- Not to be previously employed by the external auditor of the company or not to have been included in the external audit process within the last two years,
e- Not to be previously employed by a firm providing significant amounts of services and products to the company and not to have a managing position therein within the last two years,
f- For his/her spouse or any of his/her relatives by blood and affinity up to the third degree, not to have a managing position or be a shareholder holding more than 5% of
the total capital or the controlling shareholder by all means, or not to hold a managerial position or not to be effective in the control of the company,
g- Not to receive any compensation other than the board membership compensation and attendance fee; to hold shares of less than 1% if he/she is a shareholder due to his/her duty, provided that such shares are not preferred shares” (Capital Markets Board of Turkey, 2003, p.52). This study does use these criteria for the definition of the independent directors.

Another advantage of the outside director concerns the notion of resource dependence (Pfeffer and Salancik, 1978). Resource dependence theory suggests that the effectiveness of the firm rests on the ability of key organisational members to act as boundary spanners. In their role as boundary spanners, they interact with the environment in a manner that co-opts important external organisations with which they are interdependent (Pfeffer and Salancik, 1978).

While in some ways this may be considered as a subset of the service role, it is thought by many to be crucial and might be noted separately. The point here is that carefully selected outside directors may be in a position to extract important resources from the environment that might otherwise be unavailable. Additionally, it is expected that these directors will support the organisation, attend to its problems, and present it favourably to outsiders. There is some empirical support that boards of directors can be quite effective in this role (Pfeffer, 1973).

A third factor is control, which refers primarily to the board's monitoring function (Anderson and Anthony 1986). In this regard, boards of directors may have received the most stinging criticism in recent years. Some observers have been quite outspoken in their doubt that insider-dominated boards could fulfil the monitoring charter (Daily and Dalton 1993).

Board reform critics have suggested increasing representation by outside directors as a means for better protecting shareholder interests. Due to their subordinate position in the organisation, it is not likely that inside directors will objectively monitor and evaluate CEO
actions. Often the effectiveness of inside directors is compromised by their ties to the CEO, resulting in losses for shareholders (Daily and Dalton 1993).

Despite the series of recommendations advocating the addition of outside board members, the founder CEO may perceive such a strategy as potentially threatening. Under these circumstances, the addition of outside directors is unlikely.

Ford (1988) reported that among Inc. 500 firms, insider-dominated boards exerted more influence or were more important with respect to strategic planning, the budget process, crisis management, and the board's ability to assist in operating the firm in the event of CEO disability.

A similar rationale would apply to the resultant impact of a lack of independence among board members, as it would under the dual leadership structure. Executives who concurrently serve as board members are unlikely to be able to set aside their interests as managers of the corporation when serving as directors. As some evidence, executive (inside) directors have been found to be more likely to vote in favour of golden parachutes or the payment of greenmail (corporate acquisition strategy for generating large amounts of money from the attempted hostile takeover of large, often undervalued or inefficient companies), practices designed to further entrench management, often at the stockholder's expense. It would seem that greater concentrations of independent (outside) directors would best serve the financial interests of the shareholders (Daily and Dalton 1993).

Anderson and Reeb (2004) examine the mechanisms used to limit expropriation of firm wealth by large shareholders among S&P 500 firms with founding-family ownership. Consistent with agency theory, they find that the most valuable public firms are those in which independent directors balance family board representation. In contrast, in firms with continued founding-family ownership and relatively few independent directors, firm performance is significantly worse than in non-family firms. They also find that a moderate family board presence provides substantial benefits to the firm. Additional tests suggest that families often seek to minimize
the presence of independent directors, while outside shareholders seek independent director representation. These findings highlight the importance of independent directors in mitigating conflicts between shareholder groups and imply that the interests of minority investors are best protected when, through independent directors, they have power relative to family shareholders.

The following empirical studies show that companies with a more independent board (measured by the proportion of outsider members in the board) are likely to perform better than others, suggesting that board composition is an important element that would enhance firm performance:

- Brown and Maloney (1998) studied the characteristics of corporate boards for 82 companies that attempted 106 acquisitions during 1980s, and found that higher inside director turnover and lower outside director turnover was associated with higher acquisition performance. They argued that when competent outside directors believe that the managers are not acting in the best interest of the shareholders, they would remain on the board and challenge the manager. If they chose to resign (resulting in a higher outside director turnover) lower firm performance would result. However, if they replaced the managers (leading to a higher inside director turnover), firm performance would improve.

- Davidson et al. (1998) studied the effects of board composition on the stock market reactions of USA firms when a golden parachute amendment was adopted between 1984 and 1990. Results suggested that golden parachutes could either be beneficial or harmful to shareholders, depending on the monitoring power of the board. They found that when the board was more independent, the decision to adopt golden parachutes was more likely to be in the interests of shareholders, thus resulting in better firm performance.

- Barnhart and Rosenstein (1998) investigated the combined effects of ownership structure and board composition on corporate performance (measured by Tobin's Q). By analyzing 321 S&P 500 firms in 1990; they found that a firm’s performance was
jointly determined by the proportion of independent directors and managerial
ownership, showing that governance structures such as board independence would
have positive effects on firm performance.

- Cotter et al. (1997) examined the role of the target firms’ independent outside directors
during takeover attempts. They analyzed 169 tender offer targets that were traded in
the USA during 1989-1992 and investigated whether the presence of a more
independent board would enhance shareholders’ wealth during the tender offer by
comparing the target shareholder gains between targeted firms with an independent
board and those without an independent board. Results showed that the target
shareholder gains were about 20% higher for those targets with an independent board,
suggesting that companies with a better governance structure (proxied by an
independent board) are associated with better shareholders’ gains during tender offers.

- Byrd and Hickman (1992), studied acquisition bids made by 111 USA firms during the
period 1980-1987, investigated whether outside directors monitor the management thus
leading to better performance. They found that generally, firms with majority-
independent boards earned higher stock price returns than other firms when they made
takeover bids, but this trend reversed for firms with more than 60% independent
directors. They concluded that outside director membership on boards was an effective
corporate governance mechanism to improve firm performance but beyond a certain
threshold (i.e., 60%) outside director membership failed to enhance firm performance.

- Rosenstein and Wyatt (1990) examined 1,251 announcements of outside director
appointments in the USA during the 1981-1985 period and found that abnormal returns
were significantly higher for companies announcing outside director appointments.
Though most boards were already dominated by outside directors before the
appointment announcements, the addition of an outside director increased firm value,
suggesting that outside directors were selected in the interest of the shareholders.

- Weisbach (1988) studied 367 USA companies from 1974-1983 and examined the
relation between monitoring of CEOs by inside and outside directors and CEO
resignations. They reported that CEO turnover was more highly correlated with firm
performance (measured by stock returns and accounting earnings) in corporations
having a majority of outside directors (at least 60% outside directors) than in those where insiders dominated, suggesting that outside directors are important in monitoring management. Unexpected stock returns were found on days when resignations were announced, showing that boards with the presence of outside directors increased firm value by removing poor performing management.

- Beasley (1996) finds evidence that outside directors fulfill their monitoring role with respect to corporate financial reporting. He reports that firms committing financial fraud have fewer independent directors than similar firms who are not found to commit fraud. Dechow et al. (1996) reinforce this evidence, finding that firms with a minority of outside directors and with no audit committee are more likely to commit fraud than firms in the same industry and of similar size, but with a majority of outside directors and an audit committee.

- Peasnell et al. (2001) found that the likelihood of firms making income-increasing abnormal accruals in order to avoid reporting earnings reductions and losses is negatively associated with the proportion of outside directors on the board.

There are some studies that found independent directors were not as effective in improving firm performance as hypothesized.


- Klein (1998) also examined 485 S&P 500 USA firms for 1992 and 486 for 1993 and found little association between overall board composition and firm performance. However, inside director representation on a board’s finance and investment committees correlated with improved firm performance, suggesting that inside directors, as a result of their superior understanding of their business, could contribute effectively to enhanced firm performance.

- Hermalin and Weisbach (1991) examined the relationship between board composition and ownership structure on firm performance. They did not find any significant
relationship between board composition (measured by the proportion of outside directors in the board) and Tobin’s Q.

Some other studies have even found that more independent directors in the board are associated with worse firm performance. These studies are discussed below:

- Bhagat and Black (1999) examined the relationship between the degrees of board independence level (measured by the proportion of independent directors minus the proportion of inside directors) and firm performance by analyzing 928 large USA public companies during 1985-1995. Firm performance is measured using Tobin’s Q, return on assets, turnover ratio, operating margin, and sales per employee. They found that firms with an independence level of 0.4 or above performed worse than other firms, and there was no significant association between board independence and firm performance for firms with less than 0.4 level of independence. In addition, firms with a higher proportion of independent directors were found to be associated with slower growth. The study suggested that more independent boards were associated with worse performance.

- Yermack’s study (1996) reported that there was a significant negative correlation between both the board size and board composition (measured by the proportion of independent directors in the board) and firm’s stock price performance (measured by Tobin’s Q), as well as operating performance (measured by return on assets and the ratio of capital expenditures to sales).

These results are interesting since they suggest that an increase in independent directors on the board does not necessarily correlate with better firm performance. Inside directors generally have a greater understanding of the company’s operations; therefore, they can enhance the efficiency of the board of directors and the precision of their decisions (Yermack, 1996; Lang, 1999). However, independent directors are more professional in business operations and can more easily achieve the supervising function, reduce the possibility of collusion of top
executives, and prevent the abuse of company resources, thus improving operating performance.

In contrast, those who consider the board an important element of corporate governance acknowledge the role of outside directors as monitors of management and providers of “relevant complementary knowledge” (Fama, 1980; Fama and Jensen, 1983).

Size of Board of Directors

The optimal number of directors is an important question to answer for companies. Efficiency is reduced if the number of directors is too large because there is an increased difficulty in achieving agreement concerning decisions. Conversely, decision-making precision is reduced if the number of directors is too small because there may not be adequate discussion of issues involved (Chiang, 2005). Different countries have different board sizes. For example although UK and USA boards subscribe to the same model, they differ in size, with UK boards typically being smaller. To illustrate, the median number of board members for firms in the study by Dedman (2000) is eight, whereas in the USA study conducted by Yermack (1996), the median board size was 12.

Pfeffer and Salancik (1978) argued that preferences for board size are related to the resource dependence perspective. The greater the reliance on the external environment is, the larger the board of directors. Small boards are most appropriate when directors serve primarily as administrators. It might also be noted that small boards are more "manageable" from the CEO's perspective (Daily and Dalton, 1993).

Board size has been argued to have an inverse relationship with the degree of effective monitoring provided by the board of directors. This is known as the board size effect and has been said to be due to problems that arise in group coordination and the ability to process problems efficiently as group size increases. This argument is drawn from organisational behaviour research that suggests that as work groups grow larger, total productivity exhibits
diminishing returns. Holthausen and Larcker (1993) consider board size among a number of variables that might influence executive compensation and company performance, but failed to find consistent evidence of a negative relationship between company performance and board size.

It is argued that when there are more directors on the board, the firm would be more likely to secure critical resources, such as external funding (Pfeffer, 1972; 1973; Zahra and Pearce, 1989). Others maintain that as the board becomes larger, the CEO could obtain quality advice from non-executive directors (NEDs) (who might themselves be the CEO of other companies) who would be able to provide more expertise than other executives (Zahra and Pearce, 1989). Empirical evidence supporting this argument includes the following:

- Dalton et al. (1999) performed a meta-analysis of 131 observations (N = 20,620) across 27 studies on the relationship between the board size and financial performance. Both accounting-based indicators of financial performance (such as return on assets, return on equity) and indicators based on market returns (such as Jensen’s alpha, the Treynor measure, the Sharpe measure) were used to measure financial performance. Their analysis found that there is a strongly positive relationship between the two variables, suggesting that corporate governance, in the form of a larger board, is associated with better firm performance.

- Golden and Zajac (2001) surveyed 3198 USA hospitals and found that the relationship between board size and strategic decisions was non-linear. In particular, they found that as board size increased for smaller boards, there was a positive effect on the firm’s strategic decisions but further increases in board size led to negative effects on strategic decisions. In other words, an increase in the number of directors on an existing large board would reduce its efficiency. This result suggests that there is an “optimum” size for the board. This is evidence that board size would indirectly affect firm performance.

- Chaganti et al. (1985) investigated the differences in board size of 21 pairs of failed and non-failed retailing firms in the USA during 1970-1976. They found that failed
firms tended to have smaller boards than non-failed ones, showing that companies with a larger board size would perform better than those with a small board, and companies with larger boards have greater chances of survival.

Though the above evidence is supportive of larger boards, other scholars have argued that firms with a smaller board would have better (or more efficient) corporate governance and hence better firm performance. Increasing board size might significantly inhibit board processes due to the potential group dynamics problems associated with large groups. Larger boards are more difficult to coordinate and may experience problems with communication and organisation. Furthermore, large boards may face decreased levels of motivation and participation and are prone to develop factions and coalitions. Researchers having this perspective pointed out that, large boards might suffer from the problem of social loafing, i.e., as the board increases in size, the individuals would exert less effort (Kidwell and Bennett, 1993; Latane et al., 1979; Shepperd, 1993). Consequently, these group dynamic problems may hinder boards of directors in reaching a consensus on important decisions and may put a barrier on the ability of the board to control management (Goodstein et al., 1994; Eisenberg et al., 1998; Forbes and Milliken, 1999; Golden and Zajac, 2001). Furthermore, CEOs might gain advantages in power relations with board members through tactics such as divide and rule or coalition building when the board is large and diverse (Mintzberg, 1983; Alexander et al., 1993). A number of empirical studies support this argument and they are summarized below:

- Eisenberg et al. (1998) studied 879 small (in terms of sales, total assets and number of employees) Finnish firms during 1992-1994 and found that the larger the board size (i.e., more than 6-7 members) the lower the firm performance as measured by industry-adjusted return on assets. They pointed out that large boards tend to have more communication and coordination problems which might hamper the effectiveness of efficient decision-making and management control. In addition, large boards tend to have a larger proportion of outside directors who usually are biased against high risk projects (which also have higher potential returns) in order to maintain their reputation (Yermack, 1996). It was also found that firms with a higher proportion of outside
directors (which is typical on a large board) would be less likely to outperform their competitors.

- Brown and Maloney (1998) examined the effects of different board characteristics on the stock price returns for acquiring firms in takeovers. They argued that since any given director’s influence on a large board is small, directors on a larger board would have incentives to shirk. It is difficult for a large board to give every director sufficient opportunities to review all the relevant issues. Therefore, it is expected that monitoring in firms with large boards would be less effective and hence lead to lower performance. Using the acquisition performance (measured by the three-day abnormal returns) of 82 USA companies that attempted 106 acquisitions during the period 1982-1986, it was found that board size was negatively related to performance, thus confirming the above hypothesis.

2.10.3 Transparency

Transparency describes the increased flow of timely and reliable economic, social, and political information about investors' use of loans, creditworthiness of borrowers, monetary and fiscal policy, and the activities of international institutions. Alternatively, a lack of transparency may exist if access to information is denied, if the information given is irrelevant to the issue at hand; or if the information is misrepresented, inaccurate, or untimely. Thus, a working understanding of transparency should encompass such attributes as access, comprehensiveness, relevance, quality, and reliability (Vishwanath, Kaufmann, 2001).

Transparency and disclosure are integral to corporate governance. Higher transparency and better disclosure reduce the information asymmetry between a firm’s management and financial stakeholders—equity and bond holders, mitigating the agency problem in corporate governance. The financial literature has analyzed the agency problems arising from the asymmetric information between a firm’s management and financial stakeholders for well over 75 years, with an increasing focus over the last 25 years. The practitioners, large institutional equity investors in particular, have also demonstrated increasingly active participation in creating a level playing ground between the management and financial
stakeholders. The focus on transparency and disclosure has increased in the wake of recent events beginning with the Asian crisis in the latter half of 1997 and continuing with the recent discussions in the USA equity markets. (Patel et al., 2002).

The OECD emphasises that a strong disclosure regime promoting real transparency is a pivotal feature of market-based monitoring of companies and is central to shareholders’ ability to exercise their ownership rights on an informed basis. Shareholders and potential investors require access to regular, reliable and comparable information in sufficient detail for them to assess the stewardship of management and make informed decisions about the valuation, ownership and voting of shares. Insufficient or unclear information could hamper the ability of markets to function, increase the cost of capital and result in a poor allocation of resources (OECD, 2006).

Beeks and Brown (2005) found that firms with higher CG quality make more informative disclosures. Sadka (2004) provides both empirical and theoretical evidence that the public sharing of financial and market transparency has enhanced factor productivity and economic growth in 30 countries.

The OECD’s assessment of transparency and disclosure involves a consideration of the extent to which the corporate governance framework effectively provides for disclosure of material information about: (a) companies’ financial and operating results; (b) their non-commercial objectives relevant to investors and others; (c) major share ownership and voting rights; (d) remuneration policies and information about board members; (e) related party transactions; (f) foreseeable risk factors; (g) issues relating to employees and other stakeholders; and (h) governance structures and policies. The assessment also involves a consideration of:

- financial and non-financial reporting standards and practices;
- external auditing standards, practices and mechanisms for oversight of auditors;
- the role of external auditors;
• the extent to which channels for disseminating information provide for equal, timely and cost-efficient access to relevant information by users; and

• the extent to which the corporate governance framework is complemented by an effective approach that promotes the provision of analysis or advice by analysts, brokers, rating agencies and others that is relevant to investment decisions and free from material conflicts of interest (OECD, 2006).

In 2007, Balic (2007), from S&P, conducted S&P's third phase of the Turkish transparency and disclosure study, which analysed the disclosure practices of 52 Turkish companies quoted on the Istanbul Stock Exchange. Standard & Poor's Governance Services and the Corporate Governance Forum of Turkey (CGFT) at Sabanci University in Istanbul monitored and assessed corporate response to regulation and market circumstances by conducting the survey over three successive years with the objective of providing a comparative insight into the disclosure practices of Turkish companies. According to this study, laws and regulations concerning corporate governance and their enforcement have been drastically improved in recent years. The new legal and regulatory framework includes corporate governance Guidelines issued in 2003 (updated in 2005), directives related to audit and accounting standards and practices issued in and after 2003 by the Capital Markets Board of Turkey (CMB), and directives issued by the Banking Regulatory and Supervisory Agency.

In Balic’s study (2007), transparency and disclosure were evaluated by assessing the inclusion of 106 possible attributes in companies' disclosure. The 106 attributes were selected after examination of the annual report and accounts, regulatory filings, and Web sites of leading companies around the world, and identification of the most common disclosure items. The attributes are grouped into three subcategories:

• Ownership structure and investor relationships,

• Financial transparency and information disclosure, and

• Board and management structure and process.
To calculate degree of transparency of companies, this study adapted S&P’s attributes for transparency and disclosure scores of companies.

2.10.4 Information Technology

Over the past 20 years, the business environment has become more competitive due greater globalization, and rapid technological changes. These changes, when coupled with the dramatic increase in computer-processing power and data storage capability, have led to an incremental approach of investing in IT. Prior to 1991, IT was generally seen as a panacea that could cure all corporate maladies and, as such, was added as an extra layer in the organisation. In many cases, IT was simply added to existing business processes (Brynjolfsson, 1993).

As companies respond to global competition, there is a growing recognition of the pivotal role of technology in determining market success (Council on Competitiveness, 1991; Mitchel1, 1990). As a result of this recognition, companies have increased their adoption of advanced technologies as well as their introduction of technologically sophisticated products. These changing practices have alerted companies to the need for developing technology policies that are consistent with business strategy (Collier, 1985). This consistency ensures the successful deployment of a company’s technological capabilities and resources in pursuit of the goals of business strategy. Such effective deployment of technological resources helps to build a sustainable competitive advantage that enhances a company’s financial performance (Porter, 1985).

IT maturity and utilisation are critical success factors for business today. In 2003, Pohlmann, Mines, and Badowski (2003), surveyed 413 global CEOs, asking them to indicate the factors that they considered were critical to their companies’ future. Many challenges were identified, including global position, market growth, marketing, innovative research and development, customer orientation, quality staff, and product quality. However, the single most critical success factor was utilizing IT. The study inquired about the implications of not keeping pace with changing technology. Fifty-eight % of CEOs said they would experience a loss of

78
competitive edge, 13% said they would not be in business, and the remainder said they would experience an increase in costs or other operating inefficiencies (Pohlmann et al., 2003).

There has been a paradigm shift in business that has resulted in IT becoming of major concern in business and a critical factor of success. This paradigm change has been brought about by the utilization of IT in the streamlining of internal processes and the value and supply chain, Internet, and e-business. This has led companies to reinvent their businesses, resulting in increased customer and supplier collaboration (Adner, 2002).

IT technologies improve the transparency and governance structure of companies. Access to information improves transparency and governance. Especially Management Information Systems reporting, company intranet websites, company websites, Internet, email, and business intelligence systems that enable people to query almost everything, makes hiding information almost impossible. In addition, software technologies having governance controls improve the information quality and veracity.

Mitchell (1998), in her article “Sources of Transparency: Information Systems in International Regimes,” states that Information systems are the true source of transparency. In their study on public sector organisations, McIvor et al. (2002) showed that Internet technologies have the potential to facilitate the achievement of transparency within public sector organisations. The connectivity that automatically results from Internet technologies can exert a very powerful influence in encouraging a free flow of ideas around the organisation, permitting individuals and organisational units to converge and interconnect. They showed how the "open" systems nature of Internet technologies can facilitate greater cooperation and communication across organisation units both internally and externally. The positive role of IT in increasing transparency has also been highlighted by Day and Wensley (1988) and Min et al. (2002).

Besides its impact on transparency, IT has clear effects on company performance. Recent studies have established that the successful use of information technology (IT) can improve a
company’s performance and competitive position (Bharadwaj, 2000; Stratopoulos and Dehning, 2000).

Based on a cross-sectional sample of 155 banking firms, Lin (2007), as part of his study, investigated the main and interactive effects of IT capability on five firm-performance measures. The results of this study indicate that IT capability contributes directly to the overall value-creation performance of banking firms.

Theoretical and empirical evidence indicates that companies implementing an IT-enabled strategy are able to gain a competitive advantage over their direct competitors (Andersen, 2001; Bharadwaj, 2000; Feeny and Ives, 1990; Konsynski and McFarlan, 1990; Mata et al., 1995; Porter and Millar, 1985; Stratopoulos and Dehning, 2000). Chircu and Kauffman argue that a firm can obtain a sustainable competitive advantage if it uses IT capability to exploit specific organisational resources that are unique, difficult or costly to imitate, and if other firms cannot acquire or build them fast enough.

In addition to its direct and measurable effects on company performance, according to Quinn and Baily (1994), IT has some immeasurable benefits such as maintaining market share, avoiding catastrophic losses, creating greater flexibility and adaptability, improving responsiveness for new product lines, improving service quality, enhancing quality of work life, and increasing predictability of operations.

According to Banker et al. (1990), Brau et al. (1995), Brown et al. (1995), Brynjolfsson and Hitt (1996), IT investment is not necessarily related to company performance. They indicated that IT maturity is different than the level of IT investment and would better measure the IT capabilities of organisations. Therefore, in this study IT maturity is used as an IT dimension rather than IT investment.
2.11 Corporate Governance in Turkey

The legal and institutional framework for corporate governance in Turkey has improved, especially in the past few years. The improvement initially began with the passage of the Capital Markets Law (CML) and establishment of the Capital Markets Board (CMB) in 1981.

In July 2003, Turkey's Capital Markets Board issued its corporate governance Principles (updated in 2005), which should be adopted on a “comply or explain” basis, placing new roles, duties and structure on the board of directors.

New CMB requirements also have been established to strengthen the oversight function of company boards. Essentially addressing publicly held companies, the CMB's Principles were published with EU accession and the global markets in mind. The principles apply to public companies on an optional or “comply or explain” basis. Specifically, disclosure regarding a publicly held company's application or non-application of the principles needs to be included in the company's annual report. The principles do not provide exceptions to, or prevail over, existing legislation and should be applied as secondary rules to reinforce a publicly held company's structure and efficiency in the market.

The Principles consist of four sections: shareholders, disclosure and transparency, stakeholders, and boards of directors. The boards of directors section deals with the principles governing: (i) a board's function, duties and responsibilities, and activities; (ii) financial benefits granted to board members; (iii) the establishment and activities of board committees; and (iv) executives.

“The first section discusses the Principles on shareholders’ rights and their equal treatment. Issues such as shareholders right to obtain and evaluate information, right to participate in the general shareholders’ meeting and right to vote, right to obtain dividend and minority rights are included in detail in this section. Matters such as keeping records of shareholders and the free transfer and sales of shares are also discussed hereunder.
The second section discusses the Principles regarding disclosure and transparency issues. Within this scope, Principles for establishment of information policies in companies with respect to shareholders and the adherence of companies to these policies are discussed. The conditions of today’s global financial economy and conditions faced in our country have been taken into consideration while setting single standards for the procedures for providing information via periodic financial statements and reports and detailing such standards through consideration of functionality.

The third section is concerned mainly with stakeholders. A stakeholder is defined as an individual, institution or an interest group that is related with the objectives and operations of a company in any way. Stakeholders of a company include the company’s shareholders and its workers; creditors, customers, suppliers, unions various non-governmental organisations, the government and potential investors who may consider to invest in the company. This section includes the Principles to regulate the relationship between the company and stakeholders.

The fourth section includes Principles concerning functions, duties, obligations, operations and structure of the board of directors; remuneration thereof, as well as the committees to be established to support the board operations and the executives.” (Capital Markets Board of Turkey, 2003, p.8).

The publication of Turkey's first set of corporate governance guidelines and plans for a new index on the ISE measuring compliance are encouraging. Nevertheless, the high level of family ownership is an impediment to good practice (Balic, 2007). Examining the quality of information available on the websites of the Istanbul Stock Exchange for the 50 companies in the IMKB 50 index, Kurdoglu (2007) found that two of them do not even have websites. Fewer than half published their annual reports on their websites. Only 4% disclosed risks associated with their partnerships and affiliates. About a third did not disclose their partnership structure. None of the companies disclosed the remuneration of its board members or its articles of association. The survey indicated that information concerning
transactions between parent companies and their affiliates was seriously under-reported (Balic, 2007).

According to Balic (2007), in Turkey, transparency is improving in some areas, particularly with respect to: (a) financial reporting; (b) accessibility of company disclosures; (c) basic information about share attributes and the largest direct shareholders; (d) basic information about boards and senior management; and (e) stakeholder policies.

In 2004, a transparency study done by Standard & Poor’s of the publicly available disclosures made by 52 of the largest and most liquid Turkish listed companies showed moderate disclosure levels, on average (Balic, 2004). Researchers analysed the inclusion in publicly available documents of 106 possible information items (attributes), grouped into three sub-categories: (1) financial transparency and information disclosure; (2) ownership structure and investor relationships; and (3) board and management structures and processes.

The last study completed by S&P in 2007. In his Turkish transparency and disclosure survey 2007, Balic (2007) from Standards and Poor’s stated that the issuance of corporate governance Principles by the CMB in 2003 was an important milestone, but had little effect on the disclosure practices of Turkish companies until the introduction of mandatory reporting on compliance with the principles in 2004. Mandatory compliance reporting improved the transparency of governance practices and created awareness of the elements of good corporate governance, but its impact on the other pillars of corporate governance has been limited. Current levels of disclosure in Turkey vary substantially between companies, and the deviation between the actual and required or recommended disclosure by the CMB depends on a number of parameters. These include, for example, the previous years' disclosure level, company size, growth opportunities, and the sector (Balic, 2007).

Turkey is a rapidly growing emerging market and the largest economy lined up to join the European Union. During its long march for integration with Europe, a high degree of
volatility, underpinned by recurrent economic crises, has been a well-documented aspect of Turkey’s macroeconomic performance.

In their study conducted on ISE companies, named "ownership patterns and control in Turkish listed companies," Demirag and Serter (2003) found that ownership of Turkish companies is highly concentrated, families being the dominant shareholders. The separation of ownership and control among Turkish companies is mainly achieved through pyramidal ownership structures and the presence of big business groups.

Ararat and Ugur (2002) found that the capital market in Turkey was characterised by low liquidity, high volatility, high cost of capital (low firm valuation) and limited new capital formation. Controlling shareholder maintained large stakes and have leveraged cash flow rights due to privileged shares and pyramidal ownership structures. They also found out that shortcomings in the legal and regulatory framework were contributing substantially to the risks of investing in equity markets in Turkey. These deficiencies have adversely affected not only the flows of foreign direct investments but also the development of an equity market into which both foreign and domestic savings could be channelled (Ararat and Ugur, 2002).

Ugur and Ararat (2004) argued that the economic policy reforms following the 2001 crisis can be expected to generate improvements in corporate governance standards for two reasons. First, the transition to a rule-based economic policy would increase the credibility of the statutory corporate governance reforms. Secondly, the macroeconomic stability that seemed to follow the economic policy reform would encourage voluntary improvements in corporate governance standards as equity finance becomes a more viable option. They concluded that the statutory corporate governance standards in Turkey have improved, but highly concentrated ownership structures and the inadequacy of the enforcement framework would continue to constitute serious obstacles.
3. RESEARCH DESIGN AND METHODOLOGY

3.1 Objectives and the Scope of the Research

This study empirically examines the effects of board characteristics, information technology maturity and transparency on company performance. The study also investigates the moderating effects of transparency and information technology on board structure and company performance. It aims to analyse corporate governance, information technology and company performance relationships in Turkey. Moreover, it will also help us to understand the corporate governance dimensions of high and low-performing companies. Demographic characteristics like, gender, age, education, and job title will be included in the study. Istanbul Stock Exchange companies studied are for the empirical phase of the research. Only stock-ownership companies are required to have boards of directors by Turkish Commercial Law. There are nearly 314 stock-ownership companies quoted on the ISE. The names and addresses of these companies are available from the website of the ISE (www.imkb.gov.tr).

3.2 Research Outline

The research is composed of three sequential research phases, each of which is outlined in the summary below.

The first phase consists of introducing the subject. It includes an elaborate literature review to gain a deeper insight of corporate governance, information technology, transparency, and the effects of board structure on company performance.

The second phase introduces the research design. It includes the literature review and development of a model for empirical evaluation. Development of hypotheses and preparation of a questionnaire is also included in this phase.

Finally, the third phase is the implementation and validation of the research conducted. This phase includes the distribution of questionnaires, the collection of data and the evaluation of results.
3.3 Research Framework

There are four dimensions to be studied in this research. This is because of the model we developed to find the relationships among board structure, IT maturity, transparency and disclosure, and company performance. Figure 3.1 below shows the dimensions of the initial research model. Analysis results will be used to finalise information technology maturity dimensions on this initial model that are created based on literature. Factor analysis will be applied to the data collected by information technology maturity questionnaires that are distributed to ISE companies. The analysis will give us the final factors or sub concepts underlying the information technology maturity in our sample companies.

Figure 3.1 Initial research model
The dimensions on figure 3.1 are explained below:

### 3.3.1 Board structure

In this study, board structure is characterized by the distinction between CEO/chairman roles, insider/outside board members (those directors who hold management positions in the company and those who do not) and board size (number of board members).

If the CEO of the company is also the chairman of the board, the variable is coded as 1; otherwise as 0. In the context of this research, the definition of outsider director is that used by the Capital Markets Board of Turkey. Details are given in the literature review section but because of the importance of the definition, it is provided here as well. According to the Capital Markets Board of Turkey, “A member of the board may be qualified as an ‘independent member’ who fulfil the below mentioned requirements:

a- Not to have any direct or indirect relationship of interest in terms of employment, capital or trade and commerce between the company, its subsidiaries, affiliates or any other group company and himself/herself, his/her spouse and his/her blood or affinity relatives by up to the third degree within the last two years,

b- Not to be previously elected to the board of directors as a representative of a certain group of shareholders,

c- Not to be employed in a company, primarily for the audit and consultant firm, which undertakes full or partial activity or organization of the company under a contract and not to be have a managing position therein within the last two years,

d- Not to be previously employed by the external auditor of the company or not to have been included in the external audit process within the last two years,

e- Not to be previously employed by a firm providing significant amounts of services and products to the company and not to have a managing position therein within the last two years,

f- For his/her spouse or any of his/her relatives by blood and affinity up to the third degree, not to have a managing position or be a shareholder holding more than 5% of the total capital or
the controlling shareholder by all means, or not to hold a managerial position or not to be effective in the control of the company,
g- Not to receive any compensation other than the board membership compensation and attendance fee; to hold shares of less than 1% if he/she is a shareholder due to his/her duty, provided that such shares are not preferred shares”. (Capital Markets Board of Turkey, 2003, p.52).
This study uses these criteria for the definition of the independent directors.
The third board structure variable is board size. It refers to the number of directors on a board.

### 3.3.2 Transparency and Disclosure

Transparency can be defined as a sharing of information and acting in an open manner. In economics and finance, transparency is defined very broadly as “a process by which information about existing conditions, decisions and actions is made accessible, visible and understandable” (Working Group, 1998, p.44).

Shareholders and potential investors require access to regular, reliable and comparable information in sufficient detail for them to assess the stewardship of management and make informed decisions about the valuation, ownership and voting of shares. Insufficient or unclear information could hamper the ability of markets to function, increase the cost of capital and result in a poor allocation of resources (OECD, 2006).

To measure the degree of transparency and disclosure quality for ISE companies, the attributes set by Standard & Poor’s, which has been used globally, is adapted for this study (see Appendix-B). The attributes set includes ownership structure and investor relationships, financial transparency and information disclosure, and board and management structure and process components.

A sample set of attributes used to rate ownership structure and investor relationships component of transparency is given below:
Degree of transparency will be calculated by adding values for each component.
\[ O_1(x) = \sum n(O) \]
\[ F_1(x) = \sum n(F) \]
\[ B_1(x) = \sum n(B) \]

\[ O(x) = \frac{(O_1(x) \times 100)}{o(x)} \]
\[ F(x) = \frac{(F_1(x) \times 100)}{f(x)} \]
\[ B(x) = \frac{(B_1(x) \times 100)}{b(x)} \]

\[ T(x) = \sum (O(x), F(x), B(x)) \]

where

\( o = \) number of ownership structure and investor relationships attributes applicable for company \( x \)
\( n(O) = \) number of ownership structure and investor relationships attributes applicable and has value 1 for company \( x \)
\( n(F) = \) number of financial transparency and information disclosure attributes applicable and has value 1 for company \( x \)
\( n(B) = \) number of board and management structure and process components attributes applicable and has value 1 for company \( x \)
\( o(x) = \) number of ownership structure and investor relationships attributes applicable for company \( x \)
\( f(x) = \) number of financial transparency and information disclosure attributes applicable for company \( x \)
\( b(x) = \) number of board and management structure and process components attributes applicable for company \( x \)
O₁ = ownership structure and investor relationships score for company x
F₁ = financial transparency and information disclosure score for company x
B₁ = board and management structure and process components score for company x
O(x) = Normalised ownership structure and investor relationships score for company x (this score used in analysis)
F(x) = Normalised financial transparency and information disclosure score for company x (this score used in analysis)
B(x) = Normalised board and management structure and process components score for company x (this score used in analysis)
T(x) = Normalised Degree of transparency for company x (this score used in analysis)

3.3.3 Information Technology Maturity

Information technology (IT) is defined as the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware. In short, IT deals with the use of electronic computers and computer software to convert, store, protect, process, transmit and retrieve information. Recently, it has become popular to broaden the term to explicitly include the field of electronic communication so that people tend to use the abbreviation ICT (Information and Communication Technology) (Wikipedia, 2007).

Information systems include many different varieties of software platforms and databases. These encompass enterprise-wide systems designed to manage all major functions of the organisation provided by companies such as SAP, PeopleSoft, JD Edwards, and so on, to more general purpose database products targeted towards specific uses, such as the products offered by Oracle, SAS, Microsoft, and many others. Information technologies encompass a broad array of communications media and devices that link information systems and people, including voice mail, e-mail, voice conferencing, video conferencing, the Internet, groupware and corporate intranets, car phones, fax machines, and personal digital assistants. Information systems (IS) and information technologies are often inextricably linked and, since it has become conventional to do so, they are referred to jointly as information technology.
IT is therefore devoted to: (a) application of data and the processing thereof, and (b) the development and use of hardware, software, telecommunications, Internet, firmware, and procedures associated with information technology (Gupta et al., 1996).

The concept of maturity was first mentioned in a study by Churchill et al. (1969) to determine how managers used computer-based information systems.

IT maturity in this study is used to characterize firms in terms of their evolution in planning, organisation, control, and integration aspects of their information system (IS) function. A higher level of IT maturity would imply a significant formalization of planning, control, organisation, and integration of IT activities. This, in turn, would suggest that the IS function in a firm with a higher level of maturity would have evolved from the data-processing orientation into the strategic IS orientation.

Previous research on IT maturity suggests using managerial practices regarding planning, organisation, and control aspects of information systems function as benchmark variables to show the progress of firms to maturity. The technology base is installed and integrated in the maturity phase of the firms. The integrated firms show a more proactive orientation toward IT, and tight integration between business strategy and IT is cited as a key to firms’ success (Gupta et al. 1996).

An IT maturity questionnaire used by Gupta et al. (1996) has been adapted for this study. A five-point Likert-type scale response format, which ranged from 1 (strongly disagree) to 5 (strongly agree), was provided.

We used four criteria represented by a total of twenty items to measure the progress of firms toward maturity. These are IT planning mode, IT control mode, IT organisation, and IT integration (see appendix A for the full questionnaire).

Gupta et al. (1996, pp.63-66) defines these criteria as below:
IT Planning Mode

As the IS function within a firm continues to mature, the nature of the IS planning changes from a computing plan oriented toward technology management to a long range strategic plan involving data resource management. The primary objectives of IT planning in the maturity stage are to align IT plans with a firm’s business plans, and to extend the infusion and diffusion of IT within a firm.

IT Control Mode

Control of IT activities in a firm has changed drastically during the past two decades from a loose/informal, project, and technical orientation to a more tight/refined, managerial orientation. New methods of controls are based on benefits, priorities (selective charge-out) and technical standards and the organizational goals rather than cost. As firms progress toward maturity, they are as confident in managing computing as in managing other resources, the applications development pursues economic benefit, and IT managers seek to manage the balance between short-term delivery and investment for the future.

IT Organization

In the early stages of IT, a firm could organize IT activities autonomously because early applications were limited to transaction-oriented functions requiring only limited user awareness and involvement. In the IT era, however, the growth of end-user computing continues to spread rapidly and users’ ideas need to be given special attention in the planning and implementation of application.

IT Integration

Traditional management strategy for automation has been a bottom-up approach, in which various functional areas were automated on an application-by-application basis, without consideration for integration and optimization at the firm level. As a result, firms discovered that these application systems were becoming increasingly incompatible, redundant, and in many cases incomprehensible. As a firm moves toward maturity, (1) there is a top-down planning process for linking IS strategy to business needs, (2) the technology is transferred to
a wider spectrum of applications, and (3) there is a high degree of technology integration leading to an effective exploitation of IT within the firm. Integrated firms use IT to create new products and services, to alter linkages with suppliers and customers, and ultimately to establish new standards of performance in their industries.”

3.3.4 Company Performance

Performances of the companies will be measured by Tobin Q and Return on Assets (ROA) that are widely used in the literature. Tobin’s Q which is defined as a ratio of the market value of the firm to the replacement cost of assets. In spite of its common use in the literature as a measure of firm performance, this variable is not publicly available for the Turkish firms. In calculating Tobin’s Q, the market value of assets is approximated by the market value of equity and the book value of debt.

A Tobin's Q ratio greater than 1 indicates that the firm has done well with its investment decisions, i.e., it has invested in positive net present value projects. In contrast, a value of Tobin’s Q lower than 1 indicates that the company did not even earn its firm-wide cost of capital with its investment projects.

Theoretically, if a firm’s investment opportunities earn a rate of return \((r)\) equal to its cost of capital \((k_0)\), \(r = k_0\), Tobin’s Q ratio would be 1.0. That is, investors are indifferent in their expectations concerning the firm’s growth opportunities. However, if \(r\) is greater than \(k_0\), \(r > k_0\), Tobin’s Q would be greater than 1.0 indicating that investors have a positive outlook for the firm’s future growth opportunities. The market price of a firm’s shares is based on management’s ability to generate sustainable real returns on investment \((r)\) that exceed the firm’s real discount rate \((k_0)\).

Tobin’s Q compares the market value of the firm with the replacement cost of the firm’s assets implying that the greater the real return on investment, the greater the value of Q. In contrast to the Book-to-Market (B/M) ratio, the impact of inflation is mitigated in the ideal Q calculation by the use of the replacement cost of assets in constant YTL to measure the value
created by the firm. The attractiveness of Tobin’s Q ratio results from its ability to provide an estimate of a firm’s intangible assets such as goodwill, future investment opportunities, market power and success of management. Ranking firms on the Q values is similar to ranking them on the basis of changes in expected future cash flows (Evans et al., 2002).

\[
Q = \frac{MVE + PS + DEBT}{TA}
\]

where

- \( Q \) = Tobin's Q
- \( MVE \) = (closing price of shares at the end of the financial year) x (number of common shares outstanding)
- \( PS \) = liquidation value of the firm's outstanding preferred stock
- \( DEBT \) = (current liabilities - current assets) + (book value of inventories) + (long-term debt), and
- \( TA \) = book value of total assets

As an alternative measure for Tobin Q we considered several measures that are common and well accepted in the past literature as proxies for performance. We follow, among others, Holderness and Sheehan (1998), Morck et al. (1988), Kang and Shivdasani (1995), Qi et al. (1998), Core et al. (2004) in considering return on asset (ROA).

ROA is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by
dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on investment."

\[ \text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \]

3.4 Data Collection Method and Instrument

There are four data sets required for this study. These are board structure, IT maturity, transparency and disclosure, and company performance data. They are brought together from different data sources. A carefully designed questionnaire which was tested for its reliability was used for the determination (measurement) of the IT Maturity of the organisations. Transparency and Disclosure quality of organisations is measured based on an adapted set of attributes used globally by Standard and Poor’s for Turkey. The rest of the data collected from ISE website, CMB website, company websites, and commercial financial data providers etc. The data used in this study detailed below.

**Board Characteristics/Structure:**

Board characteristics (structure) data is collected from the 2006 Yearbook of Companies published by the ISE. The Yearbook data are also available from the ISE website http://www.ise.org/company/yb2006.htm. Furthermore, company websites, company annual reports, and the Capital Markets Board of Turkey website were used to collect:

- Number of independent directors
- Board size
- Whether CEO and chairman is the same person (CEO/Chairman Duality)

For some of the companies, required data was not available from the sources above; therefore, investor relations departments of these companies were called or e-mailed to get the data. The template below (see Table 3.1) used to store the collected data.
Table 3.1 Board Structure data collection template

<table>
<thead>
<tr>
<th>Company Code</th>
<th>Company Name</th>
<th>Number of Independent Directors</th>
<th>CEO/Chairman Duality? (1: Yes 0:No)</th>
<th>Board Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IT Maturity:

Survey research is used for statistical analysis. It is more time efficient than interviewing, particularly at a distance because, once properly designed, the survey can be sent to a large number of people with little extra trouble (Meredith et al., 1989).

The data used in this study were collected from primary sources by self-administered, structured questionnaires and from websites of companies and reliable organisations like the ISE, and the Capital Markets Board of Turkey.

The IT Maturity questionnaires (see Appendix – A) were distributed to ISE companies by e-mail and by hand. The questionnaire consists of 20 questions (and 6 demographic questions), and takes approximately 10-15 minutes to fill out completely. At least one questionnaire was distributed to each of 165 ISE companies.

The questionnaire is designed to be as structured as possible to make data analysis easier. Still, some of questions are provided with the “others” choice to give respondents more freedom. The respondents are asked to specify “others” choice. All the questions are self explanatory.
To be able to measure the IT Maturity of the organisations the questions are accompanied by a 5-point interval rating scale (Likert type), ranging from ‘Strongly Disagree’ to ‘Strongly Agree’ or ‘Very Low to Very High.’

The questionnaire includes two sections:

Section A: This Section is used to collect demographic information. Information below is asked:

• Age
• Gender
• Education
• Organisational structure
• Company’s sector?
• Industry of the company

Section B: This Section is used to collect information about IT maturity of companies.

Table 3.2 lists the questions asked in this section of the questionnaire:
Table 3.2 IT maturity questionnaire – IT related questions

<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Our IT projects support the business objectives and strategies of our company.</td>
</tr>
<tr>
<td>2. We continuously examine the innovative opportunities IT can provide for competitive advantage.</td>
</tr>
<tr>
<td>3. We are adequately informed on the current use of IT by competitive forces (e.g., buyers, suppliers, and competitors) in our industry.</td>
</tr>
<tr>
<td>4. We are adequately informed on the potential use of IT by competitive forces (e.g., buyers, suppliers, and competitors) in our industry.</td>
</tr>
<tr>
<td>5. We have an adequate picture of the coverage and quality of our IT systems.</td>
</tr>
<tr>
<td>6. We are content with how our IT project priorities are set.</td>
</tr>
<tr>
<td>7. In our organisation, the responsibility and authority for IT direction and development are clear.</td>
</tr>
<tr>
<td>8. In our organisation, the responsibility and authority for IT operations are clear.</td>
</tr>
<tr>
<td>9. We are confident that IT project proposals are properly appraised.</td>
</tr>
<tr>
<td>10. We constantly monitor the performance of IT functions.</td>
</tr>
<tr>
<td>11. Our IT function is clear about its goals and responsibilities.</td>
</tr>
<tr>
<td>12. Our IT function is clear about its performance criteria.</td>
</tr>
<tr>
<td>13. In our organisation, user ideas are given due attention in IT planning and implementation.</td>
</tr>
<tr>
<td>14. Our IT specialist understands our business and the firm.</td>
</tr>
<tr>
<td>15. The structure of our IT function fits our organisation.</td>
</tr>
<tr>
<td>16. The IT specialist-user relations in our firm are constructive.</td>
</tr>
<tr>
<td>17. In my firm top management perceives that future exploitation of IT is of strategic importance.</td>
</tr>
<tr>
<td>18. There is a top-down planning process for linking information systems strategy to business needs.</td>
</tr>
<tr>
<td>19. Some IT development resource is positioned within the business unit.</td>
</tr>
<tr>
<td>20. The introduction of, or experimentation with, new technologies takes place at the business unit level under business unit control.</td>
</tr>
</tbody>
</table>

**Transparency and Disclosure:**

The attributes set created by Standard & Poor’s, which has been used globally, is adapted and used for this study. Data have been collected from company websites and ISE resources. No survey was used to gather this information. The attributes set includes ownership structure and investor relationships, financial transparency and information disclosure, and board and management structure and process components (see Appendix-B). There are 105 transparency...
and disclosure attributes gathered from the companies’ annual accounts or on their websites. The degree of transparency of a company is calculated by adding values for each component. The items not applicable for a certain company are considered while calculating total score to improve the significance of the scores. For example, if a company A has a total score of 60 out of 95 applicable attributes, then its score will be calculated as below.

Total score = (60/95)*100 rather than (60/105)*100.

For more detail about calculations refer to previous section.

Microsoft Excel is used for the calculation of the data.

A sample of the adapted set of S&P’s attributes is given in Table 3.3 below (for full set of the attributes see Appendix B which includes 105 transparency and disclosure attributes). As it is shown in Table 3.3 and Appendix-B, transparency and disclosure attributes are organised under 3 sections which are:

- Ownership Structure and Investor Relationships
- Financial Transparency and Information Disclosure
- Board and Management Structure and Process

Table 3.3 Sample of 105 transparency and disclosure attributes

<table>
<thead>
<tr>
<th>Component 1: Ownership Structure and Investor Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whether the company in its annual accounts or on its Web site discloses:</td>
</tr>
<tr>
<td>The number of issued and outstanding ordinary shares?</td>
</tr>
<tr>
<td>The number of issued and outstanding other shares (preferred and nonvoting)?</td>
</tr>
<tr>
<td>The par value of each ordinary share?</td>
</tr>
<tr>
<td>The par value of other shares (preferred and nonvoting)?</td>
</tr>
<tr>
<td>The number of authorized but unissued and outstanding ordinary shares?</td>
</tr>
<tr>
<td>The number of authorized but unissued and outstanding other shares?</td>
</tr>
</tbody>
</table>

| Component 2: Financial Transparency and Information Disclosure |
Whether the company in its annual accounts or on its Web site discloses:

Its annual report (specifically, is this available on the company's Web site)?

Its accounting policies?

The accounting standards under which it reports?

Its accounts according to local accounting standards?

Its accounts according to an internationally recognized accounting standard (IAS/USA GAAP)?

Its balance sheet according to an international accounting standard (IAS/USA GAAP)?

Component 3: Board and Management Structure and Process

Whether the company in its annual accounts or on its Web site discloses:

A list of board members (names)?

Details about directors (other than name/title)?

Details about the current employment/position of directors?

Details about directors' previous employment/positions?

The date that each of the directors joined the board?

Whether directors are classified as executives or outside directors?

Company Performance:

For company performance data to calculate Tobin Q and ROA, first Thomson Financials (now Thomson Reuters) was contacted. They gave the quote below (see table 3.4) for the requested data for a five-year period (between 2000 and 2006).

Table 3.4 Thomson Financials’ quotation for historic company data

<table>
<thead>
<tr>
<th>Database</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>DataStream Adv (1 User/5 Access Points)</td>
<td>£15,133.17</td>
</tr>
<tr>
<td>DataStream Worldscope Add-on</td>
<td>£6,053.27</td>
</tr>
<tr>
<td>Total for 12 months subscription</td>
<td><strong>£21,186.44</strong></td>
</tr>
</tbody>
</table>
Financial limitations made it impossible to pay the above amount; hence, we looked for other options. The data needed was obtained from ISE resources, company websites, and the Finnet (finnet.com.tr) website.

Some of the corporate customers of Finnet are:

- C Menkul Degerler A.S.
- Gedik Sigorta
- Gedik Yatirim Ortakligi
- Marbas B Tipi Menkul Degerler Yatirim Ortakligi
- Tekstil Menkul Degerler
- Nurol Menkul Degerler A.S.
- Ata Yatirim Menkul Degerler A.S.
- Ata Online Menkul Degerler A.S.
- Ak Emeklilik A.S.

Tests are conducted between data collected from the Finnet website and those obtained from ISE resources (i.e., data obtained from company balance sheets). Data collected was for the year 2005-2006. Microsoft Excel is used systematically for the calculation of the Tobin’s Q and ROA.

3.5 Sampling

As the objective of the research is to empirically examine the impact of board characteristics, transparency and information technology maturity on company performance, an IT maturity survey was conducted with ISE companies. At least one questionnaire (with an explanatory cover letter) was given to IT and business managers/specialists of 165 ISE companies, with responses being from 89 companies. Only 82 companies returned valid questionnaires. These companies form more than 70% of ISE market capitalization and 26% of the total number of the companies trading under ISE.
3.6 Data Analysis Method

After the IT maturity questionnaire data was collected, data was coded on the computer. The corresponding variables were defined accordingly. The SPSS for Windows statistical software package was utilized for the analysis of the data. The package provides a user friendly interface for statistical analysis.

Microsoft Excel was used for the formulation and collection of board structure, transparency and company performance data. This data was also recorded in SPSS for further statistical analysis. The following tests are used for analysis purposes:

Empirical Data Analysis and Hypothesis Testing

In cause and effect relationships among variables, the difference between dependent, independent, and intervening variables can be understood. The effect is known as the dependent variable, and its performance is dependent on another variable. The assumed cause of such performance or result is called the independent variable. An intervening (either moderating or mediating) variable is the means by which an independent variable affects the dependent variable. A mediator is a variable that passes the effects of an independent variable on to a dependent variable, and as such is an intermediary in the relationship between the independent and dependent variables. A moderator variable affects the direction and/or the strength of the relation between an independent and a dependent variable (Peters, 2002).

The factors which affect how data are analysed are: (1) the number of variables being examined; (2) the level of measurement of the variables; and (3) whether we want to use our data for descriptive or inferential purposes. Depending on the number of variables we will use univariate (one variable only), bivariate (the relationship between two variables) or multivariate (the relationship between more than two variables) analytical techniques. Levels of measurement relates to how the categories of the variable relate to one another (Peters, 2002).
Reliability Analysis:

Fundamentally, reliability concerns the extent to which a measuring procedure yields the same results on repeated trials while validity concerns the crucial relationship between concept and indicator. One interpretation of the reliability criterion is the internal consistency of a test, that is, the items are homogeneous (Kerlinger, 1986). In this sense, reliability refers to the accuracy or precision of a measuring instrument or scale, that it is free from error and therefore will yield consistent results (Peterson 1994). Reliability can be expressed in terms of stability, equivalence, and consistency. Consistency check which is commonly expressed in the form of Cronbach Coefficient alpha (Cronbach, 1951) is a popular method.

Cronbach alpha is a measure of squared correlation between observed scores and true scores. Put another way, reliability is measured in terms of the ratio of true score variance to observed score variance. The theory behind it is that the observed score is equal to the true score plus the measurement error.

Cronbach's alpha estimates reliability by determining the internal consistency of a test or the average correlation of items (variables) within the test. Cronbach's alpha will generally increase when the correlations between the items increase. Alpha can take values between negative infinity and 1. Nunnaly (1978) has indicated Cronbach’s $\alpha$ coefficient of 0.7 or higher to be an acceptable reliability coefficient but lower thresholds are sometimes used in the literature.

Principal Components Analysis and Factor Analysis:

Principal components analysis and factor analysis are statistical techniques applied to a single set of variables to discover which sets of variables in the set form coherent subsets that are relatively independent of one another. Variables that are correlated with one another which are also largely independent of other subsets of variables are combined into factors. Factors which are generated are thought to be representative of the underlying processes that have created the correlations among variables (Peters, 2002).
Factor analysis is a general term used for a variety of different but related data reduction techniques that examine the relationships between a large number of observed variables and group a smaller set of these variables into dimensions that have common characteristics. They rely on mathematical criteria, such as explaining the highest percentage of variance inherent in the original set of variables. Exploratory factor analysis techniques are used to explore the interrelationships among a set of variables and attempt to determine how many underlying constructs/factors are present.

Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction, by identifying a small number of factors which explain most of the variance observed in a much larger number of manifest variables (Peters, 2002).

Factor analysis can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis (for example, to identify collinearity prior to performing a linear regression analysis).

Assumptions which underlie factor analysis include that the data should have a bivariate normal distribution for each pair of variables and that observations should be independent (Peters, 2002).

The factor analysis model specifies that variables are determined by the factors estimated by the model and factors which do not overlap between observed variables. The resulting computed estimates are based on the assumption that all unique factors are uncorrelated with each other and with the common factors. Factor analysis has three main steps. First step is the selection of variables that will be included into analysis. Second step is the extraction of initial set of factors. One common way of determining which factors to keep in the subsequent analysis is to use a statistic called an eigenvalue. This value indicates the amount of variance in the pool of original variables that the factor explains (Peters, 2002).
Normally factors will be retained only if they have an eigenvalue greater than 1. The third step is to clarify which variables belong most clearly to the factors which remain. To do this, variables are rotated to provide a solution in which factors will have only some variables loading on them, and in which variables will load on only single factor. One of the most common rotation methods is varimax rotation.

Principal components analysis is a linear method of factor analysis that uses the mathematical concepts of eigenvalues and eigenvectors (Peters, 2002). And it is designed to transfer a set of interrelated variables into a new set of uncorrelated components that account for all the variance in the original variables (Visualstatistics, 2008). It amounts to a “rotation” of the coordinate axes to identify the principle components which are optimum linear combinations of band values comprising a new data layer.

In this study factor analysis is used to examine the underlying structure of IT maturity questionnaire and to reduce the number of variables for regression and moderating effect tests. Before starting factor analysis Kaiser-Meyer-Olkin measure is calculated and significance of Bartlett’s test is checked to understand whether covariance matrix is suitable for factor analysis. Then factor analysis (with extraction method of principles component analysis) is conducted.

**Correlations Testing:**

In the social and natural sciences, researchers seek to understand and explain the nature of causal relations between phenomena. The phenomena are operationalised into measured relationships that are observed or tested. Hence, correlations serve as empirical indications of possible relationships between variables.

The strength of a linear relationship can be measured for quantitative variables by using the Pearson correlation coefficient.

The values of the correlation coefficient can range from -1 to +1. The following table provides a summary of the types of relationship and their correlation coefficients:
### Table 3.5 Correlation types and coefficients

<table>
<thead>
<tr>
<th>Correlation Type</th>
<th>Correlation Coefficient (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect negative Correlation</td>
<td>r = -1</td>
</tr>
<tr>
<td>Negative</td>
<td>-1 &lt; r &lt; 0</td>
</tr>
<tr>
<td>No Correlation</td>
<td>r = 0</td>
</tr>
<tr>
<td>Positive</td>
<td>0 &lt; r &lt; 1</td>
</tr>
<tr>
<td>Perfect Positive Correlation</td>
<td>r = 1</td>
</tr>
</tbody>
</table>

The higher the correlation coefficient, regardless of sign, the stronger the linear relationship between the two variables is. A positive correlation implies that as the values of one of the variables increase, the values of the other variable tend to increase also. On the other hand, a negative correlation implies that as the values of one of the variables increase, the values of the other variable tend to decrease (Correlation and simple linear regression, 2008). A small or 0 correlation implies that the two variables do not have a linear relationship.

**Regression:**

Regression enables the identification of statistically significant relations between multiple variables. Specifically, it enables identification of the effect of several independent variables on a dependent variable, i.e., the extent to which variations in the dependent variable can be predicted by variations in the independent variables.

Unlike factor analysis, which is based on correlations between variables and a relationship used to group them, regression is designed to reveal cause and effect relationships insofar as it calculates the extent to which variations in the dependent variable can be predicted by variations in the independent variables.

There are two types of regression analysis namely Simple and Multiple regressions. Simple regression involves two variables, the dependent variable and one independent variable.
Multiple regression involves many variables, one dependent variable and many independent variables.

Mathematically, the simple regression equation is as shown below:

\[ y' = b_0 + b_1x \]

Mathematically, the multiple regression equation is as shown below:

\[ y' = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \ldots + b_nx_n \]

where \( y' \) is the estimated value for \( y \) (the dependent variable), \( b_1, b_2, b_3, \ldots \) are the partial regression coefficients, \( x, x_1, x_2, x_3, \ldots \) are the independent variables and \( b_0 \) is the regression constant. These coefficients will be generated automatically after running the simple regression procedure (Regression Analysis, 2008).

Multiple regression analysis is used in this study to examine the relationships between degree of transparency (total) and independent variables.

### 3.7 Definition of Key Terms

Definitions of the key concepts that are used in this study are given below. Related literature and background information is given in section 3.9.

**Board structure**

In this study, board structure is characterized by the distinction between CEO/chairman roles, insider/outsider board members (those directors who hold management positions in the company and those who do not) and board size (number of board members).

This study uses CMB criteria for the definition of the independent directors.

The third board structure variable is board size. It refers to the number of directors on a board.

**Information Technology Maturity**
IT maturity in this study is used to characterize firms in terms of their evolution in planning, organisation, control, and integration aspects of their information system (IS) function.

**Transparency and Disclosure**

Transparency and disclosure practices are important elements of corporate governance because investors and other corporate stakeholders need sufficient information about a company’s operations and financial performance to make investment decisions and assess risk. Good corporate disclosure is often regarded as one of the leading indicators of good corporate governance. Companies that disclose more tend to be more open, investor friendly, and well governed.

Transparency can be defined as a sharing of information and acting in an open manner. Transparency and disclosure is evaluated by searching company annual reports and standard regulatory filings for the inclusion of 105 possible information attributes. These attributes are then grouped into three sub-categories:

(i) Ownership structure and investor relations
(ii) Financial transparency and information disclosure;
(iii) Board and management structure and process.

**Company Performance:**

Companies need to know how they are performing in order to analyse problems, find solutions and make plans for the future. Management accounts provide data about operational efficiency.

In this study we utilise Tobin's Q and ROA as performance measures. The unavailability of many variables comprising the theoretical Tobin’s Q used in studies by Lindenberg and Ross (1981) and Morck et al. (1988) prevent similar calculations being used in this study. To calculate Tobin’s Q we utilise Chung and Pruitt’s (1994) formula for approximating Tobin’s Q:
ROA is a measure which gives an idea about how efficient management is at using its assets to generate earnings. It is calculated by dividing a company's annual earnings (net income) by its total assets.

3.8 Hypotheses

The conceptual framework calls for a moderating model or input-IT maturity and transparency-output approach (Cohen and Bailey, 1997; Gladstein, 1984). In such an approach, the structural board characteristics will first be exposed to IT maturity/transparency effect before performance appears. Hence, a mediation model consists of two parts: (1) board structure affecting IT maturity/transparency (2) IT maturity and transparency affecting performance.
Figure 3.2 Initial research model

The diagram above shows the main and sub dimensions/blocks of the theoretical model.

Board structure comprises the 3 dimensions below:

- CEO/Chairman Duality
- Board Size – Number of Board of Directors Members
- Composition – Insider/Outsider Members Ratio

IT Maturity block comprises the 4 dimensions below:

- IT Planning
- IT Control
- IT Organisation
- IT Integration

Transparency block comprises sub-dimensions below:
Ownership: Ownership structure and investor relationships

Transparency and Disclosure: Financial transparency and information disclosure

Board: Board and management structures and processes

Finally, company performance comprises the performance measures below:

- ROA
- Tobin’s Q

A set of hypotheses are tested as part of the empirical study. These are:

**H1: CEO/Chairman duality is associated with lower company performance.**

CEO/Chairman duality is concerned with the considerable concentration of power which arises where the roles of chairman and chief executive are combined (duality).

In this situation, the supervising function of the board of directors is diminished because of this lack of independence (Patton and Baker, 1987). Duality also promotes CEO entrenchment. A negative relation is then expected between duality and firm performance. On the other hand, one can see duality as an advantage to the firm because it provides a unified firm leadership (Finkelstein and Aveni, 1994).

A key recommendation in codes of best practice is for there to be a separation between the chair and CEO position, which will lead to more independent boards. The Cadbury Code of Best Practice (Cadbury Report, 1992) for example, recommended that ‘there should be a clearly accepted division of responsibilities at the head of the company, which will ensure a balance of power and authority, such that no individual has unfettered powers of decision.’ The suggestion of separating the CEO/Chairman roles is consistent with agency theory (Eisenhardt, 1989), which assumes that the separation of ownership and control of corporations can lead to self-interested actions of the managers, and conflicts of interest in their role as agents of the owners. Agency theory, therefore, suggests that CEO duality (the
situation where the CEO is also the Chairman of the Board) reduces the monitoring effectiveness of the board over management, and supports separation of the CEO/Chairman roles. Stewardship theory (Davis, Schoorman and Donaldson, 1997), on the other hand, regards managers as inherently trustworthy and unlikely to appropriate organisational resources for their own ends. It thus views CEO duality as fostering strong and unified leadership, rather than as weakening the board's independence from management and its monitoring role.

Several studies examining the separation of CEO and chairman posit that agency problems are higher when the positions are held by the same person. Using a sample of 452 firms in the annual Forbes magazine rankings of the 500 largest USA public firms between 1984 and 1991, Yermack (1996) shows that firms are more valuable when the CEO and board chairs are separate. Empirical study by Rechner and Dalton (1991) also supports the separation.

**H2: There is a positive relationship between greater numbers of total directors and overall performance of firms.**

**H3: There is a positive relationship between proportion of outside directors and overall performance of firms.**

The optimal number of directors is a dilemma for companies. Efficiency is reduced if the number of directors is too large because there is increased difficulty in achieving agreement concerning decisions to be made. On the other hand, decision-making precision is reduced if the number of directors is too small because there may not be an adequate discussion of issues. Expanding the number of directors provides an increased pool of expertise this means that larger boards are more likely to have greater knowledge and skills at their disposal. In addition, large boards may be able to draw on a variety of perspectives on corporate strategy and may reduce domination by the CEO (Forbes and Milliken, 1999; Goodstein et al., 1994).
From an agency perspective, it can be argued that a larger board is more likely to be vigilant when it comes to agency problems simply because a greater number of people will be reviewing management actions. However, agency theorists recognize that there is an upper limit to boards. Jensen (1993) suggests this limit to be around eight directors, as any greater number will interfere with group dynamics and inhibit board performance. Alternatively, it can be argued that it is not the size of the board *per se* that is critical, but rather the number of outside members on the board (Dalton et al., 1999). From a resource dependence theory perspective, it can be similarly argued that a larger board brings greater opportunity for more links and hence access to resources.

In their study, Kiel and Nickelson (2003) examined the relationships between board demographics and corporate performance in 348 of Australia’s largest publicly listed companies and described the attributes of these firms and their boards. They found that board size is positively correlated with firm value. Chaganti et al. (1985) report that in a paired sample of non-failed and failed firms, non-failed firms had larger boards than failed firms. The study conducted by Bozec and Dia (2005) for the Canada’s state-owned enterprises found a positive relation between board size, board independence and firm technical efficiency.

Dalton et al. (1999) performed a meta-analysis of 131 observations (N = 20,620) across 27 studies on the relationship between the board size and financial performance. Both accounting-based indicators of financial performance (such as return on assets and return on equity) and indicators based on market returns (such as Jensen’s alpha, the Treynor measure, and the Sharpe measure) were used to measure financial performance. Their analyses found that there is a strongly positive relationship between the two variables, suggesting that corporate governance, in the form of a larger board, is associated with better firm performance.

Chaganti et al. (1985) investigated the differences in board size of 21 pairs of failed and non-failed retailing firms in the USA during 1970-1976. They found that non-failed firms tended to have larger boards than the failed ones, showing that companies with a larger board size would
perform better than those with a small board, and companies with larger boards have greater chances of survival.

Although UK and USA boards subscribe to the same model, they differ in size, with UK boards typically being smaller. To illustrate, the median number of board members for firms in the study by Dedman (2000) is eight, whereas in the USA study conducted by Yermack (1996), the median board size was 12. Table 3.6 below shows some studies summarizing board sizes for Australia, the UK, and the USA. It is clear that board sizes are different in different countries and the effective/ideal board size can be different from country to country. This could explain the differences in some of the empirical studies.

Table 3.6 Australian board characteristics compared with USA and UK boards (Kiel and Nickholson, 2003)

<table>
<thead>
<tr>
<th>Sample</th>
<th>Australia</th>
<th>US</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stapledon and Lawrence, 1996</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>1995</td>
<td>1989</td>
<td>1996</td>
</tr>
<tr>
<td>No. of companies</td>
<td>100</td>
<td>135</td>
<td>348</td>
</tr>
<tr>
<td>Board size</td>
<td>8.89</td>
<td>5.56</td>
<td>6.6</td>
</tr>
<tr>
<td>Proportion of outside directors</td>
<td>0.73</td>
<td>0.62</td>
<td>0.69</td>
</tr>
<tr>
<td>CEO duality</td>
<td>0.17</td>
<td>0.23</td>
<td></td>
</tr>
</tbody>
</table>

Many scholars predict that the effectiveness of a firm's board depends not only upon its size but also on its mix of inside and outside directors (John and Senbet 1998). From an agency perspective, boards should be able to act independently of management and, therefore, must include a preponderance of outside directors.
The opposite perspective is grounded in stewardship theory. According to stewardship theory, managers are good stewards of the company assets. Managers do not misappropriate corporate resources at any price because they have a range of non-financial motives, such as the intrinsic satisfaction of successful performance, the need for achievement and recognition etc.

Agency theory supports the idea that boards should be dominated by outside directors, in order to increase the board's independence from management. The Cadbury code suggests that `the board should include non-executive directors of sufficient calibre and number for their views to carry significant weight in the board's decisions.'

Agency theory leads to normative recommendations that boards should have a majority of outside and, ideally, independent directors and that the position of chairman and CEO should be held by different persons (OECD, 1999; Bosch, 1995; Toronto Stock Exchange Committee, 1994; Committee on the Financial Aspects of Corporate Governance, 1992).

Independent directors are more professional in business operations and can more easily achieve the supervising function, reduce the possibility of collusion of top executives, and prevent the abuse of company resources, thus improving operating performance. Outsider-dominated boards are more involved in restructuring decisions (Johnson et al., 1993) and positively influence diversification strategies (Baysinger and Hoskisson, 1990).

Outside directors are often thought to play a monitoring role inside a board. Prior discussion and debate amongst regulators and corporate governance reformists suggest independence is the critical determinant of board effectiveness. Non-executive directors are thought to be in a better position than executive directors to fulfil their monitoring function because they are independent and concerned with maintaining their reputation in the external labour market (Fama and Jensen, 1983). Consistent with this proposition, a positive relation is expected between firm performance and board independence, here defined as the proportion of outsider directors on the board.
Both the UK and the USA have witnessed a significant increase in the proportion of outsider directors, non-executive director (NEDs), on firm boards in recent years. Though bodies such as the Cadbury Committee in the UK, and the Business Roundtable in the USA, advocate these changes as improving board effectiveness, whether such improvements have actually occurred is an empirical issue.

Among the 33 empirical ownership/performance articles published between 1932 and 1998 surveyed by Gugler (2001), 27 deal with outside and six with inside concentration. The papers mostly found either a positive relationship or no link between outside concentration and performance. In a meta-analysis based on 37 samples from previous studies, Rhoades et al. (2000) concluded that board composition, or more specifically the proportion of outside directors, had a positive relationship with firm performance.

Rosenstein and Wyatt (1990) found that a clearly announced appointment of an outside director leads to an increase in shareholder wealth. Moreover, Baysinger and Butler (1985) reported that firms with higher proportions of independent directors had superior performance records. Wagner et al. (1998) conclude that both greater insider and outsider representation can have a positive impact on performance, while others conclude that there is virtually no relationship between board composition and firm performance (Dalton et al., 1998; Hermalin and Weisbach, 2000).

In the USA, Cotter et al. (1997) found that target shareholder gains are higher when the target board comprises at least 50% outside directors. Beasley (1996) finds evidence that outside directors fulfil their monitoring role with respect to corporate financial reporting. He reports that firms committing financial fraud have fewer independent directors than similar firms who are not found to commit fraud. Dechow et al. (1996) reinforce this evidence, finding that firms with a minority of outside directors and with no audit committee are more likely to commit fraud than firms in the same industry and of similar size, but with a majority of outside directors and an audit committee.
Table 3.7 below summarises recommendations of different guidelines in different countries for hypothesis 1, 2 and 3.

Table 3.7 Guideline recommendations in different countries (Kiel and Nickholson, 2003)

<table>
<thead>
<tr>
<th>Country</th>
<th>Guideline/report</th>
<th>Recommendation</th>
<th>Size of board</th>
<th>CEO duality</th>
<th>Outside directors</th>
<th>Independent directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>Cadbury Report (Committee on the Financial Aspects of Corporate Governance, 1992)</td>
<td>N/A</td>
<td>The two roles should be separate</td>
<td>Minimum of 3</td>
<td>Majority</td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>NACD Blue Ribbon Commission (NACD, 2000)</td>
<td>Board to determine</td>
<td>The two roles should be separate</td>
<td>N/A</td>
<td>Substantial majority</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Toronto Stock Exchange Committee Report (1994)</td>
<td>10–16, board to determine</td>
<td>The two roles should be separate</td>
<td>N/A</td>
<td>Majority must be unrelated</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>Bosch Report (Bosch, 1995)</td>
<td>Nomination committee to devise criteria</td>
<td>N/A</td>
<td>Sufficient number</td>
<td>One third</td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>OECD Principles of Corporate Governance (OECD, 1999)</td>
<td>N/A</td>
<td>N/A</td>
<td>Sufficient number</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

**H4:** There is a positive association between level of IT maturity and degree of transparency.

Component 1: Ownership structure and investor relationships
Component 2: Financial transparency and information disclosure
Component 3: Board and management structure and process

**H4A:** Component 2 of degree of transparency is going to explain the majority of the variance in the dependent variable of transparency.
A considerable proportion of recent research is dedicated to exploring the relationship between the disclosure of a company’s information and changes in stock prices. The results reveal that corporate transparency is highly related to performance, and companies with better corporate governance have higher standards of disclosure and transparency (Black et al., 2002; Botosan, 1997; Brounen and Schweitzer, 2001).

Mitchell (1998), in her article “Sources of Transparency: Information Systems in International Regimes,” stated that Information systems are the true source of transparency. In their study on public sector organisations McIvor et al. (2002) showed that Internet technologies have the potential to facilitate the achievement of transparency of public sector organisations. The connectivity that automatically results from Internet technologies can exert a very powerful influence in encouraging a free flow of ideas around the organisation, permitting individuals and organisational units to converge and interconnect. They showed that the way in which the "open" systems nature of Internet technologies can facilitate greater cooperation and communication across organisation units both internally and externally. The positive role of IT in increasing transparency has also been highlighted by Day and Wensley (1988) and Min et al. (2002).

**H5:** High level of IT maturity moderates the relationship between board structure and overall performance of corporations.

**H6:** High level of transparency moderates the relationship between board structure and overall performance of corporations.

**H7:** There is a positive relation between the board structure and degree of transparency (transparency total).

Beeks and Brown (2005) found that firms with higher CG quality make more informative disclosures. Sadka (2004) provides both empirical and theoretical evidence that the public
sharing of financial and market transparency has enhanced factor productivity and economic growth in 30 countries.

IT technologies also improve the transparency and governance structure of companies. Access to information improves transparency and governance. Especially management information systems reporting, company Intranet websites, company websites, internet, email, and business intelligence systems that enable people to query almost everything makes hiding information almost impossible. In addition, software technologies having governance controls improve the information quality and veracity.

Besides its effects on transparency, IT has clear impact on company performance. Recent studies have established that the successful use of information technology can improve a company’s performance and competitive position (Bharadwaj, 2000; Stratopoulos and Dehning, 2000).

Based on a cross-sectional sample of 155 banking firms, Lin (2007) investigated the main and interactive effects of IT capability on five firm-performance measures. The results of this study indicate that IT capability contributes directly to the overall value-creation performance of banking firms.

Theoretical and empirical evidence indicates that companies implementing an IT-enabled strategy are able to gain a competitive advantage over their direct competitors (Andersen, 2001; Bharadwaj, 2000; Feeny and Ives, 1990; Konsynski and McFarlan, 1990; Mata et al., 1995; Porter and Millar, 1985; Stratopoulos and Dehning, 2000). A firm can obtain a sustainable competitive advantage if it uses IT capability to exploit specific organisational resources that are unique, difficult, or costly to imitate, and if other firms cannot acquire or build them fast enough.

According to Quinn and Baily (1994), besides its direct and measurable effects on company performance, IT has some immeasurable benefits, which are maintaining market share,
avoiding catastrophic losses, creating greater flexibility and adaptability, improving responsiveness for new product lines, improving service quality, enhancing quality of work life, and increasing predictability of operations.

**Tests Used in this study for Hypothesis Testing:**

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Main Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: CEO/chairman duality is associated with lower company performance</td>
<td>Correlation test (Pearson correlation)</td>
</tr>
<tr>
<td>H2: There is a positive relationship between greater numbers of total directors and overall performance of firms.</td>
<td>Correlation test (Pearson correlation)</td>
</tr>
<tr>
<td>H3: There is a positive relationship between proportion of outside directors and overall performance of firms</td>
<td>Correlation test (Pearson correlation)</td>
</tr>
<tr>
<td>H4: There is a positive association between level of IT maturity and degree of transparency. Component 1: Ownership Structure and Investor Relationships Component 2: Financial Transparency and Information Disclosure Component 3: Board and Management Structure and Process</td>
<td>Correlation test (Pearson correlation) Multiple regression analysis (to examine the relationships between degree of transparency (total) and independent variables)</td>
</tr>
<tr>
<td>H4A: Component2 of degree of transparency is going to explain the majority of the variance in the dependent variable of transparency.</td>
<td>Linear regression analysis by using stepwise method</td>
</tr>
<tr>
<td>H5: High level of IT maturity moderates the relationship between board structure and overall performance of corporations.</td>
<td>Correlation test (Pearson correlation) Partial correlations (controlling for IT maturity factors)</td>
</tr>
<tr>
<td>H6: High level of transparency moderates the relationship between board structure and overall performance of corporations.</td>
<td>Correlation test (Pearson correlation) Partial correlations (controlling for degree of transparency)</td>
</tr>
<tr>
<td>H7: There is a positive relation between the board structure and degree of transparency (transparency total).</td>
<td>Correlation test (Pearson correlation)</td>
</tr>
</tbody>
</table>
4. ANALYSIS OF THE RESULTS

4.1 Reliability of Results

For the empirical part of this study, an IT maturity questionnaire was distributed to ISE companies. Therefore, the IT maturity questionnaire was initially tested for its reliability by using a sample of 30 companies. As it is shown in Table 4.1, Cronbach's Alpha is 0.899940891, which is the indication of the reliability of the questionnaire. Individual Cronbach's Alpha of questions are also greater than 0.88.

Table 4.1 Reliability test result for initial questionnaires

<table>
<thead>
<tr>
<th>Item</th>
<th>Scale Mean</th>
<th>Scale Variance</th>
<th>Corrected Tau</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAR0001</td>
<td>65.7</td>
<td>111.9414</td>
<td>0.29028</td>
<td>0.900662</td>
</tr>
<tr>
<td>VAR0002</td>
<td>65.833333333</td>
<td>105.6609</td>
<td>0.623485</td>
<td>0.892879</td>
</tr>
<tr>
<td>VAR0003</td>
<td>65.9</td>
<td>101.3345</td>
<td>0.834897</td>
<td>0.886891</td>
</tr>
<tr>
<td>VAR0004</td>
<td>65.66666666666666666</td>
<td>101.7575</td>
<td>0.703275</td>
<td>0.88929</td>
</tr>
<tr>
<td>VAR0005</td>
<td>66.1</td>
<td>106.7138</td>
<td>0.543274</td>
<td>0.894848</td>
</tr>
<tr>
<td>VAR0006</td>
<td>66.16666666666666666</td>
<td>102.4196</td>
<td>0.703741</td>
<td>0.8901</td>
</tr>
<tr>
<td>VAR0007</td>
<td>66.03333333333333333</td>
<td>103.2057</td>
<td>0.682323</td>
<td>0.890843</td>
</tr>
<tr>
<td>VAR0008</td>
<td>65.73333333333333333</td>
<td>104.6851</td>
<td>0.713262</td>
<td>0.89084</td>
</tr>
<tr>
<td>VAR0009</td>
<td>66.13333333333333333</td>
<td>101.7747</td>
<td>0.73552</td>
<td>0.88913</td>
</tr>
<tr>
<td>VAR0010</td>
<td>66.1</td>
<td>106.5759</td>
<td>0.58268</td>
<td>0.893967</td>
</tr>
<tr>
<td>VAR0011</td>
<td>65.83333333333333333</td>
<td>101.3851</td>
<td>0.711954</td>
<td>0.889608</td>
</tr>
<tr>
<td>VAR0012</td>
<td>65.9</td>
<td>103.6103</td>
<td>0.66779</td>
<td>0.891299</td>
</tr>
<tr>
<td>VAR0013</td>
<td>66</td>
<td>108.2759</td>
<td>0.544525</td>
<td>0.895183</td>
</tr>
<tr>
<td>VAR0014</td>
<td>65.66666666666666666</td>
<td>106.9885</td>
<td>0.556995</td>
<td>0.894614</td>
</tr>
<tr>
<td>VAR0015</td>
<td>65.8</td>
<td>105.4069</td>
<td>0.646333</td>
<td>0.892337</td>
</tr>
<tr>
<td>VAR0016</td>
<td>65.63333333333333333</td>
<td>109.9594</td>
<td>0.486622</td>
<td>0.89663</td>
</tr>
<tr>
<td>VAR0017</td>
<td>65.73333333333333333</td>
<td>109.9264</td>
<td>0.443809</td>
<td>0.8937</td>
</tr>
<tr>
<td>VAR0018</td>
<td>66.2</td>
<td>109.4759</td>
<td>0.304461</td>
<td>0.901994</td>
</tr>
<tr>
<td>VAR0019</td>
<td>67.33333333333333333</td>
<td>112.9885</td>
<td>0.071857</td>
<td>0.915187</td>
</tr>
<tr>
<td>VAR0020</td>
<td>67.3</td>
<td>110.4531</td>
<td>0.213703</td>
<td>0.906274</td>
</tr>
</tbody>
</table>

(a) Listwise deletion based on all variables in the procedure.
The field study was performed on 82 different organisations traded under the Istanbul Stock Exchange. Table 4.2 below shows that questionnaire data collected during the final field study has very high reliability (Alpha=0.8929). Individual Cronbach's Alpha of questions are also greater than 0.88.
Table 4.2 Reliability results for final study – IT maturity questionnaire

<table>
<thead>
<tr>
<th>Statistics for</th>
<th>Mean</th>
<th>Variance</th>
<th>Std Dev</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCALE</td>
<td>65.4634</td>
<td>109.5357</td>
<td>10.4659</td>
<td>20</td>
</tr>
</tbody>
</table>

Item-total Statistics

<table>
<thead>
<tr>
<th>Scale</th>
<th>Scale If Item Mean</th>
<th>Scale If Item Variance</th>
<th>Corrected Item-Mean if Item Deleted</th>
<th>Corrected Item-Mean if Item Correlation</th>
<th>Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAR00001</td>
<td>61.8902</td>
<td>97.8026</td>
<td>.6334</td>
<td>.8841</td>
<td></td>
</tr>
<tr>
<td>VAR00002</td>
<td>61.9024</td>
<td>95.4718</td>
<td>.7254</td>
<td>.8811</td>
<td></td>
</tr>
<tr>
<td>VAR00003</td>
<td>62.0519</td>
<td>97.0703</td>
<td>.6485</td>
<td>.8856</td>
<td></td>
</tr>
<tr>
<td>VAR00004</td>
<td>62.0000</td>
<td>98.4198</td>
<td>.5834</td>
<td>.8855</td>
<td></td>
</tr>
<tr>
<td>VAR00005</td>
<td>61.9755</td>
<td>96.1475</td>
<td>.6530</td>
<td>.8832</td>
<td></td>
</tr>
<tr>
<td>VAR00006</td>
<td>62.0976</td>
<td>99.3484</td>
<td>.5910</td>
<td>.8856</td>
<td></td>
</tr>
<tr>
<td>VAR00007</td>
<td>62.1341</td>
<td>99.8707</td>
<td>.5285</td>
<td>.8872</td>
<td></td>
</tr>
<tr>
<td>VAR00008</td>
<td>61.9634</td>
<td>100.9246</td>
<td>.5035</td>
<td>.8880</td>
<td></td>
</tr>
<tr>
<td>VAR00009</td>
<td>61.9146</td>
<td>99.1655</td>
<td>.5827</td>
<td>.8857</td>
<td></td>
</tr>
<tr>
<td>VAR00010</td>
<td>62.1951</td>
<td>97.7886</td>
<td>.5914</td>
<td>.8852</td>
<td></td>
</tr>
<tr>
<td>VAR00011</td>
<td>62.0976</td>
<td>95.1262</td>
<td>.7293</td>
<td>.8808</td>
<td></td>
</tr>
<tr>
<td>VAR00012</td>
<td>62.0732</td>
<td>97.9452</td>
<td>.6057</td>
<td>.8849</td>
<td></td>
</tr>
<tr>
<td>VAR00013</td>
<td>62.0976</td>
<td>100.2126</td>
<td>.5131</td>
<td>.8876</td>
<td></td>
</tr>
<tr>
<td>VAR00014</td>
<td>62.0488</td>
<td>98.4420</td>
<td>.5550</td>
<td>.8863</td>
<td></td>
</tr>
<tr>
<td>VAR00015</td>
<td>62.0976</td>
<td>98.7805</td>
<td>.5797</td>
<td>.8857</td>
<td></td>
</tr>
<tr>
<td>VAR00016</td>
<td>62.0122</td>
<td>99.3949</td>
<td>.5801</td>
<td>.8859</td>
<td></td>
</tr>
<tr>
<td>VAR00017</td>
<td>62.4021</td>
<td>98.5891</td>
<td>.5020</td>
<td>.8880</td>
<td></td>
</tr>
<tr>
<td>VAR00018</td>
<td>62.6829</td>
<td>103.3550</td>
<td>.2569</td>
<td>.8956</td>
<td></td>
</tr>
<tr>
<td>VAR00019</td>
<td>63.0122</td>
<td>107.9875</td>
<td>.0197</td>
<td>.9037</td>
<td></td>
</tr>
<tr>
<td>VAR00020</td>
<td>63.1463</td>
<td>106.4475</td>
<td>.0933</td>
<td>.9012</td>
<td></td>
</tr>
</tbody>
</table>

Reliability Coefficients

N of Cases = 82.0
N of Items = 20

Alpha = .8926
4.2 Research Results

Demographic information related to the sample group used for the study is shown below:

Age:

Table 4.3 IT maturity questionnaire – demographics (age)

<table>
<thead>
<tr>
<th>IT MATURITY Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between 20 to 30</td>
<td>25</td>
<td>30.5</td>
<td>30.5</td>
<td>30.5</td>
</tr>
<tr>
<td>Between 30 to 40</td>
<td>29</td>
<td>35.4</td>
<td>35.4</td>
<td>65.9</td>
</tr>
<tr>
<td>Between 40 and 50</td>
<td>23</td>
<td>28.0</td>
<td>28.0</td>
<td>93.9</td>
</tr>
<tr>
<td>Between 50 and 60</td>
<td>5</td>
<td>6.1</td>
<td>6.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As seen above, approximately 95% of the participants are between 20 to 50 years old.
Figure 4.1 IT maturity questionnaire – demographics (age).

Gender:

Table 4.4 IT maturity questionnaire – demographics (gender)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>49</td>
<td>59.8</td>
<td>59.8</td>
<td>59.8</td>
</tr>
<tr>
<td>Female</td>
<td>33</td>
<td>40.2</td>
<td>40.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As seen above, approximately 60% of the participants are male and 40% female.
Figure 4.2 shows the gender distribution on a pie-chart.

**Education:**

Table 4.5 IT maturity questionnaire – demographics (education)
As seen above, all participants have either undergraduate or graduate degrees. Those with undergraduate degrees make up 63% of the total.

![IT Maturity Education Pie Chart]

Figure 4.3 IT maturity questionnaire – demographics (education)

**Company Information:**

Company information for the participants is gathered under the dimensions of organisational structure, sector and industry.

**Organisational Structure**

The collected data show that 62% of participants are working within functional type organisations, 26% within a divisional structure and 11% within a matrix organizational structure. The results are given on the Table 4.6.
Table 4.6 IT maturity questionnaire – organisational structure

<table>
<thead>
<tr>
<th>IT MATURITY Organisational Structure</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>51</td>
<td>62.2</td>
<td>62.2</td>
<td>62.2</td>
</tr>
<tr>
<td>Functional</td>
<td>22</td>
<td>26.8</td>
<td>26.8</td>
<td>89.0</td>
</tr>
<tr>
<td>Divisional, SBU, profit center</td>
<td>9</td>
<td>11.0</td>
<td>11.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As shown above, majority of the organisations have Functional structure.

Figure 4.4 IT maturity questionnaire – organisation structure
Sector

Table 4.7 IT maturity questionnaire – sector

As shown above, approximately 62% of the companies operate in production and 28% in service.

Figure 4.5 IT maturity questionnaire – sector
As shown above, most of the participants work for production companies and while the remainder work in the service sector. There are also some companies operating in both sectors.

Industry

Table 4.8 IT maturity questionnaire – industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>10</td>
<td>12.2</td>
<td>12.2</td>
<td>12.2</td>
</tr>
<tr>
<td>Consumer goods</td>
<td>21</td>
<td>25.6</td>
<td>25.6</td>
<td>37.8</td>
</tr>
<tr>
<td>Energy</td>
<td>5</td>
<td>6.1</td>
<td>6.1</td>
<td>43.9</td>
</tr>
<tr>
<td>Financials</td>
<td>18</td>
<td>22.0</td>
<td>22.0</td>
<td>65.9</td>
</tr>
<tr>
<td>Healthcare</td>
<td>1</td>
<td>1.2</td>
<td>1.2</td>
<td>67.1</td>
</tr>
<tr>
<td>Industrials</td>
<td>13</td>
<td>15.9</td>
<td>15.9</td>
<td>82.9</td>
</tr>
<tr>
<td>Technology</td>
<td>3</td>
<td>3.7</td>
<td>3.7</td>
<td>86.6</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>1</td>
<td>1.2</td>
<td>1.2</td>
<td>87.8</td>
</tr>
<tr>
<td>Utility</td>
<td>1</td>
<td>1.2</td>
<td>1.2</td>
<td>89.0</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>11.0</td>
<td>11.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The industries of the companies are shown above. The majority of companies operate in consumer goods and financial services industries.
Figure 4.6 IT maturity questionnaire – industry

Figure 4.6 shows the pie chart distribution of the companies.

**IT Maturity Questionnaire Factor Analysis:**

Table 4.9 IT questionnaire - KMO and Bartlett’s test

<table>
<thead>
<tr>
<th>KMO and Bartlett's Test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</td>
<td>.801</td>
</tr>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td>Approx. Chi-Square</td>
</tr>
<tr>
<td></td>
<td>df</td>
</tr>
<tr>
<td></td>
<td>Sig.</td>
</tr>
</tbody>
</table>
Kaiser-Meyer-Olkin measure is greater than 0.8 and Bartlett’s test is significant. So Covariance matrix is suitable for factor analysis.

Table 4.10 IT maturity questionnaire – total variance explained

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>Total</td>
<td>% of Variance</td>
<td>Cumulative %</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.

Factor structure of the ‘IT Maturity’ questionnaire is presented in Table 4.10. Four factors were initially extracted with eigenvalues greater than 1, explaining 64.8% of the total variance.
Table 4.11 IT questionnaire – factor analysis - Rotated Component Matrix

Respondents were first asked to measure the level of IT maturity in their organisation. Factor analysis, a powerful method of construct validation, allows for the examination of the underlying structure of IT maturity. As seen above, there are four factors. After making necessary significance tests as those in Figure 4.7, there were only three statistically significant factors found.
Figure 4.7 IT maturity questionnaire – factors and sub concepts

Factor 1: IT Planning
The primary objectives of IT planning in the maturity stage are to align IT plans with a firm’s business plans and strategies and to extend the infusion and diffusion of IT within organisation.

Factor 2: IT Control
Controls are based on benefits, priorities and technical standards and the organizational goals rather than cost.

Factor 3: Business Alignment and Organisation
Alignment of IT structure with business strategies and objectives.
Q17 + Q1 could not form a factor because of the minimum number of attributes required to form a factor is three.

Table 4.12 IT questionnaire – Component Transformation Matrix

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.762</td>
<td>.540</td>
<td>-.056</td>
<td>.353</td>
</tr>
<tr>
<td>2</td>
<td>-.120</td>
<td>.062</td>
<td>.940</td>
<td>.314</td>
</tr>
<tr>
<td>3</td>
<td>-.456</td>
<td>.838</td>
<td>-.013</td>
<td>-.300</td>
</tr>
<tr>
<td>4</td>
<td>.444</td>
<td>-.050</td>
<td>.337</td>
<td>-.829</td>
</tr>
</tbody>
</table>


Reliability test for Factor 1 is below:

Figure 4.8 Reliability test for Factor 1
As seen in Figure 4.8 above, the reliability of Factor1 is significant (Cronbach alpha > 0.8).

Reliability test for Factor2 is below:

![Figure 4.9 Reliability for factor2](image)

As seen in Figure 4.9 above, the reliability of Factor2 is significant (Cronbach alpha > 0.8).

Reliability test for Factor3 is below:

Cronbach alpha is greater than 0.8, so it is significant.
Figure 4.10 Reliability test for Factor3

As seen in the Figure above, the reliability of Factor3 is **significant** (Cronbach alpha>0.8).
Reliability test for Factor 4:

As seen in the figure above, the reliability of Factor 4 is not significant (Cronbach alpha<0.8).

Board Structure and Performance:

In terms of board characteristics, (1) the CEO-chairman duality phenomenon occurs in 23% of the boards; (2) the average number of outsider directors is 0.56 and (3) the average board size is seven members.
Table 4.13 CEO/Chairman duality, board size, and outsider board members’ means

<table>
<thead>
<tr>
<th></th>
<th>CEO CHAIRMAN DUALITY</th>
<th>BOARD SIZE</th>
<th>OUTSIDER BOARD MEMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>.2317</td>
<td>7.0122</td>
<td>.5610</td>
</tr>
<tr>
<td>Median</td>
<td>.0000</td>
<td>7.0000</td>
<td>.0000</td>
</tr>
</tbody>
</table>

As seen above, 76 % of the companies in our sample have a separate CEO and chairman.

Table 4.14 CEO/Chairman duality frequency statistics

<table>
<thead>
<tr>
<th>CEO CHAIRMAN DUALITY</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>.90</td>
<td>63</td>
<td>76.8</td>
<td>76.8</td>
</tr>
<tr>
<td>1.00</td>
<td>19</td>
<td>23.2</td>
<td>23.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 4.12 CEO/Chairman duality distribution

Table 4.15 Board size frequency statistics

<table>
<thead>
<tr>
<th>BOARD SIZE</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>3</td>
<td>3.7</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>3.00</td>
<td>5</td>
<td>6.1</td>
<td>6.1</td>
<td>9.8</td>
</tr>
<tr>
<td>4.00</td>
<td>14</td>
<td>17.1</td>
<td>17.1</td>
<td>26.8</td>
</tr>
<tr>
<td>5.00</td>
<td>7</td>
<td>8.5</td>
<td>8.5</td>
<td>35.4</td>
</tr>
<tr>
<td>6.00</td>
<td>23</td>
<td>28.0</td>
<td>28.0</td>
<td>63.4</td>
</tr>
<tr>
<td>7.00</td>
<td>9</td>
<td>11.0</td>
<td>11.0</td>
<td>74.4</td>
</tr>
<tr>
<td>8.00</td>
<td>14</td>
<td>17.1</td>
<td>17.1</td>
<td>91.5</td>
</tr>
<tr>
<td>9.00</td>
<td>2</td>
<td>2.4</td>
<td>2.4</td>
<td>93.9</td>
</tr>
<tr>
<td>10.00</td>
<td>5</td>
<td>6.1</td>
<td>6.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
As seen in Table 4.15 above, the majority of the boards have seven members. Board sizes of five and nine share second place, both making up 17.1% of the sample.

![Figure 4.13 Board size distribution](image)

As seen in Figure 4.13, majority of the companies in our sample consist of boards having five and nine board members.
Table 4.16 Outsider board members frequency statistics

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>.00</td>
<td>60</td>
<td>73.2</td>
<td>73.2</td>
<td>73.2</td>
</tr>
<tr>
<td>1.00</td>
<td>6</td>
<td>7.3</td>
<td>7.3</td>
<td>80.5</td>
</tr>
<tr>
<td>2.00</td>
<td>11</td>
<td>13.4</td>
<td>13.4</td>
<td>93.9</td>
</tr>
<tr>
<td>3.00</td>
<td>4</td>
<td>4.9</td>
<td>4.9</td>
<td>98.8</td>
</tr>
<tr>
<td>6.00</td>
<td>1</td>
<td>1.2</td>
<td>1.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

It is very clear in Figure 4.14 that the majority of Turkish companies traded on the ISE (60%) do not have outsider directors on board.

Figure 4.14 Outsider board member distribution
4.3 Hypotheses Tests

H1: CEO/chairman duality is associated with lower company performance

Table 4.17 CEO/Chairman duality and Tobin Q means and standard deviations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOBIN Q (2005, 2006)</td>
<td>1.1471</td>
<td>.5248</td>
<td>82</td>
</tr>
<tr>
<td>CEO CHAIRMAN DUALITY</td>
<td>.2317</td>
<td>.4245</td>
<td>82</td>
</tr>
</tbody>
</table>

Table 4.18 Correlation of CEO/Chairman duality and Tobin Q

<table>
<thead>
<tr>
<th></th>
<th>TOBIN Q (2005, 2006)</th>
<th>CEO CHAIRMAN DUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOBIN Q (2005, 2006)</td>
<td>1.000</td>
<td>- .093</td>
</tr>
<tr>
<td>CEO CHAIRMAN DUALITY</td>
<td>-.093</td>
<td>1.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

The correlation value for Tobin’s Q and CEO/chairman duality is -0.093 and is insignificant at the 0.01 level.

Table 4.19 CEO/Chairman duality and ROA means and standard deviations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO CHAIRMAN DUALITY</td>
<td>.2317</td>
<td>.4245</td>
<td>82</td>
</tr>
</tbody>
</table>
Table 4.20 Correlation of CEO/Chairman duality and ROA

The correlation value for ROA and CEO/Chairman Duality is -0.095 and is insignificant at the 0.01 level. H1 is not supported.

H2: There is a positive relationship between greater numbers of total directors and overall performance of firms.

Table 4.21 Board size and Tobin’s Q means and standard deviations
Table 4.22 Correlation of board size and Tobin’s Q

<table>
<thead>
<tr>
<th>Correlations</th>
<th>TOBIN Q (2005, 2006)</th>
<th>BOARD SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td>.010</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>BOARD SIZE</td>
<td>Pearson Correlation</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation value for Tobin’s Q and Board Size (total number of directors) is 0.284 and is significant at the 0.01 level.

Table 4.23 Board Size and ROA means and standard deviations

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td>BOARD SIZE</td>
</tr>
</tbody>
</table>

Table 4.24 Correlation of Board Size and ROA

<table>
<thead>
<tr>
<th>Correlations</th>
<th>ROA (2005, 2006)</th>
<th>BOARD SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.020</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>BOARD SIZE</td>
<td>Pearson Correlation</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.257*</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed).
The correlation value for ROA and Board Size is 0.257 and is **significant** at the 0.01 level. H2 is supported both for ROA and Tobin’s Q.

**H3: There is a positive relationship between proportion of outside directors and overall performance of firms**

Table 4.25 Outsider director ratio and Tobin’s Q means and standard deviations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOBIN Q (2005, 2006)</td>
<td>1.1471</td>
<td>.5248</td>
<td>82</td>
</tr>
<tr>
<td>OUTSIDER DIRECTOR RATIO</td>
<td>7.073E-02</td>
<td>.1281</td>
<td>82</td>
</tr>
</tbody>
</table>

Table 4.26 Correlation of outsider director ratio and Tobin’s Q

<table>
<thead>
<tr>
<th></th>
<th>TOBIN Q (2005, 2006)</th>
<th>OUTSIDER DIRECTOR RATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOBIN Q (2005, 2006)</td>
<td>Pearson Correlation</td>
<td>.283*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.010</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
</tr>
<tr>
<td>OUTSIDER DIRECTOR RATIO</td>
<td>Pearson Correlation</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.010</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed).

The correlation value for Tobin’s Q and Outsider Director Ratio is 0.283 and is **significant** at the 0.05 level.
Table 4.27 Outsider director ratio and ROA means and standard deviations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTSIDER DIRECTOR RATIO</td>
<td>7.073E-02</td>
<td>.1281</td>
<td>82</td>
</tr>
</tbody>
</table>

Table 4.28 Correlation of outsider director ratio and ROA

<table>
<thead>
<tr>
<th></th>
<th>ROA (2005, 2006)</th>
<th>OUTSIDER DIRECTOR RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA (2005, 2006)</td>
<td>1.00</td>
<td>.235*</td>
</tr>
<tr>
<td>Sig (2-tailed) N</td>
<td></td>
<td>.033</td>
</tr>
<tr>
<td>OUTSIDER DIRECTOR RATIO</td>
<td>.235*</td>
<td>1.00</td>
</tr>
<tr>
<td>Sig. (2-tailed) N</td>
<td>.033</td>
<td></td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

The correlation value for ROA and Outsider Director Ratio is 0.235 and is significant at the 0.01 level. H3 is supported both for ROA and Tobin’s Q.

Table 4.29 “CEO member of Board” and Tobin’s Q means and standard deviations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOBIN Q (2005, 2006)</td>
<td>1.1471</td>
<td>.5248</td>
<td>82</td>
</tr>
<tr>
<td>CEO MEMBER OF BOARD?</td>
<td>.7439</td>
<td>.4392</td>
<td>82</td>
</tr>
</tbody>
</table>
The correlation value for Tobin’s Q and CEO Member of Board is 0.01 and is insignificant.

Table 4.31 “CEO member of Board” and Tobin’s Q means and standard deviations

Table 4.32 Correlation of “CEO member of Board” and Tobin’s Q
The correlation value for ROA and CEO Member of Board is -0.034 and is **insignificant**.

Table 4.33 Correlation of board size and outsider board members

<table>
<thead>
<tr>
<th></th>
<th>BOARD SIZE</th>
<th>OUTSIDER BOARD MEMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BOARD SIZE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1.000</td>
<td>0.396**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td><strong>OUTSIDER BOARD MEMBERS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>0.396**</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Firms having larger board size are likely to have more outsider directors than the boards having small members. The correlation is **significant** at the 0.01 level.

**H4: There is a positive association between level of IT maturity and degree of transparency.**

Component 1: Ownership Structure and Investor Relationships
Component 2: Financial Transparency and Information Disclosure
Component 3: Board and Management Structure and Process

**H4A: Component2 of degree of transparency is going to explain the majority of the variance in the dependent variable of transparency.**

Multiple regression analysis is used in this study to examine the relationships between degree of transparency (total) and independent variables. The purpose of this analysis is to answer: Is there a relationship between degree of transparency and IT maturity? According to Hair et al. (1992), regression analysis is the most widely used and versatile dependence modelling technique applicable to business decision-making. The objective of multiple regression analysis is to use predictor variables with known values to predict...
a dependent variable. Because the variables are weighted, their relative contribution to the prediction can be determined (Chiang, 2005).

Table 4.34 Correlation of degree of transparency and IT maturity factors

<table>
<thead>
<tr>
<th>Correlations</th>
<th>FACTOR1</th>
<th>FACTOR2</th>
<th>FACTOR3</th>
<th>TRANSPARENCY TOTAL LIKERT</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACTOR1</td>
<td>1.000</td>
<td>.675**</td>
<td>- .076</td>
<td>.564*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.500</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>FACTOR2</td>
<td>.675**</td>
<td>1.000</td>
<td>-.008</td>
<td>.399*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.943</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>FACTOR3</td>
<td>-.076</td>
<td>-.008</td>
<td>1.000</td>
<td>.233*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.500</td>
<td>.943</td>
<td>.035</td>
<td>.035</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY TOTAL LIKERT</td>
<td>.554**</td>
<td>.399**</td>
<td>.233*</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.035</td>
<td>.035</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed)
* . Correlation is significant at the 0.05 level (2-tailed).

There is a **significant** correlation between:
Factor1 (IT planning) and degree of transparency (transparency total) at the 0.01 level
Factor2 (IT control) and degree of transparency (transparency total) at the 0.01 level
Factor3 (business alignment and organisation) and degree of transparency (transparency total) at the 0.05 level
Table 4.35 IT maturity and degree of transparency regression test – variables entered/removed

![Variables Entered/Removed Table]

Table 4.36 IT maturity and degree of transparency regression test – Model summary

![Model Summary Table]

Factor 1 (IT planning) explains the 37.4% of the variance in the ‘degree of transparency’. Factor 2 (IT control) explains the 4.4% of the variance in the ‘degree of transparency’. In
total Factor1 (IT planning) and Factor2 (IT control) explains the 42% of the variance in the ‘degree of transparency’.

F values for Factor1 (IT planning) and Factor2 (IT control) are 47.880 and 5.949 respectively. This is statistically significant (p=.000 and p=.017).

Table 4.37 IT maturity and degree of transparency regression test – Anova test results

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>5928.088</td>
<td>1</td>
<td>5928.088</td>
<td>47.880</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>9904.776</td>
<td>80</td>
<td>123810</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15832.864</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Regression</td>
<td>6621.750</td>
<td>2</td>
<td>3310.876</td>
<td>28.396</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>9211.095</td>
<td>79</td>
<td>116596</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>16322.946</td>
<td>81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), FACTOR1
b. Predictors: (Constant), FACTOR1, FACTOR3
c. Dependent Variable: TRASPERENCY_TOTAL(%)
Degree of Transparency (Transparency_Total) = -2.104 + 1.326 + 1.071 + e

This equation shows that if the transparency is active/effective, it will have small but important impact.

It is also important to note that there is a significant correlation between Factor1 (IT planning) and degree of transparency (transparency total) (0.554), and it is greater than 0.5. Factor 3 (business alignment and organisation) also has significant correlation with degree of transparency but it is less than Factor1 (IT planning)’s correlation.

Table 4.39 IT maturity and degree of transparency regression test – Excluded variables

<table>
<thead>
<tr>
<th>Model</th>
<th>Beta In</th>
<th>t</th>
<th>Sig</th>
<th>Partial Correlation</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Minimum Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.063*</td>
<td>5.24</td>
<td>0.059</td>
<td>.544</td>
<td>1.838</td>
<td>.544</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>.210*</td>
<td>2.439</td>
<td>0.017</td>
<td>265</td>
<td>0.934</td>
<td>1.065</td>
<td>.964</td>
</tr>
<tr>
<td>2</td>
<td>.047*</td>
<td>3.08</td>
<td>0.045</td>
<td>542</td>
<td>1.844</td>
<td>.539</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.40 IT maturity and degree of transparency regression test – Collinearity diagnostics

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimension</th>
<th>Eigenvalue</th>
<th>Condition Index</th>
<th>Variance Proportions (Constant)</th>
<th>FACTOR1</th>
<th>FACTOR3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1.982</td>
<td>1.000</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>1.734E-02</td>
<td>10.542</td>
<td>.99</td>
<td>.99</td>
<td>.99</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>2.895</td>
<td>1.000</td>
<td>.00</td>
<td>.00</td>
<td>.01</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>8.957E-02</td>
<td>5.685</td>
<td>.02</td>
<td>.11</td>
<td>.84</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>1.552E-02</td>
<td>13.615</td>
<td>.97</td>
<td>.89</td>
<td>.15</td>
</tr>
</tbody>
</table>

a. Dependent Variable: TRASPARENCY_TOTAL(%)
Table 4.41 IT Maturity and Degree of Transparency Regression test – Residuals Results

H4A: Component2 is going to explain the majority of the variance in the dependent variable of transparency.

Table 4.42 Regression results for H4A – Variables entered/removed
Table 4.43 Regression results for H4A – Model summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>R Square</td>
<td>Adjusted R Square</td>
<td>Std. Error of the Estimate</td>
<td>Change Statistics</td>
<td>Durbin-Watson</td>
</tr>
<tr>
<td>1</td>
<td>.797a</td>
<td>.636</td>
<td>.631</td>
<td>8.4926</td>
<td>.636</td>
<td>139.523</td>
</tr>
<tr>
<td>2</td>
<td>.903b</td>
<td>.815</td>
<td>.811</td>
<td>6.0809</td>
<td>.180</td>
<td>77.037</td>
</tr>
<tr>
<td>3</td>
<td>.992c</td>
<td>.984</td>
<td>.983</td>
<td>1.7993</td>
<td>.169</td>
<td>824.355</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), TRANSPARENCY_OWNERSHIP(%)  
b. Predictors: (Constant), TRANSPARENCY_OWNERSHIP(%), TRANSPARENCY_DISCLOSURE(%)  
c. Predictors: (Constant), TRANSPARENCY_OWNERSHIP(%)  
d. Dependent Variable: TRASPARENCY_TOTAL(%)
Table 4.44 Regression results for H4A – Anova Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>10062.947</td>
<td>1</td>
<td>10062.947</td>
<td>139.523</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>5769.898</td>
<td>80</td>
<td>72.124</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15832.845</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Regression</td>
<td>12911.601</td>
<td>2</td>
<td>6455.800</td>
<td>174.586</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2921.244</td>
<td>79</td>
<td>36.978</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15832.845</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Regression</td>
<td>15580.331</td>
<td>3</td>
<td>5193.444</td>
<td>1604.224</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>252.514</td>
<td>78</td>
<td>3.237</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15832.845</td>
<td>81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), TRANSPARENCY_OWNERSHIP(%)

b. Predictors: (Constant), TRANSPARENCY_OWNERSHIP(%), TRANSPARENCY_DISCLOSURE(%)

c. Predictors: (Constant), TRANSPARENCY_OWNERSHIP(%), TRANSPARENCY_DISCLOSURE(%), TRANSPARENCY_BOARD(%)

d. Dependent Variable: TRANSPARENCY_TOTAL(%)
Table 4.45 Regression results for H4A – Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95% Confidence Interval for B</th>
<th>Correlations</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Zero-order</td>
<td>Partial</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>14.194</td>
<td>3.298</td>
<td>4.304</td>
<td>.000</td>
<td>7.631</td>
<td>20.758</td>
</tr>
<tr>
<td></td>
<td>TRANSPARENCY_ownership(%)</td>
<td>.688</td>
<td>.068</td>
<td>.797</td>
<td>11.812</td>
<td>.000</td>
<td>.672</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>6.904</td>
<td>2.503</td>
<td>2.758</td>
<td>.007</td>
<td>1.921</td>
<td>11.887</td>
</tr>
<tr>
<td></td>
<td>TRANSPARENCY_ownership(%)</td>
<td>.482</td>
<td>.048</td>
<td>.559</td>
<td>10.084</td>
<td>.000</td>
<td>.387</td>
</tr>
<tr>
<td></td>
<td>TRANSPARENCY_disclosure(%)</td>
<td>.330</td>
<td>.038</td>
<td>.487</td>
<td>8.777</td>
<td>.000</td>
<td>.255</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>-.793</td>
<td>.788</td>
<td>-1.007</td>
<td>.317</td>
<td>-2.361</td>
<td>.776</td>
</tr>
<tr>
<td></td>
<td>TRANSPARENCY_ownership(%)</td>
<td>.313</td>
<td>.015</td>
<td>.363</td>
<td>20.449</td>
<td>.000</td>
<td>.283</td>
</tr>
<tr>
<td></td>
<td>TRANSPARENCY_disclosure(%)</td>
<td>.323</td>
<td>.011</td>
<td>.475</td>
<td>28.967</td>
<td>.000</td>
<td>.300</td>
</tr>
</tbody>
</table>

a. Dependent Variable: TRASparency_TOTAL(%)
The method we used to test this hypothesis, shown in Table 4.43, was linear regression analysis by using stepwise method. Component1 (Transparency_Ownership) accounts for 0.631 (63%) of the variance in the dependent variable Transparency_Total. On the other hand, Component2 (Transparency_Disclosure) explains a considerable amount of variance (18%) in the dependent (t > 3) variable of Transparency_Total. The relevant hypothesis was not supported by the observed data.

Although hypothesis wasn't supported by the observed data, the outcome is of importance due to the fact that Component-1 (Transparency_Ownership) has the function (role) of
explaining transparency. When the coefficient Beta values of three components and corresponding t values are examined, it is clear that all of them are statistically significant and meaningful. Although the variance inflation factor may indicate a relatively negligible sampling bias of the findings, the results are still satisfactory. As shown in the correlation column of Table 4.45, partial coefficients (0.918, 0.957, and 0.956) and their squares are very high. These values explain the degree of transparency variance. H4A is not supported.

**H5:** High level of IT maturity moderates the relationship between board structure and overall performance of corporations, and

**H6:** High level of transparency moderates the relationship between board structure and overall performance of corporations.

Table 4.48 Correlations between Board dimensions and Tobin Q

<table>
<thead>
<tr>
<th></th>
<th>CEO CHAIRMAN DUALITY</th>
<th>BOARD SIZE</th>
<th>OUTSIDER DIRECTOR RATION</th>
<th>TOBIN Q (2005, 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEO CHAIRMAN DUALITY</strong></td>
<td>Pearson Correlation</td>
<td>-2.56**</td>
<td>-1.34</td>
<td>-0.05</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.007</td>
<td>0.232</td>
<td>0.467</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td><strong>BOARD SIZE</strong></td>
<td>Pearson Correlation</td>
<td>1.000</td>
<td>2.59*</td>
<td>2.64**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.007</td>
<td>0.019</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td><strong>OUTSIDER DIRECTOR RATION</strong></td>
<td>Pearson Correlation</td>
<td>-1.34</td>
<td>2.59*</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.232</td>
<td>0.019</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td><strong>TOBIN Q (2005, 2006)</strong></td>
<td>Pearson Correlation</td>
<td>-0.093</td>
<td>2.83*</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.407</td>
<td>0.010</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).**

**Correlation is significant at the 0.05 level (2-tailed).**
Table 4.49 Correlations between board dimensions and ROA

<table>
<thead>
<tr>
<th></th>
<th>CEO CHARMAN DUALITY</th>
<th>BOARD SIZE</th>
<th>OUTSIDER DIRECTOR RATION</th>
<th>ROA (2005, 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEO CHARMAN DUALITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1.000</td>
<td>-.296**</td>
<td>-.134</td>
<td>.096</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.017</td>
<td>.019</td>
<td>.020</td>
</tr>
<tr>
<td>N</td>
<td>62</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td><strong>BOARD SIZE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.296**</td>
<td>1.000</td>
<td>.259*</td>
<td>.257*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.007</td>
<td>.</td>
<td>.019</td>
<td>.020</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td><strong>OUTSIDER DIRECTOR RATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.134</td>
<td>.259*</td>
<td>1.000</td>
<td>.255*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.232</td>
<td>.019</td>
<td>.</td>
<td>.033</td>
</tr>
<tr>
<td>N</td>
<td>62</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td><strong>ROA (2005, 2006)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.056</td>
<td>.257*</td>
<td>.255*</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.354</td>
<td>.020</td>
<td>.033</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 4.50 Partial correlations between board dimensions and ROA (controlling for IT maturity factors)

--- PARTIAL CORRELATION COEFFICIENTS ---
Controlling for: F1 LLKRT F2 LLKRT F3 LLKRT

<table>
<thead>
<tr>
<th></th>
<th>DUALITY</th>
<th>B_SIZE</th>
<th>OUT_RATE</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DUALITY</strong></td>
<td>1.000</td>
<td>-.2388</td>
<td>-.0970</td>
<td>-.0595</td>
</tr>
<tr>
<td>( 77)</td>
<td>( 77)</td>
<td>( 77)</td>
<td>( 77)</td>
<td></td>
</tr>
<tr>
<td>P= .</td>
<td>P= .034</td>
<td>P= .395</td>
<td>P= .603</td>
<td></td>
</tr>
<tr>
<td><strong>B_SIZE</strong></td>
<td>-.2385</td>
<td>1.0000</td>
<td>.2033</td>
<td>.2255</td>
</tr>
<tr>
<td>( 77)</td>
<td>( 77)</td>
<td>( 77)</td>
<td>( 77)</td>
<td></td>
</tr>
<tr>
<td>P= .034</td>
<td>P= .</td>
<td>P= .072</td>
<td>P= .046</td>
<td></td>
</tr>
<tr>
<td><strong>OUT_RATE</strong></td>
<td>-.0970</td>
<td>.2033</td>
<td>1.0000</td>
<td>.2148</td>
</tr>
<tr>
<td>( 77)</td>
<td>( 77)</td>
<td>( 77)</td>
<td>( 77)</td>
<td></td>
</tr>
<tr>
<td>P= .395</td>
<td>P= .072</td>
<td>P= .</td>
<td>P= .057</td>
<td></td>
</tr>
<tr>
<td><strong>ROA</strong></td>
<td>-.0595</td>
<td>.2255</td>
<td>.2148</td>
<td>1.0000</td>
</tr>
<tr>
<td>( 77)</td>
<td>( 77)</td>
<td>( 77)</td>
<td>( 77)</td>
<td></td>
</tr>
<tr>
<td>P= .603</td>
<td>P= .046</td>
<td>P= .057</td>
<td>P= .</td>
<td></td>
</tr>
</tbody>
</table>

(Coeficient / (D.F.) / 2-tailed Significance)

"." is printed if a coefficient cannot be computed
Table 4.51 Partial correlations between board dimensions and Tobin Q (controlling for IT maturity factors)

<table>
<thead>
<tr>
<th></th>
<th>DUALITY</th>
<th>B_SIZE</th>
<th>OUT_RATE</th>
<th>TOBIN_Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUALITY</td>
<td>1.0000</td>
<td>-.2988</td>
<td>-.0970</td>
<td>-.0418</td>
</tr>
<tr>
<td></td>
<td>( 0)</td>
<td>( .77)</td>
<td>( .77)</td>
<td>( .77)</td>
</tr>
<tr>
<td></td>
<td>p = .034</td>
<td>p = .034</td>
<td>p = .395</td>
<td>p = .715</td>
</tr>
<tr>
<td>SIZE</td>
<td>-.2388</td>
<td>1.0000</td>
<td>.2033</td>
<td>.2247</td>
</tr>
<tr>
<td></td>
<td>( .77)</td>
<td>( 0)</td>
<td>( .77)</td>
<td>( .77)</td>
</tr>
<tr>
<td></td>
<td>p = .034</td>
<td>p = .</td>
<td>p = .072</td>
<td>p = .047</td>
</tr>
<tr>
<td>OUT_RATE</td>
<td>-.0970</td>
<td>.2033</td>
<td>1.0000</td>
<td>.2555</td>
</tr>
<tr>
<td></td>
<td>( .77)</td>
<td>( .77)</td>
<td>( 0)</td>
<td>( .77)</td>
</tr>
<tr>
<td></td>
<td>p = .395</td>
<td>p = .072</td>
<td>p = .</td>
<td>p = .023</td>
</tr>
<tr>
<td>TOBIN_Q</td>
<td>-.0418</td>
<td>.2247</td>
<td>.2555</td>
<td>1.0000</td>
</tr>
<tr>
<td></td>
<td>( .77)</td>
<td>( .77)</td>
<td>( .77)</td>
<td>( 0)</td>
</tr>
</tbody>
</table>

(Coefficient / (D.F.) / 2-tailed Significance)
Table 4.52 Partial correlations between board dimensions and Tobin Q (controlling for degree of transparency)

<table>
<thead>
<tr>
<th></th>
<th>DUALITY</th>
<th>B_SIZE</th>
<th>OUT_RATE</th>
<th>TOBIN_Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUALITY</td>
<td>1.0000</td>
<td>-.1918</td>
<td>-.0512</td>
<td>-.0139</td>
</tr>
<tr>
<td>(0)</td>
<td>(79)</td>
<td>(79)</td>
<td>(79)</td>
<td>(79)</td>
</tr>
<tr>
<td>( p = .086</td>
<td>( p = .146 )</td>
<td>( p = .146 )</td>
<td>( p = .072 )</td>
<td></td>
</tr>
<tr>
<td>B_SIZE</td>
<td>-.1918</td>
<td>1.0000</td>
<td>.1629</td>
<td>.2009</td>
</tr>
<tr>
<td>(79)</td>
<td>(0)</td>
<td>(79)</td>
<td>(79)</td>
<td>(79)</td>
</tr>
<tr>
<td>( p = .086</td>
<td>( p = .041 )</td>
<td>( p = .041 )</td>
<td>( p = .041 )</td>
<td></td>
</tr>
<tr>
<td>OUT_RATE</td>
<td>-.0512</td>
<td>.1629</td>
<td>1.0000</td>
<td>.2278</td>
</tr>
<tr>
<td>(79)</td>
<td>(79)</td>
<td>(0)</td>
<td>(79)</td>
<td>(79)</td>
</tr>
<tr>
<td>( p = .650</td>
<td>( p = .041 )</td>
<td>( p = .041 )</td>
<td>( p = .041 )</td>
<td></td>
</tr>
<tr>
<td>TOBIN_Q</td>
<td>-.0139</td>
<td>.2009</td>
<td>.2278</td>
<td>1.0000</td>
</tr>
<tr>
<td>(79)</td>
<td>(79)</td>
<td>(0)</td>
<td>(0)</td>
<td>(0)</td>
</tr>
<tr>
<td>( p = .902</td>
<td>( p = .041 )</td>
<td>( p = .041 )</td>
<td>( p = .041 )</td>
<td></td>
</tr>
</tbody>
</table>

(Coefficient / (D.F.) / 2-tailed Significance)
Table 4.53 Partial correlations between board dimensions and ROA (controlling for degree of transparency)

The results above show that adding neither IT Maturity nor Transparency improved correlations significantly (see Tables 4.48 through 4.53). H5 and H6 are not supported.
H7: There is a positive relation between the board structure and degree of transparency (transparency total).

Table 4.54 Correlation between CEO/Chairman duality and transparency dimensions

<table>
<thead>
<tr>
<th></th>
<th>CEO CHAIRMAN DUALITY</th>
<th>TRANSPARENCY_OWNERSHIP(%)</th>
<th>TRANSPARENCY_DISCLOSURE(%)</th>
<th>TRANSPARENCY_BOARD(%)</th>
<th>TRASPARENCY_TOTAL(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO CHAIRMAN DUALITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1.000</td>
<td>-.203</td>
<td>-.285**</td>
<td>-.193</td>
<td>-.312**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>.067</td>
<td>.009</td>
<td>.083</td>
<td>.004</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OWNERSHIP(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.203</td>
<td>1.000</td>
<td>.490**</td>
<td>.440**</td>
<td>.757**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.067</td>
<td>.</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISCLOSURE(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.285**</td>
<td>.490**</td>
<td>1.000</td>
<td>.234**</td>
<td>.760**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.009</td>
<td>.000</td>
<td>.</td>
<td>.034</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOARD(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.193</td>
<td>.440**</td>
<td>.234**</td>
<td>1.000</td>
<td>.729**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.063</td>
<td>.000</td>
<td>.034</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_TOTAL(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.312**</td>
<td>.797**</td>
<td>.760**</td>
<td>.729**</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.004</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

There is a **significant** correlation between:

- CEO Chairman Duality and Transparency_Disclosure at the 0.05 level
- CEO Chairman Duality and Transparency_Total at the 0.05 level
Table 4.55 Correlation between board size and transparency dimensions

<table>
<thead>
<tr>
<th></th>
<th>BOARD SIZE</th>
<th>TRANSPARENCY_OWNERSHIP(%)</th>
<th>TRANSPARENCY_DISCLOSURE(%)</th>
<th>TRANSPARENCY_BOARD(%)</th>
<th>TRANSPARENCY_TOTAL(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOARD SIZE</td>
<td>1.000</td>
<td>.313**</td>
<td>.453**</td>
<td>.192</td>
<td>.420*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.004</td>
<td>.000</td>
<td>.084</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_OWNERSHIP(%)</td>
<td>.313**</td>
<td>1.000</td>
<td>.490**</td>
<td>.440**</td>
<td>.797**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.004</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_DISCLOSURE(%)</td>
<td>.453**</td>
<td>.490**</td>
<td>1.000</td>
<td>.234*</td>
<td>.760**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.034</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_TOTAL(%)</td>
<td>.192</td>
<td>.440**</td>
<td>.234*</td>
<td>1.000</td>
<td>.725*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.084</td>
<td>.034</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRASPARENCY_TOT(%)</td>
<td>.420**</td>
<td>.797**</td>
<td>.760**</td>
<td>.729**</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

There is a significant correlation between:
CEO Board Size and Transparency_Ownership at the 0.05 level
CEO Board Size and Transparency_Disclosure at the 0.05 level
CEO Board Size and Transparency_Total at the 0.05 level
Table 4.56 Correlation between outsider director ratio and transparency dimensions

<table>
<thead>
<tr>
<th></th>
<th>OUTSIDER DIRECTOR RATION</th>
<th>TRANSPARENCY_OWNERSHIP(%)</th>
<th>TRANSPARENCY_DISCLOSURE(%)</th>
<th>TRANSPARENCY_BOARD(%)</th>
<th>TRANSPARENCY_TOTAL(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTSIDER DIRECTOR RATION</td>
<td>1.000</td>
<td>.334**</td>
<td>.079</td>
<td>.254*</td>
<td>.278*</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_OWNERSHIP(%)</td>
<td>.334**</td>
<td>1.000</td>
<td>.490**</td>
<td>.440**</td>
<td>.797**</td>
</tr>
<tr>
<td>Sig  (2-tailed)</td>
<td>.002</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_DISCLOSURE(%)</td>
<td>.079</td>
<td>.490**</td>
<td>1.000</td>
<td>.234*</td>
<td>.760**</td>
</tr>
<tr>
<td>Sig  (2-tailed)</td>
<td>.483</td>
<td>.000</td>
<td>.000</td>
<td>.034</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_BOARD(%)</td>
<td>.264*</td>
<td>.440**</td>
<td>.234*</td>
<td>1.000</td>
<td>.729*</td>
</tr>
<tr>
<td>Sig  (2-tailed)</td>
<td>.021</td>
<td>.000</td>
<td>.034</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>TRANSPARENCY_TOTAL(%)</td>
<td>.278*</td>
<td>.797**</td>
<td>.760**</td>
<td>.729**</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig  (2-tailed)</td>
<td>.911</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

There is a **significant** correlation between:
CEO Outsider Director Ratio and Transparency_Ownership at the 0.05 level
CEO Outsider Director Ratio and Transparency_Board at the 0.05 level
CEO Outsider Director Ratio and Transparency_Total at the 0.05 level

As shown above, all board characteristics have significant correlation with ‘degree of transparency.’ Hypothesis 7 is supported.

### 4.4 Interpretation of Findings

Figures 4.15 below shows the revised research model based on the analyses done in the previous sections. The IT maturity block of initial research model amended to reflect the factors found in figure 4.7. As it is seen in figure 4.15, revised model includes IT
planning, IT control and business alignment and organisations dimensions under IT maturity block. Except this amendment, the initial model stayed unaffected.

![Figure 4.15 Revised research model](image)

Figures 4.16 and 4.17 below summarise the main findings of the study. These figures are the summary of the hypothesis test results given in the following part.
Figure 4.16 Revised research model – Main correlations results
Figure 4.16 shows that there is no significant relationship between CEO/chairman duality and company performance. The diagram also shows that there is a significant relationship between board size and company performance, and between board composition and company performance. It is also clearly seen that all three IT maturity factors have significant correlation with degree of transparency. It is important to note that there are significant relationships between board structure characteristics and transparency dimensions.

Figure 4.17 Results for moderating effects of transparency and IT maturity
Figure 4.17 shows that neither transparency nor IT maturity moderates the relationship between board structure and company performance.

**Board Structure and Performance:**

In terms of board characteristics it was found that (1) the CEO-chairman duality (one person occupying both roles) phenomenon occurs in 23% of the boards; (2) the average number of outsider directors is 0.56 person and (3) the average board size is seven. And it is important to note that 73% of the companies do not have any outsider directors. In our sample, it is also found that 7% of the companies have one, 13% have two and 5% have three outsider directors. It is important to note that average performance figures for year 2005 and 2006 were calculated and used for the analysis. Using the averages of two years and two different performance indicators (Tobin’s Q and ROA) improves the quality and reliability of the findings.

**H1: CEO/chairman duality is associated with lower company performance**

Hypothesis 1 conjectured that the presence of CEO/chairman duality would be associated with lower company performance. However, we did not find any conclusive evidence supporting the claim that boards having separate CEO and chairman outperform the companies having CEO/chairman duality based on the performances measured by Tobin’s Q and ROA. The correlation between CEO/chairman duality and performance are -0.093 and -0.095 for Tobin’s Q and ROA, respectively. The original hypothesis was based on the literature which supports the independent structure (separate CEO and chairman). Although the findings do not parallel the original hypothesis, there are similar findings in existing literature. Our findings are commensurate with the empirical studies which did not find any conclusive evidence supporting the separation of CEO and chairman roles. These studies include, for example, Dalton et al. (1998), Daily and Dalton (1993), and Rechner and Dalton (1989).

Moreover, it is also important to note that Turkey has different commercial law, corporate governance principles, and a different ownership structure than the companies studied in
literature. Moreover, Turkey is an emerging market which cannot be easily compared with developed countries such as the US and UK.

**H2: There is a positive relationship between greater numbers of total directors and overall performance of firms.**

**Board size:**

The findings of the study show that there is a significant correlation between number of total directors (board size) and company performance as measured by Tobin’s Q and ROA. The correlation value between board size and Tobin’s Q was found to be 0.284. And the correlation value between board size and ROA was 0.257. Empirical evidence supports Hypothesis 2. Some of the empirical studies supporting our findings include Golden and Zajac (2001), Dalton et al. (1999), Chaganti et al. (1985) and (Conger, 2001). It is also important to note that the average board size found in this research is seven.

Family ownership in Turkish companies is very concentrated. According to Umit (2004), family-owned businesses make up 99% of the Turkish private sector. Because of this, board sizes are relatively small. In addition, boards having more members generally are professionally managed, institutionalised organisation. Therefore, performance increase in these kinds of organisations is parallel to Turkish company structures and corporate governance literature.

The optimal number of directors is a dilemma for companies. Efficiency is reduced if the number of directors is too large because there is an increased difficulty in achieving agreement concerning decisions. On the other hand, decision-making precision is reduced if the number of directors is too small because there may not be adequate discussion of issues involved (Chiang, 2005). Different countries have different board sizes. For example although UK and USA boards subscribe to the same model, they differ in size, with UK boards typically being smaller. To illustrate, the median number of board members for firms in the study by Dedman (2000) is eight, whereas in the USA study conducted by Yermack (1996), the median board size was 12. Conger et al. (2001) suggest that a board size of 9 to 13 members is typically right for most companies, but too small for larger ones.
H3: There is a positive relationship between proportion of outside directors and overall performance of firms

**Outsider Director Ratio:**

The findings of the study show that there is a significant correlation between “outsider director ratio” and company performance as measured by Tobin’s Q and ROA. Hypothesis 3 is supported by the empirical evidence. “Outsider director ratio” is calculated by dividing board size by the number of outsider director members. The correlation between “outsider director ratio” and Tobin’s Q is 0.284 and is significant at the 0.05 level. In addition, the correlation value between “outsider director ratio” and ROA is 0.235 and is significant at the 0.01 level.

To understand whether CEO membership on the board has any effect on company performance we conducted correlation tests. The results show that there is no significant effect of CEO membership on company performance. We also found that firms having larger board size are likely to have more outsider directors than the boards having fewer members. The correlation is significant at the 0.01 level.

From the perspective of solving the Berle-Means agency problem between management and shareholders, appointing outsiders seems to be the natural solution. The following empirical studies prove that companies with a more independent board (measured by the proportion of outsider members in the board) are likely to perform better than others suggesting that board composition is an important element that would enhance firm performance: Barnhart and Rosenstein (1998), Daily and Dalton (1994), Rosenstein and Wyatt (1990), Bayesinger and Butler (1985), Byrd and Hickman (1992), Hermalin and Weisbach (1991), Bhagat and Black (1997; 1998), Dalton et al. (1998), Anderson and Reeb (2004), Pfeffer and Salancik (1978).

By showing that board independence is positively related to firm performance, our results are quite consistent with recent regulatory reforms in the private sector (Sarbanes-Oxley
Act in the USA and the OSC equivalent Act in Canada) and with recommendations issued by the Treasury Board of Canada in 1996.

Independent directors are more professional in business operations and can more easily achieve the supervising function, reduce the possibility of collusion of top executives, and prevent the abuse of company resources, thus improving operating performance.

In contrast, those who consider the board an important element of corporate governance acknowledge the role of outside directors as monitors of management and providers of “relevant complementary knowledge” (Fama, 1980; Fama and Jensen, 1983). On the other hand, inside directors generally have a greater understanding of the company’s operations; therefore, they can enhance the efficiency of the board of directors and the precision of their decisions.

**IT Maturity and Degree of Transparency:**

**Transparency:**

In this study, we have adapted the Standard & Poor’s information transparency measurement criteria to gauge information transparency of selected companies. Companies’ annual reports are used in S&P research. However, from the investor’s point of view, transparency information can be obtained not only from the annual report but also from other public sources, such as the company’s website, the Istanbul Stock Exchange website and the Capital Markets Board of Turkey’s website. Therefore, this study supplements S&P criteria with information gathered from all public materials in order to obtain more comprehensive transparency information. The results indicate that corporate transparency does have a significant positive relationship with operating performance. Companies with good corporate governance also have a significant positive relationship with operating performance. As such, a company may devote resources to improving corporate structure in order to improve performance, and outsiders can rely on the information provided by the company to make their decisions. In addition, laws and regulations requiring transparency in the board of directors’ structure may be modified in order to achieve more transparency.
IT Maturity:
This study shows that IT maturity of companies can be considered in three dimensions: IT planning, IT control, and business alignment and organisation.

The primary objectives of IT planning in the maturity stage are to align IT plans with a firm’s business plans and strategies and to extend the infusion and diffusion of IT within organisation. Controls are based on benefits, priorities and technical standards and organisational goals rather than cost. Business alignment and organisation refers to alignment of IT strategies and processes with business strategies and objectives. The first two dimensions found in this study are similar to the findings of an empirical study done by Gupta et al. al. (1996). In their original study, they found IT Planning, IT Control, IT Organisation, and IT Integration dimensions (factors) to be significant. However, in this study we found only three significant factors: IT planning, IT control, and business alignment and organisation. This could be explained by differences in population, sample, and the requirements of the current business environment. As it was mentioned before, the study done by Gupta et al. al. (1996) was conducted on 1035 randomly selected IT managers in the financial services industry in 11 states of the USA.

H4: There is a positive association between level of IT maturity and degree of transparency.
Component 1: Ownership Structure and Investor Relationships
Component 2: Financial Transparency and Information Disclosure
Component 3: Board and Management Structure and Process

H4A: Component 2 of degree of transparency is going to explain the majority of the variance in the dependent variable of transparency.

The findings of the study show that there is a significant correlation between factor 1 (IT planning) and the degree of transparency (degree of transparency), and factor 2 (IT control) and degree of transparency at the 0.01 level. There is also a significant correlation between factor 3 (business alignment and organisation) and degree of transparency at the 0.05 level. Hypothesis 4 is therefore supported.

It is also important to note that there is a significant correlation between factor 1 (IT planning) and degree of transparency (0.554), and it is greater than 0.5. Factor 3 (business
alignment and organisation) also has a significant correlation with degree of transparency but it is less than factor 1 (IT planning)’s correlation.

Empirical results of the H4A hypothesis testing shows that component 1 instead of component 2, explains the majority of the variance in the dependent variable of transparency. Hypothesis 4A is not supported.

Component 1 (transparency ownership) accounts for 63% of the variance in the dependent variable degree of transparency (transparency total). On the other hand, component 2 (transparency disclosure) explained considerable amount of variance (18%) in the dependent variable of degree of transparency (transparency total). The relevant hypothesis was not supported by the results obtained.

Although the hypothesis was not supported by the statistical findings, the outcome is of importance due to the fact that component 1 (transparency ownership) has the function (role) in explaining transparency.

**H5: High level of IT maturity moderates the relationship between board structure and overall performance of corporations,**

and

**H6: High level of transparency moderates the relationship between board structure and overall performance of corporations.**

The analysis for investigating the moderating effects of IT maturity and transparency shows that neither IT maturity nor transparency moderates the relationship between board structure and company performance. It was found earlier that board size and outsider director ratio is positively correlated. To test this hypothesis, we used the correlation values between board structure and performance. In addition to that, we did partial correlation tests between the board structure and performance by using alternately using IT maturity and transparency each time as a controlling variable. The results show adding neither IT maturity nor transparency proved/affected correlations significantly. So we conclude that neither IT maturity nor transparency has a moderating effect on the
relationship between board structure and company performance. Hypothesis 5 and hypothesis 6 are not supported.

**H7: There is a positive relation between the board structure and degree of transparency (transparency total).**

The findings of the study show that there is a significant correlation between CEO/chairman duality and transparency disclosure at the 0.05 level. Moreover, there is a significant correlation between CEO/chairman duality and degree of transparency (transparency total) at the 0.05 level. So, hypothesis 7 is supported.

There is also significant correlation found between:

- CEO board size and transparency ownership at the 0.05 level
- CEO board size and transparency disclosure at the 0.05 level
- CEO board size and degree of transparency (transparency total) at the 0.05 level
- CEO outsider director ratio and transparency ownership at the 0.05 level
- CEO outsider director ratio and transparency board at the 0.05 level
- CEO outsider director ratio and degree of transparency (transparency total) at the 0.05 level
5. CONCLUSION AND RECOMMENDATIONS

Corporate governance in Turkey has attracted a great deal of attention in the last decade. The Capital Markets Board has made a number of regulatory amendments in accounting standards, independent auditing, rating agencies, disclosure of material events, and minority rights. In addition to these regulations, following current practices worldwide, the CMB has established the “Corporate Governance Principles” in which a “comply or explain” approach is adopted. CMB is also intending to set up corporate governance index at the Istanbul Stock Exchange.

The purpose of this study has been to investigate the relationships among characteristics and indicators of corporate governance, including board structure, transparency and company performance measures, and to determine whether or not the indicators could be predictors of company performance in our sample of ISE quoted companies in Turkey. A conceptual model is developed based on these relationships. The relationship between IT maturity and corporate governance, specifically along the transparency dimension, was also investigated. The investigation of whether IT maturity and transparency moderate the relationship between board structure and company performance is also an important part of the study. ISE companies were studied for the empirical phase of the research.

The primary contribution of this research to the literature is the consistent estimation of the relationship between corporate governance and performance, by taking into account the inter-relationships among corporate governance (board structure and transparency), corporate performance, and IT maturity. The study makes five additional contributions to the literature:

- First, instead of considering just a single measure of governance (as some of the prior studies in the literature have done), this study considers two different governance measures; board structure and transparency. Transparency has been investigated by considering transparency in three subject areas:
  - Ownership structure and investor relationships
  - Financial transparency and information disclosure and
• Board and management structure and process.

Board structure has been researched by considering the following characteristics:
• CEO/chairman duality
• Outsider board member ratio and
• Board size

Second, the correlation between IT maturity and corporate governance (specifically with transparency dimension) is investigated for the first time in literature – at least to the extent that we can determine.

Third, this study also analyses whether transparency and IT maturity moderate the relationship between board structure and company performance. ROA is used in addition to Tobin’s Q for performance measurement and the data of the last two years are used to have more consistent and reliable performance measures.

Fourth, this study is one of the most comprehensive studies done in Turkey both in the areas of corporate governance, and company performance and corporate governance relationships. Moreover, this study will contribute to corporate governance literature in emerging countries, specifically countries having concentric and family-ownership structure. Demirag and Serter (2003) showed in their research on ISE companies that ownership of Turkish companies is highly concentrated, families being the dominant stakeholders. Their analysis of the 100 largest Turkish traded companies (ISE 100) shows that the majority of these firms are ultimately owned and controlled by families. Families, directly or indirectly own more than 70% of all traded companies and retaining majority control.

Finally, this study provides useful statistics to understand the board structure of Istanbul Stock Exchange companies, i.e., average board size, average outsider directors, number of companies having CEO/chairman duality.
The research is based on the analysis done on 82 Istanbul Stock Exchange-listed companies that are among the largest companies in their sectors. The total market capitalization of the firms analyzed in this research constitutes more than 70% of the ISE’s market capitalization. In addition, approximately 1/3 of the companies operate in service sector and the remaining in production.

5.1 The Contributions and Limitations of the Study

5.1.1 Contributions to the Literature

This study also provides significant contributions to the corporate governance literature. It provides empirical evidence for corporate governance, transparency, IT maturity, and company performance relationships, especially for Turkey and emerging countries. Other main contributions are following:

- It introduces the analysis for measuring moderating effects of information technology and transparency within a corporate governance and performance framework.
- It is the first study that we are aware of which investigates the correlation between IT maturity and corporate governance.
- This study brings two important dimensions into focus: transparency and information technology maturity.
- This study contributes to the corporate governance literature in emerging markets specifically in countries having concentric and family ownership structure.
- This study provides useful statistics to understand the board structure of the Istanbul Stock Exchange companies, i.e., average board size, average outsider directors, number of companies having CEO/Chairman duality.

5.1.2 Contributions to Business

This study shows that there is a significant relationship between some practices/dimensions of the corporate governance and performance. This could serve to better inform a business about opportunities for improvement.
It is clearly shown that corporate governance should not be practiced just because of regulations. The opportunity it provides for growth and survival in the market place should also be considered. Moreover, this study shows that CG practices have practical outcomes with respect to company performance. This will give investors a chance to invest their money in companies having better CG practices. The McKinsey Quarterly surveys suggest that institutional investors will pay as much as 28% more for the shares of well-governed companies in emerging markets (Mark, 2000).

It demonstrates the importance of the board size and outsider directors on transparency of companies. This protects stakeholders from any problems stemming from the question of agency. Investors will understand the importance of the ISE Corporate Governance Index better because of the benefits of better governance shown in this study.

Finally, this study also shows the importance of the IT maturity for improved transparency and disclosure practices.

5.1.3 Limitations

One of the limitations of this study is that it focuses solely on board structure and transparency and disclosure dimensions of the corporate governance. The model could be extended to take board processes, accountability, and social responsibility into consideration.

Another limitation is related to the quality of the data disclosed by companies. The assumption is that the data they disclose accurate as possible. Earnings management is particularly important, for example.

This study is based on the empirical findings of the company data and IT maturity questionnaire. Since the author of this dissertation is living in UK, face-to-face interviews with ISE companies were not possible. It would have been better to support the findings of the study with interview technique.
This research had a limited budget so we couldn’t have access to wider data sources for empirical part of the study. It prevented us from studying other dimensions of the board structure and accessing wider data set for company performance measurement.

For example, Thomson (now Thomson Reuters) quoted a fee of £21,186 to access data to calculate company performances for ISE companies. It would have enabled the data to cover more years when making performance calculations and would have decreased the time spent on the research significantly.

It is an important fact that there are other factors that would affect the company performance. There is no intention to imply that, given the findings of the study, corporate governance is either the sole or most important concept affecting firm performance.

Because of the highly concentric and family ownership nature of Turkish companies, the findings of this study should be considered in this light.

The final limitation is that it would be much better if this study had a longitudinal perspective. This study is essentially cross sectional, looking at board structure at a particular point in time. Further research is required to see whether the relationship we find exists over time. It would also be appropriate to examine the effects of board structure changes on transparency and company performance.

5.2 Recommendations for Future Research

It would be useful to extend the timeline of this study. So a longitudinal study with similar scope will be very useful. The research should investigate whether the relationship we find exist over time. It would also be appropriate to examine the effects of board structure changes on transparency and company performance. This study was conducted in Turkey. If done in different countries, our findings might be supported.

The study could be conducted by using different company performance measures and different set of company groups. For example, the study could be repeated for service sector companies traded in ISE by using return on equity.
Finally, we believe that information technology and transparency relationships need to be investigated in more detail for companies in specific sectors and/or in other counties.

**5.2.1 The Essence**

Our objective was to analyse the effects of board characteristics, information technology maturity and transparency on company performance.

We found that:

- Improved governance practices have some positive effects on company performance.
- IT maturity has positive effect on company transparency (degree of transparency) and
- Transparency and IT maturity does not moderate the relationship between board structure and company performance.

The findings of this study should be considered within the limitations mentioned above.
6. REFERENCES


ICCWBO, (2005), www.iccwbo.org/CorpGov/whycorpgov.asp


http://en.wikipedia.org/wiki/Information_technology


Yurtoglu, Y., (1998), “Ownership Structure of Turkish Listed Firms,” The ISE Finance Award Series Volume: 1

7. APPENDIX – A

IT Maturity Questionnaire

QUESTIONNAIRE: TECHNOLOGY

Hello!

This questionnaire has been prepared as part of a research study conducted by Yeditepe University, Institute of Social Sciences, Doctorate Program in Management and Organisation.

SECTION A

1. Your Age
   a. Between 20 and 30
   b. Between 30 and 40
   c. Between 40 and 50
   d. Between 50 and 60
   e. Above 60
   Answer:

2. Your Gender
   a. Male
   b. Female
   Answer:

3. Your Education
   a. Not complete Primary School
   b. Primary School
   c. High School
   d. Undergraduate
   e. Graduate
   Answer:

4. What is the organisational structure of your company?
   a. Functional
   b. Divisional, SBU, profit centre
   c. Matrix
   d. Other: Please specify: .................................................................
   Answer:

5. What is your company’s sector?
   a. Production
   b. Service
   c. Production and Service
   Please state the sector of your company: ..........................................
   Answer:

6. What is the industry in which your organisation operates?
   a. Basic materials
   b. Consumer goods
   c. Energy
   d. Financials
   e. Healthcare
   f. Industrials
   g. Technology
   h. Telecommunications
   i. Utility
   j. Other: ……………………………
   Answer:
SECTION B

Instructions

(I) For the following statements, cross(X) the most appropriate choice using the scale below.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Our IT projects support the business objectives and strategies of our company.
2. We continuously examine the innovative opportunities IT can provide for competitive advantage.
3. We are adequately informed on the current use of IT by competitive forces (e.g., buyers, suppliers, and competitors) in our industry.
4. We are adequately informed on the potential use of IT by competitive forces (e.g., buyers, suppliers, and competitors) in our industry.
5. We have an adequate picture of the coverage and quality of our IT systems.
6. We are content with how our IT project priorities are set.
7. In our organisation, the responsibility and authority for IT direction and development are clear.
8. In our organisation, the responsibility and authority for IT operations are clear.
9. We are confident that IT project proposals are properly appraised.
10. We constantly monitor the performance of IT functions.
11. Our IT function is clear about its goals and responsibilities.
12. Our IT function is clear about its performance criteria.
13. In our organisation, user ideas are given due attention in IT planning and implementation.
14. Our IT specialist understands our business and the firm.
15. The structure of our IT function fits our organisation.
16. The IT specialist-user relations in our firm are constructive.
17. In my firm top management perceives that future exploitation of IT is of strategic importance.
18. There is a top-down planning process for linking information systems strategy to business needs.
19. Some IT development resource is positioned within the business unit.

20. The introduction of, or experimentation with, new technologies takes place at the business unit level under business unit control.
8. APPENDIX – B

Transparency and Disclosure Attributes

To measure the degree of transparency and disclosure quality for ISE companies, an attributes set used globally by Standard & Poor’s is adapted.

In 2002, S&P Governance Services published its first T&D study that includes companies in the following S&P/ International Finance Corporation indices: Asia, Latin America, Asia Pacific 100, TOPIX 150 (Japan). Then the surveys came in Russia in 2002, 2003, and, as a result of continued interest among investors, in 2004.

Furthermore, in 2003, S&P released its study of the S&P Europe 350 companies. S&P and the corporate governance Forum of Turkey (CGFT) of Sabanci University announced the results to the public in a press release in May 2002.

105 Transparency and Disclosure Attributes (Source: Balic (2007))

Component 1: Ownership Structure and Investor Relationships

Whether the company in its annual accounts or on its Web site discloses:

• The number of issued and outstanding ordinary shares?
• The number of issued and outstanding other shares (preferred and nonvoting)?
• The par value of each ordinary share?
• The par value of other shares (preferred and nonvoting)?
• The number of authorized but unissued and outstanding ordinary shares?
• The number of authorized but unissued and outstanding other shares?
• The top shareholder?
• The top-three shareholders?
• The top-five shareholders?
• The number and identity of shareholders holding more than 3%?
• The number and identity of shareholders holding more than 5%?
• The number and identity of shareholders holding more than 10%?
• The free float rate?
• The details of different share classes, if applicable?
• Shareholders by type?
• The percentage of cross-ownership?
• Does the annual report refer to or publish corporate governance Charter?
• Does the annual report refer to or publish Code of Best Practice?
• All information about its articles of association (changes, for example)?
• Details about the articles of association?
• The voting rights for each voting share?
• The way directors are nominated to the board and which shareholders nominate?
• The way shareholders convene an extraordinary general meeting?
• The procedure for putting inquiry rights to the board?
• The procedure for putting proposals forward at shareholder meetings?
• A review of the last shareholder meeting (such as minutes)?
• A calendar of important shareholder dates?
• Whether there are any formal or informal voting agreements or voting blocs (relevant to family ownership)?
• Whether senior managers hold shares?
• Whether the ultimate beneficiaries are disclosed in the case of institutional, company, or cross shareholdings?

**Component 2: Financial Transparency and Information Disclosure**

Whether the company in its annual accounts or on its Web site discloses:

• Its annual report (specifically, is this available on the company's Web site)?
• Its accounting policies?
• The accounting standards under which it reports?
• Its accounts according to local accounting standards?
• Its accounts according to an internationally recognized accounting standard (IAS/USA GAAP)?
• Its balance sheet according to an international accounting standard (IAS/USA GAAP)?
• Its income statement according to an international accounting standard (IAS/USA GAAP)?
• Its cash flow statement according to an international accounting standard (IAS/USA GAAP)?
• Inflation-adjusted accounts?
• A basic earnings forecast of any kind?
• A detailed earnings forecast?
• Financial information on a quarterly basis?
• A segment analysis (broken down by business line)?
• The name of its auditing firm?
• A copy of the auditors' report?
• The amount paid in audit fees to the auditor?
• Any non-audit fees paid to the auditor?
• Consolidated financial statements?
• Its method for asset valuation?
• Its method for fixed-assets depreciation?
• A list of affiliates in which it holds a minority stake?
• A reconciliation of its domestic accounting standards to IAS/USA GAAP?
• The ownership structure of affiliates?
• Details of the kind of business it operates in?
• Details of the products/services produced/provided?
• Output in physical terms (number of users, for example)?
• The characteristics of assets employed?
• Efficiency indicators (ROA and ROE, etc.)?
• Any industry-specific ratios?
• Information on corporate strategy?
• An overview of investment plans in the coming year(s)?
• Detailed information about investment plans in the coming year(s)?
• An output forecast of any kind?
• An overview of industry trends?
• Its market share for any or all of its businesses?
• A list/register of related-party transactions?
• A list/register of group transactions?
Component 3: Board and Management Structure and Process

Whether the company in its annual accounts or on its Web site discloses:

• A list of board members (names)?
• Details about directors (other than name/title)?
• Details about the current employment/position of directors?
• Details about directors’ previous employment/positions?
• The date that each of the directors joined the board?
• Whether directors are classified as executives or outside directors?
• The name of the chairman?
• Details about the chairman (other than name/title)?
• Details about the role of the board of directors?
• A list of matters reserved for the board?
• A list of board committees?
• The existence of an audit committee?
• The names on the audit committee?
• The existence of a remuneration/compensation committee?
• The names on the remuneration/compensation committee?
• The existence of a nomination committee?
• The names on the nomination committee?
• The existence of internal audit functions besides the audit committee?
• The existence of a strategy/investment/finance committee?
• The number of shares in the company held by directors?
• A review of the last board meeting (such as minutes)?
• Whether training is provided for directors?
• The decision-making process for directors’ pay?
• The specifics of directors’ pay (such as salary levels)?
• The form of directors’ salaries (such as cash or shares)?
• The specifics of performance-related pay for directors?
• A list of senior managers (not on the board of directors)?
• The backgrounds of senior managers?
• The decision-making process for managers’ pay?
• The specifics of managers’ pay?
• The form of managers' pay?
• The specifics of performance-related pay for managers?
• The details of the CEO's contract?
• The number of shares held by managers in other affiliated companies?
• Whether board members are employees of the parent company (if the company is a consolidated affiliate/subsidiary)?
• Whether any group policies exist regarding the nature of the relationship between the parent and its affiliates (with respect to the corporate governance of the affiliates/subsidiaries)?
• Whether any members of senior management are related (family, joint business, or similar) to any major shareholder?
# 9. APPENDIX - C

## Corporate Governance Index Attributes

<table>
<thead>
<tr>
<th>Démiaor</th>
<th>S&amp;P</th>
<th>ISS</th>
<th>CLSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Board structure</strong>&lt;br&gt;• election of the board; selection and appointment of board members, number of directors, age limitation&lt;br&gt;• composition and workings of the board; presence of non-executive and independent directors, diversity, division between the role of Chairman and CEO&lt;br&gt;• functioning of the board; workings of the board, internal conduct&lt;br&gt;• director and executive remuneration policy, stock option plans&lt;br&gt;• workings and authorities of board committees</td>
<td><strong>Board structure &amp; process</strong>&lt;br&gt;• Board structure and composition&lt;br&gt;board size and composition; board leadership and committees; representation of constituencies&lt;br&gt;• Role and effectiveness of board&lt;br&gt;definitions of board role; board-level processes for identifying, evaluating, managing and mitigating risks faced by the company; board and committee meeting's agenda and papers; management</td>
<td><strong>Board</strong>&lt;br&gt;board composition&lt;br&gt;Nominating committee&lt;br&gt;Compensation committee&lt;br&gt;Governance committee&lt;br&gt;Audit committee&lt;br&gt;Board structure&lt;br&gt;Board size&lt;br&gt;Changes in board size&lt;br&gt;Cumulative voting&lt;br&gt;Boards served on – CEO&lt;br&gt;Boards served on – other than CEO&lt;br&gt;Former CEOs&lt;br&gt;Chairman/CEOs separation&lt;br&gt;Board guidelines&lt;br&gt;Response to shareholder proposals&lt;br&gt;Board attendance</td>
<td><strong>Independence</strong>&lt;br&gt;Chairman who is independent from management&lt;br&gt;Executive management committee comprised differently from the board&lt;br&gt;Audit committee chaired by independent director&lt;br&gt;Remuneration committee chaired by independent director&lt;br&gt;Nominating committee chaired by independent director&lt;br&gt;External auditors unrelated to the company</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>ISS</td>
<td>CLSA</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-----</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>compensation process</td>
<td>Board vacancies</td>
<td>No representatives of banks or other large creditors on the board</td>
<td></td>
</tr>
<tr>
<td>• Role and independence of outside directors</td>
<td>Related party transactions</td>
<td>• Accountability</td>
<td></td>
</tr>
<tr>
<td>relationship between outside board members and senior management; history of involvement of outside directors with company; terms of outside director engagement; control committee independence and activity; articulation of the specific role of outside directors, director election procedures</td>
<td>Executive and director compensation</td>
<td>Board plays a supervisory rather than executive role</td>
<td></td>
</tr>
<tr>
<td>• Directors and executive compensation, evaluation and succession policies level and form of compensation; the extent to which pay is connected to financial or other performance measures; performance evaluation criteria; independence and integrity of compensation setting process; succession planning</td>
<td>Cost of option plans</td>
<td>Non-executive directors demonstrably independent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option repricing</td>
<td>Independent, non-executive directors at least half of the board</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shareholder approval of option plans</td>
<td>Foreign nationals’ presence on the board</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compensation committee interlock</td>
<td>Full board meetings at least every quarter</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Director compensation</td>
<td>Board members able to exercise effective scrutiny</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pension plans for non-employee directors</td>
<td>Audit committee that nominates and reviews work of external auditors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option exercise</td>
<td>Audit committee that supervises internal audit and accounting procedures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Option burn rate</td>
<td>• Responsibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corporate loans</td>
<td>Acting effectively against individuals who have transgressed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Qualitative factors</td>
<td>Record on taking measures in case of mismanagement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Retirement age for directors</td>
<td>Measures to protect minority interests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Board performance review</td>
<td>Mechanisms to allow punishment of executive/management committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meetings of outside directors</td>
<td>Share trading by board members fair and fully transparent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CEO succession plan</td>
<td>Board small enough to be efficient and effective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outside advisers available to board</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Directors resign upon job change</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DVFA</td>
<td>Brunswick Warwick</td>
<td>ICLG</td>
</tr>
</tbody>
</table>

- Cooperation between management board and supervisory board
- Is there a written understanding between the management and supervisory boards with regard to regular, timely and comprehensive information by the management board?
- Do terms of reference exist for the supervisory board detailing its rights and duties, stipulating *inter alia* the transactions Board composition: Representatives of minority shareholders or well-known independent industry experts serving on the board usually help to install confidence that minority shareholders will at least be informed of the board’s activities Board of directors and management structure

A number of questions analysed as part of the Corporate Governance Rating Methodology concern independent directors. A study is also carried out of the board of directors’ role in the management of the company and other matters pertaining to the distribution of powers between
<table>
<thead>
<tr>
<th><strong>DVFA</strong></th>
<th><strong>Brunswick Warburg</strong></th>
<th><strong>ICLG</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>requiring approval and the information duties of the management board?</td>
<td>and have their concerns heard.</td>
<td>the board of directors and the company’s executive authority.</td>
</tr>
<tr>
<td>Do the representatives of the shareholders and of the employees of co-determined supervisory boards meet separately to prepare the supervisory board meetings?</td>
<td>It is important to know the percentages of shares owned by members of its board of directors and its executive authority, whether the positions of the board chairman and the individual executive authority are separated in practice, how extensively the management council is represented on the board of directors, whether the charter or other internal regulations make any specific requirements for directors, and what such requirements are, considering that the charters of some companies formulate such requirements for candidates to serve on the board of directors as violate shareholder rights. Other questions to be answered include whether the board of directors has formed any special committees and whether such committees include so-called independent directors. The regularity of meetings held by the board of directors is also analysed, as are issues deliberated at such meetings and whether all board members take part in voting.</td>
<td></td>
</tr>
<tr>
<td>Is a general meeting generally convened in case of a takeover offer?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does an appropriate deductible exist for any D&amp;O insurance policies for management and supervisory board members?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supervisory board</strong> Do defined criteria exist to ensure the qualification of supervisory board members (e.g. professional qualification and experience, sufficient time, international experience)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there no more than two former members of the management board on the supervisory board and do supervisory board members remain from directorships or advisory tasks for important competitors of the company?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do re-appointments of management board members take place at the earliest one year before the end of the original appointment period and with due consideration of age limits?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the supervisory board have a sufficient number of committees in order to adequately handle complex issues?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does an audit committee exist? Is the audit committee not chaired by the chairman of the supervisory board?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the supervisory board receive a performance-related variable compensation linked to the long-term company results, which is reported individually in the notes of the financial statements?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is additional compensation received for advisory or agent services of supervisory board members separately listed on an individual basis?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are potential conflicts of interest and own-account transactions disclosed to the supervisory board and to the general meeting (such as purchase and sale of own shares and share options, transactions with the company or its board members, company loans, directorships with important competitors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the supervisory board conduct an annual review of its activities?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10. BIOGRAPHY

SINAN DUZTAS
MBA, PRINCE2, PMP
E-mail: sinan.duztas@icinnova.com
Mobile: +447899 781939

Career Summary

- Total 9 years investment/retail banking/insurance work experience
- Founder and CEO of ICInnova Consultancy which operates in UK and Turkey
- Marketing and sales of Project management solutions in Turkey and UK
- 6 years full-life-cycle Project Management (with budget responsibility) and Change Management experience
- Prince2 and Project Management Professional (PMP) certified
- Experienced project manager in Software Development, MI, Business Intelligence/Data Warehouse, Market Risk, and Operational Risk (BASEL2) projects
- Strong application development, solution design, solution implementation, data migration, data mapping, and business analysis background/experience
- BSc in Electronic Engineering (computer engineering concentration) degree, MBA degree, Ph.D. in Management (writing dissertation)
- 8+ years Investment Banking/Retail Banking, 1 year Insurance and 6 months Government experience
- 3+ years experience in working with Tier 1 Consultancies
- PRINCE2, PMP, and MCSD (Microsoft Certified Solution Developer) certificates
- Experience of managing 5-20 people teams
- Stakeholder management up to top management-director level
- Managed projects having £1M-£40M budgets
- Risk and Issue management of projects
- Third party firm management/ Off-shore team management
- Recruitment, resource planning, and budgeting for projects
- Matrix organisation structure experience

Professional Experience

01/2008-Present ICInnova Consultancy – UBS – Project Manager (Prince2, ITIL)
06/2007-01/2008 ICInnova Consultancy - NSS Information Management and Technology – Project Manager (Prince2, ITIL)
01/2007-04/2007 ICInnova Consultancy - Lloyds TSB – Project Manager (Prince2, CMM), Strategic Delivery Centre, Group IT
02/2006-01/2007 ICInnova Consultancy - The AA(Insurance) – Project Manager (PRINCE II), Information Systems
01/2004-02/2006 Yapi Kredi Bank – Senior Business Analyst, Technology Management Department
01/1999-01/2004 IsBank -- Project Manager, Information Technology Department
06/1997-08/1997 Mercedes-Benz -- R&D Engineer, Internship

Education

2002 – 2008 Yeditepe University, Management, Ph.D.
Ph.D. Emphasis: Strategic Management, Organisation theory, Change Management
1999 – 2002 Yeditepe University, Master of Business Administration (MBA)
MBA Emphasis: Management and Organisation
1993 – 1998 METU, BSc in Electronic Engineering (computer engineering concentration)
BSc Emphasis: Computer Software and Hardware, Digital Circuits, and Microprocessors

Membership

- Member of Institute of Directors (IoD)
- Member of Project Management Institute (PMI)
- Member of Information and Communication Technology Association

211