APPENDIX 3: RELIABILITY AND FACTOR ANALYSES FOR DESIGN DIMENSIONS

The first five sections of this appendix provides the reliability and factor analyses for the five design dimensions used to determine the deviation distance of the sample firms to the ideal-type profile. The following five sections explore the reliability or validity of the stakeholder-specific variables used to compare stakeholder-specific design features and stakeholder-specific performance measures. The statistical analyses were conducted on SPSS© (1997).

APP.3.1 STRUCTURAL CONFIGURATION

The structural configuration design dimension consists of board configuration information and management structure information. The board configuration information is examined first. Although there were many firms (20-50%) that reported a committee or appointed member to represent the interests of various stakeholder groups, there were few firms that had an outside member of the board of directors from a stakeholder group (4-20%). Therefore, the analysis of the board was divided into two sections -- the internal (committee or appointed member to represent stakeholder interests) and the composition of outside members.

The inter-item scale reliability analysis for the internal composition of the board of directors is shown in Table A.3.1. Nine items were included -- the eight stakeholder groups and the corporate scanning position. The standardized item alpha is 0.8845, and it indicates the items were sufficient measurements of the design dimension A factor analysis (Table A.3.2) indicates that the item load onto two factors. However, if the representation of product and supplier issues is deleted from the calculation, the remaining seven items load on one factor. (The consideration of product and supplier interests by an internal board member was included by almost all the respondents.)

Table A.3.1: Reliability Analysis -- Internal Composition

Constituency	Alpha if item deleted
Public Interest or Public Responsibility	0.8697
Employees	0.8749
Environment	0.8785
Community	0.8673
Minorities	0.8607
Women	0.8608
Product Quality (Consumers)	0.8730
Suppliers	0.8772
Scanning Position	0.8832
Standardized Item Alpha	*0.8845*

Table A.3.2: Factor Analysis -- Internal Composition

	First Factor Analysis		Second Factor Analysis (Product and Supplier omitted from analysis)
Stakeholder	**Component 1**	**Component 2**	**Component 1**
Product Quality (Consumers)	**0.720**	**0.590**	
Suppliers	**0.673**	**0.587**	
Public Interest or Public Responsibility	**0.738**	-0.195	**0.767**
Employees	**0.697**	0.237	**0.668**
Environment	**0.646**	-0.250	**0.680**
Community	**0.767**	-0.101	**0.775**
Minorities	**0.833**	-0.247	**0.872**
Women	**0.833**	-0.233	**0.857**
Scanning Position	**0.588**	-0.343	**0.617**

Significant factor loadings appear in bold (>0.4).

The inter-item scale reliability analysis for the eight items representing the outside members of the board of directors is shown in Table A.3.3. The standardized item alpha is 0.5690, and it indicates the items were somewhat sufficient measurements of the design

dimension, considering the range limitations. A factor analysis (Table A.3.4) indicates that the item load onto three factors. There were so few affirmative answers for some of these items, that there was range restriction and the analysis is not useful.

Table A.3.3: Reliability Analysis -- Outside Members

Constituency	Alpha if item deleted
Community	.6173
Public Interest	.4938
Trade Group or Association	.4693
Consumers	.4958
Employees or Labor Union	.5606
Environment	.5708
Minorities	.5195
Women	.5598
Standardized Item Alpha	*.5690*

Table A.3.4: Factor Analysis -- Outside Members

Stakeholder	Component 1	Component 2	Component 3
Consumers	**0.664**	0.116	-0.116
Trade Association	**0.709**	0.214	0.220
Public Interest or Public Responsibility	**0.619**	0.200	-0.246
Employees	**0.413**	-0.238	**0.634**
Environment	0.259	**0.482**	**0.584**
Community	0.387	**0.478**	**-0.478**
Minorities	**0.601**	**-0.442**	-0.260
Women	**0.439**	**-0.678**	-0.002

Significant factor loadings appear in bold (>0.4).

The management structure category consists of three items: a department or functional area, an officer or member of top management, and a management committee specifically for ethics and/or social responsibility. A reliability analysis and a factor analysis of these design

elements are shown in Tables A.3.5 and A.3.6, respectively. The standardized item alpha is 0.4660, and it indicates the items were somewhat useful measurements of the design dimension

Table A.3.5: Reliability Analysis -- Management Structure

Design Element	Alpha if item deleted
Management Department Or Area	0.2764
Officer	0.3330
Management Committee	0.5943
Standardized Item Alpha	*0.4660*

Table A.3.6: Factor Analysis -- Management Structure

Design Element	Component
Management Department Or Area	**0.801**
Officer	**0.775**
Management Committee	**0.582**

Significant factor loadings appear in bold (>0.4).

APP.3.2 HUMAN RESOURCE POLICIES AND INCENTIVES

The human resource policies and incentives (HRPI) design dimension could potentially consist of six components. However, a factor analysis of these six dimensions indicated that the design features of having a committee or appointed board member for employee issues was not related with the other components. The factor analysis with the six original design features is in provided in Table A.3.7, and the modified factor analysis (with the five other components) is provided as Table A.3.8. Based on these findings, I decidied to omit the design feature of the internal board structure for employee representation. A reliabilty analysis of the five components of the HRPI design dimension are shown in Table A.3.9. The standardized item alpha is 0.2306, and it indicates the items are not very sufficient measurements of the design dimension. However, refinement is needed for the design features specifically for the employee-firm

stakeholder relationship. One feature, the hotline, is strongly recommended by the Federal Sentencing Guidelines and may not be effective in promoting a just environment. The other two features, an open-door policy and an employee as an outside member of the board, may be superficial and not truly effective in promoting a just environment. Human resource policies, structures, or initiatives may be incorporated piecemeal instead of part of a comprehensive organiztaion design.

Table A.3.7: Factor Analysis -- HRPI, Six Design Features

Design Element	Component 1	Component 2	Component 3
Employees on Management Committee	0.078	**0.840**	-0.254
Open-Door Policy	**0.403**	**0.397**	0.041
Hotline	0.380	**0.458**	**0.437**
Employees Included in Strategic Planning	**0.621**	0.008	-0.607
Employee Outside Member of Board	**0.750**	-0.347	-0.076
Board Representative for Employee Issues	0.361	-0.038	**0.641**

Significant factor loadings appear in bold (>0.4).

Table A.3.8: Factor Analysis -- HRPI, Five Design Features

Design Element	Component 1	Component 2
Employees on Management Committee	-0.394	**0.708**
Open-Door Policy	0.374	**0.435**
Hotline	0.213	**0.745**
Employees Included in Strategic Planning	**0.553**	-0.047
Employee Outside Member of Board	**0.801**	0.020

Significant factor loadings appear in bold (>0.4).

Table A.3.9: Reliability Analysis -- HRPI, Five Design Features

Design Element	Alpha if item deleted
Employees on Management Committee	0.2247
Open-Door Policy	0.1417
Hotline	0.1251
Employees Included in Strategic Planning	0.2523
Employee Outside Member of Board	0.2052
Standardized item alpha	*0.2306*

APP.3.3 CONTROL SYSTEMS

The control systems design dimension consists of two components: an audit and a compensation, evaluation, and incentive plan that includes extra-economic goals or objectives. Because there were only two components, neither a reliability nor a factor analysis was conducted.

APP.3.4 INTERORGANIZATIONAL ALLIANCES

A reliability analysis of the six components in the inclusion of stakeholders in the strategic planning process is shown in Table A.3.10. The standardized item alpha is 0.7927, and it indicates the items were sufficient measurements of the design dimension. All the items loaded onto one factor as shown in Table A.3.11.

Table A.3.10: Reliability Analysis -- Strategic Planning

Constituencies	Alpha if item deleted
Customers	0.7441
Suppliers	0.7463
Employees	0.7647
Community	0.7530
Environment	0.7947
Government	0.7611
Standardized item alpha	*0.7927*

Table A.3.11: Factor Analysis -- Strategic Planning

Constituencies	Component 1
Customers	**0.756**
Suppliers	**0.749**
Employees	**0.688**
Community	**0.747**
Environment	**0.563**
Government	**0.722**

Significant factor loadings appear in bold (>0.4).

APP.3.5 ORGANIZATIONAL ETHOS

The organiztaional ethos design dimension consists of one component -- the rating for the mission statement, credo, or code. No reliability or factor analysis was conducted for this dimension.

APP.3.6 COMMUNITY RATING / COMMUNITY AS A STAKEHOLDER GROUP

Table A.3.11: Reliability Analysis -- Community Rating

Component	Alpha If Item Deleted
Board Comm. For Public Interest	0.3485
Board Comm. For Community Issues	0.3176
Outside Member (Public Interest)	0.4640
Outside Member (Community)	0.5122
Outsiders on Mgt. Comm.	0.4804
Community Included in Strategic Planning	0.4928
Standardized Item Alpha	*0.4836*

Table A.3.12: Factor Analysis -- Community Rating

Design Feature	Component 1	Component 2
Board Comm. For Public Interest	**0.826**	-0.250
Board Comm. For Community Issues	**0.803**	-0.362
Outside Member (Public Interest)	0.345	**0.694**
Outside Member (Community)	0.285	**0.645**
Outsiders on Mgt. Comm.	0.392	-0.118
Community Included in Strategic Planning	0.319	0.376

Significant factor loadings appear in bold (>0.4).

APP.3.7 DIVERSITY RATING

Table A.3.13: Reliability Analysis -- Diversity Rating

Component	Alpha If Item Deleted
Board Comm. For Minority Issues	0.3543
Board Comm. For Women's Issues	0.3170
Outside Member (Minority Issues)	0.7291
Outside Member (Women's Issues)	0.7255
Standardized Item Alpha	*0.6786*

Table A.3.14: Factor Analysis -- Diversity Rating

Design Feature	Component 1	Component 2
Board Comm. For Minority Issues	**0.908**	-0.352
Board Comm. For Women's Issues	**0.920**	-0.318
Outside Member (Minority Issues)	**0.428**	**0.714**
Outside Member (Women's Issues)	**0.432**	**0.710**

Significant factor loadings appear in bold (>0.4).

APP.3.8 EMPLOYEE RATING / EMPLOYEES AS A STAKEHOLDER GROUP

Table A.3.15: Reliability Analysis -- Employee Rating

Component	Alpha If Item Deleted
Board Comm. For Employee Issues	0.2716
Open-Door Policy	0.1971
Outside Member (Employee Issues)	0.2317
Hotline	0.2152
Employees on Management Comm.	0.2694
Employees Included in Strategic Planning	0.2221
Standardized Item Alpha	*0.2700*

APP.3.9 ENVIRONMENT RATING / ENVIRONMENT AS A STAKEHOLDER

Table A.3.16: Reliability Analysis -- Environment Rating

Component	Alpha If Item Deleted
Board Comm. For Environment	0.1937
Outside Member (Environment)	0.2563
Environment Included in Strategic Planning	0.2736
Standardized Item Alpha	*0.3270*

Table A.3.17: Factor Analysis -- Environment Rating

Design Feature	Component 1
Board Comm. For Environment	**0.701**
Outside Member (Environment)	**0.696**
Environment Included in Strategic Planning	**0.601**

Significant factor loadings appear in bold (>0.4).

APP.3.10 PRODUCT RATING / CONSUMERS AS A STAKEHOLDER GROUP

Table A.3.18: Reliability Analysis -- Product Rating

Component	Alpha If Item Deleted
Board Comm. For Product Issues	0.4868
Board Comm. For Supplier Issues	0.4854
Outside Member (Trade Association)	0.5281
Outside Member (Consumers)	0.5071
Customers Included in Strategic Planning	0.4828
Suppliers Included in Strategic Planning	0.5390
Standardized Item Alpha	*0.5514*

Table A.3.19: Factor Analysis -- Product Rating

Design Feature	Component 1	Component 2	Component 3
Board Comm. For Product Issues	**0.836**	-0.352	0.233
Board Comm. For Supplier Issues	**0.780**	-0.359	0.386
Outside Member (Trade Association)	**0.477**	0.265	**-0.661**
Outside Member (Consumers)	**0.611**	0.178	**-0.485**
Customers Included in Strategic Planning	0.283	**0.806**	0.218
Suppliers Included in Strategic Planning	0.139	**0.800**	0.383

Significant factor loadings appear in bold (>0.4).