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THE IMPACT OF CULTURE ON STOCK MARKET DEVELOPMENT AND CORPORATE GOVERNANCE

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A THESIS SUBMITTED IN PARTIAL FULLFILMENT FOR A DEGREE OF

DOCTOR OF PHILOSOPHY

SUPERVISOR
PROF. JOHN POINTON

ACCOUNTING AND FINANCE GROUP
DEPARTMENT OF BUSINESS AND MANAGEMENT

JUNE 2007

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DEDICATION

To my dearest wife and children,

My father Dr. Wahid ElKelish,

My Mum and my sister,

My supervisor Prof. John Pointon,

And all others who have given me their support and patience during my research

THE IMPACT OF CULTURE ON STOCK MARKET DEVELOPMENT AND CORPORATE GOVERNANCE

WALAA WAHID ELDIN ELKELISH

ABSTRACT

This study takes a step forward to explore the dynamic relationship between cultural values and stock market development in the United Kingdom, during the period 1991-2004. Cultural values are represented by the cultural model of Hofstede (1980) which consists of five dimensions, which are: power distance, uncertainty avoidance, individualism, masculinity and time horizon. Stock market development is represented by four indicators, which are: stock market activity, size, liquidity and concentration. Empirical results, using structural equation modelling (SEM), show that some cultural values have significant relationships with stock market development indicators. Power distance has a significant negative relationship with stock market size, while individuality has a significant positive relationship with stock market activity at the 0.90 confidence level. Furthermore, since good corporate governance systems are considered as an important component of stock market development, this study has been extended to explore the impact of cultural values on corporate governance systems across twenty four countries in Western Europe, North America and Asia Pacific. Corporate governance systems are represented by eight aspects, which are: board size, separation of chair and CEO, independence per board, independent audit committee, remuneration disclosure, women on board, code of ethics and ethics systems. The regression analysis results show that cultural values have a significant impact on several corporate governance systems across countries. Individuality has significant positive relationships with three corporate governance systems, which are: independence per board, audit committee, and ethics systems. Power distance has a significant positive relationship with separation of chair and CEO. The interaction term, uncertainty avoidance/masculinity, has significant negative relationships with three corporate governance systems, which are: independence per board, remuneration disclosure, and code of ethics. Moreover, the interaction term power distance/masculinity has a significant negative impact on women on board. This study concludes that several cultural values play an important role in the formation and behaviour of stock market development over time, and on corporate governance systems across countries. These results have important consequences at both firm and country levels and in terms of stock market integration across the globe.

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At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award. The following activities, pertaining to the program of related study have been undertaken:

Published papers

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Working papers

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(2) Walaa W. ElKelish, 2006, "Cultural values and corporate governance systems across countries", working paper, Plymouth Business School, Plymouth University, United Kingdom.

(3) Walaa W. ElKelish and Andrew Marshall, 2006, "Financial structure and firm value in the United Arab Emirates", working paper, Strathclyde University, Graduate Business School, Glasgow, Scotland, United Kingdom.

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(4) Walaa W. ElKelish and Andrew Marshall, "Financial structure choice in the United Arab Emirates emerging market". Proceedings of the 5th Global Conference on Business and Economics, Cambridge, England, July 6-8, 2006.

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CHAPTER 1 INTRODUCTION

In the past decade global stock markets have experienced huge developments in terms of market capitalization and activity. The importance of stock market development stems from their potential impact on economic growth and prosperity. However, there is evidence that the trend of stock market development varies across countries. In general, three approaches have been introduced to explain these differences across countries, which include: legal, political and cultural approaches. Among these approaches the cultural aspects are receiving more attention nowadays as they may provide a more comprehensive view for stock market performance than other approaches. Consequently, this study proposes that cultural values may have an influence on stock market development in a nation over time.

Furthermore, previous empirical research highlighted the importance of corporate governance systems on stock market development, as good corporate governance systems may increase investors' confidence and reduce investment risk. Although, there is a tendency towards internationally accepted good corporate governance practices, still there is significant evidence of corporate governance differences across countries. As a result, this study is extended to explore the potential reasons of these differences across countries. These notable additions to existing literature may provide further insights into the stock market development mechanism, and the origins of corporate governance systems across countries. Further details of the research process unfold as follows.

(1/1) Study problem

The study problem can be formulated in the following two questions:

(1) What is the impact of cultural values on the stock market development in the United Kingdom?

(2) What is the impact of cultural values on corporate governance systems across countries?

(1/2) Motivation

The main motivation for this study stems from the deep desire to explore new underlying fundamental aspects, which may have significant influence on stock market development mechanisms. Cultural values have been spotted as a potential underlying major player in this context. Obviously, extensive literature review shows that there is a lack of a comprehensive framework for the dynamic relationships between cultural values and stock market development in one country across time. Moreover, since corporate governance systems represent an important aspect of stock market development worldwide, the study is directed to explore the potential origins of corporate governance across countries. These aspects have important institutional and individual consequences which are laid down in the next section

(1/3) Study importance

This study makes several additions to existing theoretical and empirical researches. First, it provides a wider perspective of the mechanisms of stock market development in the United Kingdom, which can help investors understand stock market behaviour more effectively. Second, it provides a new path in the search for a small group of variables that affect stock market development across time. Third, it can help to introduce more effective stock market development programs, which is considered as an important issue towards more global stock market integration and greater international capital flows. Finally, it sheds some light on the origins of corporate governance systems across countries, which may improve international investors' decision-making process and corporate governance development programs across the globe.

(1/4) Study aim

The main aim of this study is to explore new dimensions of the stock market development in the United Kingdom and corporate governance differences across countries.

(1/5) Study purpose

Consequently, the purpose of this study is to move towards a more comprehensive framework that makes up the development process of the stock market in the United Kingdom, as well as to explore the potential origins of corporate governance systems across countries.

(1/6) Study objectives

The main study objectives focus on smart targets to highlight the relationships between cultural values, stock market development and corporate governance, as detailed below:

a) to identify the most important factors that determine cultural values in the United Kingdom,

b) to identify the most important factors which determine stock market development in the United Kingdom,

c) to investigate the impact of cultural values on stock market development in the United Kingdom, and

d) to examine the relationship between cultural values and corporate governance systems across countries.

(1/7) Study hypotheses

In order to test the potential relationships between cultural values (independent variables), stock market development indicators and corporate governance systems (dependent variables), the following null hypotheses are formulated:

Hypothesis 1: "Power distance, uncertainty avoidance, individuality, masculinity, and time horizon do not provide distinct dimensions of culture values in the United Kingdom ".

Hypothesis 2: "Activity, size, liquidity and concentration do not provide distinct dimensions of stock market development in the United Kingdom ".

Hypothesis 3: "There is no relationship between cultural values and stock market development indicators in the United Kingdom".

Hypothesis 4: "There is no relationship between cultural values and corporate governance systems across countries".

The third null hypothesis has been reformulated into thirteen sub alternative hypotheses, while the fourth null hypothesis has been sub-divided into eight alternative hypotheses to cover the range of relationships between the study variables. More details on hypothesis formulation are presented in chapter three: Methodology.

(1/8) Data and methodology

To achieve the study objectives the following procedures have been implemented concerning data sources and statistical analysis techniques.

(1/8/1) Data sources

Data have been collected from several secondary sources to satisfy the statistical analysis requirements.

a) Annual, quarterly and monthly proxy variables for cultural values, as suggested by Hofstede's cultural model (1980, 1983), are collected using several published secondary data sources such as the DataStream database, as well as other private and government sources such as the Office for National Statistics for the period 1990-2004.

b) Annual, quarterly and monthly data on the stock market development indicators in the U.K., in the light of previous empirical research, have been collected using several published secondary data sources, such as the DataStream database, as well as other private and government sources, such as the London Stock Exchange for the period 1990-2004.

c) Corporate governance indices are collected from the Ethical Investment Research Service (EIRIS) Ltd, for twenty four countries in Western Europe, North America and Asia Pacific.

(1/8/2) Statistical analysis techniques

This study depends on a variety of statistical analysis techniques and methods to achieve the study objectives.

a) The confirmatory factor analysis (CFA) is used to identify the most suitable cultural model, as suggested by Hofstede (1980, 1982), using the LISREL software package (Version 8.72)

b) The confirmatory factor analysis (CFA) is used to identify the most suitable stock market development model, in the light of the work by Demirguc-Kunt and Levine (1995), using the LISREL software package (Version 8.72).

c) The structural equation models (SEM) are used to construct suitable causal models that link cultural values and stock market development indicators, using the LISREL software package (Version 8.72).

d) Multiple, stepwise and weighted regression analyses are used to explore the relationship between cultural values and corporate governance across countries, using SPSS (Version 14.00) and E-views software packages (Version 3.1).

(1/9) Study plan

The study plan maps on to seven chapters, providing a detailed presentation of the research undertaken, as follows (See Figures: 1.1 and 1.2):

Chapter 1: Introduction

This chapter presents the study problem, motivation, importance, objectives, hypotheses and methodology for the whole study.

Chapter 2: Literature review

This chapter includes a critical review over previous theoretical and empirical research concerning cultural values, stock market development and corporate governance as well as related topics.

Chapter 3: Methodology

This chapter includes the methodology implemented to achieve the study objectives; it outlines the data-sources, detailed research hypotheses, measurement of variables, and statistical analytical techniques.

Chapter 4: Data analysis and results for cultural values and stock market development

This chapter includes the core details of the statistical analysis process and results pertaining to the relationship between cultural values and stock market development in the United Kingdom.

Chapter 5: Data analysis and results for cultural values and corporate governance

This chapter includes the core details of the statistical analysis process and results ascribing to the relationship between cultural values and corporate governance systems across countries.

Chapter 6: Discussion

This chapter includes a brief discussion of the results and findings of this study, the detailed critical comparisons with previous empirical research, and the most notable contributions of this study.

Chapter 7: Conclusion

This chapter presents the summary of the results and findings, the scope and limitations of this study, and finally future recommended research.

Figure 1.1: The flow chart for the relationship between cultural values and stock market development in the United Kingdom

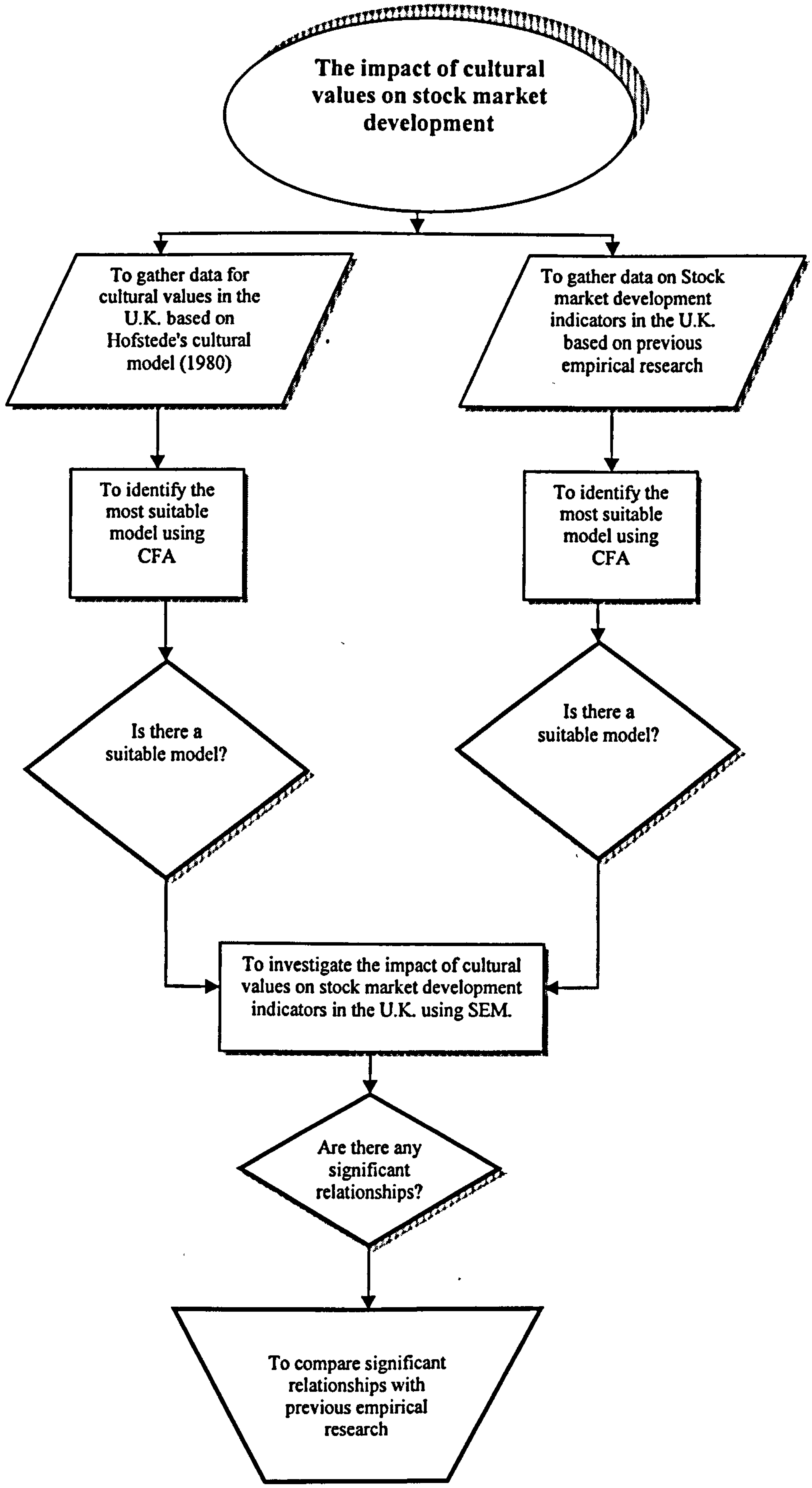
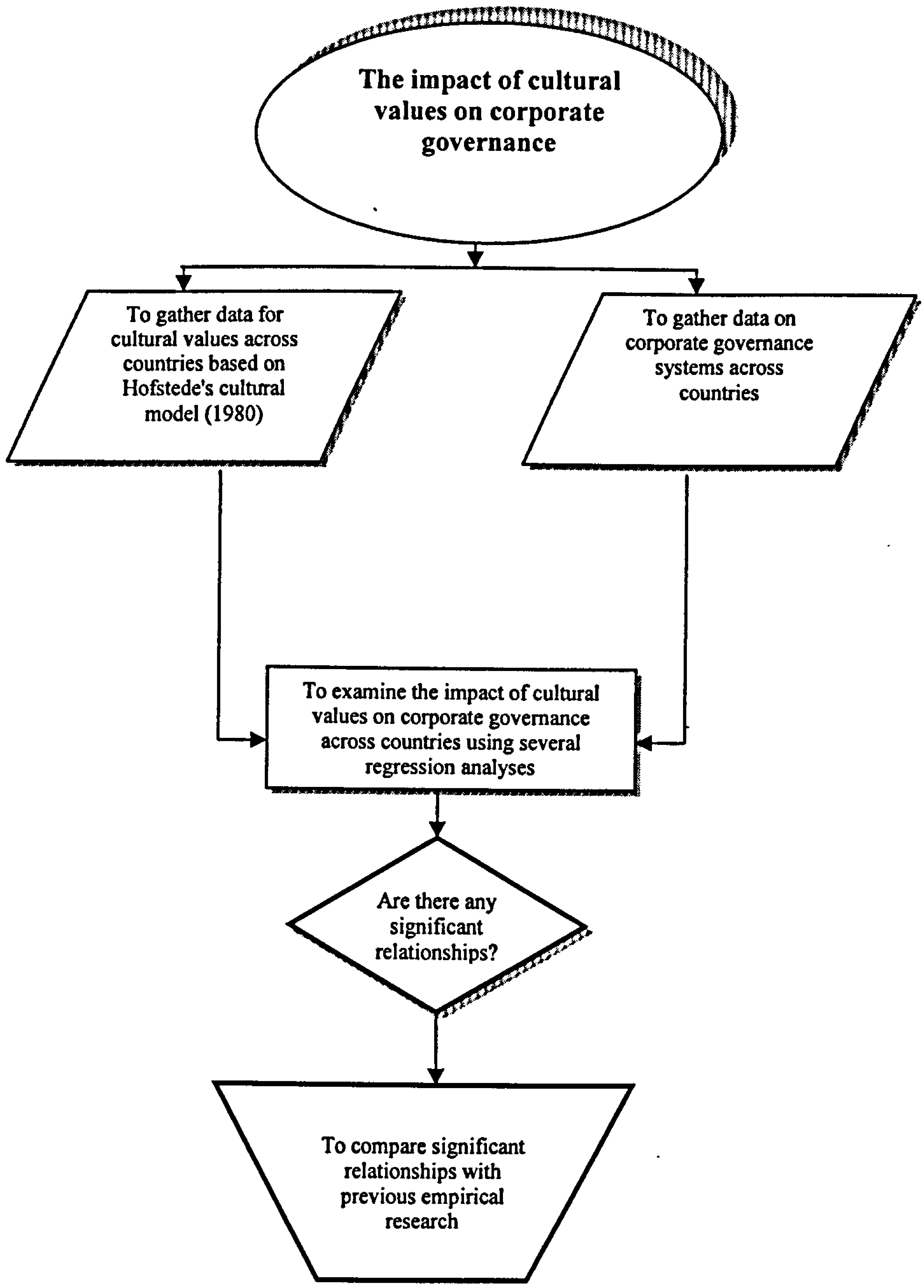


Figure 1.2: The flow chart for the relationship between cultural values and corporate governance systems across countries



CHAPTER 2 LITERATURE REVIEW

The aim of this chapter is to present a review of previous theoretical and empirical literature concerning culture, stock market development and corporate governance. Consequently, this chapter is divided into six sections. The first section presents cultural value dimensions, whilst the second section lays out the most important research on stock market development indicators. The third section presents the relationship between culture and stock market development. The fourth section presents corporate governance systems. The fifth section deals with corporate governance systems across countries. Finally, this chapter concludes with a summary and conclusions.

(2/1) Cultural value dimensions

The literature review shows that there are several definitions of culture which describes different meanings and scopes from different view points. Kroeber and Kluckholhn (1952) have defined culture as:

> **"Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiment in artifacts, the essential core of culture consists of traditional ideas and especially their attached values".**

They have suggested that a large culture exists in a society and it may comprise other smaller sub-cultures. They have pointed out that culture is shared distinctive values of a human group and these values are usually expressed in their behavior and artifacts.

Another common definition of culture is introduced by Hofstede (1983) which states that:

"It is the collective programming of the mind which distinguishes the members of one human group from another".

However, Hofstede (1980) has reclaimed that humans are not programmed like computers; they have an ability to diverge from their societal collective program. Though, the cultural collective program means that certain behavior is more expected to happen in one country compared to others. It seems that culture may have an impact on the preferences of a society; these preferences influence the people, organizations and the whole economy. Hofstede (1980) has argued that: "Much as a computer operating system (e.g. MS-DOS) contains a set of rules that act as a reference point and set of constraints to higher level programs (i.e. Excel), so culture includes a set of societal values that drive institutional forms and practice" (Salter and Niswander, 1994). These societal values can be defined as (Hofstede, 1991):

"The broad tendencies to prefer certain states of affairs over others"

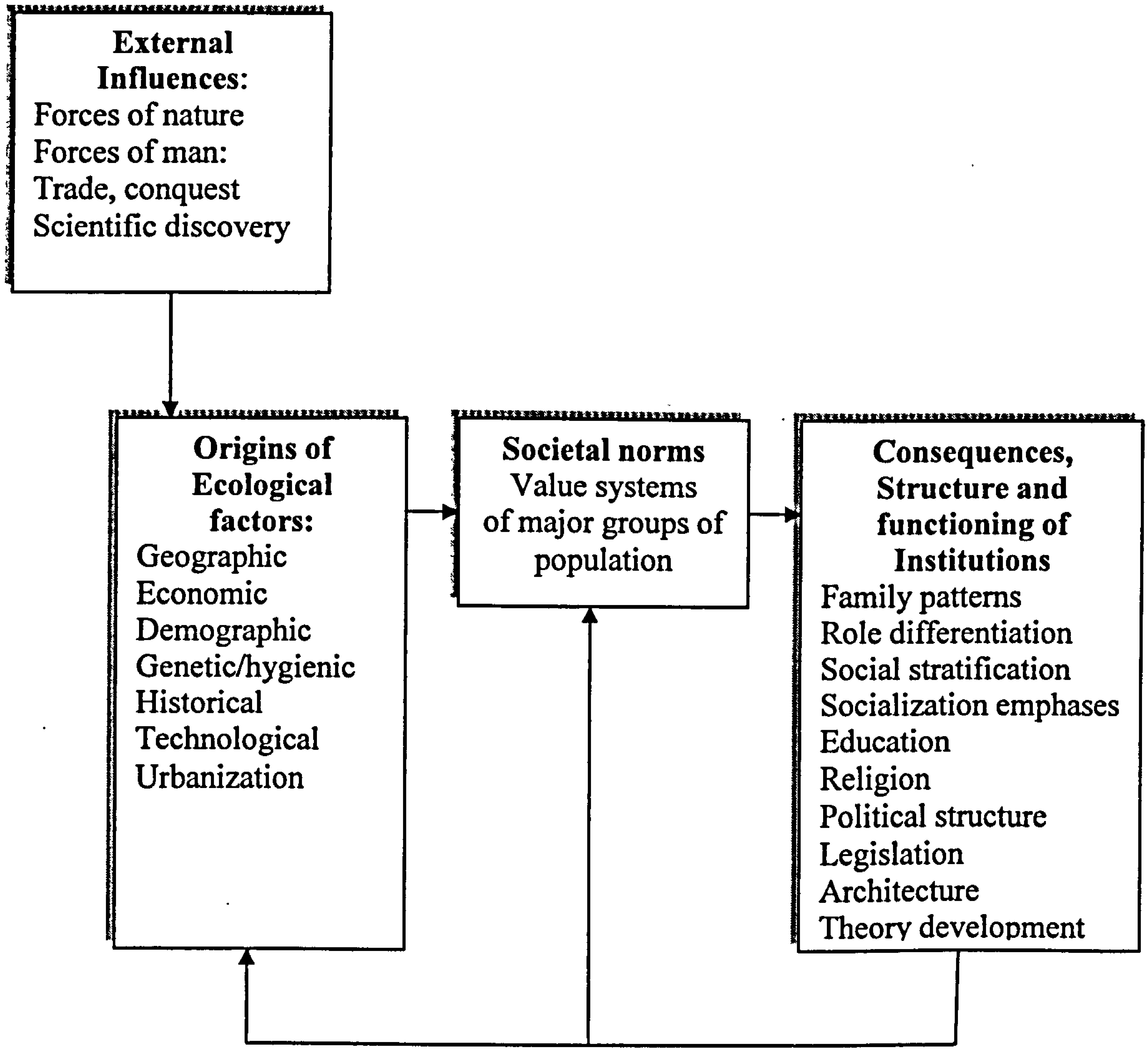
These values are reflected in the societal norms and behaviour of people living in the same society, leading to a sequence of reactions to daily life-events and situations, whether personal, organizational or even economic as a whole (Hofstede, 1991).

Hofstede (1991) has suggested that culture is similar to an onion that can be peeled layer by layer to reach the core content. The outer skin layer of culture represents Symbols such as words, colors and any other behavior/artifacts which may have a special meaning. The second layer consists of Heroes who are for example admired persons who represent a model for behavior. The third layer consists of rituals which include for example ways of respect and greetings between people. The final core level consists of the social values. It can be noticed that as we move down towards the core of the onion-like shape of culture the attributes become more invisible.

Symbols are the most visible attributes of culture; they form the outer skin of the onion, whereas values are more invisible and form the deep core level, which are more difficult to change. These invisible core values are acquired unconsciously at an early stage of human life (Hassan and Ditsa, 1999), and they can easily observed by watching the visible behavior outcomes of the cultural system in a society (Dahl, 2004).

Hofstede (1980) has asserted that societal norms may be determined by some ecological influences such as economic, historical and technological aspects (Figure 2.1). At the same time, these social norms show themselves in the form of institutional consequences, such as family patterns, capital markets, and legislation. In this context, it can be asserted that the behaviour of stock market stakeholders, i.e. owners, new investors, customers, suppliers, brokers, dealers and government, may be influenced by the deep societal values in a given society.

Figure 2.1: Culture/societal values and institutional consequences.
Source: Hofstede (1984)



In addition, Hofstede (1980) has suggested that there is a feedback loop between culture and its institutional consequences. This means that there are two ways causation between cultural values and stock market development in a society. North (1990) has mentioned that institutions can be defined as:

> **"The rules of the game in society, or more formally, the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic".**

He has added that there are two types of institutions in a society. The formal institutions which include written rules and legislations, and the informal institutions which include unwritten rules of conduct (De-Jong and Semenov, 2002).

Furthermore, Hofstede (1980) has introduced the "culture in the individual" concept which suggests that culture is situated between the human nature and the individuals' personality. This means that common culture does not necessarily imply that all members of a society share exactly the same underlying values to the same degree. However, the concept means that members of a society will be more likely to share common values that are expressed both individually and/or collectively (Dahl, 2004). Ultimately, the culture concept describes both the underlying values as well as the manifested visible behavior. These values are transferred from one generation to another based on the society perception of the surrounding social environment and on past experience (Triandis, 1972).

Spencer-Oatey (2000) has provided another useful definition of culture which entails:

> **"Culture is a fuzzy set of attitudes, beliefs, behavioral norms, and basic assumptions and values that are shared by a group of people, and that influence each member's behavior and his/her interpretations of the "meaning" of other people's behavior".**

She has suggested that basic assumptions and values encompass the inner core of the culture onion. This inner core is followed by a level of beliefs, attitudes and conventions. Then, the third level consists of "systems and institutions", which is followed by an outer layer of culture. This cultural model has made two significant contributions: First, it has highlighted the functions of culture in addition to the values and behavioral outcomes. Second, it has suggested the existence of two core levels of culture with a fuzzy boundary; the new core component contains attitudes, beliefs and behavioral conventions (Dahl, 2004).

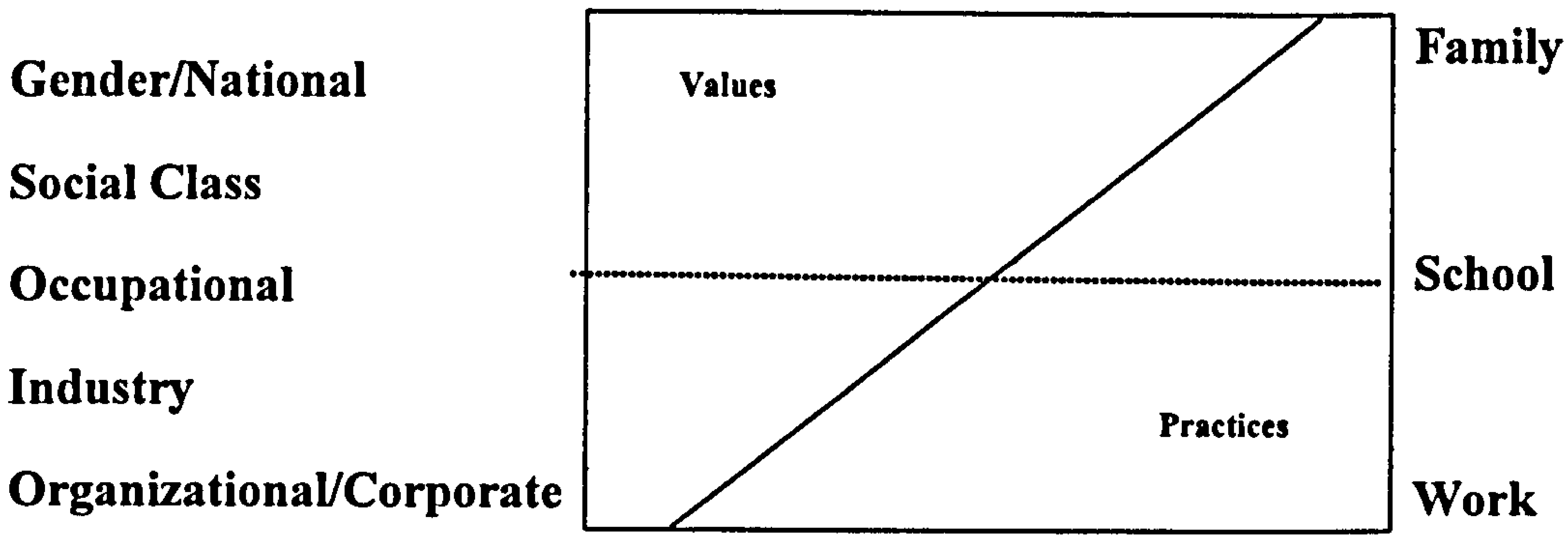
At this point it may be useful to highlight the relationship between the national culture and both the organizational culture and investor culture. On the one hand, the organizational culture phenomenon is quite different from the national culture. The nature of an organizational culture as a social system is quiet different in many respects from a national culture. Hofstede and Hofstede (2005) have defined organizational culture as the "The collective programming of the mind that distinguished the members of one organization from another", also they have added that it is "Perceived common practices: symbols, heroes, and rituals". This means that organizational cultures can be meaningfully described by a number of practice dimensions; these collective practices depend on the organizational characteristics, such as structures and systems. Organizational cultures are mainly expressed not in members' values but in more superficial manifestations such as common symbols, heroes and rituals. This has two important consequences: First, organizational practices can be easily influenced by changing these organizational characteristics, compared to collective values of people which are extremely difficult to change. Second, there is no one cultural model for all organizations because different organizations may have different organizational practices and characteristics.

Another difference between national and organizational culture seems to be based on their different mix of values and practices. Hofstede and other researchers have conducted research between "1985-1987", under the auspices of the Institute for Research on Intercultural Cooperation (IRIC), on several companies in Denmark and

Netherlands. They have found that the roles of values versus practices at the organizational level to be exactly the opposite of their roles at the national level. There were considerable differences in practices but much smaller differences in values between similar people in different organizations (Figure 2.2) (Hofstede and Hofstede, 2005).

Figure 2.2: The balance of values and practices for various levels of culture.

Source: Hofstede and Hofstede (2005)



They have added that national cultures are part of the mental software we acquired during the first ten years of our lives, and they contain most of our basic values. While organizational cultures are acquired when we enter an organization, with our values in place, and they consist of mainly of the organization's superficial practices.

On the other hand, it can be suggested that national cultural values may have an impact, to some extent, on the behaviour of both individual and institutional investors. De-Jong and Semenov (2002) have argued that the mental programming of investors influence their choices of the way they are conducting business, and the aggregate of these choices will shape the financial system in a nation. Indeed, the investors' decisions to invest, for example in shares, will depend to a great extent on their attractiveness compared to other investment opportunities such as deposits or bonds, which in turn are determined by a trade-off process between the return-risk of each investment. That is, the attractiveness of buying shares will be influenced by the attitude of investors towards uncertainty (De-Jong and Semenov, 2002). Different countries have different cultural values concerning uncertainty avoidance, thus investors in different countries may differ in the degree of their uncertainty avoidance. Therefore, it can be asserted that different national cultures concerning uncertainty avoidance may place some general boundaries on the mental programming of investors to behave in a certain way. In this context, Hofstede and Hofstede (2005) have suggested that societies, organizations and individuals represent the gardens, bouquets and flowers of social science. They have concluded that the three are related and part of the same social reality. The three levels should be taken into account to better understand our social environment.

Previous empirical research shows that researchers have presented several cultural value dimensions models. One of the most important researches on culture was presented by Hofstede in 1980. He has performed a survey of work-related values around 1968 and 1973. About 120,000 employees of IBM subsidiaries participated in a questionnaire across 66 countries; employees represented 38 occupations and 20 languages. Factor analysis was implemented on more than 100 standardized questions to explore culture differences across countries. Hofstede (1980) has successfully managed to identify some structural elements of culture which may affect human behavior in work situations. Four main culture dimensions were identified, which are: power distance, uncertainty avoidance, individualism and masculinity.

Later on, Hofstede (1991) has introduced a fifth cultural dimension, called the time orientation, based on the Chinese culture connection study (1987). The long term time orientation represents people preference to persistence, ordering relationships by status and monitor, thrift, and having a sense of shame. While, short-term orientation shows preference to personal steadiness and stability, protecting your face, respect for tradition and reciprocation of greetings, favors and gifts (Dahl, 2004, Smith et al., 1996).

Furthermore, Hofstede (1980) has provided an explanation for the consequences of each cultural value dimension for family life, organization, and government. In addition, he has successfully presented an explanation of the origins of each cultural dimension, which may help to identify measurable observable variables for each of them. In addition, empirical results have shown that some relationships between cultural value dimensions and other ecological factors do exist. For example: he has found positive relationship between power distance and country size. Also, he has found that power distance and masculinity are significantly related to the geographic location and historic background of the countries. More recently, Hofstede (2001) has shown that cultural value dimensions (except individualism) are persistent across time. The five culture value dimensions of Hofstede (1980) are described in detail as follows:

The first cultural value dimension is power distance, which refers to the extent a society can accept an unequal distribution of power among its members. It describes the degree of interpersonal dependence between superiors and subordinates in a society. Hofstede (1983) has defined power distance as:

> **"The power distance between a boss (B) and a subordinate (S) in a hierarchy is the difference between the extent to which B can determine the behavior of S, and the extent to which S can determine the behavior of B".**

People in large power-distance societies; accept the existence of a hierarchy of inequality that is perceived to provide the best protection for everyone (De Jong and Semenov, 2002). As a result, co-operation among people is difficult to maintain, as everyone perceives the other as a potential threat to his/her power. Also, this implies an automatic or paternalistic relationship between subordinates and superiors, whereby the latter is usually dependent on the former, and they seldom contradicts each other and neither would a subordinate normally approaches the superior directly (Sudarwan and Fogarty, 1996).

On the other hand, people in small power-distance societies believe in an equal distribution of power. They feel that inequality among them should be justified (Amat et al., 1996). People feel less threatened, trust each other and feel more at ease to cooperate with others (De Jong and Semenov, 2002). The relationship between superiors and subordinates is characterized by less interdependence, and a consultative communication-mode, whereby subordinates feel free to approach and contradict superiors (Sudarwan and Fogarty, 1996).

The cultural value dimensions by Hofstede (1980) has shown that the United Kingdom is characterized by a low power-distance score (Table 2.1). A low power-distance society may be characterized by the following (Gray, 1988): first, low concentration of economic power, high independence in decision-making and high self-regulation, which may encourage competition among members of the society. The low preference for concentration of power may force the regulatory system to provide more favourable conditions that facilitate competition, such as to increase minority shareholder's rights (De-Jong and Semenov, 2002). Second, low level of conservatism and secrecy, which may enhance disclosure of information about companies' performance. Third, high self-regulation, flexibility and decentralization, which may force effective regulation in favour of the stock market development. Therefore, low power distance cultural value dimension is expected to support more stock market development.

Table 2.1: Summary of countries' scores according to the cultural value model of Hofstede (1980). N/A = not available.

Country	Power Distance	Uncertainty Avoidance	Individualism	Masculinity	Time Horizon
Austria	11	70	55	79	N/A
Belgium	65	94	75	54	N/A
Denmark	18	23	74	18	N/A
Finland	33	59	63	26	N/A
France	68	86	71	43	N/A
Germany	35	65	67	67	31
Greece	60	112	57	35	N/A
Italy	50	75	76	70	N/A
Netherlands	38	53	80	14	44
Norway	31	50	69	8	N/A
Portugal	63	104	31	27	N/A
Spain	57	86	51	42	N/A
Sweden	31	29	71	5	33
Switzerland	34	58	68	70	N/A
United Kingdom	35	35	89	66	25
United States	40	46	91	62	29

The second cultural value dimension is the uncertainty avoidance, which refers to the extent that people can tolerate the anxiety emerging from unknown or ambitious situations in daily life. People usually try to avoid and/or reduce these situations by using technology, rules and rituals. High uncertainty-avoidance societies feel that uncertainty inherent in life is a continuous threat that must be fought. These societies are motivated by security-preference, which is considered as an achievement in itself. People tend to reduce ambiguity, conflict and competition. By contrast, low uncertainty-avoidance societies are more at ease and relax within an ambiguous situation. Motivation is perceived as recognition by others rather than security. People focus more on practice rather than principles in life. They can accept more deviance, conflict and competition and use it to the benefit of their society (De Jong and Semenov, 2002).

The cultural value dimensions by Hofstede (1980) shows that the United Kingdom is characterized by low-uncertainty-avoidance score (Table 2.1). A low uncertainty avoidance society may be characterized by the following (Gray, 1988): First, high independence among people and managers in a society, which may result in more competition between members of the nation. Second, high self-regulation, flexibility and decentralization, which may result in flexible legislations that foster stock market development. Therefore, it can be predicted that low uncertainty-avoidance may result in more support for stock market development.

The third cultural value dimension is individualism, which reflects the extent people prefer personal freedom and free choice. It can be defined as (Salter and Niswander, 1994):

"A high degree of independence a society maintains among individuals"

In an individualistic society, people are considered to be responsible only for themselves and their immediate family. They usually prefer loose social ties in the society. On the other hand, collectivist societies can be defined as (Amat et al., 1996):

> **"A high degree a society accepts responsibility for family, tribal or in-groups in exchange for loyalty".**

People in collectivist societies have a "we" consciousness versus an "I" consciousness in individualist societies (De Jong and Semenov, 2002).

The cultural value dimensions by Hofstede (1980) show that the United Kingdom is characterized by high individualism score (Table 2.1). A high individualism society may be characterized by (Gray, 1988): First, high tendencies towards self-independence in decision-making, which may result in more competition. As competition is more favourable to an individualistic society that prefers limited government-intervention and dispersed concentration of power (De-Jong and Semenov, 2002). Second, low conservatism and secrecy in financial reporting practices may increase the disclosure of financial information. Third, high self-regulation, flexibility and decentralization of regulations, which may result in flexible legislations to improve stock market development. Therefore, it can be predicted that high individualism may result in more stock market development.

The fourth cultural value dimension is the masculinity, which can be defined as (Hofstede, 1980):

> **"It is the level of distinction of social gender roles in a society"**

People in a masculine society emphasize material achievement, assertiveness, and competition. They feel that the strong should be supported, conflicts are resolved by fighting them out, and managers prefer to have more independence in decision-making. On the other hand, a feminine society usually tends to focus on feminine nurturance, care for others, a living environment and the quality of life. As more preference is given to modest behaviour, stress equality and solidarity against competition, and managers usually look for consensus-decisions (De Jong and Semenov, 2002).

The cultural value dimensions by Hofstede (1980) shows that the United Kingdom is characterized by medium masculinity score (Table 2.1). A high masculinity society may be characterized by (Gray, 1988): First, high preference for independence in decision-making among members of the society, which may result in more competition nation-wide. Second, high self-regulation, regulation flexibility and decentralization, which may lead to positive legislations towards stock market development. Some intermediary channels may support these relationships through managers' high independence (arm's length relationships with stakeholders); dominate private pension funds, and low preference for ownership concentration (De Jong and Semenov, 2002). Third, low conservatism and secrecy in financial reporting practices, which may increase the information content of company reports. Therefore, it can be predicted that a high masculinity may result in more stock market development. Some intermediary channels may support these relationships, for example, in a high masculinity-environment; society usually fosters competition through manager's high independence (arms' length relationships with stakeholders), dominant private pension funds, and a low preference for ownership-concentration (De-Jong and Semenov, 2002).

The fifth cultural value dimension is time horizon, which has been added after the Chinese culture connection survey was conducted in 1987. This survey has shown a significant positive relationship between the long-term horizon of people in some countries, i.e. China, Hong Kong and Taiwan, and Confucianism. This religion encourages self-discipline, and restrained and conservative behaviour. A Confucian society is expected to have more economic growth, because it focuses on long-term rather than short-term outcomes. Long-term horizon societies are characterized by their ability to focus on the whole rather than the parts in a persistent and flexible way. They slowly construct a process from parts in an ascending order to build the whole. On the other hand, short-term horizon societies prefer to sub-divide the whole into several parts, they expect quick results because they have confidence that they are doing things correctly (Sudarwan and Fogarty, 1996).

Previous empirical research has shown that the time horizon of investment varies significantly across countries. The shares of some companies are held by stable long-term shareholders, in contrast to other companies, which have short-term oriented investors (De-Jong and Semenov, 2002). The cultural value dimensions by Hofstede (1980) have shown that the United Kingdom is characterized by a short term time horizon (Table 2.1). However, it is still difficult to draw clear relationships between this dimension and stock market development, except that long-term horizon societies may experience higher economic growth rates than short-term oriented societies, due to their tendency to invest more in human capital and long-term investment projects (De-Jong and Semenov, 2002).

In general, the cultural model of Hofstede (1980) has provided a useful framework of cultural values, which relatively reduces the complexity of the culture concept into five easily understood dimensions. In addition, the model is easy to apply using measurable variables for empirical testing and hypothesis (Dahl, 2004). However, researchers have argued that there are several drawbacks of this cultural model that should be taken into consideration. First, Hofstede (1980) survey is criticized for being not representative of the whole societies in each county, since it was conducted only on IBM employees. Hence, the study results may not be generalized to the whole society. Hofstede himself has noted that: "IBMers are very special people, not at all representative for our country". However, he has argued that the perfect match of his samples across countries is more important than the problem of sample representation (Licht et al., 2004). Second, the model does not address the interrelationships among the cultural dimensions. For example a change in uncertainty avoidance may be due to a change in power distance rather than a change in the environment, an increase in the education levels may decrease power distance and simultaneously allow people to be more confident and perhaps less anxious about the uncertainty of future outcomes (Sudarwan and Fogarty, 1996).

Third, the model may suffer from a defect in the survey measurement instrument. Hofstede has classified cultural diffusion by nationality, and he has asserted that shared values represent the basis for national existence. However, cultural diffusion may not follow the boarder of nations. For example the Indonesian population comprises several different ethnic groups with different languages, religions, and customs. Therefore, the focus on national culture may not be suitable to capture the different cultures of different ethnic groups in one country (Sudarwan and Fogarty, 1996).

Fourth, other researchers have argued that people-preferences do not necessarily represent the deeply rooted values in a society. That is, what people should do may diverge from what they are actually doing. This divergence problem has been resolved, at least partly, by Hofstede (1980, 1991) when he has introduced two types of values: the desirable and desired values. Desirable values represent what people think how they should do, whilst desired values represent how people actually behave. It has been asserted that changes in organizational culture are due to differences in behaviour and practice rather than different values. The interaction between national cultures and organizational cultures are not expected to occur in the deep-rooted desirable values, because they are very difficult to change. Instead, these interactions usually take place in the outer layers of culture-values which represent the desired values. These values are more flexible, and can be adjusted according to the situation, via symbols, heroes and rituals (Sudarwan and Fogarty, 1996).

Fifth, Holden (2002) has criticized the cultural value model by Hofstede (1980) on the basis that the survey data has been collected a long time ago, which may not be valid to represent culture values prevailing in societies in more recent years (Dahl, 2004). However, De Jong and Semenov (2002) has argued that there is considerable evidence that these culture dimensions are deeply rooted values in societies that have been stable over time, and they are less likely to shift suddenly in the short-run. Furthermore, Punnett and Withane (1990) have conducted a theoretical review of the previous literature on Hofstede's cultural model. They have shown that there is no agreement among researchers about the validity of such a model to explain cross-country differences in all situations. They have recommended that further analysis is needed in order to have deeper insights into this issue.

Consequently, several empirical studies have been conducted to assess the validity of the cultural value model by Hofstede (1980) and/or to present new cultural models form different perspectives. In this context, a land-mark study called the "Chinese culture connection" (1987) confirmed the existence of Hofstede's four cultural dimensions. In addition, it has introduced a new fifth culture dimension called the "Time Horizon" as mentioned earlier. Two core cultural norms were identified which include: a Pragmatic long-term orientation and a Conventional short-term orientation. This new dimension of time implies that the greater the tendency a society has towards a pragmatic future-oriented attitude, the more likely it will exhibit economic growth and vice versa.

Hall and Hall (1990) have presented another cultural value model which consists of two dimensions, which are: context and Monochromy/Polychromy value dimensions. The context value dimension describes the amount of information that surrounds an event. It deals with language which is located at the outer skin of the cultural onion as described by Hofstede (1980). A high context culture show a pre-programmed information which is in the receiver and the settings surrounding an event, while only very little information in the coded, explicit, transmitted part of any communication message. In contrast, a low context culture allows the mass of information to be transmitted in the explicit codes of the messages (Hassan and Ditsa, 2004).

The second cultural dimension is the Monochrony/polychrony. The Monochrony culture focuses on one issue at a time with special emphasis on schedules and procedures for task completion. Whereas, Polychrony culture focus on multiple tasks at one time and focus more on task completion than following procedures (Hassan and Ditsa, 2004). Overall, these concepts seem to be useful and easy to understand. However, they suffer from some drawbacks which include: First, there is a lack of statistical data to test the model empirically. Second, there is a difficulty to use these concepts in a more analytical approach to compare culturally close countries. Third, the concepts are limited to only one aspect of culturally based behavior rather than a wide explanation of underlying values which limit a broader research (Dahl, 2004).

Later on, Trompenaar and Turner (1997) have presented a wide scope of cultural-values in a sample of 12 countries which include: USA, UK, Sweden, Netherlands, Germany, France and Japan. They have expanded the core level of the basic four-layered onion shape cultural model by Hofstede (1980). A survey study was conducted using questionnaires on a large number of business executives from different organizations. They have suggested that there is a strong relationship between cultural values in those societies and the work related organizational behavior to create wealth. And they have identified respondents' preferred behavior in a number of work and leisure situations. As a result, seven value orientations were identified, which are: universalism/particularism, communitarianism/individualism, neutral/emotional, defuse/specific, achievement/ascription, human-time, and human-nature.

A comparison between the Trompenaar and Turner (1997) and Hofstede (1980) cultural value dimensions shows that some of these values are identical. First, the communitarianism/individualism may be identical to the collectivism/individualism value dimension by Hofstede (1980). Second, the achievement/ascription seems to be linked to the power distance cultural value by Hofstede (1980), although the latter does not take into consideration the degree of inequality acceptance among members of a society. Finally, the universalism/particularism may be related to some extent to both uncertainty avoidance and collectivism/individualism cultural values (Dahl, 2004).

More recently, a radical improvement to culture studies was presented by Schwartz (1999). He has used a value survey on more than 60 000 respondents from more than 63 countries. Respondents were asked to rank fifty six cultural values as guiding principles in their life. Multidimensional scaling analysis is used for each value in each country. Then, the similarity structure analysis (SSA) is used to distinguish the differences across countries.

He has conducted two separate analyses on the individual and on the cultural levels. At the individual-level analysis he has derived ten distinct value types, which are: power, achievement, hedonism, stimulation, self direction, universalism, benevolence, tradition, confirmatory and security. These values are further ordered into four higher order value types which are: openness to change, self-enhancement, conservatism, and self transcendence. Then, these high order value types are positioned in two opposing bipolar conceptual dimensions which consist of: openness to change and self-enhancement against conservation and self-transcendence. In contrast, at the cultural-level analysis he has derived seven value types, which can be summarized into three bipolar cultural value dimensions, as follows: embedded-ness versus autonomy, hierarchy versus egalitarianism, mastery and harmony (Licht, 2001, Dahl, 2004).

The cultural value dimensions model by Schwartz (1999) has the following advantages compared to other models: First, the measurement instrument used in the surveys depends on the preferred values rather than status or behavior, which can eliminate the impact of situational variables on respondents. However, other researchers have argued that using values as a measurement instrument may increase response bias, as respondents may prefer to choose ideal values that may not represent their actual behavior in real life situations. Second, the model provides clear distinction between levels of culture (Dahl, 2004).

A detailed comparison between Schwartz (1999) and Hofstede (1980) cultural value models show that: First, the individualism cultural value dimension by Hofstede (1980) is similar to the autonomy/embeddedness value dimension by Schwartz (1999). Second, the power distance cultural value dimension by Hofstede (1980), which means acceptance of social equality/inequality among members of a society, is similar to the Egalitarinism/Herarchy value dimension by Schwartz (1999). Third, although Schwartz's (1999) value dimensions model do not provide an identical dimension to the uncertainty avoidance cultural value by Hofstede (1980), However, some scholars has argued that Mastery/Harmony value dimension by Schwartz is close to it, since it deals with an attitude of submission and fitting with the real world contingences (Licht, 2001, Dahl, 2004).

Overall, there seems to be an association between cultural value dimensions in different models. Licht (2001) has mentioned that: "[A] close positive association between basic dimensions [is] identified in different ways by different authors". However, despite the obvious similarity among cultural value models, there seems to be no consensus among researchers on a single concept of culture or culture dimensions. Dahl (2004) has presented a review for the main concepts and theories of intercultural and cross cultural communications. He has concluded that: "Despite all efforts there is no commonly acknowledge correct concept of culture or cultural dimensions as yet". Further, he has noted that the suggested cultural values dimensions, such as those in Hofstede (1980), and Trompenaars and Turner (1997), are frequently based on very little data, or derived from a limited number of questions, which may disturb the derived value predictions, and it may hide certain dimensions or values which may be wrongly derived because of certain situations influence on respondents. Also, he has pointed out that despite the increasing importance of intercultural studies, few researchers depend on the empirical evidence from cross-cultural and intercultural research to explain their findings.

Nevertheless, it may be useful to note that some empirical studies in finance have shown that some managers reflect on their working environment in decision-making processes. Barker (1999) has investigated the valuation models used in practice using a sample of 42 analysts in the United Kingdom. He has found that analysts' preferences between stock valuation models vary systematically according to stock market sector. Price-earnings ratio is preferred when analyzing the service, industrials and consumer goods sectors. While, the dividend yield is predominant in the financial and utilities sectors. He has concluded that value may depend on the type of activity due to issues concerning the predictability of cash flow generation or information asymmetry or a long operation cycle, or it may depend on investors' preference on how they would like to receive their outcome from investment.

Graham and Harvey (2001) have surveyed Chief Executive Officers (CEOs) in the U.S.A. about their practices in a broad range of areas, which included capital budgeting, cost of capital and capital structure. They have conducted an analysis of the survey-responses conditional on each separate firm-characteristic. They have used a list of risk factors that corporations may account for, when determining the cash flow and/or discount rate inputs for project valuation. This list included: the fundamental factors in Fama and French (1992), momentum as defined in Jegadeesh and Titman (1993), as well as macroeconomic factors in Chen, Roll and Ross (1986) and Freson and Harvey (1991). They have asserted that there is a possibility that their findings are impounded into stock prices and audit ratings, and so CEOs react to them indirectly.

Their results have shown that executives use the mainline techniques to evaluate projects and to estimate the cost of equity. The CAPM is by far the most popular method of estimating the cost of equity capital, followed by the average stock returns and a multi-beta CAPM. Few firms actually used a dividend discount model to estimate the cost of equity. However, they have found that the CAPM may not be applied properly in practice. It was found that more than half of the respondents use their firm's overall discount rate to evaluate a project in an overseas market, even though the project is likely to have different risk factors from the overall firm.

They have found that the most important additional risk factors other than market risk are: interest rate risk, exchange rate risk, business cycle risk and inflation risk. CFOs paid very little attention to risk factors based on momentum and book to market value. As for the calculation of discount rates, the most important factors are: interest rate risk, size, inflation risk and foreign exchange rate risk, while for the calculation of cash flows, many CFOs incorporated the effects of commodity prices, GDP growth, inflation and foreign exchange risk.

However, they have found that executives are much less likely to determine capital structure decisions according to academic factors and theories. According to their survey, the most important factors that affect capital structure decisions are: credit ratings, EPS dilution, and financial flexibility, recent changes in stock price, maturity matching, hedging foreign operations and practical cash management. They have indicated that firm size significantly affect the practice of corporate finance. There are fundamental differences between small and large firms. For example, large firms are significantly more likely to use NPV and CAPM techniques than are small firms, which are more likely to use less sophisticated methods in evaluating risky projects such as the payback method.

More recently, Elkelish and Marshal (2006) have shown that managers in the United Arab Emirates emerging market tend to prefer the behavioural/ managerial approach in determining financial structure choice. Furthermore, survey evidence has highlighted the impact of some personal and firm characteristics on managers' choice.

(2/2)Stock market development indicators

In recent years, the large expansions of international stock markets have attracted the attention of many researchers to investigate stock market development and its impact on firm and economic performance. Though, it may not be surprising to find some countries pursuing structural reformation of their stock markets to increase economic growth and to attract more international investment funds. Unfortunately, literature review shows that the debate among researchers on the expected benefits of well developed stock markets is far form being settled.

A growing theoretical evidence suggest that developed stock markets may increase risk diversification, liquidity, information processing and capital mobilization, which in turn may foster long term economic growth (Levine, 1991, Greenwood and Smith, 1994, Obstfeld, 1994, mentioned in Demirguc-kunt and Levine, 1995). Rousseau and Wachtel (2000) have emphasized that developed stock markets can play a crucial role in the economy, as they provide a possible exit mechanism for investors, allow transfer surplus from short to long term capital markets, provide information that improves efficiency of financial intermediaries (De-Jong and Semenov, 2002). Furthermore, stock markets may provide investors with better opportunities to diversify risks which lower the risk premia charged for funding new projects (Morck and Nakamura, 1999), facilitate the efficiency of investment decisions and discipline managers (Paul, 1992, Holmstrom and Tirole, 1993), and facilitate the operation of the market for corporate control (Jensen, 1992) (Mentioned in De-Jong and Semenov, 2002).

By contrast, De-Jong and Semenov (2002) have argued that there is no overwhelming empirical evidence that stock market development will always result in greater economic growth and prosperity. They have pointed out that, despite the previous benefits of stock market development, stock miss-pricing may result in inefficient investment decisions, therefore, linking managerial compensation to stock prices which may lead to suboptimal decisions, and hostile takeovers based on this price will decrease efficiency (Shleifer and Vishny 1988). Furthermore; the stock market does not aggregate all public and private knowledge (Seyhun 1986, Malkiel 1992), or even public information, at least in the relatively short-term (Scheren 1988, Shefrin and Statman 1994, Debondt and Thaler 1995, Allen and Gale, 2000) (Mentioned in De-Jong and Semenov, 2002).

In this context, there seems to be no agreement among researchers on a single concept or measure for stock market development worldwide. Demirguc-kunt and Levine (1995) have noted that:

> **"Stock market development is a complex and multi-faceted concept and no single measure will capture all aspects of stock market development."**

To overcome this problem Demirguc-kunt and Levine (1995) have presented several indicators of stock market development using data on 41 countries during the period 1986 to 1993. Their main aim was to provide a variety of indicators for stock market development to facilitate empirical research in the relationship between a stock market, economic development and corporate financing decisions. They have found high cross-country variations in stock market development. For instance, countries with effective information-disclosure regulations, internationally accepted accounting standards, and unrestricted international capital flows are more likely to have larger and more liquid markets. High ownership concentration stock markets are more likely to have smaller, less liquid and less internationally integrated markets.

They also have found a significant positive relationship between stock market development and the development of financial intermediaries, such as banks, private non-banks, private insurance companies and pension funds. Empirical results show that big markets are more likely to be less volatile, more liquid, and less concentrated. Institutionally developed markets are more likely to be large and liquid. The stock market indicators implemented by Demirguc-Kunt and Levine (1995) include: stock market capitalization, liquidity, concentration and volatility (Table 2.2). These are detailed as follows:

First, the stock market capitalization ratio is usually used to represent market size. The growth rate of the market capitalization ratio is often used by some practitioners as an indicative indicator of rapid stock market development. It is measured here by the value of listed shares on the stock market divided by gross domestic production (GDP). The importance of this indicator stems from the assumption that stock market size is more likely to correlate positively with the ability to diversify risk and to mobilize capital (Demirguc-Kunt and Levine, 1995).

Table 2.2: Summary of some variables used in previous empirical research to proxy for stock market development.

Stock market development variables (dependent)	Source
Market Activity	
Value of Trade	Omran and Pointon (2001)
Volume of Trade	Omran and Pointon (2001)
Number of Transactions	Omran and Pointon (2001)
Value of new issues including capital gains as % of Trading value	Omran, M. M.A.(1999)
Value of new issues including capital gains as % of GDP	Omran, M. M.A.(1999)
Market Size	
Market Capitalization	Omran, M. M.A.(1999)
Market capitalization as a % of GDP	Demirguc-Kunt and Levine (1995), Omran, M. M.A.(1999)
Volume of shares listed	Omran, M. M.A.(1999)
Number of listed companies	Omran, M. M.A.(1999)
Market Liquidity	
Total value traded to market capitalization	Demirguc-Kunt and Levine (1995), Omran, M. M.A.(1999)
Total value traded to GDP	Demirguc-Kunt and Levine (1995), Omran, M. M.A.(1999)
Volume of share traded as a % of volume of shares listed	Omran, M. M.A.(1999)
Market concentration	
% of biggest companies' shares in market capitalization	Demirguc-Kunt and Levine (1995), Omran, M. M.A.(1999)
% of biggest companies' shares in value traded	Omran, M. M.A.(1999)

Second, the stock market liquidity is defined as (Demirguc-kunt and Levine, 1995):

"The ability to easily buy and sell securities"

The liquidity ratio and turnover ratio are frequently used to measure stock market liquidity. There are two types of stock market liquidity. The liquidity ratio equals the total value of shares traded on the stock market divided by gross domestic production (total value traded /GDP). This variable is expected to correlate positively with liquidity for the whole economy of a country, since it reflects the organized trading of shares in the market as a percentage of national production. On the other hand, the turnover ratio is used to reflect the trading volume in a stock market. It is equal to the value of total shares traded in the market divided by market capitalization. The turnover ratio usually correlates negatively with transaction costs, and hence stock market development. This variable focuses on the cost of transactions and measures the stock market trading relative to the size of the market (Demirguc-kunt and Levine, 1995).

Third, the stock market concentration is defined as (Demirguc-kunt and Levine, 1995):

"The degree few companies dominate the stock market in a country"

This indicator is measured by the share (%) of market capitalization accounted for by the biggest 10 stocks. This indicator may reflect the degree of preference of some cultural values such as: inequality among members of a society. The United Kingdom is characterized by low concentration of ownership as compared to other international countries (Table 2.3). Previous empirical research has shown that developed stock markets usually have dispersed concentration of ownership, which may help to increase the volume of trade, to reduce volatility and to provide more information about listed companies (Pagano, 1989a, 1989b, Allen and Gale, 1994, Holmstrom and Tirole, 1993, mentioned in De-Jong and Semenov, 2002, 2000). By contrast, more concentrated ownership may be expected in societies, which are characterized by a low protection of minority shareholder's rights, under-developed stock markets, high uncertainty, a low case for independence, and closer relationships between managers and stockholders (De-Jong and Semenov, 2000).

Fourth, the stock market volatility is measured using a twelve-month rolling standard deviation estimate based on market returns. Note that there are other indicators calculated by Demirguc-kunt and Levine (1995), such as asset pricing efficiency, regulatory and institutional development and conglomerate indices of all previous indices, which are intended to measure capital markets integration across countries.

Table 2.3: Summary of previous empirical research on ownership concentration percentages across countries. Values represent percentages of companies with an owner holding at least 20% of voting rights. Source: De-Jong and Semenov (2000). N/A= not available.

Country	Pedersen and Thomsen (1997)	La Porta et al. (1999)		Faccio and Lang (2002)	Ownership concentration
	%	Largest companies (%)	Medium-size	%	
United Kingdom	22	0	40	37	Low
France	73	29	100	85	High
Germany	86	33	88	89	High
Italy	100	100	100	86	High
Belgium	87	95	71	80	High
Finland	80	46	75	66	High
Denmark	80	50	63	N/A	High
Portugal	N/A	100	100	77	High
Greece	N/A	100	100	N/A	High
Netherlands	50	68	89	N/A	High
Spain	83	50	100	72	High
United States	N/A	0	10	N/A	Low
Ireland	N/A	35	38	37	Low

In addition, an overview of the stock market indicators used by international economic organizations such as International Monetary Fund (IMF) and Organization of Economic Cooperation and Development (OECD) shows that there are a variety of indicators used for different purposes. The Financial Market Update Bulletin, issued by the International Monetary Fund, which covers the developments in both mature and emerging markets, shows a number of indicators such as equity market index, market capitalization and price to earnings ratio (P/E). Other stock market development indicators applied by the Organization for Economic Cooperation and Development (OECD) include a variety of indicators such as: market price index, volatility and earnings per share (Table 2.4).

Table 2.4: Stock market development indicators applied by some international economic organizations. Source: Financial Market Update Bulletin, IMF, June, 2006, Financial Market Trends Bulletin, OECD, 2006.*Capital market development program in India, Asian Development Bank, 2004

Stock market indicator	Calculation	Source
Equity market index	Price index i.e. Topix, Eurofirst300, S&P 500	IMF
Price earnings ratio	Share price to earnings per share, 12 month forward earnings	IMF
Market volatility	30-day rolling historical volatility, in%,	IMF
Market capitalization to GDP	Value of all shares listed on the market to gross domestic product	IMF
Historic and Implied volatility	Historic volatilities are monthly volatilities calculated from daily data. Standard deviation estimate based on market returns. Implied volatility is future volatility derived from at-the-money call option prices (interpolated) using the Black-Scholes formula.	OECD
Earnings per share	For U.K. the earnings are calculated by a rolling 12 months method of analysis based on	OECD

	interim, final and annual accounts	
Price earnings ratio	Price to earnings per share	OECD
Market Capitalization to GDP	Value of all shares listed on the market to gross domestic product	OECD*
Market capitalization	Value of all shares listed on the market to gross domestic product	OECD*
Stock market to Banking system	Stock market capitalization to domestic assets of deposit money at banks	OECD*
Stock market orientation relative to economic development	(M/B)/(GDP per capita/1000) M=stock market capitalization B=domestic assets of deposit money at banks GDP=gross domestic product	OECD*
Trades of domestic equities to claims of deposit	Value of the trades of domestic equities on domestic exchanges to claims of deposit money banks on private sector	OECD*
Domestic listed firms to population	Value of domestic listed firm to population (in millions)	OECD*
Number of IPOs to population	IPO=initial public offerings	OECD*
Annual turnover	Total value of transactions of securities in all market segments	OECD*
Average daily volume	Number of shares	OECD*
Number of listed companies	Number of listed companies on stock market	OECD*
Initial public offerings	Number of stocks; Amount of IPO; Amount of Subscriptions	OECD*
Transaction costs	Commission percentage on trading, clearing and settlement values.	OECD*
Value traded to GDP	Total value traded to gross domestic product	OECD*

(2/3)The relationship between cultural values and stock market development

In recent years, the impact of culture-values have received a wide attention in varies fields of study such as psychology, anthropology, organization theory, management and even information technology. In particular, some empirical research investigations can be found in the accounting literature across countries, such as: accounting practice (Gray, 1988, and Willet, 1996), management accounting (Chow et al. 2001), auditing (Wingate, 1997), financial accounting and accounting standards (Noravesh, 2003). In addition, other empirical studies have shown the impact of culture on accounting practice in one country, such as, Sudarwan and Fogarty (1996) in Indonesia, Amat et al. (1996) in Spain, and Noravesh et al. (2005) in Iran.

An important piece of theoretical research by Gray (1988) has investigated the impact of culture on accounting values and practice. He was the first to introduce a comprehensive theoretical model for the influence of cultural values on the development of accounting systems, the regulations of the accounting profession and attitudes towards management and disclosure. He has extended the cultural model of Hofstede (1980) by proposing a sub-link between societal norms and the accounting sub-culture. He has predicted that the value systems or attitudes of accountants are related to and derived from societal work-related values. These accounting values will in turn influence the accounting systems. He has derived four bipolar accounting value dimensions that exist at the level of the accounting subculture, which are: professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism, secrecy versus transparency. A summary of the predicted relationships between cultural values and accounting sub-cultures are indicated in table 2.5. A review of these relationships shows that uncertainty avoidance and individuality may have more impact on accounting practice than power distance and masculinity. This is detailed as follows:

Table 2.5: Summary of theoretical evidence on the impact of cultural dimensions of Hofstede (1980) on accounting values. Source: Gray, 1988.

Cultural values Regulation/control	Power Distance	Uncertainty Avoidance	Individualism	Masculinity
Self regulation	-	-	+	N/A
Uniformity	+	+	-	N/A
Conservatism	N/A	+	-	-
Secrecy	+	+	-	-

Gray (1988) has proposed four hypotheses on the relationship between cultural values and accounting values, which entails: first, there is a significant association between self regulation and cultural value dimensions. He has predicted a negative relationship, although less strong, between self regulation and power distance. He has explained that self regulation is likely to be accepted in a small power distance society where there is more concern for equality, people at various power levels are less threatened and more prepared to trust each other, people belief in the need to justify the imposition of laws and codes. In addition, he has predicted that a preference for independent self regulation and judgment is usually associated with low uncertainty avoidance, whereby, there is a belief in fair play with few rules as possible and professional judgment is widely accepted. Further, he has asserted a significant positive relationship between self regulation/professionalism and individualism. It seems that a tendency towards loosely knit social framework with more emphasis on independence, respect for individual decisions and endeavor is usually associated with a preference for independent self regulation and judgment. By contrast, he has predicted no relationship with masculinity cultural value.

Second, there is a significant association between uniformity and cultural value dimensions. He has predicted a significant positive relationship between uniformity and power distance, although with less strength. Uniformity is more preferred in a large power distance society, where the imposition of more laws and codes of a uniform character are more likely to be accepted. In addition, he has predicted that high uniformity accounting values are associated with a preference for high uncertainty avoidance. A high uncertainty avoidance society tend to prefer law and order and rigid codes of conduct, more written rules and regulations, more respect for conformity and continuous search for ultimate, obsolete truths and values. Further, a significant negative relationship is predicted for the relationship between uniformity and individualism. Since, uniformity is usually preferred in a society with tight knit social framework, a belief in organization and order, and more respect for group norms rather than individual norms. By contrast, no relationship is predicted with masculinity cultural value

Third, there is a significant relationship between conservatism and cultural value dimensions. He has predicted that there is no relationship predicted between conservatism and power distance. He has asserted that there may be a significant positive relationship between conservatism and uncertainty avoidance. He has explained that more conservative measure of profits is preferred in societies with more concern with security and more cautious approach to future uncertainty. Further, Gray (1988) has predicted that there is a significant negative relationship, although with less strength, between conservatism and both individualism and masculinity cultural values. He has explained that more emphasis on individual achievement and performance is likely to foster a less conservative approach to measurement of performance.

Fourth, there is a significant association between secrecy of information and cultural value dimensions. He has predicted that high power distance is usually associated with more limitations on information disclosures to secure power inequalities in the society. In addition, Gray (1988) has predicted a significant positive relationship between secrecy of information disclosure and uncertainty avoidance. Since high secrecy of information is usually associated with a need to limit information disclosure to avoid conflict and competition and to preserve security. Further, secrecy is negatively associated with individualism. As high secrecy is usually dominate in a collectivism society with less concern about firm outside stakeholders. He has predicted a significant negative relationship between secrecy and masculinity, although with less strength, since more feminine society's emphasis quality of life, people and environment and more transparent for information.

These interesting predictions by Gray (1988) have been tested empirically by some researchers to assess their validity in practice. Salter and Niswander (1994) have tested the impact of cultural values on accounting values and practice using Gray's (1988) four hypothesis model. They have found that Gray's model significantly explain the actual financial reporting practices across twenty nine countries.

However, the model has failed to explain extant professional and regulatory structure in a cultural context (Licht, 2001).

Margerison and Moizer (1996) have examined the relationship between the ways in which auditors are licensed in eleven European Union countries and the cultures of those countries using Gray's (1988) model. Empirical results show that culture could be associated with the different ways of licensing auditors across countries. William and Tower (1998) have employed the theoretical framework of Gray (1988) to link Hofstede's (1980) cultural values to two key issues of differential reporting, the preferred level of disclosure and perceived balance of costs relative to benefits of compliance. Survey findings indicated that the perceptions of small business managers in Singapore and Australia were consistent with prior literature. Uncertainty avoidance and to some extent power distance were found to have significant effect on small business managers' perceptions. They have pointed out that the current association between cultural values, accounting sub-cultural dimensions and accounting practice as depicted by Gray (1988) may have to be rearranged.

Sudarwan and Fogarty (1996) have presented one of few studies which have examined the longitudinal relationship between cultural values, as depicted by Hofstede (1980), and Gray's (1988) four hypotheses model. Linear structure relations analysis (LISREL) was implemented during the period 1981 and 1992. They have found that power distance, uncertainty avoidance and individualism have significant relationships with one or more accounting values in Indonesia. These results may suggest that the development of accounting standards and disclosure practices are influenced by the change of cultural norms. However, they have suggested some useful recommendations for future research such as to apply several transformations on the study variables to make the results more reliable, to explore the interrelationships among the cultural dimensions, and finally to use a longer study period to allow the culture changes to express their impact more clearly on institutional consequences. Similarly, Noravesh et al. (2005) have implemented a quiet identical approach to investigate the impact of cultural values on the accounting values and practice in Iran. A summary of the proxy variables used in previous empirical studies to represent cultural values are mentioned below in detail (Table 2.6, a, b).

Table 2.6a: Summary of proxy variables for cultural value dimensions model by Hofstede (1980). Source: Sudarwan and Fogarty, 1996, and Noravesh et al., 2005.

Proxy variables	Source
Power distance	
Number of telephone lines	Sudarwan and Fogarty (1996)
Ratio of number of telephone lines per 100 population	Sudarwan and Fogarty (1996), and Noravesh et al. (2005)
Ratio of non-agriculture sector to gross domestic product	Sudarwan and Fogarty (1996), and Noravesh et al. (2005)
Total students enrolment	Sudarwan and Fogarty (1996)
Ratio of total number of students enrolment to total population	Sudarwan and Fogarty (1996)
Urbanization rate	Noravesh et al. (2005)
Literacy rate	Noravesh et al. (2005)
Uncertainty Avoidance	
Number of economic deregulation policy packages	Sudarwan and Fogarty (1996)
Number of economic sectors being deregulated	Sudarwan and Fogarty (1996)
Volume of transactions on stock market	Noravesh et al. (2005)
Fluctuations of foreign currency rate	Noravesh et al. (2005)
Individualism	
Urbanization rate	Sudarwan and Fogarty (1996)
Income per capita	Sudarwan and Fogarty (1996)
Rate of divorce	Noravesh et al. (2005)
Ratio of population who never get married to total adult people	Noravesh et al. (2005)
Average number of children per family	Noravesh et al. (2005)
Gross national product per capita	Noravesh et al. (2005)

Table 2.6b: Summary of proxy variables for cultural value dimensions model by Hofstede (1980). Source: Sudarwan and Fogarty, 1996, and Noravesh et al., 2005.

Proxy variables	Source
Masculinity	
Ratio of male employment to total employment	Sudarwan and Fogarty (1996)
Ratio of male students to female students in elementary schools	Sudarwan and Fogarty (1996)
Ratio of male students to female students in secondary schools	Sudarwan and Fogarty (1996)
Ratio of male students to female students in higher schools	Sudarwan and Fogarty (1996)
Literacy rate	Noravesh et al. (2005)
Ratio of social budget to total budget	Noravesh et al. (2005)
Ratio of national defensive budget to total budget	Noravesh et al. (2005)
Ratio of budget for protecting living environment to total budget	Noravesh et al. (2005)
Time Horizon	
Ratio of total spending on education to total budget	Sudarwan and Fogarty (1996) and Noravesh et al. (2005)
Ratio of total gross fixed investment to GDP	Sudarwan and Fogarty (1996) and Noravesh et al. (2005)

Chanchani and Willett (2004) have conducted an accounting values survey (AVS) administered to a sample of users and preparers of financial statements in New Zealand and India. The results provide some support for the usefulness of Gray's accounting values as empirically based classificatory constructs. However, they have questioned the possibility of existence of other unrecognized accounting value constructs. They have recommended further quantitative survey research to investigate the relevance of cultural factors in understanding international accounting practices.

More recently, Askary (2006) has examined the effects of culture on accounting professionalism in 12 developing countries during the period 1996 to 2000, using Gray's (1988) model and Hofstede's (1980) cultural dimension model. Results show that Gray's hypothesis of statutory control is positively confirmed for Iran, and moderately for Bangladesh, Jordan, Oman, and Qatar. However, this hypothesis is negatively rejected for Pakistan, Turkey, Malaysia and Indonesia. These findings shed some light on the accounting authority in those developing countries and are useful in the context of the harmonization process of the international accounting practices.

Tsakumis (2007) has examined the influence of national culture on the accountants' application of accounting rules in Greece, based on a refinement of Gray's (1988) framework. Results show that Greek accountants are less likely to disclose information than U.S. accountants. There is no significant difference between Greek and U.S. accountants' recognition decisions involving both contingent assets and liabilities. However, additional analysis shows that U.S. accountants are more conservative than Greek accountants.

On another aspect, Sekely and Collins (1988) have investigated the impact of culture on international capital structures across countries. They have utilized a methodology, developed by Broek and Webb (1973) and James (1976), for classifying countries into homogeneous groupings known as the "Cultural realms". These are groupings that have "fundamental unity of composition, arrangement, and integration of significant traits which distinguish them from other realms" (Broek and Webb, 1973). These cultural realms and countries grouped in each one are in Table 2.7 as follows:

Table 2.7: The cultural realms and countries grouped in each one.

Source: Sekely and Collins, 1988

Cultural realms	Countries
Anglo-American	Australia, Canada, South Africa, United Kingdom, and United States
Latin American	Argentina, Brazil, Chile, and Mexico
Western Central Europe	Benelux, Switzerland, and West Germany
Mediterranean Europe	France, Italy, and Spain
Scandinavia	Denmark, Finland, Norway, and Sweden
Indian Peninsula	India and Pakistan
Southeast Asia	Malaysia and Singapore

In general, empirical results tend to confirm that cultural differences contribute to significant country and minimal industry influences. The examination of the ranks of the debt ratios, using the Kruskal Wallis test statistic, shows distinct groups of countries with respect to country median rank. Low debt ratios are found in the Southeast Asian group, the Latin American group, and the Anglo-American of countries, and Indian Peninsula. The West Central European countries appear in the middle of the rankings. However, they have claimed that while these groupings do not conclusively prove the cultural impact on financial structure, they do give clear indication of the influence in that direction. They have pointed out that these results show that there are country effects on capital structure and that these results stem, in part, from cultural influence. They have added that these inter-country differences appear to be caused by underlying cultural patterns among groups of countries; these cultural patterns may influence the development of financial institutions, attitudes towards risk, and/or attitudes towards debt. It seems that these groups of countries with similar cultural attributes help explain some of the differences in capital structure between multinational companies headquartered in different parts of the world.

Furthermore, they have noted that most other areas of research recognize the significant role of cultural factors in multinational business. Unfortunately, this is not the case in the finance discipline which tends to undervalue the importance of cultural differences, and "this may be a serious mistake". Ball and McCulloch (1982) have pointed out that "the study of foreign cultures is of primary importance to those in international business because cultural differences exert a pervasive influence on all of the business functions". Finally, they have recommended that future research on international capital structure can be enhanced by including variables such as the social and legal structures of countries in addition to the more traditional economic variables in an attempt to better explain capital structure differences across countries. Multinational mangers will be better armed to make efficient international financial structure decisions and financial planning across countries.

Moreover, the cultural value model by Hofstede (1980) has been implemented in other fields of study such as information technology (IT). Hassan and Ditsa (2006) have conducted a study on the impact of national cultures on the adoption of computer-based information systems in organizations across six countries, which are: Egypt, Jordan, Turkey, Ghana and Australia. The study depended on qualitative data from semi-structured interviews with information technology staff at both managerial and operational levels. This is followed by an interpretive comparative analysis to derive the results. They have found that managers in high power distance societies tend to worry much about any challenge of their authority. Modern technical communications and the internet are viewed as a threat to the authoritarian structure of their society. They have noted that those managers are often fearful of the open nature of modern information technology environment. This environment reduce power distance by developing a flatter management structures that distributes information more efficiently, increase awareness, and forcing managers to take advice from their information technology subordinates staff.

Mani and Romijn (1999) have analyzed a small sample of existing previous interview-based data to explore the main reasons behind the successful development of the information and communication technology industry in India. He has asserted that culture plays an important role in the success of Indians in the international information technology industry. He has found that the success of this industry in the south India seems to be due to several factors which include: the availability of human capital base and geo-physical circumstances, stimulating government policies, and the involvement of non-resident Indians. Overall, he has asserted that the software industry success may be due to the existence of favorable attitude towards education and learning in south India, and the availability of an infrastructure in higher education. However, he has pointed out that culture is only a complementary variable to other explanatory variables of the success of the Indian information technology industry.

Other researchers have focused on the impact of cultural-values on the economic performance, and more particularly, the stock market development. De-Jong and

Semenov (2000) have provided theoretical and empirical evidence on the influence of cultural values, as depicted by Hofstede's model (1980), on ownership patterns. They have asserted that the choice of stock market development may depend upon society-preferences. These preferences are shaped by deeply rooted cultural-values in a society. A number of intermediary factors, that may affect these relationships, are presented, which are: regulatory environment, level of stock market development, and propensity of stakeholders to enter into implicit contracts.

Their empirical results have shown that cultural-values have an influence on the degree of ownership-concentration as well as some intermediating variables, such as the level of protection of minority shareholders, the role of the state in pension provision, and propensity to invest in shares. They have found a significant negative relationship between concentration of ownership and masculinity. By contrast, they have found a significant positive relationship between concentration of ownership and uncertainly avoidance. This means that high ownership concentration is expected in high uncertainty avoidance and low masculinity societies. Finally, they have further found a negative relationship between market capitalization and ownership concentration at the 0.99 confidence level. They have asserted that power distance and individualism may also have an effect, but they did not manage to predict the type of relationship due to their inability to isolate unambiguous relationships.

Later on, De-Jong and Semenov (2002) have extended their work by presenting an excellent theoretical and empirical work on culture-values and stock market development in 17 OECD countries. Stock market capitalization to GDP was found to be relatively higher in low uncertainly avoidance and high masculinity societies. In addition, they have uncovered the existence of some intermediating variables in this relationship. For example, a negative relationship has been detected between uncertainty avoidance and protection of minority shareholders rights. Also, a positive relationship has been detected between uncertainty avoidance and public pension at the 0.99 significance level. This means that the government usually plays a big role in the provision of public pensions in countries with high uncertainty-avoidance.

By contrast, their empirical results have shown low uncertainty avoidance society is more likely to have large private pension funds. The existence of large private pension funds usually fosters competition in the financial system, increases investments in the stock market and hence develops the stock market more efficiently (De-Jong and Semenov, 2002). A low uncertainty avoidance society usually has a preference for more competition. While, high uncertainty avoidance societies usually prefer group decisions and consultative management against competition.

In addition, some important theoretical prediction was presented by De-Jong and Semenov (2002) concerning the relationships between culture dimensions and stock market development, although they did not manage to provide any empirical evidence for it. They have predicted a significant negative relationship between power distance and concentration of ownership. Further, they have asserted that high power distance societies are more reluctant to give up independence and to enter into a long-term relationship with other stakeholders. This implies that the score on the power distance dimension has a negative impact on stock market development. In general, De Jong and Semenov (2002) have predicted that stock markets would be more developed in societies with low uncertainty avoidance. The low protection of minority shareholders' rights should result in more concentration of ownership. A greater role of government pension may hinder competition in the financial sector, while close relations with stakeholders would limit managers' independence and hence decrease competition. It is time now to turn to the next section which presents an overview of existing theoretical and empirical research on corporate governance system which is considered to be an important perquisite of developed stock markets.

(2/4)Corporate governance systems

Modern corporate governance systems have emerged after some western business scandals that have resulted in loss of investors' confidence in financial markets and fall in market value. Consequently, some national governments have introduced new legislations to protect shareholders and investor, and to restore their confidence in financial markets (Stephanie, 2005). For example: In the late 1980s, the collapse of the Bank of credit and commerce (BCCI) in the United Kingdom has initiated the government to support the Cadbury committee report (1992). The report and associated code of best practice made recommendations to improve financial reporting, accountability and board of directors' oversight. Later on, a combined code on corporate governance was adopted in 2003 and it is now a securities listing requirement on the London Stock Exchange. Similarly, recent financial scandals in the U.S., such as Enron and WorldCom, have uncovered the failure of corporate governance systems and initiated the need for more efforts to restore investors trust in the financial system. As a result, the Sarbanes-Oxley act (SOX) was initiated in 2002 to provide a broad set of structural and procedural reforms designed to strengthen the governance system of U.S. public firms (Michaud and Magaram, 2006).

The review of previous theoretical and empirical studies shows that there is no generally accepted definition of corporate governance worldwide. There is a broad spectrum of definitions that exist in the literature, ranging from a narrow, agency theoretic definitions to broader, stakeholder definitions. The narrowest approach describes the basic role of corporate governance, such as the Cadbury report (2002), which states that "Corporate governance is the system by which companies are directed and controlled". Corporate governance in this definition is restricted to the relationship between a company and its shareholders. This is the traditional finance scheme as reflected in Agency theory. Another definition of corporate governance, which falls in the middle of the definitions spectrum, is represented by Parkinson (1994), which states that "Corporate governance is the process of supervision and control intended to ensure that the company's management acts in accordance with the interests of shareholders". This definition represent a solely finance prospective to corporate governance involving only shareholders and company management (Solomon and Solomon, 2004).

At the other end of the spectrum the definition of corporate governance is extended to broader definitions that encompass corporate accountability to a wide range of stakeholders and society at large. Tricker (1984) has presented one of these definitions, which states that "The governance role is not concerned with the running of the business of the company per se, but with giving overall direction to the enterprise, with overseeing and controlling the executive actions of management and with satisfying legitimate expectations of accountability and regulation of interests beyond the corporate boundaries". In this case, corporate governance is viewed as a web of relationships between a company and a broad range of stakeholders such as shareholders, employees, management, customers, and suppliers. This view is compatible with the stakeholder theory and is gradually attracting greater attention in the business practice due to the increasing public awareness of issues like accountability and corporate social responsibility (Solomon and Solomon, 2004).

However, a closer look at these definitions of corporate governance reveals that they share certain common characteristics such as the issue of accountability. Narrow definitions of corporate governance focus on corporate accountability to only shareholders, while broader definitions emphasis accountability to shareholders as well as other stakeholders. Furthermore, Solomon, J. (2007) has argued that even the narrow shareholders approach is compatible with the theoretical framework of the stakeholder accountability approach. She has stressed that shareholders' interests can only be fulfilled by taking account of stakeholder interests, and that companies can be more successful over the long run if they are accountable to all their stakeholders. This means that companies can maximize value creation over the long run, by extending their accountability to all their stakeholders and by improving their system of corporate governance (Solomon, J., 2007).

There are two types of corporate governance systems: internal and external. The internal corporate governance systems deal with the board of directors and equity ownership structure. While, the external corporate governance systems focus on the external market for corporate control (takeover market) and the legal/regulatory system. The primary board-related issues are board composition and executive remuneration (Michaud and Magaram, 2006). The ownership structure is divided into the dispersed ownership system (outside system) and the concentrated ownership structure (insider system). Note that the ownership structure can be defined as: "The identities of a firm's equity holders and the sizes of their positions" (Denis and McConnell, 2003). In addition, another classification of previous empirical evidence has shown two components of corporate governance: structural and behavioral aspects. The structural component includes issues such as the separation roles of chairman and CEO, number of independent directors on the board. By contrast, the behavioral aspects include issues such as board meetings attendance directors, remuneration disclosure, and remuneration policy (Stephanie, 2005).

The role of the board of directors varies across countries. According to the western-style model, the board of directors represents the interests of shareholders. The board main responsibilities are to hire, fire, and monitor and compensate management with the main objective to maximize shareholders wealth (Denis and McConnell, 2003). In the U.S, U.K., Swiss and Belgian board of directors' focus on maximizing shareholders wealth, while in other countries such as Germany and Austria, the role is to maximize all stakeholders' wealth. Most of the European countries have a unitary board of directors like the U.S.; however, others have two-tiered board. This type is mandatory in some countries such as Germany and Austria, or optional in others such as in France and Finland. The two-tiered boards of directors consist of a managing board which is composed of executives of the firm, and a supervisory board (Denis and McConnell, 2003). As mentioned earlier, the board composition usually deals with issues such as board size, board independence, and remuneration disclosure.

Several empirical studies have been conducted worldwide to highlight the importance of corporate governance systems on both firm and economic performance. Some of these studies have examined the impact of individual corporate governance factors (or sets of factors) such as board composition and equity ownership (Michaud and Magaram, 2006). Alonso et al. (2002) have found a negative relationship between board size and company value in the OECD countries (Stephanie, 2005). By contrast, Caroline et al. (2002) have found a negative relationship between board size and operating performance improvements after company mergers in the United Kingdom. In addition, Eisenberg et al. (1998) have found a negative impact of board size on profitability for small and medium size companies in Finland (Denis and McConnell, 2003). Further, Beiner et al. (2004) have examined the relationship between board size and firm performance as measured by Tobin's Q across 167 Swiss firms. They have mentioned that: "Any changes in board size leave firm valuation unaffected at best, but more probably lead to a decrease in Tobin's Q". They have found that the performance of the firm may be a function of previous board actions that subsequently influences the board's subsequent choices for directors (Michaud and Magaram, 2006).

On another aspect, there seems to be relatively limited evidence on whether the separation of chair and CEO influence corporate governance effectiveness. For example Brickley et al. (1997) have found that the separation of chair and CEO has no significant effect on firm performance or in better decision making in the U.S (Denis and McConnell, 2003).

Denis and McConnell (2003) have conducted a review of previous theoretical and empirical research on corporate governance. He has found that the international empirical evidence on board structure and executive compensation is similar to the

U.S. evidence. Empirical results have shown that small boards of directors are associated with better firm performance. The presence of outsiders on boards of directors does not affect the ongoing performance of the firm, on average, but does sometimes affect decisions about important issues. New codes of best practice in many countries around the world generally tend to increase representation by outside directors. Finally, the effects of compliance with these codes alter board decisions within some, but not all, countries.

Hermalin and Weishbach (2001) have found no significant relationship between higher proportions of outside directors and firm performance. They have found a significant positive relationship between higher percentages of outside directors and better acquisition, executive compensation and CEO turnover decisions. Also, they have found a negative relationship between board size and firm performance and the quality of decision making in the U.S.A. (Denis and McConnell, 2003). Jensen et al. (2004) have shown that independent boards of directors provide stronger oversight with respective firms enjoying fewer instances of financial fraud (Michaud and Magaram, 2006).

Similarly, Santalo and Diestre (2006) has shown a positive correlation between outside directors and corporate performance, when the level of corporate anti-takeover protection is low. They have suggested that the threat of takeovers provide an adequate incentive for outside directors to undertake their supervisory role more efficiently. By contrast, they have found that outside directors' ownership do not seem to improve the quality of their performance (Michaud and Magaram, 2006).

Crespi et al. (2002) have found some evidence of a positive relationship between pay and industry adjusted stock prices performance for firms with strong block holders in Spain (Denis and McConnell, 2003). Rodriguez and Anson (2001) have shown that there is a positive relationship between firms' announcements of compliance with the Spanish code of good corporate governance practice and stock prices, when such announcements imply a major restructuring of the board of directors. Further, they have noted that this impact is stronger for poorly performing firms (Denis and McConnell, 2003).

Klapper and Love (2002) has found that good corporate governance is significantly positively associated with operating performance and market valuation. Firm level-corporate governance provisions are more important in countries with weak legal environment. He has found that firm-level corporate governance practices and performance is lower in countries with weak legal environment. He has argued that improving the legal system should remain a priority and that firms can partially overcome the defects in laws and degree of enforcement by establishing good corporate governance practices (Denis and McConnell, 2003).

Some researchers argue that cultural values have an impact on economic and corporate performance. Durnev and Kim (2002) have found that great variations in the quality of governance systems such as board structure, ownership structure, disclosure and accountability within countries. Firms with better investment opportunities and firms that rely more on external finance have better governance system and are more valued in the market (Denis and McConnell, 2003). By contrast, Chui et al. (2002) have argued that national cultural values have influence corporate capital structure.

They have found that countries with high score on "conservatism" and "Mastery" cultural values tend to have lower corporate debt ratios (Gorga, 2003).

(2/5) Corporate governance systems across countries

During the past decade, comparative corporate governance studies have received more attention due to the increase in international foreign investment and globalization. The growing interest on comparative corporate governance is motivated by a desire to locate good legal governance practices and to try transplanting them in other countries to develop good governance system across the world (Hill, 2004). In general, the literature review shows that there are strong differences in corporate governance systems across countries. These cross-country differences have been widely claimed to be due to three aspects: legal, political and cultural. These are as follows:

(2/5/1) Corporate governance and legal aspects

Some empirical studies have focused on the impact of different legal systems on the structure and effectiveness of corporate governance across countries. In this context, La Porta et al. (1997, 1998) have highlighted the impact of legal systems on corporate governance systems. They have initially constructed a measure for the degree of protection of outside investors against insiders across 49 countries. They have measured two indices of national laws which are: anti-directors rights and creditors' rights. They have found a variation among these indices across countries (Licht et al., 2004).

Moreover, La Porta et al. (1997, 1998) were the first to introduce a framework for law and finance. They have extended their analysis by investigating the relationship between investors' legal rights and the structure of capital markets and corporate finance across countries (Mintz, 2005). They have found a significant positive relationship between several measures of stock market development, such as breadth of the equity market, and measures of companies' access to external finance, and shareholders protection indices (Pagano and Voplin, 2005). They have pointed out that the aggregate measures of the use of external finance are highest in common law countries, where investors' protection is greatest, in contrast to civil law countries, where investors' protection is weakest (Denis and McConnell 2003, Licht et al., 2004).

Later on, La Porta et al. (1998) have shown that the degree of shareholders protection differs systematically across legal system across countries. They have found that common law counties provide more protection for shareholders in contrast to civil law countries (Pagano and Voplin, 2005, Denis and McConnell, 2003). Common law societies usually have better legislative protection for investors and more developed stock markets than civil law societies. In fact there are two types of enforcement laws: The civil and common law. Civil law emphasizes duties, authorities and orders; it is more paternalistic and tries to protect citizens against themselves (Chloros, 1978). On the other hand, common law emphasizes rights, emancipations and responsibilities.

More recently, La Porta et al. (2000) have introduced the "Legal approach" which explains the cross-country difference in corporate governance systems by legal origin rather than particular index scores (Licht et al., 2004). They have argued that minority shareholders protection laws and the degree of their enforcement are key determinants of capital markets, and hence they have argued that the tradition of law plays an important role in the financial market development. In addition, they have investigated the impact of investor protection on dividends payouts. They have found a positive relationship between investor protection and dividends payouts when firm reinvestment opportunities are poor and vice versa (Denis and McConnell, 2003). Furthermore, La Porta et al. (2002) have investigated the impact of investors' legal protection on firm value. They have found that firms with better shareholders protection are associated with positive relationship with Tobin's Q ratios (Denis and McConnell, 2003).

De-Jong and Semenov (2002) have predicted that demand for shares will be higher in societies with lower uncertainty avoidance and a favorable regulatory environment towards the stock market. They have added that countries with low investors' protection are generally characterized by high concentration of equity ownership within companies and a lack of significant public equity markets. They have concluded that the legal system i.e. investors' rights and degree of enforcement of law, are the most fundamental determinants of corporate finance and corporate governance systems across countries (Denis and McConnell, 2003).

Moreover, Demirguc-kunt and Maksimoveic (2002) have found a positive significant relationship between the development of national legal systems and firm's access to external finance in 40 countries (Denis and McConnell, 2003). John and Kedia (2002) have added that there is a degree of association between optimal governance systems and the development of financial markets. They have argued that low investor protection may encourage companies to develop their own governance system to increase their chances to attract external finance, whereas Denis and

McConnell (2003) have shown that previous empirical studies indicate that investor's legal protection and their degree of enforcement affect the size and the extent of financial markets and, with them, the level of economic growth.

However, the alleged legal approach has not always been successful in explaining the differences in corporate governance across countries. During the 1990s, some counties have implemented several legal reforms to improve corporate governance practices. However, some of these reforms were not quiet successful. Licht et al. (2004) have mentioned that: "At the turn of the millennium, commentators came to share the view that simply writing investors rights into the law is not enough, more fundamental issues must be confronted". It seems that passing new laws to enhance investor protection do not guarantee by itself corporate governance improvement.

Unfortunately, researchers usually refer to the Russian economic reform program as an example of the failure to transplant the Western style market economy model in other countries. Hill (2004) has shown that the mass economic and legislative reforms imposed in Russia since the early 1990s have failed to achieve their main objectives. She has argued that the main reasons for this failure reside in both insufficient economic reform program and regulatory system. She has concluded that historical, cultural and social norms in the Russian society have represented an obstacle to effective implementation of the economic reform program. These issues highlight the importance of the path dependence and operation effects in comparative corporate governance systems.

Another example in this context is the Brazilian corporate law reforms. Gorga (2003) has examined the impact of economic incentives on the Brazilian corporate law reforms. He has shown that the Brazilian corporate law (2001) was aimed to provide efficient corporate governance practices to stimulate market development. However, some crucial aspects were dismissed from the initial legal reforms during the legislative process due to pressures from rent-seeking groups. He has argued that the Brazilian culture provide support for the interests of these rent seeking groups, which facilitates a path dependence towards a less efficient reforms. He has noted that: "Subjective perceptions reflected in culture and informal constraints, play a major role in shaping patterns of firm governance, rather than just a residual influence as typically assumed".

Other researchers questioned the alleged superiority of the common law over civil law countries. Lomareaux and Rosental (2004) have shown that common law has not been always superior to civil law in terms of business and economic development. They have shown that the French commercial civil law "Code de Commerce" and legal practice offer more sophisticated and flexible solutions to organize businesses more than the Anglo American law (Pagano and Voplin, 2005) (see also Licht et al., 2004). Coffee (2001a) has pointed out that the Scandinavian countries have a strong common law system, in contrast to the U.S.A. which has a civil law system. However, he has noted that these two countries have low expropriation of minority investors. He has noticed that the Scandinavian countries have a very low crime rate in comparison to the U.S. Consequently, he has concluded that dominate social norms in a society play a key role in the social behavior and that the enforcement of law rather than the law in the books alone (Denis and McConnell, 2003).

Moreover, some empirical evidence shows that law enforcement is more important than law in the books in the development of financial markets. Shleifer (2002) has argued that the enforcement of law and the structure of the society rather than the law in the books are important to effective investors' protection. He has suggested that legal rules are just a reflection of a broader societal stance (Licht et al., 2004). Ultimately, the impact of regulatory environment seems to depend on the type and effective implementation of legislation in place. For example, flexible mandatory disclosure rules may discourage investors to buy shares due to insufficient information about the companies, and vice versa (De-Jong and Semenov, 2002). Gorga (2003) has added that studies which emphasis the impact of law on the development of financial markets and corporate governance across counties, ignore other important variables such as informal norms (social norms and cultural beliefs) and the political environment.

Consequently, a debate has emerged among researchers on the best way legal change can be advanced across countries. Some researchers argue that there is a swift tendency towards convergence towards an internationally accepted good corporate governance practices. O'Sullivan (2003) has argued that there is indeed a significant change has occurred in the governance systems in France and Germany. However, she has pointed out that current theories have failed to explain the political economy of these changes. Finally, she has asserted that these changes are likely to continue to evolve in the direction towards the shareholder value model, similar to the U.S.

By contrast, other researchers believe that difference in corporate governance systems is likely to continue. Bebehuk and Roe (1999) have criticized the idea of smooth and rapid convergence towards a unified corporate governance system. They have asserted that political and economic forces influence corporate governance systems across countries, which creates a path dependence that can slow the convergence or even stop it (As mentioned in Pagano and Voplin, 2000, 2005). Shlefier and Vishny (1997) have suggested that there is an acceptable level of variation of legal protection across countries. However, they have noted that many countries do not have the minimum reservation legal protection level to develop good governance system and greater economic development.

Pistor et al. (2000) has argued that the divergence of corporate governance systems is likely to persist on the basis that legal rules are shaped by a path dependence towards preexisting political and social forces (As mentioned in Hill, 2004). Similarly, Palepu et al. (2002) have examined the relationship between globalization and the convergence towards a common set of good governance practices across 37 countries. They found no evidence of convergence in practice. They have found evidence for convergence in law at the country level. They have found convergence between various pairs of economically interdependent countries rather than towards any single system. They have concluded that globalization has indeed foster common corporate governance practices across countries, however, their implementation are not yet clear.

Gillan and Starks (2003) have examined the relationship between corporate governance and ownership structure, focusing on the role of institutional investors. They have examined cross-country differences in ownership structures and the implications of these differences for institutional investor involvement in corporate governance. The have mentioned that although there may be some convergence in governance practices across countries over time, the endogenous nature of the interrelation among governance factors suggests that variation in governance structures will persist.

Davis and Marquis (2005) have examined the governance practices, ownership structures and analyst followings of U.S listed companies from six countries. They have found little evidence of convergence towards a U.S model of corporate governance. The U.S listed firms have more favorable board size, proportion of inside directors, and the propensity to separate CEO and chairman roles than domestic companies. They have found that new firms outside the U.S which anticipate listing in the U.S may adopt the American-style governance practices, by contrast existing firms are unlikely to do so even after a U.S listing.

(2/5/2)Corporate governance and political aspects

Other researchers have provided an alternative explanation for the differences incorporate governance systems across countries. They have argued that these differences may be due to the political processes in these countries. Roe (1999) has presented a political theory, based on ideology, to explain corporate governance structure across countries. For example, he has mentioned that common ideology in the U.S. influence politicians to pass legal rules that prevent concentration of ownership, in order to reduce the power of banks and pension funds. He has argued that the existence of different corporate laws across countries can not explain in its own differences of corporate governance systems across countries. For example, some countries such as the Scandinavian countries have high protection for shareholders protection and at the same time they have high ownership concentration. He has noted that laws are able to provide control on some types of behavior such as self-dealing or insider trading but they can not provide protection against mismanagement. He has concluded that there must be other factors that are in place other than the law that support the separation of ownership and control (Gorga, 2003).

In addition, Roe (1999) has presented the "path dependence" phenomenon which indicates that differences in corporate governance structures across countries are due to differences in historical and social underpinnings of jurisdictions. He has argued that these differences in shareholders rights compared to other stakeholders are due to ideological factors rather than economic factors. For example, he has noted that the differences between the U.S. and continental Europe social democracies are due to divergent ideology (Pagano and Voplin, 2005). De-Jong and Semenov (2002) have pointed out that although cultural variables can not provide an explanation for each particular political change, they can provide indications about the direction of these changes and that state interventions will be largely determined by cultural values.

Rajan and Zingales (2000) have added that changes in a political coalition can influence changes in the financial development. They have claimed that if some political groups gain unjustified power, due to increased competition and lack of insurance by social and economic bodies, the political system may weaken the development of financial markets. However, they did not show systematically why this suppression differs across countries. In addition they used different arguments to justify stock market development across countries. For example: they used political and cultural factors for USA, while in U.K. they used economic factors (De-Jong and Semenov, 2002).

Pagano and Voplin (2000) have supported the political process model to explain corporate governance systems across countries. However, they have argued that public policies and regulations are determined by the political interplay of economic constituencies. They have explained that the political decisions behind passing legal codes are based on economic principles rather than ideology. They have considered the state as an agent for the political forces rather than an independent player, the state intervention view as the result of a political agreement rather than as its cause.

They have proposed a stylized political economy model to explain the determinants of the degree of investor protection. The model suggests that a political agreement between entrepreneurs and employees to preserve their benefits may cause low shareholders protection. The model shows a negative relationship between employment and investors protection across countries. They also have found that the frequency of mergers and acquisition (control changes) is negatively correlated with employment protection. However, the model may be criticized for providing no explanation for the persistent differences in corporate governance systems or political processes across countries (De-Jong and Semenov, 2002).

Pagano and Voplin (2005) have extended their previous analysis to find a significant positive relationship between investors' protection and some measures of stock market development such as equity issuance, initial public offerings and market capitalization, using a panel data for 47 countries over 1993-2002. They have referred to investors' protection as the set of laws protecting the rights of non-controlling shareholders. They have found a tendency by countries with low shareholders protection to converge towards good corporate governance practices. The speed of convergence is determined by the number of domestic companies acquired by cross-boarder mergers and acquisition, which increase political support for greater domestic shareholder protection. They have documented an international convergence in shareholder protection to best-practice, and show that it is correlated with cross-boarder mergers and acquisition.

(2/5/3)Corporate governance and culture

There are an increasing number of researchers who believe that informal constraints or social norms are the main reason for differences in corporate governance across countries. North (1990) has argued that an economic model that does not include a cultural component do not provide enough information about historical changes in the past. He has explained that the core cultural values and basic assumptions influence the scope of institutional change through their impact on social norms and outcome behavior in a society. North (1990) has added that the institutional structure in a country may foster or hinder future choices, and its historical circumstances are additional factors that affect create path dependence to the development of financial markets. He has concluded that culture may have a persistent influence that may hinder or stimulate certain changes to formal and informal institutions and to create a state of stable equilibrium in the society (Gorga, 2003).

Casson (1991) has asserted that cultural values have an impact on transaction costs and entrepreneurs' decision making. On one hand, he has argued that effective cultural values in a society can increase moral and level of trust in the overall economy. He has mentioned that morality has the advantage of providing an informal means of monitoring compliance with contracts in addition to formal procedures, which can reduce transactions costs and hence improve overall economic performance. He has concluded that the quality of dominate culture values in a society is an important determinate of economic success. On the other hand, he has argued that the personality of the entrepreneurs is strongly influenced by their own cultural environment and they can exert a cultural influence in their organizations. He has concluded by saying that: "The economic analysis of culture should therefore be able to shed light on a wide variety of contemporary social and business problems" (Gorga, 2003).

Grief (1994) has conducted a comparative study on the business organization of two societies: Maghribis and the Genoese. He has found that although these two groups work under the same technology and environmental conditions, they have developed different patterns of business conduct. He has noted that the Genoese individualistic cultural value may be more efficient than the Maghribis collectivism values in the long run. He has explained that the Genoese formal enforcement institutions may have provided more support for anonymous exchange which is useful for the economic development. He has concluded that cultural values influence coordination processes which create different paths of development (Gorga, 2003).

Gorga (2003) have conducted a review for previous empirical evidence. He has argued that culture may influence corporate governance systems by determining the ultimate goals and objectives of national organizations. For example in some countries the ultimate goal of organizations is to maximize shareholders wealth i.e. U.S., while in other countries the goal is to maximize all stakeholders interests including employees and community. The German organizations usually prefer consensus decision making processes which are supported by collective cultural values. Consequently, German organizations usually have a two-tier board of directors' governance system which consists of a management board and a supervisory board with employee participations (Mintz, 2005).

He has added that human preference is important in determining change and development in institutions and economic development in a society. He has mentioned that: "The traditional economic model considers preferences as exogenously determined. Though culture is a necessary variable to explain endogenous preferences and change in tastes". He has explained that culture and ideology are common values and belief systems that may have an impact on social norms and interactions in a society, and hence may have an important impact on the decision making process of the stakeholders. This concept of culture is different from the concept of "corporate culture" which implies business values of certain organizations. Hofstede (1980) has explained that corporate culture is quiet distinguished because it can overcome national cultural differences to develop new rules of conduct (Gorga, 2003).

He has suggested that culture is a powerful tool to explain differences of corporate governance systems across countries. For example he has mentioned that culture can limit rent-seeking interests and can support institutional changes that are not explained by the traditional economic model. In contrast, culture can make interest groups more powerful and impede institutional change. He has added that social norms and law may have reciprocal relationships that influence human behavior. This relationship may be more important in exclusion and enforcement of law. As informal work rules may have the upper hand in comparison to legal rules of conduct. These values also may have an impact on the relationship between private businesses and the government. Further, he has explained that the existence of inefficient weak legal rules of property rights may be due to the culture and ideology of a particular stakeholder. He has concluded that the introduction of culture may shed some light on corporate governance systems across countries. The core cultural values and basic assumptions of certain stakeholders may have an impact on the relationships between the CEO, directors, officers and employees, press and public opinion. (Gorga, 2003).

Furthermore, Gorga (2003) has suggested that culture can influence the press and public opinion perceptions to constrain institutional change. He has added that culture and ideology can explain the existence of inefficient laws and inadequate enforcement of laws in many countries. He has shown that culture can reinforce or prevent implementation of more efficient legal reforms. That is, culture can explain the divergent outcomes of implementing similar legal reforms across countries. Consequently, he has concluded that a strong ideology or belief system should be in place to build trust and good governance practices in the capital markets across countries.

Some empirical studies have highlighted the relationship between culture and firm financial structure. Andy et al. (2002) have argued that national cultural values have an impact on corporate capital structure. They have found that countries with high score on "conservatism" and "mastery" cultural values tend to have lower corporate debt ratios (Gorga, 2003). By contrast, Mintz (2005) has explored the impact of cultural variables and different methods of financing business operations. He has found that corporate governance systems in the U.S., U.K. and Germany has developed as a result of the underlying cultural values, legal structures and different forms of financing business. He has suggested that these aspects are deeply rooted across countries and he has noted that any attempt to impose a "one size fits all" model is likely to be unsuccessful.

Other empirical studies have shown that culture has a strong impact on the formulation and enforcement of laws across countries. Licht (2001) introduced a theoretical framework of cultural value dimensions (CVD) to measure the impact of culture on corporate governance systems across countries. He has argued that national cultures can be perceived as the mother of all path dependencies. He has explained that national cultures may have an impact on both the origin and development of corporate governance systems in these countries. This means that the influence of culture may be more persistent than other variables such as legal or political variables. Corporate governance systems in his study are defined as "The legal and factual environment in which publicly held business corporations operate".

Coffee (2001b) has further argued that social norms concerning the behavior of controlling shareholders differ significantly across jurisdictions. He has mentioned that: "Compliance with non-legally enforceable social norms can significantly affect market value". He has suggested a relationship between private benefits of controlling shareholders and social variables such as the level of crime and the law compliance within jurisdictions across countries. For example he has noted that the Scandinavian legal system seems to outperform countries with common or civil law systems in terms of reducing private benefits of control. He has argued that since the Scandinavian countries have a common law system, therefore the common claim that common law countries usually provide superior shareholding protection may not be the case. He has suggested that the high social cohesion in the Scandinavian countries produce greater confirmatory with social norms. This means that law provide only part of the explanation of cross country difference in corporate governance systems and that social norms may be the underlying forces behind the scene (Gorga, 2003).

Stutz and Williamson (2001) have focused on the influence of culture on corporate governance systems. They have found a relationship between religion and language as proxies of national culture and creditors' rights. By contrast, the have found no relationship between religion and language with shareholders' rights. However, they did not provide any theoretical justification of their analysis and they have depended on a sole indicator for national culture (De-Jong and Semenov, 2002).

Later on, Licht et al. (2004) have examined empirically the cultural value dimensions framework (CVD) to highlight the importance of the underlying cultural dimensions of the laws across countries. They have investigated how the laws on the books reflect national cultural values across countries. some testable hypothesis have been derived to show that the degree of investors protection through legal rights depend o the practice of justice in the court system, which in turn depend on the cultural values. Cultural values have been represented in this study by Schwartz (1999) and Hofstede (1980) cultural values models.

Empirical results show that there is a significant relationship between cultural value dimensions and shareholding voting rights and creditors' rights. They have found a positive significant relationship between individualism and anti-director rights across countries. They have explained that in more individualistic countries the individual shareholder is expected to have more power against the management and/or major block holders of organizations. They have found a significant negative relationship between uncertainty avoidance and anti-director rights. This means that the more rights increase uncertainty in the business environment across countries. They have found a significant negative relationship between uncertainty avoidance and creditors' protection rights across countries. This means that the increase in creditors' protection rights, especially during restructure or bankruptcy, can create more uncertainty in the business environment (Mintz, 2005).

More interestingly, Licht et al. (2004) have extended their analysis to examine the relationship between cultural regions and legal regimes across countries. They have found more anti-directors rights in common law countries than civil law countries. However, they have found no significant difference in creditors' protection among cultural regions (Mintz, 2005). Consequently, they have pointed out that this finding draw some doubts about the alleged superiority of common law countries to protect investors, as they provide no better protection to creditors than in other regions. They have concluded that the "legal approach" can not provide adequate explanation of corporate governance differences across countries.

Furthermore, they have found that these relationships hold regardless of the other major characteristics of the country. The relationship is also persistent against formal legal reforms. Therefore, they have concluded that national cultures may impede legal reforms and may induce path dependence in corporate governance systems. They also have found no reverse causal impact of law on culture values. However, they have found that these relationships may explain, in part, the British rule history across countries. As a result, they have recommended further studies for both culture and legal history to better understand corporate governance systems across countries (Gorga, 2003).

Other researchers have tried to capture possible transmission mechanisms between cultural values, corporate governance and stock market performance. De-Jong and Semenov (2002) have highlighted possible channels by which cross country differences in cultural preferences influence institutions, and hence the performance of stock markets. These channels are: the regulatory environment, the role of the state in provision of pensions, the attractiveness of buying shares, and the attractiveness of issuing shares. They have suggested that these intermediating channels are related to agents' preferences, particularly the attitude towards uncertainty and instability. Since culture influences the preference of several economic agents, such as politicians, regulators, and investors, these preferences may shape the behaviour of the agents and can motivate them to enforce a wide array of transmission mechanisms towards stock market development. Politicians can pursue programs that aim to develop the stock market, regulators can work on several statutes and enforcement procedures that strengthen the stock market and economic performance in general, while the investors will demand more stocks and will be ready to accept more uncertainty. These transmission mechanisms represent an important source of information about the underlying framework of stock market development and are wide open for more empirical research.

(2/6) Summary and conclusions

The main aim of this chapter is to present a review of previous theoretical and empirical literature concerning culture, stock market development and corporate governance. The literature review shows that there are several definitions of culture which describes different meanings and scopes from different view points. A common definition of culture has been introduced by Hofstede (1983) which states that: "It is the collective programming of the mind which distinguishes the members of one human group from another". Similarly, previous empirical research shows that researchers have presented several cultural value dimensions models. Licht (2001) has mentioned that: "[A] close positive association between basic dimensions [is] identified in different ways by different authors". However, despite the similarity among cultural value models, there seems to be no consensus among researchers on a single concept of culture or culture dimensions.

One of the most important cultural value models have been presented by Hofstede (1980). This model includes five cultural value dimensions, namely: power distance, uncertainty avoidance, individualism, masculinity and time horizon. In general, this model has provided a useful framework of cultural values, which relatively reduces the complexity of the culture concept into five easily understood dimensions. In addition, the model is easy to apply using measurable variables for empirical testing and hypotheses (Dahl, 2004).

In the last decade, the large expansions of international stock markets have attracted the attention of many researchers to investigate stock market development and its impact on firm and economic performance. Though, it may not be surprising to find many countries pursuing structural reformation of their stock markets to increase economic growth and to attract more international investment funds. Unfortunately, literature review shows that the debate among researchers on the expected benefits of well developed stock markets is far form being settled.

Some theoretical evidence has suggested that developed stock markets may increase risk diversification, liquidity, information processing and capital mobilization, which in turn may accelerate long term economic growth. By contrast, other researchers have argued that stock market development will not always result in greater economic growth and prosperity (De-Jong and Semenov, 2002). In this context, there seems to be no agreement among researchers on a single concept or measure for stock market development worldwide. To overcome this problem Demirguc-kunt and Levine (1995) have presented several indicators of stock market development using data on 41 countries during period 1986 to 1993. They have implemented several stock market development indicators, which include: stock market capitalization, liquidity, concentration and volatility.

In recent years, the impact of culture has received a wide attention in varies fields of study such as psychology, anthropology, organization theory, management and even information technology. In particular, some empirical research investigations can be found in the accounting literature across countries. An important theoretical research by Gray (1988) has investigated the impact of culture on accounting values and practice. He has derived four bipolar accounting value dimensions that exist at the level of the accounting subculture, which are: professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism, secrecy versus transparency. A review of these relationships shows that uncertainty avoidance and individuality may have more impact on accounting practice than power distance and masculinity. Other researchers have focused on the longitudinal relationship between cultural values and accounting values and practice such as Sudarwan and Fogarty (1996), and Noravesh et al. (2005).

On another aspect, literature review shows that modern corporate governance systems have emerged after some western business scandals that have resulted in loss of investors' confidence in financial markets and fall in market value. Consequently, national governments have introduced new legislations to protect shareholders and investor, and to restore their confidence in financial markets (Stephanie, 2005). Unfortunately, there seems to be no generally accepted definition of corporate governance worldwide. There is a broad spectrum of definitions that exist in the literature, ranging from a narrow, agency theoretic definitions to broader, stakeholder definitions.

Literature review shows that there are two types of corporate governance systems: internal and external. The internal corporate governance systems deal with the board of directors and equity ownership structure. While, the external corporate governance systems focus on the external market for corporate control (takeover market) and the legal/regulatory system. Several empirical studies have found strong relationships between individual corporate governance factors (or sets of factors) on firm and economic performance (Michaud and Magaram, 2006). Other researchers have focused their attention on comparative corporate governance studies across countries. The growing interest on comparative corporate governance is motivated by a desire to locate good legal governance practices and to try transplanting them in other countries to develop good governance system across the world (Hill, 2004). Empirical evidence has shown that there are strong differences in corporate governance systems across countries. These cross-country differences have been widely claimed to be due to three aspects: legal, political and cultural.

In this context, La Porta et al. (1997, 1998, 1999, and 2000) have presented several empirical studies to highlight the impact of different legal systems on the structure and effectiveness of corporate governance across countries. They have introduced the "legal approach" which states that differences in shareholders' rights can provide an explanation of corporate governance systems across countries. However, this approach has not always been successful in explaining the differences in corporate governance across countries. Unfortunately, researchers usually refer to the Russian economic reform program and the Brazilian corporate law reforms as examples of the failure to transplant the Western style market economy model in other countries.

Consequently, other researchers have provided an alternative explanation which states that these differences may be due to some political processes in these countries. Most notably, Roe (1999) has presented a political theory, based on ideology, to explain corporate governance structure across countries. Pagano and Voplin (2000) have proposed a stylized political economy model to explain the determinants of the degree of investor protection. The model suggests that a political agreement between entrepreneurs and employees to preserve their benefits may cause low shareholders protection. Later on, Pagano and Voplin (2005) have extended their analysis to find a significant positive relationship between investors' protection and some measures of stock market development such as equity issuance, initial public offerings and market capitalization. However, this model may be criticized for providing no clear explanation for the persistent differences in corporate governance systems or political processes across countries (De-Jong and Semenov, 2002).

Finally, there are an increasing number of researchers who believe that the legal and political approaches provide only part of the explanation to cross country differences in corporate governance. They have argued that national cultures can be perceived as the mother of all path dependencies. That is, national cultures may have an impact on both the origin and development of corporate governance systems in these countries, which mean that the influence of culture may be more persistent than other legal or political aspects (Licht, 2001). Finally, it is time now to turn to the next chapter to present the methodology implemented in this study.

CHAPTER 3 METHODOLOGY

The main aim of this chapter is to present the detailed methodology implemented in order to achieve the study objectives. Consequently, this chapter is divided into three main sections. The first section presents the research philosophy. The second section presents the methodology for measuring the relationship between cultural values and stock market development in the United Kingdom. The third section deals with the methodology for measuring the relationship between cultural values and corporate governance systems across countries. Each main section is further divided into several sub-sections which deal with the identification and measurement of study variables, data sources, study hypotheses, and finally statistical techniques.

(3/1) Research Philosophy

The research philosophy of this study depends mainly on the principles of positivism, which adopt the philosophical stance of the natural scientist. This means that the research deals with observable social realities and that the final outcome can be law-like generalizations similar to those produced by the physical and natural scientists (Remenyi et al., 1998). The research study has a highly structured methodology to facilitate replication (Gill and Johnson, 1997) and quantifiable observations have been collected to satisfy the statistical analysis (Saunders et al., 2003). However, the positivism approach/philosophy can be criticized for trying to oversimplify the complex situation in the social world of business and management, which unlike the physical sciences do not have definite 'laws' for practice. Nevertheless, although this study falls primarily into the positivism approach, it does not ignore the stance of the interpretivist and realism philosophy either, by trying to incorporate some social factors in addition to the economic factors to explain economic situations. The proponents of the interpretivist philosophy argue that the real business situations are complex and unique and they are a function of a particular set of circumstances and individuals. The presence of an individual element necessities understanding of the subjective meanings motivating peoples actions in order to be able to understand them. Whereas, the realism approach adds the importance of broader social forces, structures or processes that influence, and perhaps constrain, the nature of peoples' views and behaviours (Saunders et al., 2003).

Consequently, this study uses the deductive approach, developing from a theory and hypotheses, and designs a research strategy to test the hypotheses. This approach is suitable to the research in hand due to the existence of a relative wealth of literature on the subject matter which can be easily defined into a theoretical framework and hypotheses for rigorous statistical testing. However, this approach can be criticized for being too rigid to permit alternative explanations of what is going on in reality. An alternative dual-approach implements both the previously mentioned deductive approach, in addition to the inductive approach which is used to collect data and develop theory. In this case theory will follow data rather than the vice versa as in the deductive approach.

This dual-approach can be justified on the basis that the existing literature on social science in general and on cultural values in particular is still premature, and attracts a lot of debate among researchers. However, it may be suitable for future research to adopt a dual approach to generate data and analyze to reflect on what theoretical themes the data is suggesting (Saunders et al., 2003). Nevertheless, the inductive approach has some drawbacks as it usually requires long time periods to collect and analyze data and to allow results to emerge gradually. Clearly, the researcher needs to choose the research philosophy and approach, which really answers the research question within the limited resources available.

(3/2) The relationship between cultural values and stock market development

This main section deals with the methodology for measuring the relationship between culture and stock market development. This section is further divided into four sub-sections, which are: identification and measurement of study variables, data sources, study hypothesis and statistical techniques. This is as follows:

(3/2/1) Identification and measurement of study variables

In general, this study tries to investigate Hofstede's proposition (1980) which states that cultural values in a society have institutional consequences, in particular, on the stock market development. Consequently, this study focuses on the dynamic relationships between cultural values and stock market development indicators on a continuous scale in one country: the United Kingdom.

The previous literature review has revealed that cultural values may have an impact on some stock market development indicators (see De-Jong and Semenov, 2002). As a result, cultural values are considered as the independent constructs, while stock market development indicators are considered as the dependent constructs.

Cultural values are represented by the cultural value model of Hofstede (1980), which consist of five dimensions: power distance, uncertainty avoidance, individualism, masculinity and time horizon. These dimensions are not directly observable. Therefore, a matching process is implemented to provide indirect measures of certain cultural values existing in the United Kingdom, whereby some observable proxy variables are located based on the prevailing origins of societal norms for each cultural value dimension. Then, the notion of "wealth creation" is used to provide explanations for the underlying societal norms/values to the unobservable culture dimensions (Hofstede, 1981).

On the other hand, the literature review on stock market development indicates that there is no common agreement between researchers on a single concept or a comprehensive model for stock market development (see Demirguc-Kunt and Levine, 1995). Therefore, the most commonly used stock market development indicators are identified in light of previous theoretical and empirical research, in particular the work of Demirguc-Kunt and Levine (1995). These observed variables are: stock market activity, size, liquidity, and concentration.

(3/2/1/1) Cultural-values' dimensions

Hofstede (1980, 1991) has suggested that some societal norms are likely to persist in a society which has certain accepted societal values among all members. These societal norms are defined as (Hofstede, 1980):

> **"Levels of each culture value prevailed in a society".**

He has summarized these societal norms along each of his five cultural dimensions. Also, he has suggested that some ecological environments can show the origins of these societal norms in a society. Thus, these ecological environments are used as indicative measures of the relationships within cultural constructs.

The cultural-values' dimensions are not directly observable. Therefore, following the methodology of Sudarwan and Fogarty (1996), and Noravesh et al. (2005) a matching process is implemented to provide indirect measures of certain cultural values existing in the United Kingdom, whereby some observable proxy variables are located based on the prevailing origins of societal norms for each cultural value dimension. The outcomes of this process are analyzed using social norms as an approximation to predict the relationships within each cultural value construct.

This matching process follows three steps, which are: first, societal origins of each cultural value are identified; second, societal origins are matched with some observable variables; and third, the resulting relationships between these variables are justified based on previous theoretical and empirical research. The notion of "wealth creation" Hofstede (1981) is used to provide some explanations for the underlying societal norms/values to each cultural value dimension. This is detailed below:

(A) Power distance

Hofstede (1980, 1991) has argued that national wealth is a determinate of power-distance across countries. People in wealthy countries may have less dependence on power to secure a higher position and have fewer tendencies towards creating powerful groups. Wealth can be considered as a substitute for power satisfaction. In this case, people are less likely to show acceptance for unequal distribution of power among levels of a society. Therefore, it can be concluded that national wealth of a country has a negative relationship with power distance.

Based on previous empirical research, four observable variables are used to proxy for the power distance dimension, the first two of which are: the number of telephone lines and the ratio of telephone lines to total population. These proxy variables are predicted to correlate positively with the national wealth in a country. This is based on the assumption that countries that have technological advances in the field of information and communication are capable of creating more national wealth than others (Sudarwan and Fogarty, 1996).

The second two variables are the total number of student enrolment and the ratio of total number of student enrolment to total population. Low levels of illiteracy rates means that various people of a nation are capable of using modern technology and to communicate effectively compared to other nations. This may help them to create more wealth and reduce power-distance. Therefore, it can be concluded that these four observable proxy variables are expected to correlate negatively with the power-distance cultural dimension (Table 3.1)

Table 3.1: Origins of societal norms for proxy variables on Power Distance.

Source: Sudarwan and Fogarty, 1996.

Proxy Variables	Relationship	Origins of societal norms	
		High Power Distance	Low Power Distance
Number of telephone lines	(-)	Less use of information and communication technology	More use of information and communication technology
Ratio of number of telephone lines to total population	(-)	Less use of information and communication technology	More use of information and communication technology
Total number of students' enrolment	(-)	Less importance of education	More importance of education
Ratio of total number of students' enrolment to total population	(-)	Less importance of education	More importance of education

(B) Uncertainty avoidance

Based on previous empirical research, four proxy variables are used to represent the uncertainty avoidance cultural value construct. These variables are: volume of transactions on the stock market, fluctuations in the foreign currency rate, changing rate of GDP and finally change in gross national income. High volume of transactions on the stock market indicates that people are willing to invest in shares despite their inherent high risk. While, changes in the foreign currency rate, gross domestic product (GDP) and gross national product (GNP) may indicate that people are more likely to accept changes in their disposable income and hence changes in their living standards. Therefore, these four variables are expected to correlate negatively with uncertainty-avoidance (Table: 3.2).

Table 3.2: Origins of societal proxy variables on uncertainty avoidance.

Source: Sudarwan and Fogarty, 1996.

Proxy Variables	**Relationship**	**Origins of societal norms**	
		High uncertainty avoidance	**Low uncertainty avoidance**
Volume of transactions on stock market	(-)	Few transactions on stock market	More transaction on stock market
Fluctuations of foreign currency rate	(-)	Less economic stability and development	More economic stability and development
Gross Domestic Product (GDP)	(-)	Less economic stability and development	More economic stability and development
Gross National Income	(-)	Less economic stability and development	More economic stability and development

(C) Individualism

Individualism is the degree to which people feel responsible for themselves and/or their immediate family. Based on previous empirical research, four observable variables are used to proxy for this cultural value, which are: ratio of people living in cities to total population, number of people living in cities, national income and finally income per capita. The first two proxy variables represent the urbanization rate, which is predicted to have a positive relationship with individualism. As more people live in urban areas greater pressure of competition and struggle for self-survival are likely to prevail in such a society (Sudarwan and Fogarty, 1996).

In addition, wealthy nations have the ability to build towns and cities that result in an increase in independence and competition among members of a society (Hofstede, 1980). The second two variables represent income available to people in a society. People living in wealthy nations can have more disposable income to pursue their own interests and objectives apart from other colleagues, which may increase individuality. Hofstede (1980) has asserted that people living in wealthy nations tend to be more independent from others. They are more likely to follow their own goals and objectives in isolation from others. Therefore, the national wealth of a country may have a positive relationship with individualism. Consequently, these four variables are expected to correlate positively with individualism (Table: 3.3).

Table 3.3: Origins of societal norms proxy variables on individualism

Source: Sudarwan and Fogarty, 1996.

Proxy Variables	Relationship	Origins of societal norms	
		High individualism	Low individualism
Ratio of people living in cities to total population	(+)	More social mobility and modernization	Less social mobility and modernization
Number of people living in cities	(+)	More social mobility and modernization	Less social mobility and modernization
National Income	(+)	More disposable income	Less disposable income
Income per capita	(+)	More disposable income	Less disposable income

(D) Masculinity

Previous empirical research has shown that the regulatory environment in a more masculine society usually facilitates competition in the financial system, whereas in a feminine society the regulatory environment is more likely to hinder competition and facilitate a comprehensive system of government pension provision. Managers in a masculine society are more likely to favor independence, in contrast to managers in a feminine society, who are more likely to favour solidarity. In addition, more close relationships can be expected between companies and stakeholders in a feminine society than in a masculine society (De-Jong and Semenov, 2002, p.20).

This study utilizes four underlying proxy variables to represent the masculinity cultural dimension, which are: ratio of male employment to total employment, ratio of male students to female students in elementary schools, ratio of male students to female students in further education, and ratio of male students to female students in higher education. The first proxy variable shows the composition of the employment force by gender. It is predicted that as more women join the workforce, the more modest societal values tend to prevail in a society. On the other hand, the more male employment indicates a more masculine society. Therefore, there may be a positive relationship between levels of male employment and masculine behaviour in societies (Sudarwan and Fogarty, 1996).

The ratios of students at different education levels by gender help to investigate the impact of education of males and females on masculinity in a society. In general, as higher male to female ratio is exhibited at different education-levels, the more masculinity is expected to prevail in a society (Sudarwan and Fogarty, 1996) (Table 3.4).

Table 3.4: Origins of societal norms of proxy variables on masculinity.

Source: Sudarwan and Fogarty, 1996.

Proxy Variables	Relationship	Origins of societal norms	
		High masculinity	Low masculinity
Ratio of male employment to total employment	(+)	More male to female employment	Less male to female employment
Ratio of male students to total students in elementary schools	(+)	More male to female education	Less male to female education
Ratio of male students to total students in further education	(+)	More male to female education	Less male to female education
Ratio of male students to total students in higher education	(+)	More male to female education	Less male to female education

(E) Time horizon

Based on previous empirical research, this study depends on four proxy variables to represent the time-horizon dimension, of which the first two are: the ratio of total spending on education to total budget, and total spending on education. In a long-term horizon society the government is expected to show more commitment towards spending on education, as part of the Confucian orientation. Confucian societies place great emphasis on education as a main goal to invest in long term human capital. The other two proxy variables are: ratio of total gross fixed investment to GDP and total gross fixed investment. People in a Confucian society prefer a conservative use of resources. They are less reluctant to trade-off current consumption of resources with the possibility of earning more returns in the future. People consider saving as an important tool for future productive activities. Therefore, it is expected that long term horizon societies will spend more money on productive fixed investments and vice versa (Sudarwan and Fogarty, 1996) (Table 3.5).

Table 3.5: The origins of societal norms of proxy variables on time horizon.

Source: Sudarwan and Fogarty, 1996

Proxy Variables	Relationship	Origins of societal norms	
		long Time horizon	short Time horizon
Ratio of total spending on education to total budget	(+)	More importance of human resources	Less importance of human resources
Total spending on education	(+)	More importance of human resources	Less importance of human resources
Ratio of total gross fixed investment to GDP	(+)	More tendency to spare resources	Less tendency to spare resources
Total gross fixed investment	(+)	More tendency to spare resources	Less tendency to spare resources

The selected proxy variables for cultural value dimensions are listed in Table: 3.6, together with their relevant symbols, relationships expected with main cultural-dimension and frequency of data observations. It can be noticed that the data observations used have different frequencies i.e. monthly, quarterly and annual. To overcome this problem and to create a uniform data-set, all variables are transformed to the monthly frequency before they are incorporated into the analysis, using the linear interpolation of data option in the SPSS statistical software package.

Table 3.6: Summary of proxy variables used in the study for independent cultural values based on the Hofstede's model (1980). PR= Predicted relationship between cultural values as depicted by Hofstede's model and proxy variables. (+) means positive relationship, and (-) means negative relationship. Frequency of data M= monthly, Q= quarterly, A= annual.

Symbol	Variables (Independent)	Predicted Relationship	Frequency
	Power distance		
X_1	Number of telephone lines	-	Q
X_2	Ratio of number of telephone lines to total population	-	Q
X_3	Total number of students' enrolment	-	Q
X_4	Ratio of total number of students' enrolment to total population	-	Q
	Uncertainty Avoidance		
X_5	Volume of transactions on stock market	-	A
X_6	Real Fluctuations of foreign currency rate	-	M
X_7	Real Gross Domestic Product	-	Q
X_8	Real Gross National Income	-	Q
	Individualism		
X_9	Ratio of people living in cities to total population	+	A
X_{10}	Number of people living in cities	+	A
X_{11}	Real Gross National Income	+	Q
X_{12}	Real Income per Capita	+	Q
	Masculinity		
X_{13}	Ratio of male employment to total employment	+	A
X_{14}	Ratio of male students to total students in elementary schools	+	A
X_{15}	Ratio of male students to total students in further education	+	A
X_{16}	Ratio of male students to total students in higher education	+	A
	Time Horizon		
X_{17}	Real ratio of total spending on education to total budget	+	Q
X_{18}	Real total spending on education	+	Q
X_{19}	Real ratio of total gross fixed investment to GDP	+	Q
X_{20}	Real total gross fixed investment	+	Q

(3/2/1/2) Descriptive statistics for the proxy variables of cultural values

The detailed descriptive statistics have been calculated for all the proxy variables of cultural values used in this study (Table 3.7). The results of the analysis show that the majority of variables vary considerably across time; in addition the majority of the skewness and kurtosis results are within the acceptable limits.

Table 3.7: Descriptive statistics for proxy variables of cultural values using SPSS software package (Version 14.00). X1 is number of telephone lines, X2 is ratio of number of telephone lines to total population, X3 is total number of students' enrolment, X4 is ratio of total number of students' enrolment to total population, X5 is volume of transactions on stock market, X6 is real Fluctuations of foreign currency rate, X7 is real Gross Domestic Product, X8 is real Gross National Income, X9 is ratio of people living in cities to total population, X10 is Number of people living in cities, X11 is real Gross National Income, X12 is real Income per Capita, X13 is ratio of male employment to total employment, X14 is ratio of male students to total students in elementary schools, X15 is ratio of male students to total students in further education, X16 is ratio of male students to total students in higher education, X17 is real ratio of total spending on education to total budget, X18 is real total spending on education, X19 is real ratio of total gross fixed investment to GDP, X20 is real total gross fixed investment

Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
X1	136	25910	35890	31204.71	3286.00	-.106	.208	-1.429	.413
X2	136	45	59	53.03	4.75	-.257	.208	-1.412	.413
X3	145	11499	14823	13046.39	1122.25	.204	.201	-1.490	.400
X4	145	20	25	22.36	1.697	.184	.201	-1.544	.400
X5	180	6910.82	53907.46	19541.79	13586.01	1.039	.181	-.224	.360
X6	180	74.39	102.81	90.55	8.87	-.552	.181	-1.226	.360
X7	179	775040	1117520	918489.84	110208.48	.204	.182	-1.331	.361
X8	178	182153.40	275580.57	221542.95	28589.74	.259	.182	-1.210	.362
X9	180	28.30	36.649	31.94	1.15	-.953	.181	4.716	.360
X10	180	19056753	20510825	19940878.56	294526.00	-.059	.181	-.032	.360
X11	178	182153.40	275580.57	221542.95	28589.74	.259	.182	-1.210	.362
X12	167	3	5	3.74	.408	.264	.188	-1.173	.374
X13	157	54	56	54.54	.449	2.084	.194	5.254	.385
X14	145	49	51	50.49	.559	-.042	.201	-.902	.400
X15	145	40.900	45.000	43.15	1.13	-.743	.201	-.423	.400
X16	145	43.600	54.400	48.23	2.99	.409	.201	-.840	.400
X17	178	8	15	10.76	1.96	.607	.182	-.896	.362
X18	178	8592.56	14819.87	10607.20	1822.17	1.145	.182	-.030	.362
X19	178	10.41	18.96	14.31	2.40	.113	.182	-1.462	.362
X20	178	30970.78	46683.49	38238.87	3283.58	-.105	.182	-.969	.362
Valid N (listwise)	127								

(3/2/1/3) Stock market development indicators

This study depends on the most commonly used stock market development indicators in light of the previous empirical research, in particular the work by Demirguc-Kunt and Levine (1995). These indicators are: stock market activity, size, liquidity and concentration, which are detailed below

(A) Stock market activity

Stock market activity is represented by five variables, which are: value of trade, volume of trade, number of transactions, value of new issues including capital gains as % of trading value, and value of new issues including capital gains as % of GDP (gross domestic production at current prices). It is expected that an increase in the values of these variables will result in an increase in overall stock market activity. An increase in stock market activity should result in greater development in stock market performance. Therefore, a positive relationship is predicted between these variables and stock market development (Table: 3.8).

Table 3.8: Relationships between the proxy variables and stock market activity

Variables	Predicted Relationship	Description	
		High market activity	Low market activity
Value of trade	(+)	More value of trading in stock market	Less value of trading in stock market
Volume of trade	(+)	More volume of trading in stock market	Less volume of trading in stock market
Number of transactions	(+)	Many transactions in stock market	Few transactions in stock market
Value of new issues including capital gains as % of trading value	(+)	More value of new issues in stock market	Less value of new issues in stock market
Value of new issues including capital gains as % of GDP	(+)	More value of new issues in stock market	Less value of new issues in stock market

(B) Stock market size

Previous empirical research has shown that market size is on of the most widely used proxies for stock market development. In this study five variables are selected to represent this indicator, which are: market capitalization (total market value of shares listed on London stock exchange), market capitalization as a % of GDP (gross domestic production at current prices), volume of shares listed, volume of shares listed as % of number of listed companies and number of listed companies. These variables are expected to correlate positively with stock market size. That is, it is expected that an increase in these proxy variables will result in an increase in stock market size (Table: 3.9).

Table 3.9: Relationships between proxy variables and stock market size

Variables	Predicted Relationship	Description	
		High market size	**Low market size**
Market capitalization	(+)	More investment in stock market	Less investment in stock market
Market capitalization as a % of GDP	(+)	More investment in stock market	Less investment in stock market
Volume of share listed	(+)	More volume of shares listed	Less volume of shares listed
Volume of shares listed as % of listed companies	(+)	More volume of shares listed	Less volume of shares listed
Number of listed companies	(+)	Many listed companies in stock market	Many listed companies in stock market

(C) Stock market liquidity

Based on the previous empirical research, three variables are used to represent stock market liquidity. These variables are: total value traded to market capitalization (total market value of shares listed on London stock exchange), total value traded to GDP (gross domestic production at current prices) and volume of shares traded as a % of volume of shares listed. It is expected that these variables have a positive relationship with stock market liquidity. That is, an increase in these proxy variables is likely to increase market liquidity (Table: 3.10). Since, an increase in stock market liquidity may reduce transaction costs and hence improve stock market performance.

Table 3.10: Relationships between proxy variables and stock market liquidity

Variables	Predicted Relationship	Description	
		High market liquidity	Low market liquidity
Total value traded to market capitalization	(+)	More value of shares traded	Less value of shares traded
Total value traded to GDP	(+)	More value of shares traded	Less value of shares traded
Volume of shares traded as a % of volume of shares listed	(+)	More volume of shares traded	Less volume of shares traded

(D) Stock market concentration

The ownership concentration indicator is commonly used to evaluate the performance of a stock market. This study selects three variables to represent this indicator. These variables are: % of 10 biggest companies' shares in market capitalization, % of 10 biggest companies' shares in value traded and value of 10 biggest companies' shares. It is expected that these variables will correlate positively with stock market concentration (Table 3.11).

Table 3.11: Relationships between proxy variables and stock market concentration

Variables	Predicted Relationship	Description	
		High market concentration	Low market concentration
% of 10 biggest companies' shares in market capitalization	(+)	More value of 10 biggest companies	Less value of 10 biggest companies
% of 10 biggest companies' shares in value traded	(+)	More value of 10 biggest companies	Less value of 10 biggest companies
Value of 10 biggest companies' shares	(+)	More value of 10 biggest companies	Less value of 10 biggest companies

A summary of the proxy variables for stock market development indicators are listed in Table 3.12, together with their relevant symbols, the predicted relationships with main stock market indicators and frequency of the data-observations. As mentioned earlier, the data used have different frequencies i.e. monthly, quarterly and annual. To create a uniform data-set, all variables are transformed to the monthly frequency before they are incorporated into the analysis, using the linear interpolation of data option in the SPSS statistical software package.

Table 3.12: Summary of proxy variables of stock market development used in the study based on previous empirical research. Predicted relationship between stock market development factors and proxy variables: (+) means positive relationship, (-) means negative relationship, (F) Frequency of data M= monthly, Q= quarterly, A= annual.

Symbol	Stock market development variables (dependent)	Predicted Relationship	F
	Market Activity		
Y_1	Real value of Trade	+	A
Y_2	Volume of Trade	+	A
Y_3	Number of Transactions	+	A
Y_4	Real value of new issues including capital gains as % of trading value	+	A
Y_5	Real value of new issues including capital gains as % of GDP	+	A
	Market Size		
Y_6	Real market capitalization	+	A
Y_7	Real market capitalization as a % of GDP	+	A
Y_8	Volume of share listed	+	A
Y_9	Volume of shares listed as % of listed companies	+	A
Y_{10}	Number of listed companies	+	A
	Market Liquidity		
Y_{11}	Real total value traded to market capitalization	+	A
Y_{12}	Real total value traded to GDP	+	A
Y_{13}	Volume of share traded as a % of volume of shares listed	+	A
	Market concentration		
Y_{14}	Real % of biggest companies' shares in market capitalization	+	M
Y_{15}	Real % of biggest companies' shares in value traded	+	M
Y_{16}	Real value of 10 biggest companies' shares	+	M

(3/2/1/4) Descriptive statistics for stock market development indicators

The detailed descriptive statistics have been calculated for all the stock market development indicators used in this study (Table 3.13). The results of the analysis show that the majority of variables vary considerably across time; in addition the skewness and kurtosis results are within the acceptable limits.

Table 3.13: Descriptive statistics for stock market development indicators using SPSS software package (Version 14.00). Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y4 is real value of new issues including capital gains as % of trading value, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies, Y10 is number of listed companies, Y11 is real total value traded to market capitalization, Y12 is real total value traded to GDP, Y13 is volume of share traded as a % of volume of shares listed, Y14 is real % of biggest companies' shares in market capitalization, Y15 real % of biggest companies' shares in value traded, Y16 is real value of 10 biggest companies' shares.

Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Y1	181	17450.34	173254.85	60847.36	32425.63	.581	.181	-.519	.359
Y2	181	6591.79	64475.26	21377.32	13749.91	1.018	.181	-.029	.359
Y3	181	2824	146315	53336.51	31352.78	.902	.181	-.053	.359
Y4	180	.6385	2.77	1.47	.48017	.820	.181	-.282	.360
Y5	178	.1906	.511	.3424	.0769	.270	.182	-.881	.362
Y6	180	352804.26	1620112.42	901612.61	380929.717	.191	.181	-1.350	.360
Y7	178	2.52	6.737	4.21	1.100	.598	.182	-.678	.362
Y8	181	1575	2939	2255.39	343.68	.064	.181	-1.185	.359
Y9	180	.998	1.513	1.168	.112	.737	.181	.581	.360
Y10	180	1465	2171	1928.19	181.71	-.882	.181	.131	.360
Y11	180	67.21	158.56	91.79	29.83	1.151	.181	-.337	.360
Y12	178	2.22	7.77	4.76	1.871	.272	.182	-1.458	.362
Y13	180	64.41	559.99	171.79	136.277	1.492	.181	.908	.360
Y14	180	14.12	25.239	18.60	2.75	.366	.181	-.835	.360
Y15	180	8.91	36.171	22.55	7.871	-.257	.181	-1.170	.360
Y16	180	97244698	318934661	195670723.06	63481944.86	.313	.181	-1.053	.360
Valid N (listwise)	178								

(3/2/2) Data sources

The data set for this study is collected from different sources, itemized below:

a) Annual, quarterly and monthly data on the proxy variables for cultural values in the United Kingdom have been collected from several published secondary data sources, such as the DataStream database, Office for National Statistics (ONS) and Office of Communications (Ofcom) for the period 1990-2004 (fifteen years). The sources of information for each proxy variable for cultural values are listed in Table 3.14 below.

b) Annual, quarterly and monthly data on stock market development indicators in the United Kingdom have been collected from several published secondary data sources, such as the DataStream database and the London Stock Exchange (LSE) for the period 1990-2004 (fifteen years). The sources of information for each stock market development indicator are listed in Table 3.15 below.

Table 3.14: The sources of information for each proxy variable of cultural values.

Symbol	Proxy variables	Source
	Power distance	
X_1	Number of telephone lines	Office of Communications
X_2	Ratio of number of telephone lines to total population	Office of Communications DataStream database
X_3	Total number of students' enrolment	Office for National Statistics
X_4	Ratio of total number of students' enrolment to total population	Office for National Statistics
	Uncertainty Avoidance	
X_5	Volume of transactions on stock market	London Stock Exchange
X_6	Real Fluctuations of foreign currency rate	DataStream database
X_7	Real Gross Domestic Product	DataStream database
X_8	Real Gross National Income	DataStream database
	Individualism	
X_9	Ratio of people living in cities to total population	Office for National Statistics
X_{10}	Number of people living in cities	Office for National Statistics
X_{11}	Real Gross National Income	DataStream database
X_{12}	Real Income per Capita	DataStream database
	Masculinity	
X_{13}	Ratio of male employment to total employment	Office for National Statistics
X_{14}	Ratio of male students to total students in elementary schools	Office for National Statistics
X_{15}	Ratio of male students to total students in further education	Office for National Statistics
X_{16}	Ratio of male students to total students in higher education	Office for National Statistics
	Time Horizon	
X_{17}	Real ratio of total spending on education to total budget	Office for National Statistics
X_{18}	Real total spending on education	Office for National Statistics
X_{19}	Real ratio of total gross fixed investment to GDP	Office for National Statistics
X_{20}	Real total gross fixed investment	Office for National Statistics

Table 3.15: The sources of information for each stock market development indicator.

Symbol	Stock market development indicators	Source
	Market Activity	
Y_1	Real value of Trade	London Stock Exchange
Y_2	Volume of Trade	London Stock Exchange
Y_3	Number of Transactions	London Stock Exchange
Y_4	Real value of new issues including capital gains as % of trading value	London Stock Exchange
Y_5	Real value of new issues including capital gains as % of GDP	London Stock Exchange
	Market Size	
Y_6	Real market capitalization	London Stock Exchange
Y_7	Real market capitalization as a % of GDP	London Stock Exchange DataStream database
Y_8	Volume of share listed	London Stock Exchange
Y_9	Volume of shares listed as % of listed companies	London Stock Exchange
Y_{10}	Number of listed companies	London Stock Exchange
	Market Liquidity	
Y_{11}	Real total value traded to market capitalization	London Stock Exchange
Y_{12}	Real total value traded to GDP	London Stock Exchange DataStream database
Y_{13}	Volume of share traded as a % of volume of shares listed	London Stock Exchange
	Market concentration	
Y_{14}	Real % of biggest companies' shares in market capitalization	DataStream database London Stock Exchange
Y_{15}	Real % of biggest companies' shares in value traded	DataStream database London Stock Exchange
Y_{16}	Real value of 10 biggest companies' shares	DataStream database

(3/2/3) Study hypotheses

This study depends on some underlying ecological and societal norms in the United Kingdom to proxy for the unobservable cultural variables, as depicted by Hofstede (1980). In light of the methodology of Sudarwan and Fogarty (1996), it is assumed that twenty indirect proxy variables can provide an estimation of these cultural values in the United Kingdom (Table 3.6). This assumption provides the basis for the first main null hypothesis, which is formulated as follows:

> **"Power distance, uncertainty avoidance, masculinity, individuality and time horizon do not provide distinct dimensions for cultural values"**

The previous literature review, as explained in chapter two, has highlighted several indicators which are used to measure stock market development in a country. This study depends on several of these indicators such as: stock market activity, size, liquidity and concentration. These indicators are measured using sixteen empirical proxy variables. This study assumes that these indicators and their underlying proxy variables can provide estimation for the stock market development model in the United Kingdom. Consequently, the second main null hypothesis is formulated as follows:

> **"Activity, size, liquidity and concentration do not provide distinct dimensions of stock market development".**

The third main null hypothesis is formulated to test the relationship between these cultural values (independent variables) and stock market development indicators (dependent variables), it states that:

> **"There is no relationship between cultural values and stock market development indicators in the United Kingdom ".**

To examine the third null hypothesis more effectively, thirteen alternative sub-hypotheses are formulated in light of previous empirical research, as follows (Table 3.16):

Table 3.16: The predicted relationships between cultural values and stock market development indicators based on previous empirical research. MA: market activity, MZ: market size, ML: market liquidity, MC: market concentration. Source: Gray, 1988, and Sudarwan and Fogarty, 1996

	Stock market development indicators			
Cultural values	**MA**	**MZ**	**ML**	**MC**
Power distance	N/A	N/A	N/A	+H(a)
Uncertainty avoidance	-H(b)	-H(c)	-H(d)	+H(e)
Individualism	+H(f)	+H(g)	+H(h)	-H(i)
Masculinity	+ H(j)	+ H(k)	+ H(l)	- H(m)
Time horizon	N/A	N/A	N/A	N/A

a. There is a positive relationship between power distance and stock market concentration.

b. There is a negative relationship between uncertainty avoidance and stock market activity.

c. There is a negative relationship between uncertainty avoidance and stock market size.

d. There is a negative relationship between uncertainty avoidance and stock market liquidity.

e. There is a positive relationship between uncertainty avoidance and stock market concentration.

f. There is a positive relationship between individualism and stock market activity.

g. There is a positive relationship between individualism and stock market size.

h. There is a positive relationship between individualism and stock market liquidity.

i. There is a negative relationship between individualism and stock market concentration.

j. There is a positive relationship between masculinity and stock market activity.

k. There is a positive relationship between masculinity and stock market size.

l. There is a positive relationship between masculinity and stock market liquidity.

m. There is a negative relationship between masculinity and stock market concentration.

(3/2/4) Statistical techniques

The linear structural relation (LISREL) software package (Version 8.72) by Joreskog and Sorbom (1993) is used to analyze the relationship between cultural values and stock market development. The general form of the LISREL model consists of two models: the measurement model and the structural equation model (SEM). This statistical analysis technique is the most suitable method to achieve the study objectives compared with other methods, such as the regression analysis and path analysis. The regression analysis technique allows only a small number of variables to be analyzed statistically at a time, which may be unhelpful when exploring unknown situations. By contrast, the path analysis technique allows for data analysis in one direction only, this may ignore the importance of interrelationships among data variables.

By contrast, the linear structure relation (LISREL) technique has several advantages which include: it helps to select the observed variables that make up latent constructs, it examines the relationships between constructs using structural equation modelling (SEM), and it has the advantages that it allows for testing all variables and constructs under consideration simultaneously in all directions (Sudarwan and Fogarty, 1996). This section is further divided into five sub-sections which are: data analysis strategy, measurement models, structural equation model, measures of models' overall fit, and finally detailed assessment of fit. This is as follows:

(3/2/4/1)Data analysis strategy

The statistical data analysis strategy in this study follows the "model generating approach" as suggested by Joreskog and Sorbom (1993, p.128), and in light of the methodology of Sudarwan and Fogarty (1996). This is as follows: first, two initial theoretical models are identified; and each of them consists of several constructs or variables. The first model is based on Hofstede's cultural values (1980); while the other model is based on previous empirical research studies, concerning the stock market development indicators, in particular the work of Demirguc-kunt and Levine (1995).

Second, a measurement model is estimated separately for each construct, then for each pair of constructs, combining them two by two. Then, two measurement models are estimated for all the constructs without constraining the covariance matrix of the constructs. Finally, a structural equation model is estimated for the constructs jointly with the measurement models. This implies that the relationships in the theoretical model are translated into a statistical model for a set of stochastic equations among random observable indicators, and latent variables (theoretical constructs). Then, the model is estimated and tested using the maximum likelihood (ML) statistical method. ML estimates are computed through an iterative procedure that minimizes a particular fit function by successively improving the parameter. Several models are modified and tested to see if the initial model does not fit the empirical data well (Joreskog and Sorbom, 1993, p.116).

Finally, an assessment and evaluation for every model estimated in step two are undertaken. The results of the structural equation analysis pass through three steps of assessment and valuation. First, output: parameter estimates are examined for any unreasonable value and/or anomalies. Second, several overall fit statistics are used to assess and evaluate the reliability and validity of the models. These statistics include: chi-square, standard errors, and t-values. Third, a detailed assessment of fit: statistics are implemented, such as standardized residuals and modification indices are used.

The squared multiple correlation (R^2) is used to measure the strength of each linear relationship in the model, the higher the value of R^2 the stronger the relationships in the model and vice versa. Note that before starting the analysis, all the data-set has been reformulated to decimal numbers in order to create a uniform data-scale to facilitate comparisons and analysis (Joreskog and Sorbom, 1993, p.121).

(3/2/4/2)The measurement model

The main purpose of the measurement model is to describe how well the observed variables serve as a measurement instrument for the latent variables. It measures the reliability and validity of the observed variables to represent the latent variables in the model (Joreskog and Sorbom, 1993). The measurement model represents the relationships between observable variables and the latent constructs of the model. Since these theoretical latent constructs are not directly observable; a number of observable variables are used to proxy for each dimension of each construct.

A confirmatory factor analysis is used to test the measurement models in LISREL. In fact, there are two types of factor analysis: exploratory and confirmatory. The exploratory factor analysis helps to identify the most important characteristics and relationships in the data without imposing any exact model as a priori. The confirmatory analysis uses a similar statistical technique but it requires a specified initial model in advance based on some form of theoretical and/or empirical studies. This study depends on confirmatory factor analysis to explore the reliability and validity of the measurement models under consideration. These measurement models include constructs for culture-values based on a priori Hofstede's (1980) cultural dimension model, and for stock market development indicators in light of previous empirical research, in particular the work of Demirguc-kunt and Levine (1995).

Confirmatory factor analysis computes measurement error through estimating regression loadings of a set of observed variables on latent variables. It starts with calculating a covariance matrix between the observed variables in the model. Then, this covariance matrix is used as an input to estimate the measurement models. The hypothetical constrained models are compared to other unconstrained models for the inter-relationships between latent variables (constructs). The unconstrained models are used as a benchmark to measure the hypothetical constrained models. The unconstrained models allow all relationships between variables in the model to be taken into consideration (Joreskog and Sorbom, 1993). There are two measurement models in this study: the measurement model for cultural values and the measurement model for stock market development indicators.

(A)Measurement model for cultural values

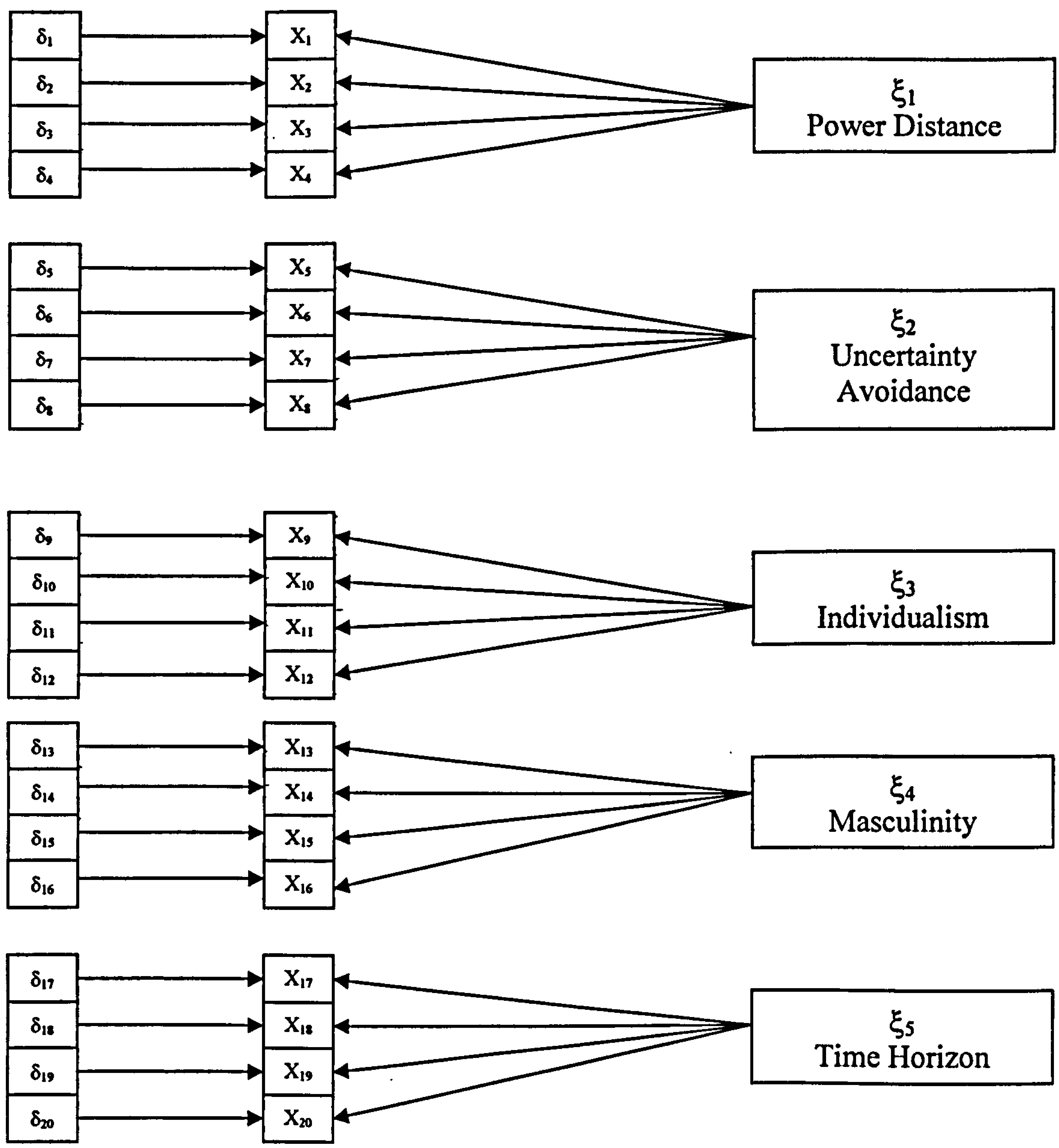
A confirmatory factor analysis technique is used to identify the most suitable culture-values model following Hofstede's culture-dimensions (1980, 1982) (Figure: 3.1). This statistical analysis is based on the following equation (Joreskog and Sorbom, 1993):

$$X = \Lambda_X * \xi + \delta$$

Where:

X	: is a $q \times 1$ vector of observed independent cultural variables
Λ_X	: is a $q \times n$ matrix of coefficients of the regression of X on ξ
Ksi (ξ)	: is an $n \times 1$ random vector of latent independent cultural variables
Delta (δ)	: is a $q \times 1$ vector of random measurement errors in X

Figure 3.1: Hypothesized model for the independent cultural variables, using Confirmatory Factor Analysis (CFA). (X) Observed variables, (ξ) is a vector of latent independent cultural variables, and (δ) is a vector of random measurement errors in X. X1 is number of telephone lines, X2 is ratio of number of telephone lines to total population, X3 is total number of students' enrolment, X4 is ratio of total number of students' enrolment to total population, X5 is volume of transactions on stock market, X6 is real Fluctuations of foreign currency rate, X7 is real Gross Domestic Product, X8 is real Gross National Income, X9 is ratio of people living in cities to total population, X10 is Number of people living in cities, X11 is real Gross National Income, X12 is real Income per Capita, X13 is ratio of male employment to total employment, X14 is ratio of male students to total students in elementary schools, X15 is ratio of male students to total students in further education, X16 is ratio of male students to total students in higher education, X17 is real ratio of total spending on education to total budget, X18 is real total spending on education, X19 is real ratio of total gross fixed investment to GDP, X20 is real total gross fixed investment. Source: Sudarwan and Fogarty, 1996



(B) Measurement model for stock market development indicators

A confirmatory factor analysis technique is also used to identify the most suitable stock market development indicators model in the context of previous empirical research (Figure 3.2). This statistical analysis is based on the following equation (Joreskog and Sorbom, 1993):

$$Y = \Lambda_Y * \eta + \varepsilon$$

Where:

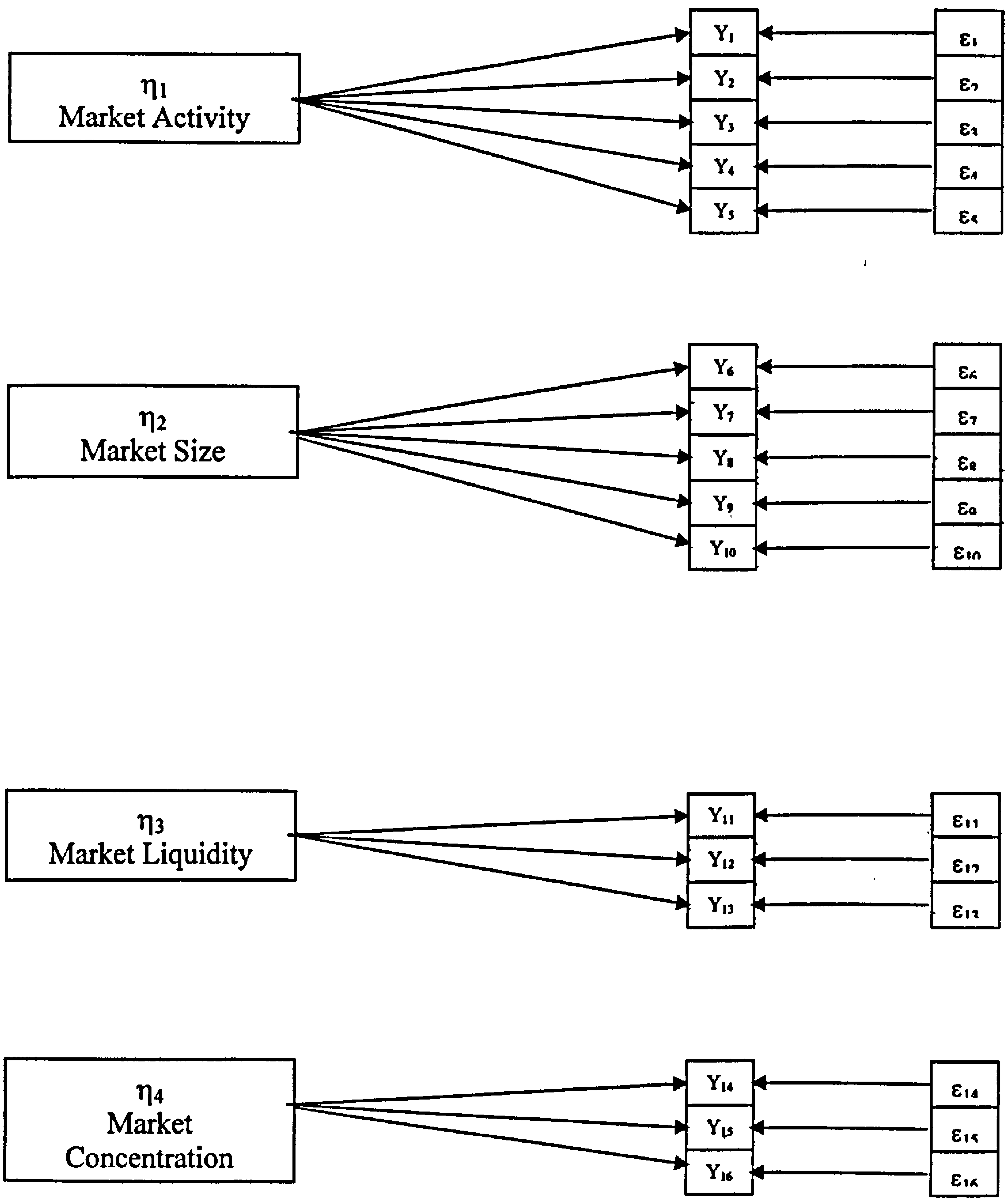
Y : is a $p \times 1$ vector of dependent observed stock market development variables.

Λ_Y : is a $p \times m$ matrix of coefficients of the regression of Y on η

Eta (η) : is an $m \times 1$ random vector of latent dependent stock market development indicators.

Epsilon (ε) : is a $p \times 1$ vector of random measurement errors in Y

Figure 3.2: Hypothesized model for the dependent stock market development indicators, using Confirmatory Factor Analysis (CFA): (Y) is observed stock market variables. (η) is a random vector of latent dependent stock market development indicators, and (ε) is a vector of random measurement errors in (Y). Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y4 is real value of new issues including capital gains as % of trading value, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies, Y10 is number of listed companies, Y11 is real total value traded to market capitalization, Y12 is real total value traded to GDP, Y13 is volume of share traded as a % of volume of shares listed, Y14 is real % of biggest companies' shares in market capitalization, Y15 real % of biggest companies' shares in value traded, Y16 is real value of 10 biggest companies' shares.



(3/2/4/3)The structural equation model

The structure equation model (SEM) helps to show the causal relationships between the latent constructs, describe the causal effects, and assign the explained and unexplained variable. It is also used to examine the theoretical relationships between constructs. Two hypothetical constructs are formulated based on Hofstede's (1980) cultural values model, and previous empirical research on stock market development indicators. Then, a structural equation model is used to test the relationships between these constructs. Joreskog and Sorbom, (1993, p.112) has mentioned that: "It is not expected that the relationships in the model are exact deterministic relationships". This means that in many situations the independent constructs will explain only a part of the co-variation in the dependent constructs, this may be due to several reasons such as missing observable variables unaccounted for in the model (Joreskog and Sorbom, 1993).

A structural equation modeling (SEM) technique is used to construct a suitable causal model that links culture values and stock market development indicators, using LISREL software (Figure: 3.3). This statistical analysis is based on the following structural equation model (Joreskog and Sorbom, 1993):

$$\eta = B_m + \Gamma\xi + \zeta$$

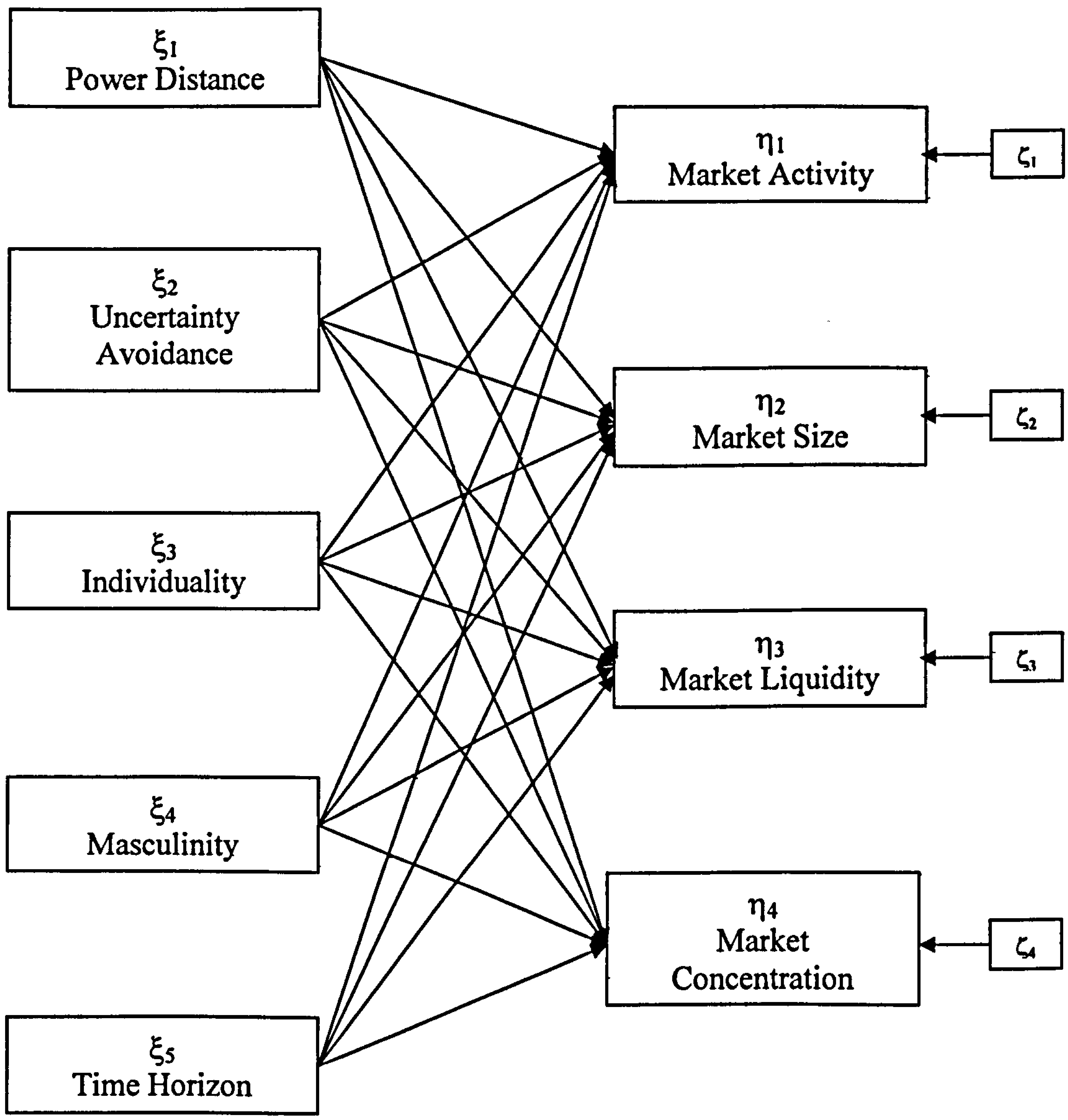
Where:

η (Eta) : is an m × 1 random vector of dependent latent stock market development indicators

B (Gamma) : is an m × m matrix of coefficients of the η-variables in the structural relationship.

Γ	: is an m × n matrix of coefficients of the ξ–variables in the structural relationship.
ξ (Ksi)	: is an n × 1 random vector of independent latent cultural variables
ζ (Zeta)	: is an m × 1 vector of equation errors (random disturbances) in the structure relationship between η and ξ

Figure 3.3: Hypothesized model for the relationship between cultural values and stock market development indicators, using Structural Equation Modelling (SEM): (η) is a random vector of latent dependent stock market development indicators, (ξ) is a vector of latent independent cultural variables, and (ζ) is a vector of equation errors (random disturbances) in the structural relationship between η and ξ.



(3/2/4/4)Measures of model's overall fit

There are several measures of the model's overall fit presented by LISREL output, the most popular of which is the chi-square measurement. Other measures are also used, all of them are originally functions of chi-square statistics, such as: goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean square index (RMSI), chi-square/df, and squared multiple correlation (R^2). The following sub-sections present details of these measures (Joreskog and Sorbom, 1993).

(A)Chi-square

It is a measure of overall fit of the model to the empirical data-set. It measures the deviance between the sample covariance matrix and the fitted covariance matrix. That is, it measures the deviance between the constrained (hypothesized) and the unconstrained model. A small value of chi-square indicates a good fit model and vice versa, while a zero chi-square indicates a perfect fit (Joreskog and Sorbom, 1993).

However, there are some disadvantages of using chi-square alone as a measure of overall fit of the models. First, the chi-square measure depends on the number of parameters and sample size of the model. That is, it usually decreases by adding more parameters to the model. Consequently, the value of chi-square may be intentionally reduced by adding more parameters to the model. Therefore, this may lead to models which contain unjustified and difficult to interpret parameters. Second, the power of chi-square measure is unknown, which may increase the possibility of rejecting the null hypothesis. So, in order to overcome these problems other goodness of fit measures are used in this study, but note that all of them are still functions of chi-square (Joreskog and Sorbom, 1993, p.124).

(B)Chi-square/df

This measure of overall fit is calculated by dividing the chi-square value by the degrees of freedom of the measurement model. This is a proposed solution which may reduce the impact of the number of parameters on the chi-square measure alone. As a general rule of thumb, a value of two or less for this measure may be considered acceptable (Sudarwan and Fogarty, 1996).

(C)Goodness of fit index (GFI)

This measure is calculated by comparing the fit functions of the constrained and unconstrained models. A high GFI index means a high similarity between the functions, and a good fit model. However, this measure also depends, although not explicitly, on the number of parameters in the model. An adjusted goodness of fit index (AGFI) is recommended to overcome this problem (Joreskog and Sorbom, 1993).

(D)Adjusted Goodness of Fit Index (AGFI)

This measure is calculated by adjusting the GFI index by the number of parameters in the model. This may help to exclude the impact of the parameters size on the measure. The goodness of fit measures GFI and AGFI should have a value between zero and one. As a general rule of thumb an AGF equal to or higher than 0.9 shows a good fit for the model (Bagozzi and Yi, 1988). By contrast, a negative GFI and AGFI index means the worst model of all models is under consideration (Joreskog and Sorbom, 1993).

(E)Root mean square residual (RMSR)

This measure calculates the measurement errors for all relationships in the model per degree of freedom. It measures the average of fitted residuals, which is the discrepancy between the elements of the original and the reproduced covariance matrices. The aggregated residuals are indexed in a statistical scale form, which range from zero to 1. Several researchers have suggested benchmarks for this measure. Browne and Cudeck (1993) have suggested that a value of 0.05 of errors represent a close fit. While, Joreskog and Sorbom (1993, p.124) have argued that a value equal to 0.08 or less represent an acceptable error. By contrast, Kalbers and Fogarty (1993) have suggested that the RMSR value up to 0.1 is considered acceptable.

(F)Coefficient of determination (CD)

The coefficient of determination (CD) for the measurement model measures the explanatory power for observed variables X and Y for the variation in the latent constructs, while the coefficient of determination (CD) for the structure-equations model measures the explanatory power of the latent independent variables for the variation in the latent dependent variables. A high CD index indicates a high explanatory power of the relationships between variables and vice versa. As a general rule of thumb, a CD of 0.9 or higher is generally an acceptable explanatory power of the variables in the model (Sudarwan and Fogarty, 1996).

(3/2/4/5) Detailed assessment of fit

Finally, the model residuals, standardized residuals, modification indices and expected change estimates are used to examine the detailed overall-fit of the model. These measures help to identify the reasons of model misspecification and to recommend how to modify the model to fit the data better. Now it is time to turn to present the methodology for measuring the relationship between culture and corporate governance systems across countries in the next section.

(3/3) The relationship between cultural values and corporate governance

This study has been extended to investigate the relationship between culture values and corporate governance systems across countries. As mentioned earlier, cultural values are represented by Hofstede's (1980) cultural model, which consist of five dimensions: power distance, uncertainty avoidance, individualism, masculinity and time horizon. While, corporate governance systems are represented by eight systems which are: board size, separation of chair and CEO, independence per board, independent audit committee, remuneration disclosure, women on board, code of ethics and ethics systems. Cultural values are considered as the independent variables. Correspondingly, corporate governance systems are considered as the dependent variables. This section is further divided into four sub-sections, which are: identification and measurement of study variables, data sources, study hypothesis and statistical analysis. This is as follows:

(3/3/1)Identification and measurement of study variables

The corporate governance systems used in this study consists of eight variables as follows (Stephanie, 2005):

(A)Board size

Good corporate corporate governance practices in some countries usually provide only general guidance for the appropriate board size, and the exact number is left open for each company to decide based on for example company size and sector. By contrast, in other countries the minimum board size is predetermined by national law or listing requirements for stock markets. The Ethical Investment Research Services (EIRIS) (LTD) indices across countries show that New Zealand has the smallest average board size of 7.2 directors, while Austria and Germany have the largest board size of 18.1 and 22.1 directors respectively (Stephanie, 2005).

(B) Separation of chairman and CEO

Good governance practices usually advice the separation of chairman and CEO position. The idea behind this separation is to prevent a single individual to have unfettered powers of decision. The chairman is usually responsibly for running the board, while the chief executive is usually responsible for running the company's business. In some countries, the corporate law requires the separation between the executive and non-executive managing directors such as in Sweden, while in other countries such as in Germany the two-tier board structure ensures the separation of roles. The EIRIS indices show that the highest proportions of companies with separation chair and CEO, within a unitary board structure, are in Ireland and Luxemburg. In Australia, United Kingdom and New Zealand over 95% of companies separate the roles. This compares with just fewer than 25% of companies in the U.S. and just over 50% of companies in Japan (Stephanie, 2005).

(C)Board independence

Recent good corporate governance practices have focused on the proportion of independent directors on the corporate board. The existence of independent directors on the board usually enhances the decision-making process, maintain accountability and transparency. The EIRIS indices show that a high percentage of independent directors on the board are found in Switzerland, Canada and U.S., while a low percentage is found in Germany and Austria (Stephanie, 2005).

(D)Audit committee

The main responsibilities of an independent audit committee are usually to monitor and review the financial statements, the internal financial controls, the external auditors' independence and objectivity, and the effectiveness of the audit process. The EIRIS indices show that the independence of the audit committee varies considerably across countries. For example the percentage of companies with majority independent audit committee is approximately 50% in Norway, 56% in Sweden, and approximately above 95% in the U.K, Netherlands, Canada, U.S., Ireland and Luxemburg, in contrast to only 4% of companies in Japan (Stephanie, 2005).

(E)Remuneration disclosure

Remuneration disclosure means the disclosure of the CEO's salary, or the salaries of all directors individually or as a whole. Good corporate governance practices advice that remuneration should be linked to corporate and individual performance. The EIRIS indices show that the lowest remuneration disclosure is found in Greece and Japan with only 58% and 44% of companies discloses remuneration to public respectively (Stephanie, 2005).

(F)Women on board

The presence of more women on corporate board increases the diversity of the backgrounds, skills and experience of board members, which may increase the effectiveness of decision-making process. The EIRIS indices show that Norway and Sweden have the highest percentages of 26% and 20% of board members on average respectively. In contrast, Japan has the lowest percentage of women on board of only 0.4% of board members (Stephanie, 2005).

(G)Code of ethics

Some good corporate governance practices require companies to adopt and disclosure a code of business conduct and ethics for directors, officers and employees. The EIRIS indices show that the highest percentage of companies with basic ethics policies is found in Finland and Netherlands. By contrast, Hong Kong and Singapore have the lowest percentages of less than 25% of companies (Stephanie, 2005).

(H)Ethics systems

A good corporate governance system demands the existence of management systems to support the enforcement of codes of ethics. These systems can improve standards of corporate governance, ethics, transparency and integrity. The EIRIS indices show that the U.K. has 86.4% of companies have a basic management systems, by contrast Luxemburg have 0% of companies with management systems (Stephanie, 2005).

(3/3/1/1) Descriptive statistics for corporate governance systems indices

The detailed descriptive statistics have been calculated for all the corporate governance systems' indices used in this study (Table 3.17). The results show that the majority of variables vary considerably across time; in addition the majority of the skewness and kurtosis analysis results are within the acceptable limits.

Table 3.17: Descriptive statistics for the dependent corporate governance systems indices across countries. Y1 is board size, Y2 is separation of chair and CEO, Y3 is independence per board, Y4 is audit committee, Y5 is remuneration disclosure, Y6 is women on board, Y7 is code of ethics and Y8 is ethics systems. Source: Study research analysis using SPSS software package (Version 14.00)

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Y1	24	7.20	22.80	13.02	3.45	.862	.472	1.50	.918
Y2	24	24.90	100.00	81.26	20.80	-1.099	.472	.603	.918
Y3	24	1.50	81.30	42.58	21.55	-.319	.472	-.428	.918
Y4	24	4.10	100.00	68.97	26.71	-.869	.472	.313	.918
Y5	24	44.10	100.00	90.94	15.21	-1.983	.472	3.364	.918
Y6	24	.60	26.20	7.96	5.81	1.669	.472	3.498	.918
Y7	24	.00	100.00	63.43	24.26	-.859	.472	.782	.918
Y8	24	.00	86.40	55.49	21.77	-1.226	.472	1.314	.918
Valid N (listwise)	24								

(3/3/2) Data sources

As mentioned above, corporate governance indices are collected from the Ethical Research Services (EIRIS, LTD., U.K.). The EIRIS is an independent, non-profit organization. Their core business is to conduct research into corporate environmental social and governance management and performance. They offer data on more than sixty research areas for some 2800 companies in Europe, North America and Asia pacific. The indices used in this study are calculated using 1600 medium and large size companies on the FTSE all world developed index in twenty four developed economies around the world as on year 2005. They provide a global picture of corporate governance practice in Western Europe, North America and Asia pacific.

(3/3/3)Study hypotheses

The relationship between cultural values and corporate governance systems is tested using the following main fourth null hypothesis, which states that:

- **"There is no significant relationship between cultural values and corporate governance systems across countries"**

This main fourth null hypothesis is further divided into eight alternative sub-hypotheses which states that:

a. There is a relationship between cultural values and "board size".

b. There is a relationship between cultural values and "separation of chair and CEO".

c. There is a relationship between cultural values and "independence per board".

d. There is a significant relationship between cultural values and "audit committee".

e. There is a relationship between cultural values and "remuneration disclosure".

f. There is a relationship between cultural values and "women on board".

g. There is a relationship between cultural values and "ethics code".

h. There is a relationship between cultural values and "ethics systems".

(3/3/4)Statistical techniques

A variety of regression analysis techniques are implemented to investigate the relationship between cultural values and corporate governance systems across countries, using the SPSS and E-views statistical software packages. This is as follows: first, a preliminary data analysis is conducted. Second, the multiple regression analysis for the full model is used to test the study variables. Third, the stepwise regression analysis model is implemented to reduce the number of variables and to eliminate the impact of any multicollinearity between the independent variables. Fourth, the weighted least square (WLS) model is implemented to overcome the problem of heteroscedasticity of residuals. Finally, several steps of assessment and valuation are undertaken for each regression model to insure reliability and validity of results.

(3/3/4/1)Preliminary data analysis

At the beginning of the analysis, the data set are screened, using descriptive statistics in SPSS software package, to understand the type and distribution of data underhand, and to determine the most suitable statistical analysis techniques. This preliminary data analysis includes tests of normality distribution and cross-correlation matrixes.

(3/3/4/2) Multiple regression models

The multiple regression analysis is used to identify the relationship between the independent cultural variables and several dependent corporate governance variables. This model describes how well the independent variables serve as a measurement instrument for the dependent variables. That is, the model measures the reliability and validity of the independent variables to represent the dependent variables in the model. The ordinary least squares (OLS) method is used to estimate the values of the parameters and to fit the data using SPSS statistical software package. The generic form the multiple regression models is as follows (Greene, 2002):

$$Yi = \beta_1 X_{i1} + \beta_2 X_{i2} + \dots\dots\dots + \beta_k X_{ik} + e_i$$

Where:

Y = dependent variable

X = independent or explanatory variable

i = indexes the n sample observations

β = coefficient for independent variable

e = random disturbance

(3/3/4/3) Stepwise multiple regression analysis

The stepwise multiple regression analysis is used to identify the best group of independent variables that explains the variability of dependent variable and to overcome the problem of multicollinearity, using the SPSS statistical software package. That is, if a strong relationship between some independent variables is discovered, this analysis is applied to get ride of some independent variables from the regression function without adding value to the coefficient of determination (R^2).

However, some economists have argued that this technique may result in reducing the study model to a great extend and may cancel out some important explanatory variables. Further, deleting relevant variables may introduce omitted variable bias, since changes in specification may introduce big changes to the results. Therefore, this method should be implemented with great caution.

(3/3/4/4) Weighted least squares regression (WLS)

The standard linear regression analysis assumes constant variance within the population under study. If this assumption is violated, for example, when cases that are high on some attributes show more variability than cases that are low on that attribute, the linear regression analysis using ordinary least square method (OLS) will not provide optimal estimates, because the least squares give equal weight to all observations. In this case, the weighted least square method is considered more efficient than simply applying least squares method, because this method implies that observations with smaller variances receive a larger weight in the computations of the sums and therefore have greater influence in the estimates obtained and vice versa.

(3/3/4/5) Testing the study models

The efficiency of the results of the ordinary least squares regression analysis techniques depend to a great extent on the existence of certain assumptions (Gauss-Markov conditions and theorem), which are: (1) The data obtained constitute a random sample from a well defined population. (2) The population model is linear, which means that the relationship between the dependent variables and each independent variable are linear. (3) The error term has a zero expected value. (4) The independent variables are linearly independent. (5) The error term has constant variance (Abdi, Heive, 2003). Consequently, the ordinary least square multiple regression models are subject to an assessment and review process to assess the validity of the results. This process involves several statistical methods to test the following aspects:

(A) Normality of the distribution

The skewness and kurtosis tests are conducted for data distribution using descriptive statistics option in SPSS statistical software package. Normal distributions usually have kurtosis equal to three. A value more than three indicates a leptokurtic distribution, while values lower than three indicates platykurtic distributions. Further, normally distributed data should have zero skewness.

(B) Multicollinearity of independent variables

The multiple regression analysis assumes that the impact of each independent variable is separate from the other variables. The multicollinearity problem means that there are strong relationships between the independent variables. The overall fit of the equation will not be affected by the multicollinearity, and any variables that are not involved in the multicollinearity are not affected. Multicollinearity introduces no bias to the estimated coefficients, but it causes their standard errors to be inflated and consequently decrease their t-statistics. Also, multicollinearity causes the estimated coefficients to be more sensitive to the specification of the variables involved. Note that the t-statistics are the ratio of the estimated coefficient to its standard error, while the standard errors are the estimates of the true standard deviations of the ordinary least square (OLS) estimators. Several statistical methods are implemented to test for this problem using the SPSS statistical software such as the cross-correlation matrix and the Variance Inflation Factor (VIF).

The cross-correlation matrix shows the relationship among the independent variables. There are different views about the limit at which this relationship is considered high. Some researchers have argued that a strong relationship between two independent variables exists if correlation is equal or more than 0.80 (Clark and Schkade, 1974), while others show doubts about a strong relationship at 0.70 or more (Gunst and Mason, 1980).

The Variance Inflation Factor (VIF) is used to investigate the multicollinearity problem between independent variable. The VIF shows the degree of the variables to explain variability in one independent variable itself. A VIF coefficient of 1 means no multicollinearity, while a coefficient of more than 5 indicates a multicolinarty problem. Other researchers have argued that multicolinarity exists only over the level of 10. A tolerance of less than 0.1 indicates a multicollinearity problem. The VIF is measured as follows:

$$\textbf{Tolerance} = \mathbf{1\text{-}R^2}$$

$$\textbf{VIF} = \mathbf{1/Tolerance}$$

(C) Autocorrelation of residuals

The regression analysis model assumes that the resulting residuals (errors) are randomly distributed. Autocorrelation refers to a pattern in the model residuals whereby the value of a residual is related to its preceding value. Autocorrelation of the residuals may result in invalid tests for statistical significance (i.e. upward bias in estimates of the statistical significance of coefficient estimates such as the t-statistics) and unduly high coefficient of determination, R^2 (Silver, 1996). Note that the problem of autocorrelation (sometimes called serial correlation) is more common with time-series analysis than in cross-section analysis. The Durbin-Watson (D-W) test statistic is used to test for the presence of first order autocorrelation using the SPSS statistical software package. The D-W test statistics coefficient usually lies between 0 and 4.0. As a rule of thumb, a D-W coefficient of 2.00 indicates no serial correlation in a series of residuals. Correspondingly, D-W values lower than 2.00 indicate a positive correlation between the residuals. By contrast, a D-W coefficient of more than 2.00 indicates a negative correlation.

(D) Heteroscedasticity of residuals (errors)

The multiple regression models assume that the variance of the residuals is constant. This means that the variance of the distribution of the dependent variable should be constant for all values of the independent variable. The problem of heteroscedasticity occurs when the variance is not constant across observations (Silver, 1996). Heteroscedasticity is most commonly associated with cross-section data analysis; although a time series model can also have a non-constant variance. This problem will not affect the coefficient estimates, but it will result in biased standard errors and thus f-tests and t-tests will be unreliable.

To test for the existence for this problem scatter plots are first used to explore the relationships between the estimated residuals and the predicted values of the regression models. Data points should be scattered randomly along the centre of the plot without showing any sign of a pattern consistent with a non-constant variance. In addition, the Goldfeld-Quandt test statistic is used to test for the existence of heteroscedasticity, using the E-views statistical software package, whereby the data set is sorted in descending order according to one of the independent variables and the data is split in half. Then, the regression analysis is conducted on each half of the data and a formal hypothesis test is conducted to test for existence of heteroscedasticity.

CHAPTER 4 DATA ANALYSIS AND RESULTS FOR CULTURAL VALUES AND STOCK MARKET DEVELOPMENT

The main aim of this chapter is to present the detailed statistical analytical procedures and results for the relationship between cultural values and stock market development indicators in the United Kingdom, during the period 1990-2004. In this context, this chapter is divided into five main sections. The first section outlines the general statistical analytical procedures of this study. The second section describes the preliminary data analysis undertaken to prepare the data-set. The third section presents the measurement models for the independent cultural values and for the dependent stock market development indicators. The fourth section presents the structural equation models (SEM) for the relationship between cultural values and stock market development indicators. Finally, the fifth section concludes with a summary of results.

(4/1) Statistical Procedures

The statistical analytical procedures start with a preliminary data analysis using descriptive statistics. The purpose of this analysis is to identify the main characteristics of the longitudinal data-set under consideration using SPSS statistical software package (Version 14.0). This process will help to identify suitable statistical analysis techniques to overcome any problems in the data-set. As a result, several transformations are undertaken to prepare the data-set for the desired statistical analysis.

Afterwards, the structure equation modelling (SEM) is implemented using the linear structural relations (LISREL) statistical software package (Version 8.72) by Joreskog and Sorbom (1993). The general form of the LISREL analysis consists of two models: the measurement model and the structural equation model (SEM). The measurement model represents the relationships between observable proxy variables and their latent constructs. Whereas, the structure-equation model (SEM) shows the relationships between the latent constructs of different models.

A model generating approach is undertaken, as suggested by Sudarwan and Fogarty (1996), to analyze the empirical longitudinal data-set for the United Kingdom. Two measurement models are formulated and tested to represent cultural values and stock market development indicators. Then, an assessment and evaluation for every model estimated is undertaken to choose the best fit models. Finally, some structural equation models are estimated jointly for the measurement models.

(4/2) Preliminary data analysis

A preliminary data analysis is undertaken using several descriptive statistics to prepare the data for the desired statistical analytical process. As a result, several statistical transformations are undertaken on the data-set, which include: first, all study variables have been transformed to a uniform scale. That is, all integer numbers have been transformed to decimal numbers that range from 0 to 1. This process usually facilitates comparisons across variables and increases the reliability of results.

Second, all monetary variables are deflated using the United Kingdom consumer price index (CPI) for the period 1990 to 2004 to avoid spurious results. Third, all the variables have been transformed using square root and first difference to increase the linearity of the models and to remove any trends in the data-set respectively. Fourth, all study variables have been normalized using the "normal variable" option in the LISREL software to satisfy the statistical analysis requirements.

Finally, the augmented Dickey Fuller (ADF) test statistic is performed using E-views statistical software package (Version 3.1) to test for stationarity in the data set (see Omran, M.M.A., 1999). On one hand, test results show that most of the independent cultural variables are stationary at first difference level (Table 4.1), except for three variables. The variable X5 is stationary at the second difference level, while the variables X9 and X13 are stationary at level zero (Appendix 1). Consequently, the variables which are stationary at first difference level are kept as they are, while the variable X5 is re-entered into the data set in first difference. By contrast, the variables X9 and X13 are cancelled from the analysis.

Table 4.1: The augmented Dickey Fuller unit root test statistic (ADF) for the independent cultural variables. X1 is number of telephone lines, X2 is ratio of number of telephone lines to total population, X3 is total number of students' enrolment, X4 is ratio of total number of students' enrolment to total population, X5 is volume of transactions on stock market, X6 is real Fluctuations of foreign currency rate, X7 is real Gross Domestic Product, X8 is real Gross National Income, X9 is ratio of people living in cities to total population, X10 is Number of people living in cities, X11 is real Gross National Income, X12 is real Income per Capita, X13 is ratio of male employment to total employment, X14 is ratio of male students to total students in elementary schools, X15 is ratio of male students to total students in further education, X16 is ratio of male students to total students in higher education, X17 is real ratio of total spending on education to total budget, X18 is real total spending on education, X19 is real ratio of total gross fixed investment to GDP, X20 is real total gross fixed investment
Source: Study analysis results using E-views software (Version 3.1)

Independent variables	Augmented Dickey Fuller unit root test statistics (ADF)		
	Zero	First	Second
Power Distance (PDI)			
X_1		Lag 0	
X_2		Lag 0,1,2	
X_3		Lag 0	
X_4		Lag 0,1,2	
Uncertainty Avoidance (UAV)			
X_5			Lag 0
X_6		Lag 0	
X_7		Lag 0	
X_8		Lag 0	
Individualism (IND)			
X_9	Lag 0,1,2		
X_{10}		Lag 0	
X_{11}		Lag 0	
X_{12}		Lag 0	
Masculinity (MAS)			
X_{13}	Lag 0		
X_{14}		Lag 0	
X_{15}		Lag 0	
X_{16}		Lag 0	
Time Orientation (TOI)			
X_{17}		Lag 0	
X_{18}		Lag 0	
X_{19}		Lag 0	
X_{20}		Lag 0	

On the other hand, the augmented Dickey Fuller test results show that some of the dependent stock market development indicators are stationary at the first difference level, while others are stationary at second difference level (Table 4.2). The variables

Y1, Y2, Y6, Y7, Y14, Y15 and Y16, which are stationary at first level, are kept as they are. By contrast, the rest of the variables Y3, Y4, Y5, Y8, Y9, Y10, Y11, Y12 and Y13, which are stationary at second difference level, are re-entered into the data set after taking their first difference, to achieve stationarity at first level for all variables (Appendix 2).

Table 4.2: The augmented Dickey Fuller unit root test statistic (ADF) for the dependent stock market development indicators. Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y4 is real value of new issues including capital gains as % of trading value, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies, Y10 is number of listed companies, Y11 is real total value traded to market capitalization, Y12 is real total value traded to GDP, Y13 is volume of share traded as a % of volume of shares listed, Y14 is real % of biggest companies' shares in market capitalization, Y15 real % of biggest companies' shares in value traded, Y16 is real value of 10 biggest companies' shares. Source: Study analysis results using E-views software (Version 3.1)

Dependent Variables	Augmented Dickey Fuller unit root test Statistic (ADF)		
	Level	First	Second
Market Activity			
Y_1		Lag 0	
Y_2		Lag 0	
Y_3			Lag 0
Y_4			Lag 0
Y_5			Lag 0
Market Size			
Y_6		Lag 0	
Y_7		Lag 0	
Y_8			Lag 0
Y_9			Lag 0
Y_{10}			Lag 0
Market Liquidity			
Y_{11}			Lag 0
Y_{12}			Lag 0
Y_{13}			Lag 0
Market Concentration			
Y_{14}		Lag 0	
Y_{15}		Lag 0	
Y_{16}		Lag 0	

(4/3) The measurement models

In this section, two separate measurement models are constructed using the LISREL statistical software package (Version 8.72) for the independent cultural values and the dependent stock market development indicators, detailed below.

(4/3/1) The measurement model for cultural values

The measurement model for cultural values is identified using a confirmatory factor analysis (CFA). The cultural values, as suggested by Hofestede (1980, 1983), consist of five constructs, which are: power distance, uncertainty avoidance, individuality, masculinity and time horizon. A model generating approach is conducted following the methodology of Sudarwan and Fogarty (1996) and Noravesh et al. (2005); whereby, the five constructs of cultural values are compared in alternative models. That is, the hypothesized one factor measurement model of cultural values is tested against the two, three, four and five factor models. The purpose of these comparisons is to identify the most suitable model that better fits the data-set (See Appendices 3, 4, 5, 6, and 7).

The five measurement models along with their goodness of fit statistics are shown in Table 4.3. Test results reveal that the three factor model is considered the best fit model compared to the other alternative models. This model consists of three latent independent constructs, which are: power distance, uncertainty avoidance, and individuality. In general, the model has the lowest score of chi-square/df of 1.16, the lowest root mean square residual (RMSR) index of .036, the best goodness of fit index (GFI) and adjusted goodness of fit (AGFI) index of 0.95 and 0.90 respectively. The model also has the best normed fit index (NFI) and non-normed fit index (NNFI) of 0.993 and 0.997 respectively. Therefore, the three factor model is considered the best fit model for cultural values (Figure 4.1).

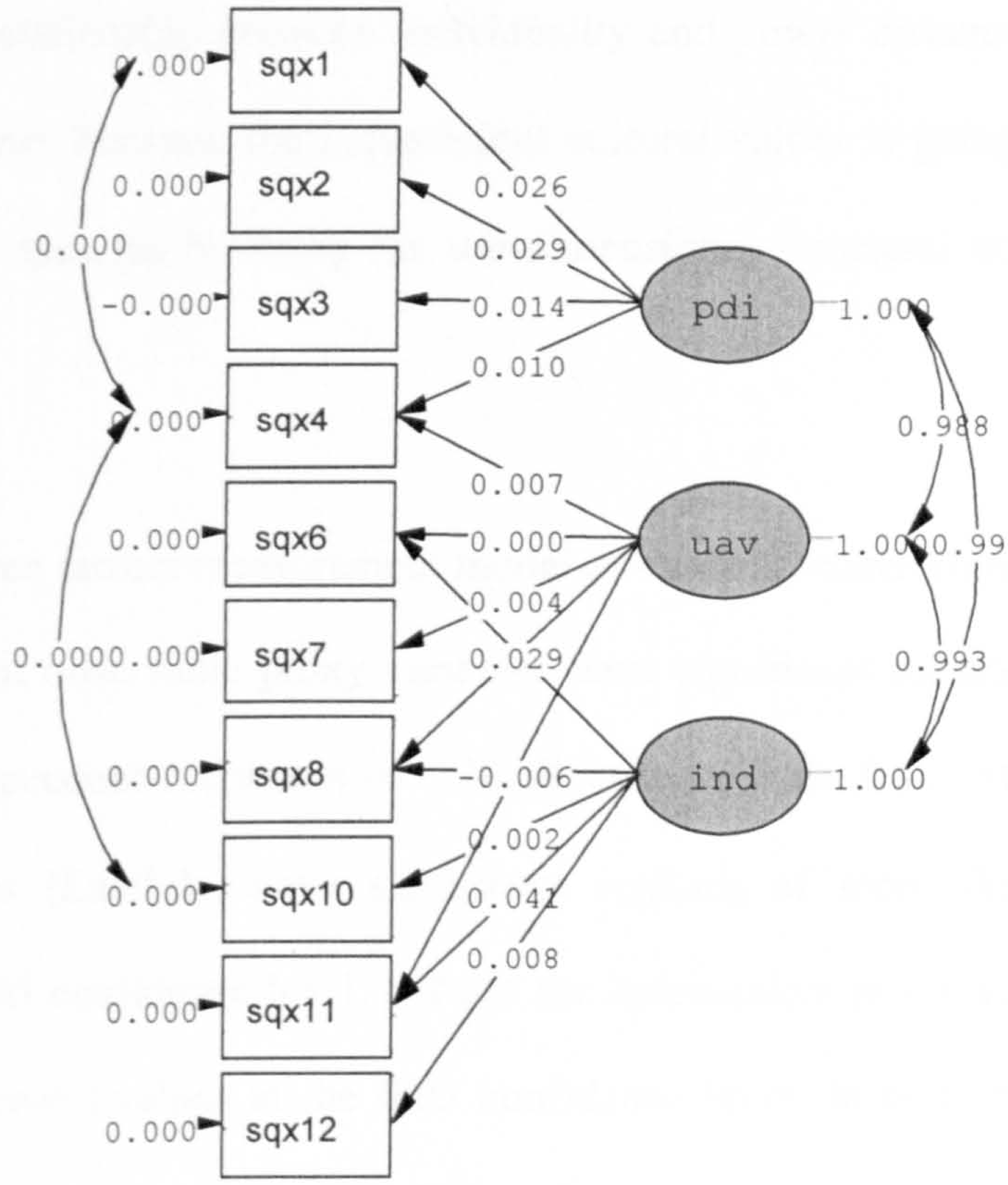
Indeed, the three factor measurement model for cultural values shows good fit statistics in comparison with the general acceptable goodness of fit benchmarks. The ratio of chi-square/df of 1.16 is lower than the acceptable level of 2.00, as suggested by Sudarwan and Fogarty (1996). The root mean square residual (RMSR) of 0.036 is lower than the 0.100 level, as suggested by Kalbers and Fogarty (1993). The goodness of fit index (GFI) and the adjusted goodness of fit index (AGFI) scores of 0.95 and 0.90, respectively, are higher than the general acceptable rule of thumb of 0.90 levels, as suggested by Bagozzi and Yi (1988). In addition, the normed fit index (NFI) and the non-normed fit index (NNFI) of 0.993 and 0.999, respectively, are also higher than the general rule of thumb of 0.80. Therefore, this model is considered the best fit model for the purpose of this study.

Table 4.3: The confirmatory factor analysis (CFA) for cultural values. One factor model: power distance. Two factors model: power distance and uncertainty avoidance. Three factors model: power distance, uncertainty avoidance and individuality. Four factors model: power distance, uncertainty avoidance, individuality and masculinity. Five factors model: power distance, uncertainty avoidance, individuality, masculinity and time orientation.

Source: study analysis results using LISREL software package (Version 8.72).

Models	Description	Fit Statistics							
		Chi-Square (X2)	Degrees of Freedom (DF)	Chi-square/df	Root mean square residual (RMSR)	Goodness of fit Index (GFI)	Adjusted goodness of fit index (AGFI)	Normed Fit Index (NFI)	Non normed Fit Index (NNFI)
1	One factors	1.74	1	1.74	0.077	0.99	0.93	1.00	0.99
2	Two factors	33.28	12	2.77	0.120	0.93	0.84	0.98	0.98
3	Three factors	30.24	26	1.16	0.036	0.95	0.90	0.993	0.997
4	Four factors	180.85	52	3.47	0.140	0.81	0.68	0.96	0.95
5	Five factors	327.32	100	3.27	0.134	0.76	0.63	0.964	0.963

Figure 4.1: The three factor measurement model for cultural values. Unidirectional arrows indicate parameters' estimates (equivalent to regression coefficients). Bidirectional arrows indicate error covariance (equivalent to square multiple correlations). X1 is number of telephone lines, X2 is ratio of number of telephone lines to total population, X3 is total number of students' enrolment, X4 is ratio of total number of students' enrolment to total population, X6 is real Fluctuations of foreign currency rate, X7 is real Gross Domestic Product, X8 is real Gross National Income, X10 is Number of people living in cities, X11 is real Gross National Income, X12 is real Income per Capita. Sq is square root. Pdi is power distance, uae is uncertainty avoidance, ind is individuality. Source: Study analysis results using LISREL software package (Version 8.72)



·Square=30.24, df=26, P-value=0.25761, RMSEA=0.036

However, other test results indicate high correlation coefficients among the independent latent cultural values constructs (See Appendix 5). For example there is a significant positive relationship between individuality and the proxy variables for power distance. Since the proxy variables of power distance are predicted to have a negative relationship with the "power distance" cultural value, it can be concluded that there is a negative relationship between individuality and power distance. This problem of multicollinearity between the independent cultural values is going to be dealt with in subsequent sections by using the uni-dimensional structural equation models.

Further analysis of the three factors measurement model of cultural values shows that most of the underlying ten observable proxy variables have significant relationships with the three latent independent constructs of cultural values (Table 4.4). Most of the parameters' estimates (Lambda) have significant t-values of more than the benchmark 1.96 at the 0.95 confidence level, but not the independent proxy variable sqx6 which has insignificant t-values at the 0.95 confidence level. In addition, the measurement errors (Theta Delta) for most of the observable proxy independent variables have very low values almost near to zero. Therefore, the first null hypothesis (H_0) which states that: "Power distance, uncertainty avoidance, individuality, masculinity and time horizon do not represent distinct dimensions of cultural values" is not rejected.

Table 4.4: The confirmatory factor analysis (CFA) for the three factor measurement model of cultural values: Goodness of fit statistics. Lambda is the parameters' estimates. T-values are the ratio between the parameter estimate and its standard error. Theta Delta is an estimate of the measurement error in the X variables. R^2 is the squared multiple correlations. (**) indicate results are significant at 0.95 confidence level.). X1 is number of telephone lines, X2 is ratio of number of telephone lines to total population, X3 is total number of students' enrolment, X4 is ratio of total number of students' enrolment to total population, X6 is real Fluctuations of foreign currency rate, X7 is real Gross Domestic Product, X8 is real Gross National Income, X10 is Number of people living in cities, X11 is real Gross National Income, X12 is real Income per Capita. Sq is square root. Source: study analysis results using LISREL software package (Version 8.72).

Independent Variables	Lambda	T-value	Theta Delta	R^2
Power Distance (PDI)				
sqX_1	0.0259	14.1738**	0.0001	0.8908
sqX_2	0.0294	15.0327**	0.0000	0.9495
sqX_3	0.0142	15.8437**	-0.0000	1.0021
sqX_4	0.0096	8.9511**	0.0000	0.9921
Uncertainty Avoidance (UAV)				
sqX_4	0.0068	6.8954**	0.0000	0.9921
sqX_6	0.0002	0.0817	0.0000	0.3335
sqX_7	0.0044	15.8070**	0.0000	0.9998
sqX_8	0.0285	8.0736**	0.0000	0.9873
sqX_{11}	-0.0059	-4.0431**	0.0000	0.9996
Individualism (IND)				
sqX_6	0.0026	0.8255	0.0000	0.3335
sqX_8	-0.0066	-2.1593**	0.0000	0.9873
sqX_{10}	0.0019	15.7304**	0.0000	0.9949
sqX_{11}	0.0408	13.8566**	0.0000	0.9996
sqX_{12}	0.0075	15.7808**	0.0000	0.9981

(4/3/2) The measurement model for stock market development indicators

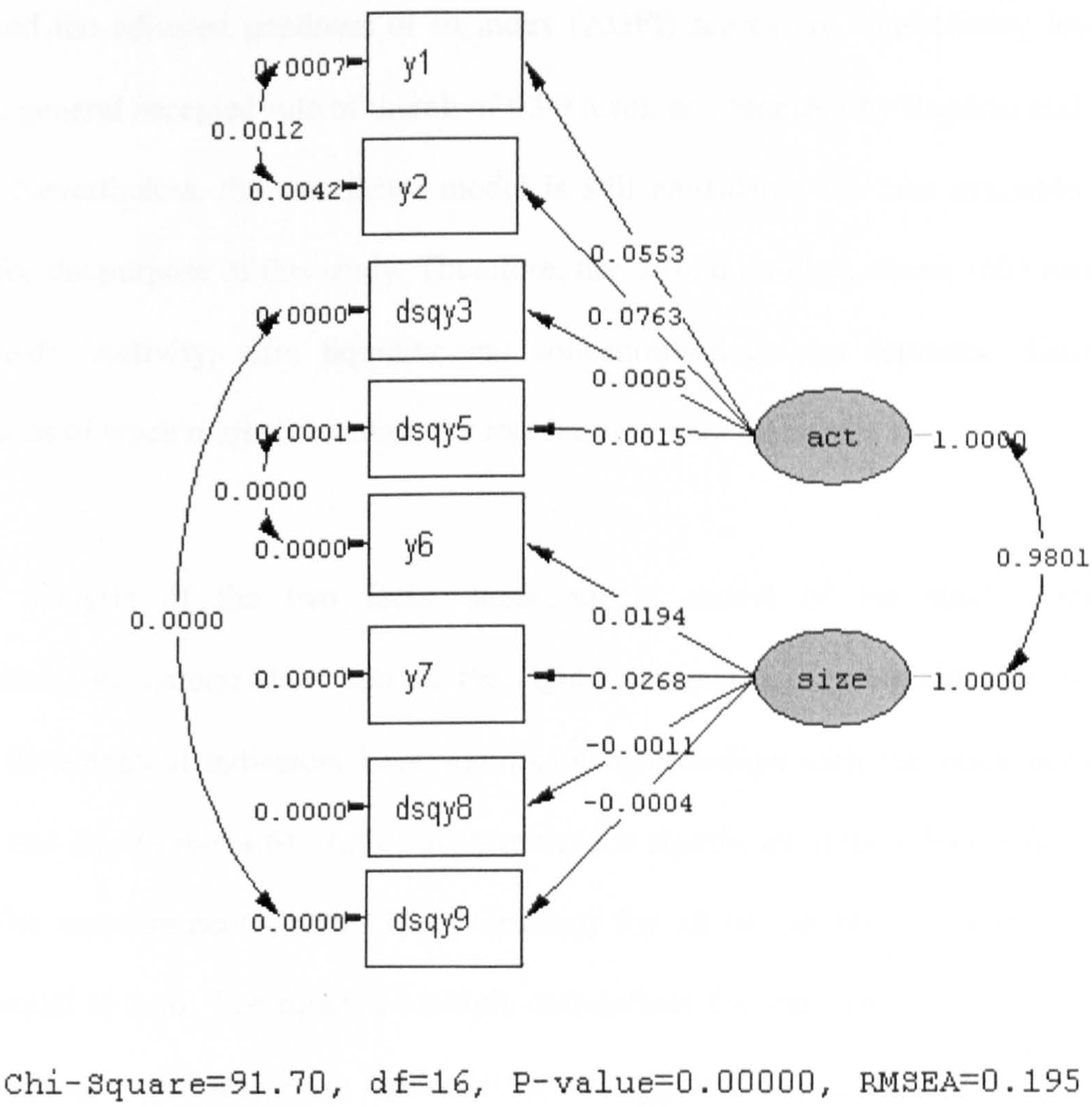
The measurement model for stock market development indicators is identified using a confirmatory factor analysis (CFA). The stock market development indicators, in light of the work by Demirguc-Kunt and Levine (1995), consist of four constructs, which are: stock market activity, size, liquidity, and concentration. A model generating approach is conducted following the methodology of Sudarwan and Fogarty (1996) and Noravesh et al. (2005), whereby, the four constructs of stock market development indicators are compared in alternative models. That is, the hypothesized one factor measurement model of stock market development is tested against the two, three and four factor models. The purpose of these comparisons is to identify the most suitable model that better represents the data-set (See Appendix 8, 9, 10, 11). The goodness of fit statistics of the four measurement models for the stock market development indicators are shown in Table (4.5).

Test results reveal that the two factor model has the best goodness of fit statistics compared to the other alternative models. This model consists of two constructs, which are: stock market activity and size. In general, this model has the lowest score of chi-square/df of 5.73, the lowest root mean square residual (RMSR) of 0.195, the best goodness of fit index (GFI) and adjusted goodness of fit index (AGFI) of 0.85 and 0.65 respectively, the highest normed fit index (NFI) and non-normed fit index (NNFI) indices of 0.90 and 0.84 respectively. Therefore, the two factor model is considered the best fit model for stock market development indicators (Figure 4.2).

Table 4.5: The confirmatory factor analysis (CFA) for stock market development indicators. One factor model: stock market activity. Two factor model: stock market activity and size. Three factors model: stock market activity, size and liquidity. Four factors model: stock market activity, size, liquidity and concentration. Source: study analysis results using LISREL software package (Version 8.72).

Models	Description	Fit Statistics							
		Chi-Square (X2)	Degrees of Freedom (DF)	Chi-square/df	Root mean square residual (RMSR)	Goodness of fit Index (GFI)	Adjusted goodness of fit index (AGFI)	Normed Fit Index (NFI)	Non normed Fit Index (NNFI)
1	One factor	18.41	2	9.20	.26	0.93	0.66	.91	.74
2	Two factors	91.70	16	5.73	.19	.85	.65	.90	.84
3	Three factors	719.74	37	8.48	.26	.54	.35	.79	.75
4	Four factors	585.34	67	8.73	.25	.60	.37	.74	.67

Figure 4.2: The two factor measurement model for stock market development indicators. Unidirectional arrows indicate parameters' estimates (equivalent to regression coefficients). Bidirectional arrows indicate error covariance (equivalent to square multiple correlations). Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies. dsq is first difference and square root. Act is market activity, size is market size. Source: Study analysis results using LISREL software package (Version 8.72)



However, the two factor measurement model of stock market development indicators may not be considered a perfect fitting model for the following reasons (Appendix 9): first, the chi-square/df score of 5.73 is considerably higher than the acceptable level of 2.00, as suggested by Sudarwan and Fogarty (1996). Second, the root mean square residual (RMSR) score of 0.19 is higher than the acceptable benchmark of 0.100, as suggested by Kalbers and Fogarty (1993). Finally, both the goodness of fit statistic (GFI) and the adjusted goodness of fit index (AGFI) scores are considerably lower than the general accepted rule of thumb of 0.90 level, as suggested by Bagozzi and Yi (1988). Nevertheless, the two factor model is still considered the best available fit model for the purpose of this study. Therefore, the second null hypothesis (H_0) which states that: "Activity, size, liquidity and concentration do not represent distinct dimensions of stock market development indicators" is not rejected.

Further analysis of the two factor measurement model of the stock market development indicators; show that all the eight observable proxy variables of stock market development indicators have significant relationships with the stock market activity and size (Table 4.6). All of the t-values are significant at the 0.95 confidence level. The measurement errors (Theta Epsilon) for all of the proxy variables are almost equal to zero. The squared multiple correlations for some proxy variables are above or close to the acceptable level of 0.90, as suggested by Sudarwan and Fogarty (1996).

Table 4.6: The confirmatory factor analysis (CFA) for the two factor measurement model of stock market development indictors: Goodness of fit statistics. Lambda is the parameters' estimates. T-values are the ratio between the parameter estimate and its standard error. Theta Epsilon is an estimate of the measurement error in the Y variables. (**) indicate results are significant at 0.95 confidence level. (R^2) means squared multiple correlations. Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies. dsq is first difference and square root. Source: study analysis results using LISREL software package (Version 8.72).

Dependent Variables	Lambda	T-value	Theta Epsilon (ζ)	R^2
Market Activity (Act)				
Y_1	0.0550	12.85**	0.0006	0.82
Y_2	0.0760	9.88**	0.0042	0.58
$dsqY_3$	0.0005	9.42**	0.0000	0.54
$dsqY_5$	0.0015	2.15**	0.0000	0.38
Market Size (SIZ)				
Y_6	0.0190	15.46**	0.0000	0.98
Y_7	0.0270	15.71**	0.0000	0.99
$dsqY_8$	-0.0011	-5.39**	0.0000	0.21
$dsqY_9$	-.0003	-5.77**	0.0000	0.24

(4/4)The structure equation models

In the previous section two separate measurement models are identified for both cultural values and stock market development indicators. This section presents the structural equation models for the relationship between the measurement models of cultural values and stock market development indicators. This is as follows:

(4/4/1) The uni-dimensional structural equation models

The uni-dimensional structural equation models are used to identify the relationship between each cultural value and the stock market development indicators. These models are undertaken to overcome the problem of multicollinearity among the independent variables. The independent cultural values measurement model consists of three latent constructs, which are: power distance, uncertainly avoidance, and individuality. By contrast, the dependent stock market development indicators measurement model consists of two latent constructs, which are: stock market activity and size. Consequently, three uni-dimensional models are constructed in the following context.

(4/4/1/1) Power distance and stock market development indicators

The uni-dimensional structural equation model is implemented to highlight the relationships between power distance and stock market development indicators. The stock market development indicators measurement model includes two constructs, which are: stock market activity and size (Figure 4.3). In general, test results show a chi-sq/df of 7.31, which is relatively higher than the acceptable level of 2.00, as suggested by Sudarwan and Fogarty (1996). The root mean square residual (RMSR) has a value of 0.225 which is higher than the acceptable benchmark of 0.100, as suggested by Kalbers and Fogarty (1993). The goodness of fit index (GFI) and the adjusted goodness of fit index (AGFI) of 0.6725 and 0.4891 respectively, are relatively low compared to the general acceptable rule of thumb of 0.90, as suggested by Bagozzi and Yi (1988) (Appendix 12).

Table 4.7: The uni-dimensional structure equation model for the relationship between power distance and stock market development indicators. T-values are in parenthesis. (***) indicate results are significant at 0.99 confidence level. Source: Study analysis results using LISREL software package (Version 8.72).

Latent independent Variables	Latent dependent variables	
	Market Activity (η_1)	Market Size (η_2)
Power Distance	0.8301*** (9.8943)	0.8720*** (13.0219)
Errorvar	0.3109 (5.6393)	0.2397 (8.7306)
Squared multiple correlation (R^2)	0.6891	0.7603

Further analysis of the uni-dimensional structural equation model shows that the proxy variables of power distance have a significant positive relationship with stock market activity (Table 4.7). The regression coefficient has a value of 0.8301 and t-value of 9.8943 at the 0.99 confidence level. However, the proxy variables of power distance are predicted to have a negative relationship with the "power distance" cultural value. As a result, it can be concluded that there is a significant negative relationship between power distance and stock market activity (Table 4.8). This means that an increase in power distance is usually associated with a decrease in stock market activity and vice versa.

Table 4.8: The relationships between stock market activity and proxy variables of power distance

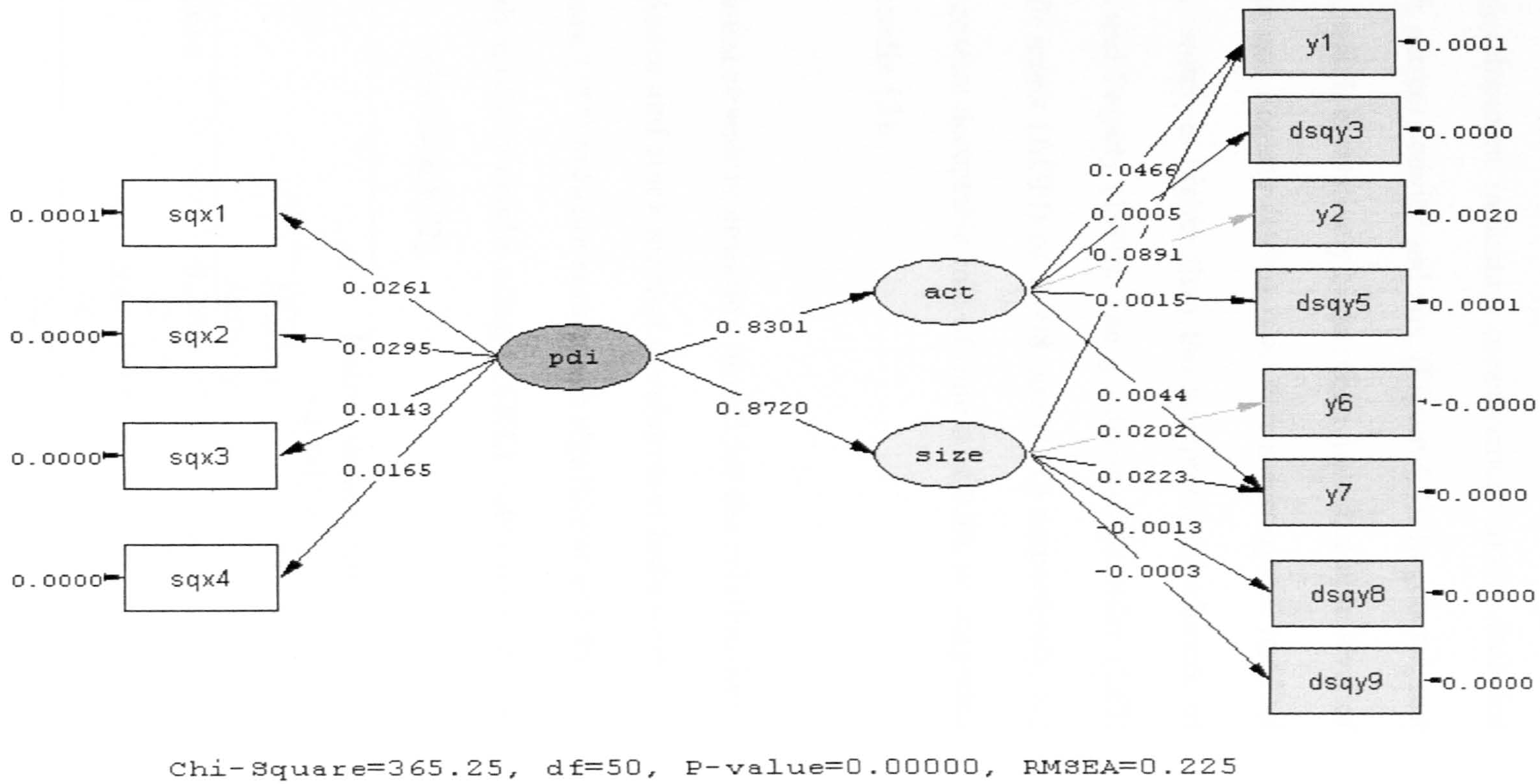
Stock market activity	Proxy variables of power distance	Power distance
Positive (+)	Positive (+)	Negative (-)

Similarly, test results show that the proxy variables of power distance have a significant positive relationship with stock market size. The regression coefficient has a value of 0.8720 and t-value of 13.021 at the 0.99 confidence level (Table 4.7). However, the proxy variables of power distance are predicted to have a negative relationship with the "power distance" cultural value. As a result, it can be concluded that thère is a negative relationship between power distance and stock market size (Table 4.9). This means that an increase in power distance is usually associated with a decrease in stock market size and vice versa.

Table 4.9: The relationships between stock market size and proxy variables of power distance

Stock Market Size	Proxy variables of power distance	Power Distance
Positive (+)	Positive (+)	Negative (-)

Figure 4.3: The uni-dimensional structural equation model for power distance and stock market development indicators. Unidirectional arrows indicate parameters' estimates (equivalent to regression coefficients). X1 is number of telephone lines, X2 is ratio of number of telephone lines to total population, X3 is total number of students' enrolment, X4 is ratio of total number of students' enrolment to total population. Sq is square root. Pdi is power distance. Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies. dsq is first difference and square root. Act is market activity, size is market size. Source: Study analysis results using LISREL software package (Version 8.7)



(4/4/1/2) Uncertainty avoidance and stock market development indicators

The uni-dimensional structural equation model is implemented to highlight the relationships between uncertainty avoidance and stock market development indicators. The stock market development indicators measurement model includes two constructs, which are: stock market activity and size (Figure 4.4). In general, test results show a chi-sq/df of 7.22, which is relatively higher than the acceptable level of 2.00, as suggested by Sudarwan and Fogarty (1996). The root mean square residual (RMSR) has a value of 0.223, which is higher than the acceptable benchmark of 0.100, as suggested by Kalbers and Fogarty (1996). The goodness of fit index (GFI) and the adjusted goodness of fit index (AGFI) of 0.698 and 0.515 respectively, are relatively low compared to the general acceptable rule of thumb of 0.90, as suggested by Bagozzi and Yi (1988) (Appendix 13).

Table 4.10: The uni-dimensional structure equation model for the relationship between uncertainty avoidance and stock market development indicators. T-values are in parenthesis. (***) indicate results are significant at 0.99 confidence level. Source: Study analysis results using LISREL software package (Version 8.72).

Latent independent Variables	Latent dependent variables	
	Market Activity	Market Size
Uncertainty avoidance	0.2809*** (2.97)	0.8882*** (12.9072)
Market size	0.6131*** (6.62)	
Errorvar	0.2393 (6.8187)	0.2112 (7.9313)
Squared multiple correlation (R^2)	0.7607	0.7888

Further analysis for the uni-dimensional structural equation model shows that (Table 4.10) the proxy variables of uncertainty avoidance have a significant positive relationship with stock market activity. The regression coefficient has a value of 0.2809 and t-value of 2.97 at the 0.99 confidence level. However, the proxy variables of uncertainty avoidance are predicted to have a negative relationship with the "uncertainty avoidance" cultural value. As a result, it can be concluded that there is a negative relationship between uncertainty avoidance and stock market activity (Table 4.11). This means that an increase in uncertainty avoidance is usually associated with a decrease in stock market activity and vice versa.

Table 4.11: The relationships between stock market activity and proxy variables of uncertainty avoidance

Stock Market Activity	Proxy Variables for uncertainty avoidance	Uncertainty Avoidance
Positive (+)	Positive (+)	Negative (-)

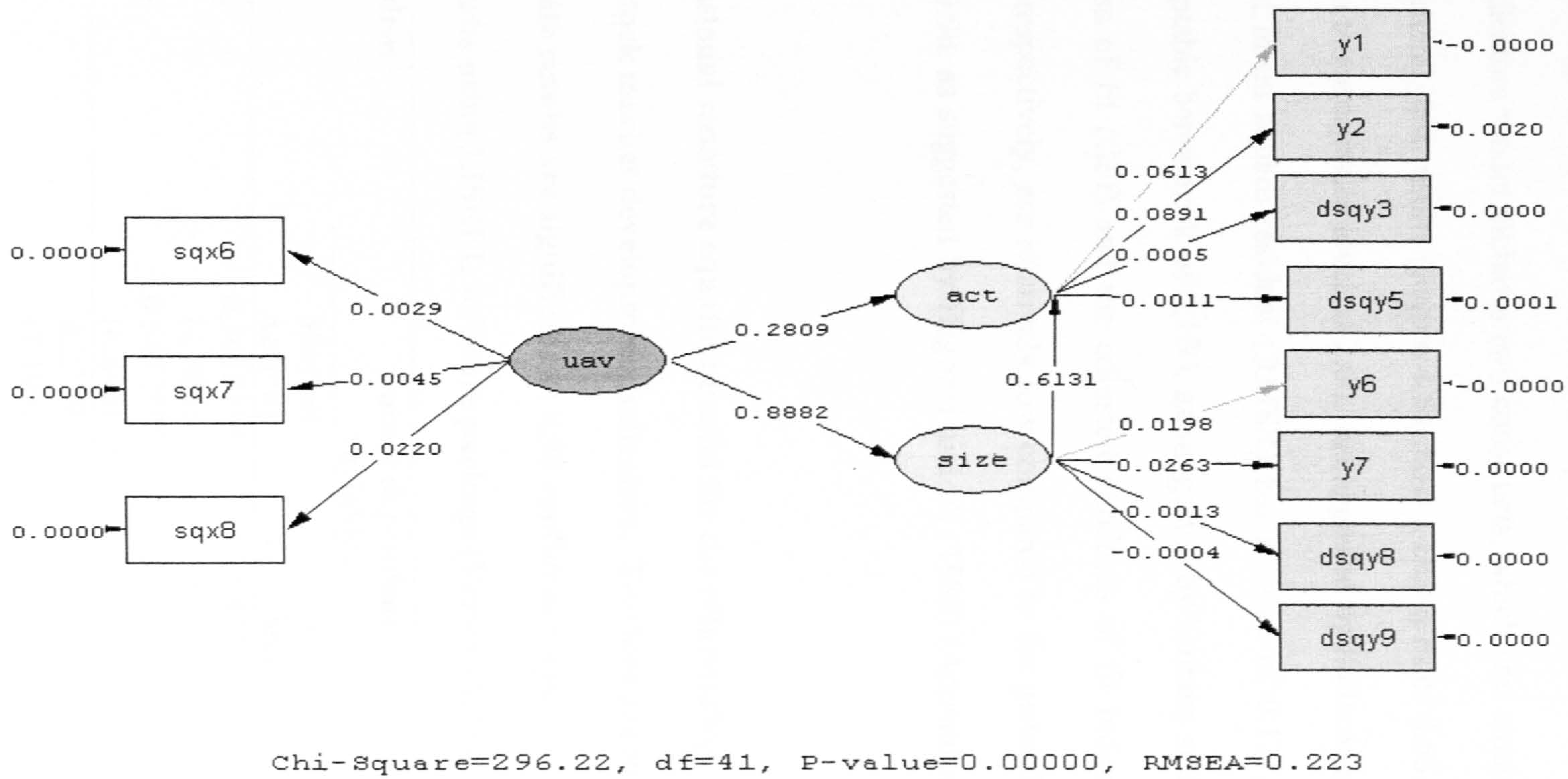
Similarly, test results show that the proxy variables of uncertainty avoidance have a significant positive relationship with stock market size (Table 4.10). The regression coefficient has a value of 0.8882 and t-value of 12.9072 at the 0.99 confidence level. The proxy variables of uncertainty avoidance are predicted to have a negative relationship with the "uncertainty avoidance" cultural value. As a result, it can be concluded that there is a negative relationship between uncertainty avoidance and stock market size (Table 4.12). This means that an increase in uncertainty avoidance is usually associated with a decrease in stock market size and vice versa.

Table 4.12: The relationships between stock market size and proxy variables of uncertainty avoidance.

Stock Market Size	Proxy Variables for uncertainty avoidance	Uncertainty Avoidance
Positive (+)	Positive (+)	Negative (-)

Finally, test results show a significant positive relationship between stock market size and stock market activity. The regression coefficient has a value of 0.6131 with a t-value of 6.622 at the 0.99 confidence level (Table 4.10). This means that an increase in stock market size is usually associated with an increase in stock market activity and vice versa.

Figure 4.4: The uni-dimensional structural equation model for uncertainty avoidance and stock market development indicators. Unidirectional arrows indicate parameters' estimates (equivalent to regression coefficients). X6 is real Fluctuations of foreign currency rate, X7 is real Gross Domestic Product, X8 is real Gross National Income sq is square root. uav is uncertainty avoidance. Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies. dsq is first difference and square root. Act is market activity, size is market size Source: Study analysis results using LISREL software package (Version 8.72).



(4/4/1/3) Individuality and stock market development indicators

The uni-dimensional structural equation model is implemented to highlight the relationships between individuality and stock market development indicators. The stock market development indicators model includes two constructs, which are: stock market activity and size. In general, test results (Figure 4.5) show a chi-sq/df of 4.65, which is relatively higher than the acceptable level of 2.00, as suggested by Sudarwan and Fogarty (1996). The root mean square residual (RMSR) has a value of 0.171, which is higher than the acceptable benchmark of 0.100, as suggested by Kalbers and Fogarty (1996). The goodness of fit (GFI) and the adjusted goodness of fit index (AGFI) of 0.763 and 0.6305 respectively, are relatively low compared to the general acceptable rule of thumb of 0.90, as suggested by Bagozzi and Yi (1988) (Appendix 14).

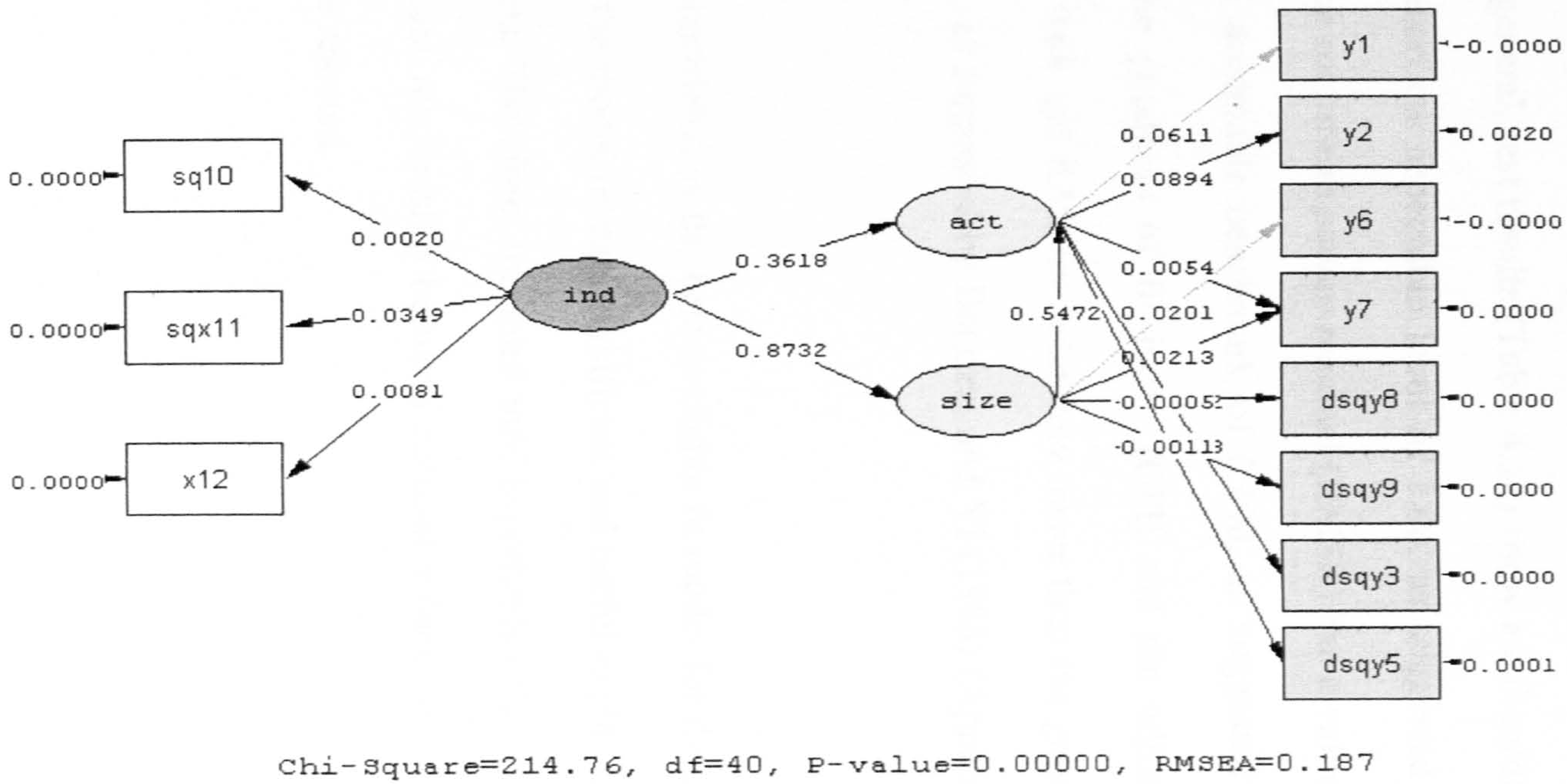
Table 4.13: The uni-dimensional structure equation model for the relationship between individuality and stock market development indicators. T-values are in parenthesis. (***) indicate results are significant at 0.99 confidence level. Source: Study analysis results using LISREL software package (Version 8.72).

Latent independent Variables	Latent dependent variables	
	Market Activity	Market Size
Individuality	0.3618*** (4.285)	0.8732*** (12.895)
Market size	0.5472*** (6.895)	
Errorvar	0.2239 (7.199)	0.2376 (8.009)
Squared multiple correlation (R^2)	0.7761	0.7624

Further analysis of the uni-dimensional structural equation model shows that individuality has a significant positive relationship with stock market activity (Table 4.13). The regression coefficient has a value of 0.3618 and t-value of 4.285 at the 0.99 confidence level. This means that an increase in individuality is usually associated with an increase in stock market activity and vice versa. Similarly, test results show that individuality has a significant positive relationship with stock market size. The regression coefficient has a value of 0.8732 and t-value of 12.8949 at the 0.99 confidence level. This means that an increase in individuality is usually associated with an increase in stock market size and vice versa.

Finally, test results show a significant positive relationship between stock market size and stock market activity. The regression coefficient has a value of 0.5472 with a t-value of 6.895 at the 0.99 confidence level (Table 4.13). This means that an increase in stock market size is usually associated with an increase in stock market activity and vice versa.

Figure 4.5: The uni-dimensional structural equation model for individuality and stock market development indicators. Unidirectional arrows indicate parameters' estimates (equivalent to regression coefficients). X10 is Number of people living in cities, X11 is real Gross National Income, X12 is real Income per Capita. Sq is square root. ind is individuality. Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies. dsq is first difference and square root. Act is market activity, size is market size Source: Study analysis results using LISREL software package (Version 8.72).



(4/4/2) The multi-dimensional structural equation model

The multi-dimensional structural equation model is implemented to highlight the relationships between all cultural values and stock market development indicators simultaneously. The cultural values model consists of three latent constructs, which are: power distance, uncertainty avoidance and individuality. While, the stock market development indicators model include two constructs, which are: stock market activity and size (Figure 4.6). In general, test results (Table 4.14) show a chi-sq/df of 4.26 which is relatively higher than the acceptable level of 2.00, as suggested by Sudarwan and Fogarty (1996). The root mean square residual (RMSR) has a value of 0.161, which is higher than the acceptable benchmark of 0.100, as suggested by Kalbers and Fogarty (1993). The goodness of fit index (GFI) and the adjusted goodness of fit index (AGFI) of 0.68 and 0.55, are relatively lower than the general acceptable rule of thumb of 0.90, as suggested by Bagozzi and Yi (1988) (Appendix 15)

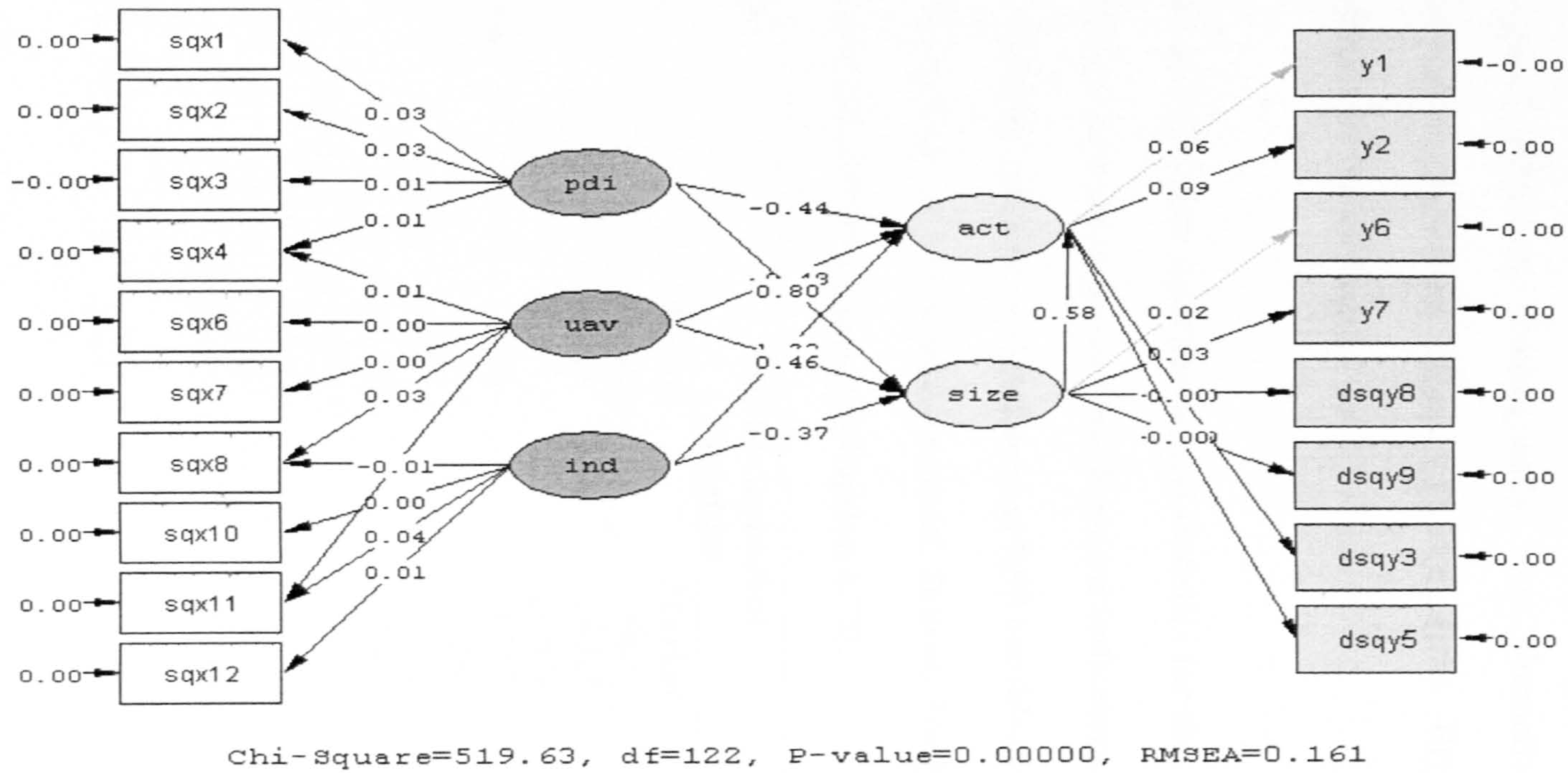
Nevertheless, this model is still considered as the best available fit model for data set under consideration. In addition, the model reveals significant and useful explanatory relationships among the constructs. Therefore, the third null hypothesis (H_0) which states that: "There is no significant relationship between cultural values and stock market development indicators" is rejected.

Table 4.14: The multi-dimensional structural equation model for culture values and stock market development indicators: Goodness of fit statistics. All variables model: power distance, uncertainty avoidance, individuality, stock market activity and stock market size.

Source: study analysis results using LISREL software package (Version 8.72).

Models	Description	Fit Statistics							
		Chi-Square (X2)	Degrees of Freedom (DF)	Chi-square/df	Root mean square residual (RMSR)	Goodness of fit Index (GFI)	Adjusted goodness of fit index (AGFI)	Normed Fit Index (NFI)	Non normed Fit Index (NNFI)
1	All variables	519.63	122	4.26	0.161	0.68	0.55	0.942	0.941

Figure 4.6: The multi-dimensional structural equation model for culture values and stock market development indicators. Unidirectional arrows indicate parameters' estimates (equivalent to regression coefficients). X1 is number of telephone lines, X2 is ratio of number of telephone lines to total population, X3 is total number of students' enrolment, X4 is ratio of total number of students' enrolment to total population, X6 is real Fluctuations of foreign currency rate, X7 is real Gross Domestic Product, X8 is real Gross National Income, X10 is Number of people living in cities, X11 is real Gross National Income, X12 is real Income per Capita. Sq is square root. Pdi is power distance, uae is uncertainty avoidance, ind is individuality. Y1 is real value of Trade, Y2 is volume of Trade, Y3 is number of Transactions, Y5 is real value of new issues including capital gains as % of GDP, Y6 is real market capitalization, Y7 is real market capitalization as a % of GDP, Y8 is volume of share listed, Y9 is volume of shares listed as % of listed companies. dsq is first difference and square root. Act is market activity, size is market size. Source: Study analysis results using LISREL software package (Version 8.72).



The third main null hypothesis is further divided into thirteen alternative hypotheses to cover the range of relationships among the study variables. However, since masculinity and time horizon are excluded from the measurement model of cultural values, and since liquidity and concentration are excluded from the measurement model of stock market development indicators. Consequently, nine alternative hypotheses are excluded from the analysis, which are H(a), H(d), H(e), H(h), H(i), H(j), H(k), H(l), and H(m) (see Chapter 3 Methodology).

Table 4.15: The multi-dimensional structure equation model statistics for the relationship between cultural values and stock market development indicators. T-values are in parenthesis. (*) indicate results are significant at 0.90 confidence level. (***) indicate results are significant at 0.99 confidence level. Source: Study analysis results using LISREL software package (Version 8.72).

Latent independent Variables	Latent dependent variables	
	Market Activity	Market Size
Power Distance	-.438	0.801*
	(-.854)	(1.65)
Uncertainty Avoidance	-.483	0.457
	(-1.22)	(1.26)
Individuality	1.23*	-.365
	(1.70)	(.539)
Market size	0.5840***	
	(6.40)	
Errorvar	.233	.205
	(6.81)	(8.08)
Squared multiple correlation (R^2)	0.76	0.79

Test results for the remaining alternative hypothesis show the following (Table 4.15): first, the proxy variables of power distance have an insignificant negative relationship with stock market activity. The regression coefficient has a value of -.438 and t-value of -.854 at the 0.90 confidence level.

In contrast, the proxy variables of power distance have a significant positive relationship with stock market size (Table 4.15). The regression coefficient has a value of 0.801 and t-value of 1.65 at the 0.90 confidence level. However, the proxy variables of power distance are predicted to have a negative relationship with the "power distance" cultural value. As a result, it can be concluded that there is a significant negative relationship between power distance and stock market size (Table 4.16). This means that an increase in power distance is usually associated with a decrease in stock market size and vice versa.

Table 4.16: The relationships between stock market size and proxy variables of power distance

Stock Market Size	Proxy Variables of power distance	Power Distance
Positive (+)	Positive (+)	Negative (-)

Second, the analysis results show an insignificant negative relationship between the proxy variables of uncertainty avoidance and stock market activity (Table 4.15). The regression coefficient has a value of -.483 and t-value of -1.22 at the 0.90 confidence level. Therefore, the alternative hypothesis *H(b)* which states that "There is a significant relationship between uncertainty avoidance and market activity" is rejected.

Similarly, test results show that there is an insignificant positive relationship between the proxy variables of uncertainty avoidance and stock market size (Table 4.15). The regression coefficient has a value of 0.457 and t-value of 1.26 at the 0.90 confidence level. Therefore, the alternative hypothesis $H_{(c)}$ which states that "There is a significant relationship between uncertainty avoidance and stock market size" is rejected.

Third, test results show that individuality has a significant positive relationship with stock market activity (Table 4.15). The regression coefficient has a value of 1.23 and a t-value of 1.70 at the 0.90 confidence level. This means that an increase in individuality is usually associated with an increase in stock market activity and vice versa. Therefore, the alternative hypothesis $H_{(f)}$ which states that "There is a relationship between individuality and market activity" is not rejected

In contrast, the analysis results show that there is an insignificant negative relationship between individuality and stock market size. The regression coefficient has a value of -.365 and t-value of .539 at the 0.90 confidence level. Therefore, the alternative hypothesis $H_{(g)}$ which states that "There is a relationship between individuality and stock market size" is rejected. Finally, test results indicate a significant positive relationship between stock market activity and stock market size. The regression coefficient has a value of 0.5840 and t-value of 6.40 at the 0.99 confidence level. This means that an increase in stock market size is usually associated with an increase in stock market activity and vice versa.

(4/5) Summary

The main aim of this chapter is to present the detailed statistical data analysis results for the relationship between cultural values and stock market development indicators in the United Kingdom, during the period 1990-2004. The explanatory statistical analysis procedures and the data screening process are first outlined. Then, two separate measurement models for cultural values and stock market development indicators are implemented. This is followed by presenting the uni-dimensional structural equation models between each cultural value and stock market development indicators to overcome the problem of multicollinarity among the independent variables. Finally, the multi-dimensional structural equation models are set out for the relationship between all cultural values and stock market development indicators. In general, the statistical analysis process has successfully managed to achieve the study objectives by highlighting some significant relationships between the independent cultural values and the dependent stock market development indicators. This is as follows:

First, the measurement model for the cultural values, using confirmatory factor analysis (CFA), reveals that the three factor cultural values model is the best model to fit the data-set. This three factor model consists of: power distance, uncertainty avoidance, and individuality. Therefore, the first null hypothesis which states that: "power distance, uncertainty avoidance, individuality, masculinity and time horizon do not represent distinct dimensions of cultural values" is not rejected. Second, the measurement model for the stock market development indicators, using confirmatory factor analysis (CFA), reveals that the two factor model is the best model to fit the data-set. This two factors model consists of: stock market activity and size. Therefore, the second null hypothesis which states that: "Activity, size, liquidity and concentration do not represent distinct dimensions of stock market development" is not rejected.

Third, the uni-dimensional structure equation models show significant relationships between each independent cultural value and the dependent stock market development indicators. Test results show that there are significant negative relationships between power distance, uncertainty avoidance on the one hand, and stock market activity and size on the other hand, at the 0.99 confidence level. By contrast, there is a significant positive relationship between individuality and stock market activity and size at the 0.99 confidence level.

Fourth, the multi-dimensional structure equation model, for the relationship between all the independent cultural values and the dependent stock market development indicators, shows that: there is a significant negative relationship between power distance and stock market size at the 0.90 confidence level. In addition, there is a significant positive relationship between individuality and stock market activity at the 0.90 confidence level. Therefore, the third null hypothesis which states that: "There is no significant relationship between cultural values and stock market development indicators" is rejected. Furthermore, test results show a significant positive relationship between stock market activity and stock market size at the 0.99 confidence level. Finally, further discussions of these results are dealt with in chapter six.

CHAPTER 5 DATA ANALYSIS FOR CULTURAL VALUES AND CORPORATE GOVERANANCE

Some previous theoretical and empirical research studies show that corporate governance systems are among the most important issues influencing the stock market development worldwide (see De-Jong and Semenov, 2002). As a result, this study is extended to explore the impact of cultural values on corporate governance systems across twenty four countries around the globe including the United Kingdom.

Consequently, the main aim of this chapter is to present the detailed statistical data analysis procedures and results for the relationships between cultural values and corporate governance systems. This statistical analysis is designed to examine the main study hypothesis and to explore the relationships predicted. Cultural values are represented by the five dimensions of Hofstede (1980) cultural value model, which are: power distance, uncertainty-avoidance, individuality, masculinity and time horizon. While corporate governance systems are represented by eight elements, which are: board size, separation chair and CEO, independence per board, audit committee, remuneration disclosure, women on board, code of ethics and ethics systems.

In this context, this chapter consists of four main sections which unfold as follows: the first section starts with a preview of the statistical analysis procedures implemented in this study. The second section deals with the preliminary data screening process. This is followed by the third section which is divided into eight consecutive sub-sections, to explain the analysis-process, results and evaluation for each relationship between cultural values and corporate governance systems. The final section concludes with a summary of results.

(5/1)Statistical procedures

The explanatory statistical procedures implemented in this chapter are in light of the methodology of De-Jong and Semenov (2002). As usual, the analysis starts with a preliminary screening of the data-set using descriptive statistics, to identify the main characteristics of the data-set under consideration. This is extremely helpful to detect any data problems and to consequently plan for suitable statistical treatments at an early stage. This is followed by the explanatory multiple regression analysis for the full data-set to highlight the relationship between cultural values and eight corporate governance systems. Subsequently, the stepwise multiple regression analysis models are implemented to eliminate the problem of multicolllinearity among the independent variables. A weighted least square regression analysis is implemented whenever necessary to eliminate the problem of heteroscedasticity of residuals. Finally, an evaluation and assessment is conducted for every model to ensure the reliability and validity of the results.

(5/2) Preliminary data screening

The purpose of the preliminary data screening is to have an insight into the data characteristics and to allocate potential problems which may distort the data analysis process. This will help to choose the suitable statistical analysis techniques and to prepare necessary statistical treatment plans for the data-set in advance. This process passes through five consecutive steps as follows: first, six interaction terms are added to the analysis to represent the inter-relationships between the independent cultural values.

Second, a cross-correlation matrix between the independent variables is computed to examine the existence of any high correlations between these variables (Table 5.1). This analysis shows some significant correlations between the independent variables. There is a significant negative relationship between power distance and individuality. The correlation coefficient has a value of -.550 with p-value of .003 at the 0.99 confidence level. This means that an increase in power distance is associated with a decrease in individuality and vice versa. In addition, there is a significant positive relationship between uncertainty-avoidance and power distance. The correlation coefficient has a value of 0.349 with p-value of 0.051 at the 0.90 confidence level. This means that an increase in uncertainty-avoidance is usually associated with an increase in power distance across the sample countries and vice versa. These results are interestingly consistent with previous longitudinal study results in the United Kingdom during period 1991-2004 (See Chapter 4).

Furthermore, the cross-correlation matrix shows twenty-six significant correlations among the interaction terms of cultural values, as well as other independent variables. Overall, these results signal the existence of a multicollinearity problem between independent variables, which suggests the use of the stepwise multiple regression analysis in a later statistical analysis stage to eliminate this problem. Finally, data screening shows that there are 13 missing values for the "time horizon" independent cultural value. Therefore, this independent variable is excluded from the analysis to avoid reducing the sample size. In addition, one of the observations under consideration for "Luxembourg" is excluded list-wise from the analysis due to the existence of missing values. So, the number of observations (N) used in this analysis came down to 23 countries.

Table 5.1: The cross correlation matrix between the independent cultural values. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. (*) indicate values are significant at the 0.90 confidence level, (**) indicate values are significant at the 0.95 confidence level. (***) indicate values are significant at the 0.99 confidence level.

Values in brackets are p-values. Source: Study analysis results using SPSS software (Version 14.00)

	PDI	UAV	IND	MAS	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
PDI	1.00									
UAV	.349* (.051)	1.00								
IND	-.550*** (.003)	-.089 (.343)	1.00							
MAS	.018 (.467)	.135 (.269)	-.001 (.498)	1.00						
PDI_UAV	.675*** (.000)	.901*** (.000)	-.225 (.151)	.024 (.457)	1.00					
PDI_IND	.461** (.013)	.448** (.016)	.457** (.014)	.048 (.415)	.593*** (.001)	1.00				
PDI_MAS	.692*** (.000)	.253 (.122)	-.340* (.056)	.687*** (.000)	.434** (.019)	.368** (.042)	1.00			
UAV_IND	.131 (.276)	.792*** (.000)	.450** (.016)	.171 (.217)	.667*** (.000)	.753*** (.000)	.163 (.228)	1.00		
UAV_MAS	.155 (.240)	.681*** (.000)	-.032 (.442)	.763*** (.000)	.524*** (.005)	.274 (.103)	.624*** (.001)	.593*** (.001)	1.00	
IND_MAS	-.245 (.130)	.087 (.347)	.540*** (.004)	.822*** (.000)	-.066 (.383)	.314* (.072)	.383** (.036)	.397** (.030)	.587*** (.002)	1.00

(5/3) Cultural values and board size

The analysis of the relationship between the independent cultural values and the dependent corporate governance system: "Board Size", follows the following procedure: the analysis process starts with a multiple regression analysis for the full study variables; which is followed by a stepwise multiple regression analysis to eliminate the problem of multicollinearity among the independent variables. Note that the evaluation and assessment of each statistical model is presented in each sub-section. This is as follows:

(5/3/1) Multiple regression analysis (full model)

In the previous section the most important data characteristics have been identified. It is time now to use the multiple regression analysis technique for the full model to highlight the relationships between the cultural values (independent variables) and corporate governance systems (dependent variable). Cultural values are represented by four variables which are labelled: power distance (PDI), uncertainty avoidance (UAV), individualism (IND), and masculinity (MAS). In addition, six interaction terms are added to the analysis to represent the interrelationships between the cultural values, while corporate governance systems are represented by one main variable which is labelled "board size" (Appendix 16).

In general, the overall results of the full regression model show weak fit statistics (Table 5.2). The R-square for the overall model has a low value of 43.8%; F-statistic has a value of only .935 with an insignificant p-value of .536 at the 0.95 confidence level. This means that the regression coefficients of the model are not significantly different from zero. Further analysis shows that there are no significant relationships between cultural values and board size. Test results show that t-values for all independent cultural values are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level.

Table 5.2: The full multiple regression analysis model for the relationship between cultural values and board size. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Sig= significance level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Board Size				
	Regression coefficient (B)	Standard error	t-Statistics	Sig.	N
Constant	47.574	32.325	1.472	.167	23
PDI	-.395	.451	-.874	.399	23
UAV	-.052	.292	-.180	.860	23
IND	-.543	.403	-1.346	.203	23
MAS	-.037	.368	-.099	.923	23
PDI_UAV	.000	.003	.152	.882	23
PDI_IND	.009	.006	1.620	.131	23
PDI_MAS	-.003	.004	-.692	.502	23
UAV_IND	-.001	.002	-.573	.577	23
UAV_MAS	.001	.003	.463	.652	23
IND_MAS	.002	.004	.424	.679	23
Multiple correlation coefficient			.662		
R-square			.438		
Adjusted R^2			-.030		
Regression standard error			3.47253		
F-test			.935		
Sig.			.536		

(5/3/1/1) Evaluation and assessment

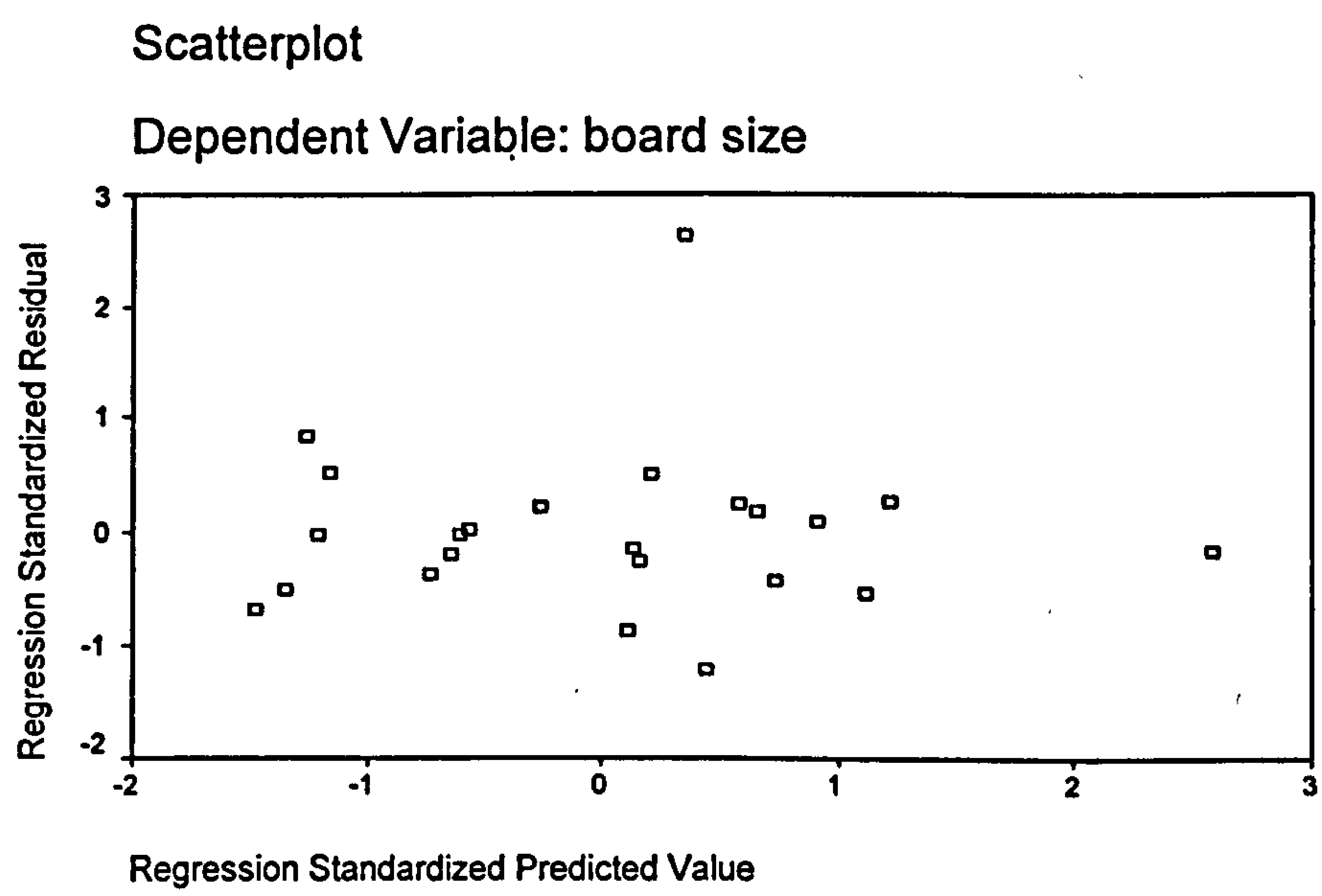
An assessment and review of the previous full multiple regression model is conducted using several tests and measures. First, the analysis of the case-wise diagnostics output shows that there are no observations with standard residual value more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) used in this analysis equal to 23 countries. During the analysis process the observation for "Luxembourg" is excluded list-wise from the analysis, due to the existence of missing values.

Table 5.3: The Variance Inflation Factors (VIF) for the relationship between independent cultural values and board size. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Source: Study analysis results using SPSS software (Version 14.00)

	Collinearity Statistics	
Independent Variables	**Tolerance**	**VIF**
Constant	.009	114.26
PDI	.009	115.89
UAV	.009	114.58
IND	.007	139.92
MAS	.014	72.64
PDI_UAV	.015	66.39
PDI_IND	.017	60.33
PDI_MAS	.032	31.05
UAV_IND	.018	56.80
UAV_MAS	.011	95.18

Second, test results show that all independent cultural variables have variance inflation factors (VIF) greater than the rule of thumb benchmark of 5 degrees (Table 5.3). This means that the study model does suffer from the problem of multicollinearity between independent variables. Therefore, the stepwise multiple regression analysis technique is going to be used to eliminate this problem in the next section.

Figure 5.1: The full regression standardized predicted and residuals values for the relationship between cultural values and board size. Source: Study analysis results using SPSS software (Version 14.00)



Finally, the scatter plot for the relationship between the regression standardized predicted value (x-axis) and regression standardized residuals (y-axis) shows that data points are scattered randomly across the panel with some signs of trend and/or cluster (Figure 5.1). As a rule of thumb, this may indicates that the model suffers from heteroscedasticity of residuals. Consequently, the full data set is tested for the existence of heteroscedasticity of residuals using Goldfeld-Quandt (G-Q) test statistics (Table 5.4). Test results show that the G-Q (F) statistic has a value of 0.0053, which is lower than the F (critical value) of 0.531 at the 0.95 confidence level. This means that the full regression model does not suffer from the problem of heteroscedasticity of residuals. Therefore, the null hypothesis of no heteroscedasticity is not rejected.

Table 5.4: The Goldfeld-Quandt (F) Statistic for the relationship between cultural values and board size. Source: Study analysis results using E-views statistical software package (Version 3.1)

Goldfeld-Quandt F Statistic	0.005334
$F_{(.95, 10, 10)}$ critical value	0.531523

The next section takes a step forward in the analysis process by implementing the stepwise multiple regression analysis technique on the data-set.

(5/3/2) Stepwise multiple regression analysis

In the previous section, the full multiple regression analysis shows no significant relationship between cultural values and board size. In this section, the stepwise multiple regression analysis technique is used to identify and exclude any independent variables which may have significant relationships with other independent variables. In general, test results show that none of the independent cultural value manages to explain the dependent board size significantly (see Appendix 16). This means that there is no significant relationship between cultural values and board size at the 0.95 confidence level. Therefore, the alternative hypothesis which states that "There is a relationship between cultural values and board size" is rejected.

To sum up, this section has successfully managed to achieve the study objectives by highlighting the relationships between cultural values and board size. The successful implementation of this statistical analysis strategy provides an additional incentive to extent this process to cover the rest of the study variables. In the next section, a similar statistical process is used to shed some light on the relationships between cultural values and the remaining seven corporate governance systems.

(5/4) Cultural values and separation chair and CEO

The analysis of the relationship between the independent cultural values and the dependent corporate governance system "separation chair and CEO", follows the following procedure: The analysis process starts with a multiple regression analysis for the full study variables. This is followed by a stepwise multiple regression analysis to eliminate the multicollinearity problem. Then, a weighted least squares regression analysis (WLS) is implemented whenever necessary to overcome the problem of heteroscedasticity of residuals. Note that an evaluation and assessment of each statistical model is presented in each sub-section. This is as follows:

(5/4/1) Multiple regression analysis (full model)

The multiple regression analysis technique for the full study variables is first used to highlight the relationships between the cultural values (independent variables) and corporate governance systems (dependent variables). Cultural values are represented by four variables labelled power distance (PDI), uncertainty avoidance (UAV), individualism (IND), and masculinity (MAS). In addition, six interaction terms are added to the analysis to represent the interrelationships between cultural variables. Corporate governance systems are represented by one main variable which is labelled "separation chair and CEO" (Appendix 17).

In general, the overall results of the model show weak fit statistics (Table 5.5). The R-square for the overall model has a moderate value of 54.2%; F-statistic has an insignificant value of 1.419, with a p-value of .279 at the .95 confidence level. The detailed analysis of the results shows that there is no significant relationship between any cultural value and corporate governance system "separation chair and CEO". Test results show that t-values for all cultural values are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level.

Table 5.5: The full multiple regression analysis model for the relationship between cultural values and separation chair and CEO. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Sig= significance level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

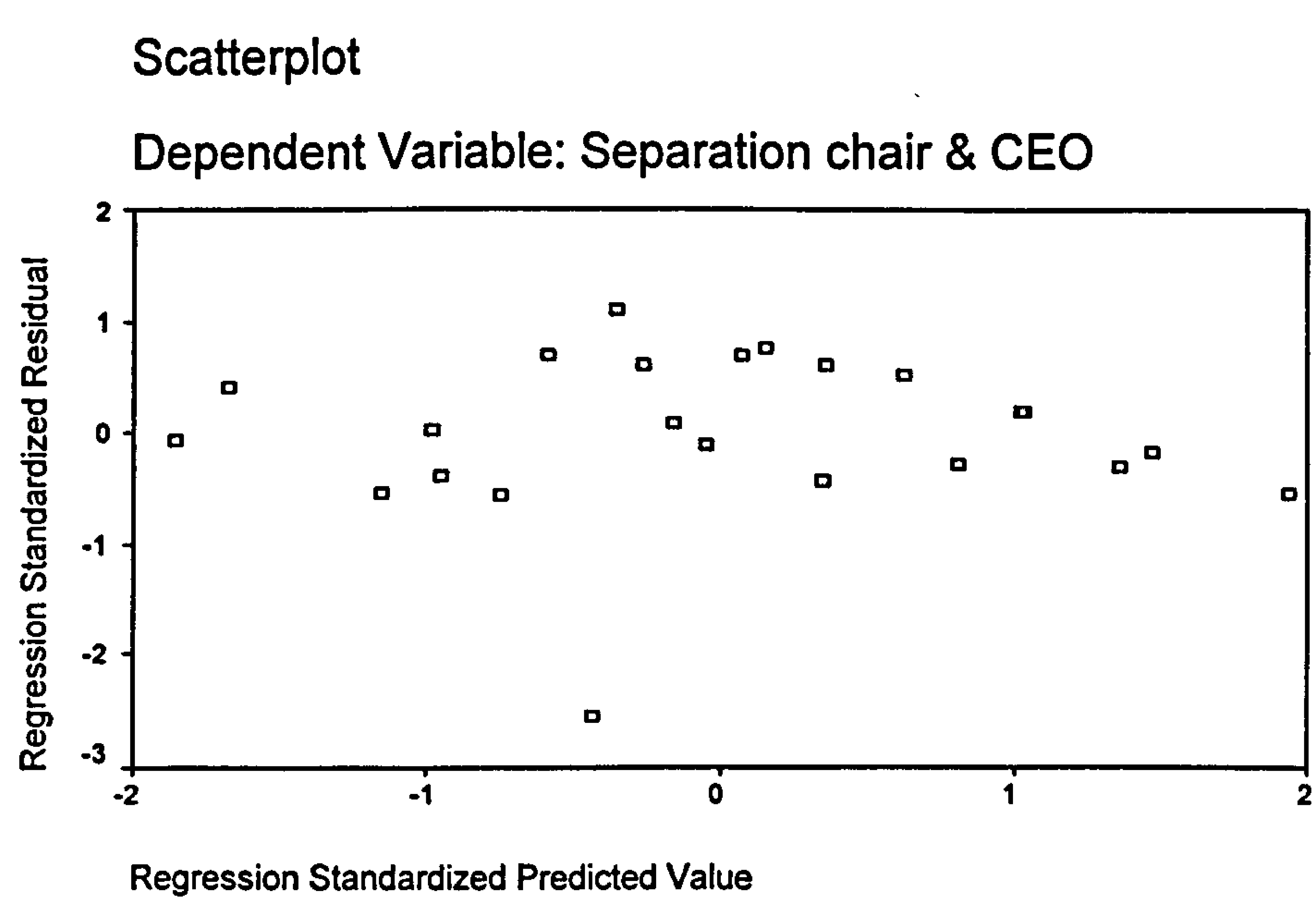
Variables	Separation chair and CEO				
	Regression coefficient (B)	Standard error	t-Statistics	Sig.	N
Constant	255.041	178.080	1.432	.178	23
PDI	-1.145	2.487	-.461	.653	23
UAV	-1.838	1.606	-1.144	.275	23
IND	-1.461	2.220	-.658	.523	23
MAS	-1.034	2.027	-.510	.619	23
PDI_UAV	.010	.017	.613	.551	23
PDI_IND	-.007	.031	-.237	.817	23
PDI_MAS	-.002	.025	-.086	.933	23
UAV_IND	.020	.014	1.490	.162	23
UAV_MAS	.004	.015	.280	.784	23
IND_MAS	.011	.021	.522	.611	23
Multiple correlation coefficient			.736		
R-square			.542		
Adjusted R^2			.160		
Regression standard error			19.130		
F-test			1.419		
Sig.			.279		

(5/4/1/1) Evaluation and assessment

An assessment and review of the full multiple regression model is conducted using several tests and measures. First, the analysis of the case-wise diagnostics output of all study observations shows that there are no observations with a standard residual value more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) used in this analysis is equal to 23. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Second, test results show that Variance Inflation Factors (VIF) for all independent variables are greater than the rule of thumb benchmark of 5 degrees (see Table 5.3). This means that the study model does suffer from the problem of multicollinearity between independent variables. Therefore, the stepwise multiple regression analysis technique is going to be used to eliminate this problem.

Figure 5.2: The full regression standardized predicted and residuals values for the relationship between cultural values and separation chair and CEO. Source: Study analysis results using SPSS software (Version 14.00)



Finally, the scatter plot (Figure 5.2) for the relationship between the regression standardized predicted value (x-axis) and regression standardized residuals (Y-axis), shows that data points are not scattered evenly across the centre of the panel. As a rule of thumb, this may indicate that the model suffers from heteroscedasticity of residuals. This is an issue that is going to be further addressed in subsequent analysis. The next section takes a step forward in the analysis process by implementing the stepwise multiple regression analysis technique on the data-set.

(5/4/2) Stepwise multiple regression analysis

In the previous section, the full multiple regression analysis model shows no significant relationship between cultural values and "separation chair and CEO". In this section, the stepwise multiple regression analysis technique is used to eliminate the problem of multicollinearity among the independent variables (Appendix 17). The overall fit statistics for the stepwise model shows that the R-square has a value of 37% compared to a value of 54.2% for the full model (Table 5.6). The F-statistic has increased to a value of 12.320, compared to a value of 1.419 for the full model, with a significant p-value of .002 at the 0.99% confidence level. This result shows that the regression coefficients are significantly different from zero.

Further results show that only one independent cultural value which is labelled "power distance" manages to significantly explain the dependent variable "separation chair and CEO". There is a significant negative relationship between power distance and separation chair and CEO, since the regression coefficient has a value of -0.724 and t-value of -3.510 with p-value of 0.002 at the 0.99 confidence level. This means that an increase in power distance is significantly associated with a decrease in "separation chair and CEO" and vice versa.

Table 5.6: The stepwise multiple regression analysis for the relationship between cultural values and "separation chair and CEO". PDI= power distance. Sig= significance level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Separation chair and CEO				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	111.616	9.557	11.679***	.000	23
PDI	-.724	.206	-3.510***	.002	23
Multiple correlation coefficient			.608		
R-square			.370		
Adjusted R^2			.340		
Regression standard error			16.96		
F-test			12.320***		
Sig.			.002		

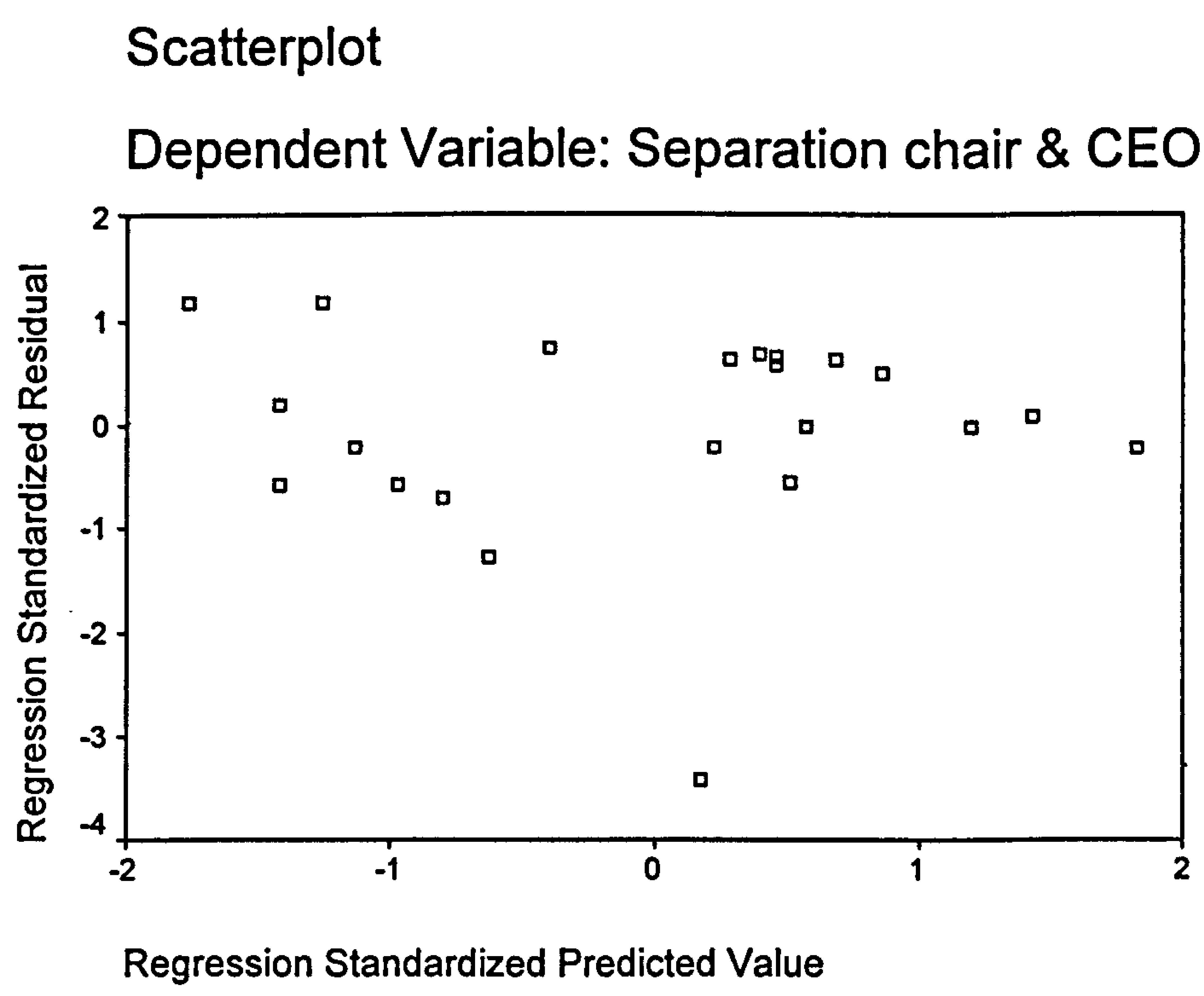
By contrast, several other insignificant cultural values are excluded from the analyses which include: uncertainty avoidance, individuality, masculinity, power distance/uncertainty avoidance, power distance/individuality, power distance/masculinity, uncertainty avoidance/individuality, uncertainty avoidance/masculinity, and finally individuality/masculinity. Test results show that t-values for all these excluded variables are below the 1.96 benchmark, with larger insignificant p-values at the 0.95 confidence level.

(5/4/2/1) Evaluation and assessment

A further assessment and review of the stepwise multiple regression model results is conducted using several test statistics. First, a review of the case-wise diagnostics output of all study observations shows that there is one observations with standard residual value of -3.405 which is more than the rule of thumb benchmark of (±3) standard deviation control limit. This observation is checked and it is found to be correct and hence it is kept in the analysis. Note that the number of observations (N) which is used in this analysis is 23 observations. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values. Second, the stepwise regression model does not show any sign of multicollinearity due to the exclusion of nine independent cultural values from the model.

Figure 5.3: The stepwise regression standardized predicted and residual values for the relationship between cultural values and separation chair and CEO.

Source: Study analysis results using SPSS software (Version 14.00)



Third, the scatter plot (Figure 5.3) for the regression results shows that data-points are not scattered evenly across the centre of the panel. As a rule of thumb, this means that the model may still suffers from heteroscedasticity of residuals. Consequently, the full data-set is tested for the existence of heteroscedasticity of residuals using

Goldfeld-Quandt (G-Q) test statistics (Table 5.7). Test results show that the G-Q (F) statistic has a value of 9.926, which is higher than the F (critical value) of 0.531 at the 0.95 confidence level. This means that the stepwise regression model results suffer from the problem of heteroscedasticity of residuals. Therefore, the null hypothesis of no heteroscedasticity is rejected. As a result, the Weighted Least Square regression analysis (WLS) is implemented to overcome this problem in the next section.

Table 5.7: The Goldfeld-Quandt (F) Statistic for the relationship between cultural values and separation of chair and CEO. Source: Study analysis results using E-views statistical software package (Version 3.1)

Goldfeld-Quandt F Statistic	9.926016
$F_{(.95, 10, 10)}$ critical value	0.531523

(5/4/3)Weighted least square regression analysis

In this section the weighted least square regression analysis is used to eliminate the problem of heteroscedasticity of residuals (Appendix 17). The overall fit statistics for the model shows that the overall R-square has a value of 90.6% compared to a value of 37% for the stepwise model (Table 5.8). The F-statistic has increased to a value of 96.240, compared to a value of 12.320 for the stepwise model, with a significant p-value of .000 at the 0.99% confidence level. This result shows that the regression coefficients are significantly different from zero.

Further results show that the power distance cultural value has a significant negative relationship with "separation chair and CEO", which is consistent with previous stepwise model results. The regression coefficient has a value of -.499, and t-value of

-9.810, with p-value of .000 at the 0.99 confidence level. This means that an increase in power distance is significantly associated with a decrease in "separation chair and CEO" across the sample countries and vice versa. Therefore, the alternative hypothesis which states that "There is a relationship between cultural values and separation chair and CEO" is not rejected.

Table 5.8: The Weighted Least Square regression analysis for the relationship between cultural values and separation chair and CEO. PDI= power distance. Sig= significance level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Separation chair and CEO				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	114.527	2.532	45.232***	.000	23
PDI	-.499	.051	-9.810***	.000	23
Multiple correlation coefficient			.952		
R-square			.906		
Adjusted R^2			.896		
Regression standard error			9.899		
F-test			96.240***		
Sig.			.000		

Overall, the analysis process in this section has successfully managed to identify a significant relationship between power distance and corporate governance system "separation of chair and CEO" across the twenty three sample countries worldwide. The next section shed some light on the relationship between cultural values and an additional corporate governance system, which is the "independence per board".

(5/5) Cultural values and independence per board

The analysis of the relationship between cultural values and the corporate governance system "Independence per Board", starts with a multiple regression analysis for the full study variables. This is followed by a stepwise multiple regression analysis to eliminate the problem of multicollinearity. Note that an evaluation and assessment of each statistical model is presented in each sub-section. This is as follows:

(5/5/1) Multiple regression analysis (full model)

The relationships between the independent cultural values and the dependent corporate governance systems are identified using the full multiple regression analysis model (Appendix 18). Cultural values are represented by four variables which include: power distance (PDI), uncertainty avoidance (UAV), individualism (IND), and masculinity (MAS). In addition, six interaction terms are added to the analysis to represent the interrelationship between the cultural variables. Meanwhile, corporate governance system is represented by the dependent variable "Independence per Board".

In general, the overall results of the model show that the R-square has a moderate value of 59.4%; the F-statistic has an insignificant value of 1.756, with a p-value of .176 at the 0.95 confidence level (Table 5.9). The detailed analysis of the results shows that there is no significant relationship between cultural values and independence per board. Test results show that t-values for all cultural values are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level.

Table 5.9: The full multiple regression analysis model for the relationship between cultural values and independence per board. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Sig= significance level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

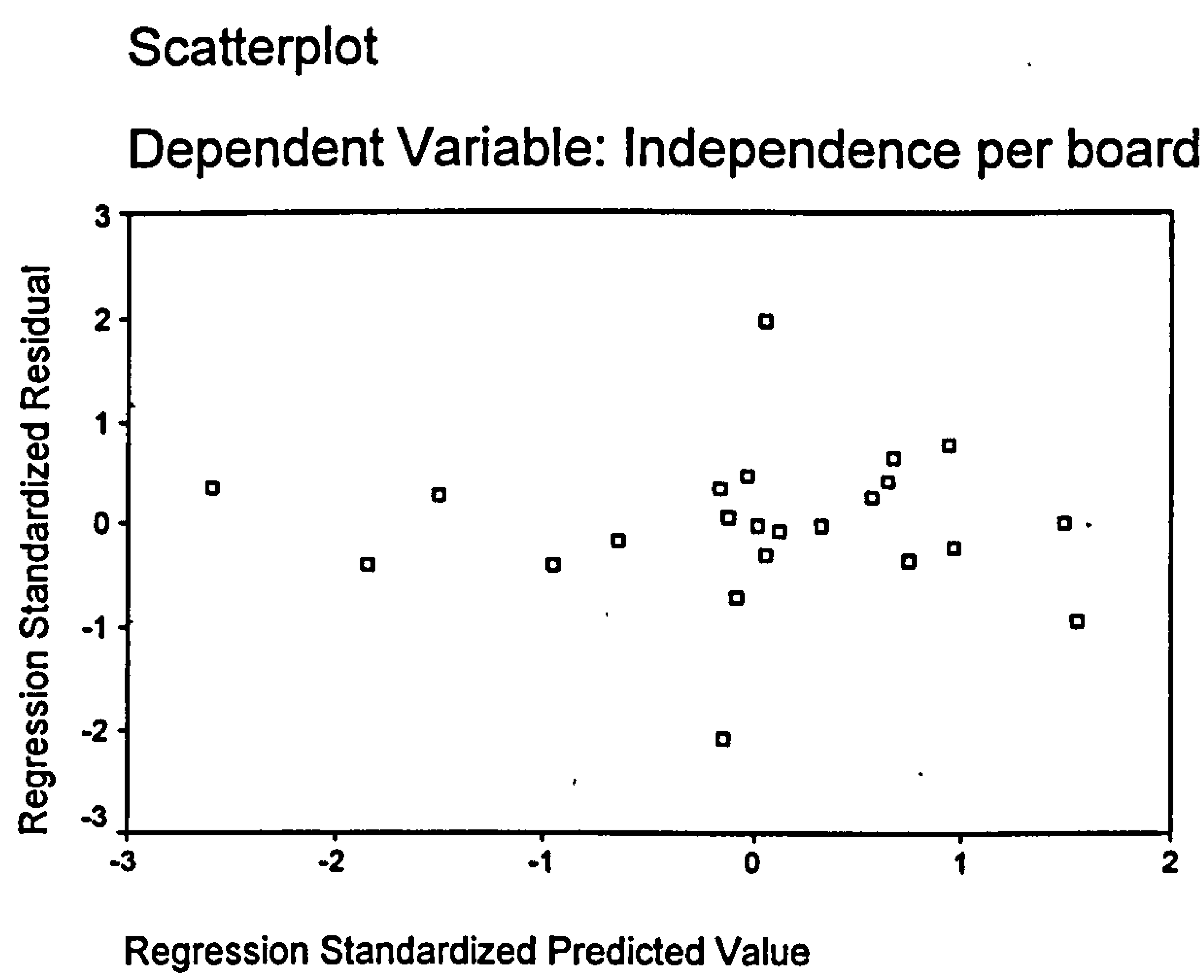
Variables	Independence per Board				
	Regression coefficient (B)	Standard error	t-Statistics	Sig.	N
Constant	95.821	175.75	.545	.596	23
PDI	-1.765	2.455	-.719	.486	23
UAV	1.157	1.585	.730	.480	23
IND	-.955	2.191	-.436	.671	23
MAS	-.628	2.001	-.314	.759	23
PDI_UAV	-.012	.017	-.700	.497	23
PDI_IND	.024	.031	.786	.449	23
PDI_MAS	.024	.024	.972	.350	23
UAV_IND	-.003	.013	-.227	.824	23
UAV_MAS	-.018	.015	-1.209	.250	23
IND_MAS	.009	.021	.454	.658	23
Multiple correlation coefficient			.771		
***R*-square**			.594		
Adjusted R^2			.256		
Regression standard error			18.881		
F-test			1.756		
Sig.			.176		

(5/5/1/1) Evaluation and assessment

The evaluation and assessment of the full regression model shows that: first, the analysis of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual value more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) used in this analysis is equal to 23. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Second, the Variance Inflation Factors (VIF) for all independent variables are greater than the rule of thumb benchmark of 5 degrees (See Table 5.3). This means that the study model does suffer from the problem of multicollinearity between independent variables. Therefore, the stepwise multiple regression analysis technique is going to be used to improve the overall fit of the model and to exclude any independent variables, which may have some impact on other independent variables.

Figure 5.4: The full regression standardized predicted and residuals values for the relationship between cultural values and independence per board. Source: Study analysis results using SPSS software (Version 14.00)



Finally, the scatter plot (Figure 5.4) for the relationship between the regression standardized predicted value (x-axis) and regression standardized residuals (Y-axis), shows that data points are not scattered evenly across the centre of the panel. As a rule of thumb, this may indicates that the model suffers from heteroscedasticity of residuals. This is an issue that is going to be further addressed in subsequent analysis.

The next section takes a step forward in the analysis process by implementing the stepwise multiple regression analysis technique on the data set.

(5/5/2) Stepwise multiple regression analysis

The multiple regression analysis full model in the previous section shows no significant relationship between cultural values and "independence per board". In this section, the stepwise multiple regression analysis technique is used to exclude any independent variables which have significant relationships with other independent variables (Appendix 18). The overall fit statistics for the model shows that the overall R-square has a value of 43.3% compared to a value of 59.4% for the full model (Table 5.10). The F-statistic has increased to a value of 7.628, compared to a value of 1.756 for the full regression model, with a significant p-value of .003 at the 0.99 confidence level. This means that the predictors' regression coefficients are significantly different from zero.

Further results show that two independent cultural values managed to explain the dependent corporate governance system "independence per board" (Table 5.10). The individuality cultural variable shows a significant positive relationship with "independence per board". Since, the regression coefficient has a value of .538 and t-value of 2.850, with p-value of .010 at the 0.95 confidence level. This means that an increase in individuality cultural value is usually associated with an increase in independence per board.

In addition, test results show a significant negative relationship between the interaction term "uncertainty avoidance/masculinity" (UAV_MAS) and "independence per board" (Table 5.10), since the regression coefficient is equal to -.005 and t-value of -2.578 with p-value of .018 at the 0.95 confidence level. This means that an increase in uncertainty avoidance and/or masculinity cultural values is usually associated with a decrease of corporate governance system "independence per board" across the sample countries. Therefore, the alternative hypothesis which states that "There is a relationship between cultural values and independence per board" is not rejected.

Table 5.10: The Stepwise Multiple regression analysis for the relationship between cultural values and independence per board. IND= individuality, UAV_MAS= interaction term of uncertainty avoidance and masculinity. Sig. = significance level. (**) indicates value significant at the 0.95 confidence level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Independence per board				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	22.082	13.974	1.580	.130	23
IND	.534	.188	2.850***	.010	23
UAV_MAS	-.005	.002	-2.578**	.018	23
Multiple correlation coefficient			.658		
R-square			.433		
Adjusted R^2			.376		
Regression standard error			17.28		
F-test			7.628***		
Sig.			.003		

In contrast, other eight independent cultural variables are excluded from the analyses. These variables are: power distance, uncertainty avoidance, masculinity, power distance/uncertainty avoidance, power distance/individuality, power distance/masculinity, uncertainty avoidance/individuality, and finally individuality/masculinity. Test results show that t-values for all these excluded variables are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level.

(5/5/2/1) Evaluation and assessment

A further assessment and review of the stepwise multiple regression model is conducted using several test statistics. First, a review of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) which is used in this analysis is 23 observations. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Table 5.11: The Variance Inflation Factors (VIF) for the relationship between independent cultural values and independence per board. IND= individuality, UAV_MAS= interaction term of uncertainty avoidance and masculinity. Source: Study analysis results using SPSS software (Version 14.00)

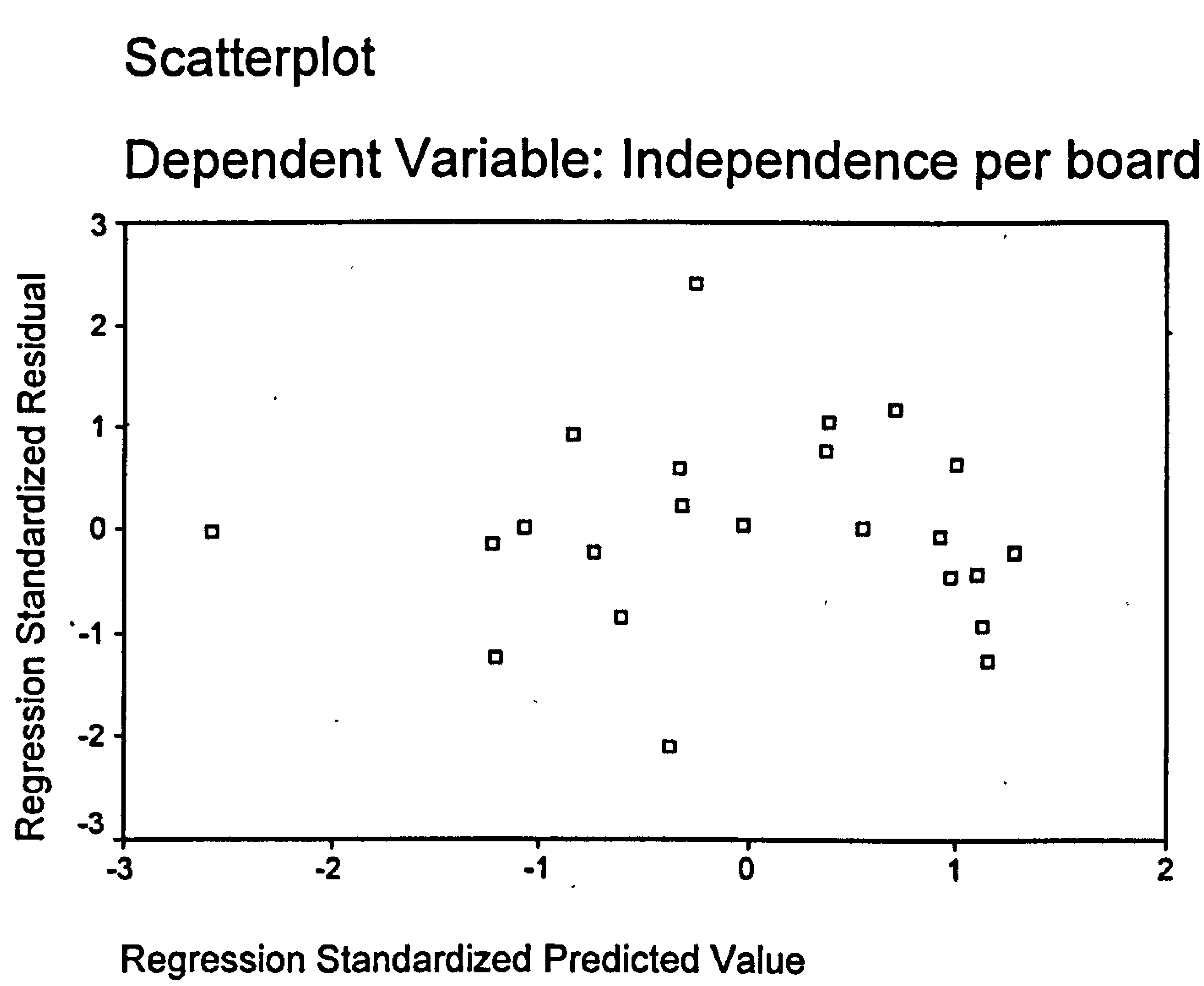
	Collinearity Statistics	
Independent Variables	**Tolerance**	**VIF**
Constant		
IND	.999	1.001
UAV_MAS	.999	1.001

Second, test results show that the Variance Inflation Factors (VIF) for individuality and uncertainty avoidance/masculinity has a value of 1.001 for both variables (Table

5.11). This is lower than the rule of thumb benchmark of 5 degrees, which means that the study model does not suffer anymore from the problem of multicollinearity between independent variables.

Figure 5.5: The stepwise regression standardized predicted and residuals values for the relationship between cultural values and independence per board.

Source: Study analysis results using SPSS software (Version 14.00)



Third, the scatter plot (Figure 5.5) for the relationship between the stepwise regression standardized predicted value (x-axis) and regression standardized residuals (Y-axis) shows that data points are still not scattered evenly across the centre of the panel. Consequently, the full data set is tested for the existence of heteroscedasticity of residuals using the Goldfield-Quandt (G-Q) test statistics (Table 5.12). Test results show that the G-Q (F) statistic has a value of 0.201, which is lower than the F (critical value) of 0.531 at the 0.95 confidence level. This means that the stepwise regression model results do not suffer from the problem of heteroscedasticity of residuals. Therefore, the null hypothesis of no heteroscedasticity is not rejected.

Table 5.12: The Goldfeld-Quandt (F) Statistic for the relationship between cultural values and independence per board. Source: Study analysis results using E-views statistical software package (Version 3.1)

Goldfeld-Quandt F Statistic	0.201443
$F_{(.95, 10, 10)}$ critical value	0.531523

Finally, the statistical analysis process in this section has successfully managed to identify a significant relationship between individuality and uncertainty avoidance/masculinity on one side, and "independence per board" on the other side across twenty three sample countries. The next section focuses on the relationship between cultural values and audit committee.

(5/6) Cultural values and audit committee

The analysis of the relationship between cultural values and the "audit committee" corporate governance system starts with a multiple regression analysis for the full study variables. This is followed by a stepwise multiple regression analysis to eliminate the multicollinearity problem. Then, a weighted least squares regression analysis is implemented to overcome the problem of heteroscedasticity of residuals. Note that an evaluation and assessment of each statistical model implemented is presented in each sub-section. This is as follows:

(5/6/1) Multiple regression analysis (full model)

The multiple regression analysis technique for the full model is used to explore the relationships between the independent cultural values and the dependent corporate governance systems (Appendix 19). Cultural values are represented by four variables which include: power distance (PDI), uncertainty avoidance (UAV), individualism (IND), and masculinity (MAS). Six interaction terms are added to the analysis to represent the interrelationships between the cultural values. Corporate governance system is represented by the dependent variable "audit committee".

In general, the overall results of the model show that the R-square has a moderate value of 77.7%; the F-statistic has a significant value of 4.172, with a p-value of .011 at the 0.95 confidence level (Table 5.13). The detailed analysis of the results shows that there is no significant relationship between cultural values and audit committee. Test results show that t-values for all cultural values are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level.

Table 5.13: The full multiple regression analysis model for the relationship between cultural values and audit committee. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Sig= significance level. (**) indicates significant values at the 0.95 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

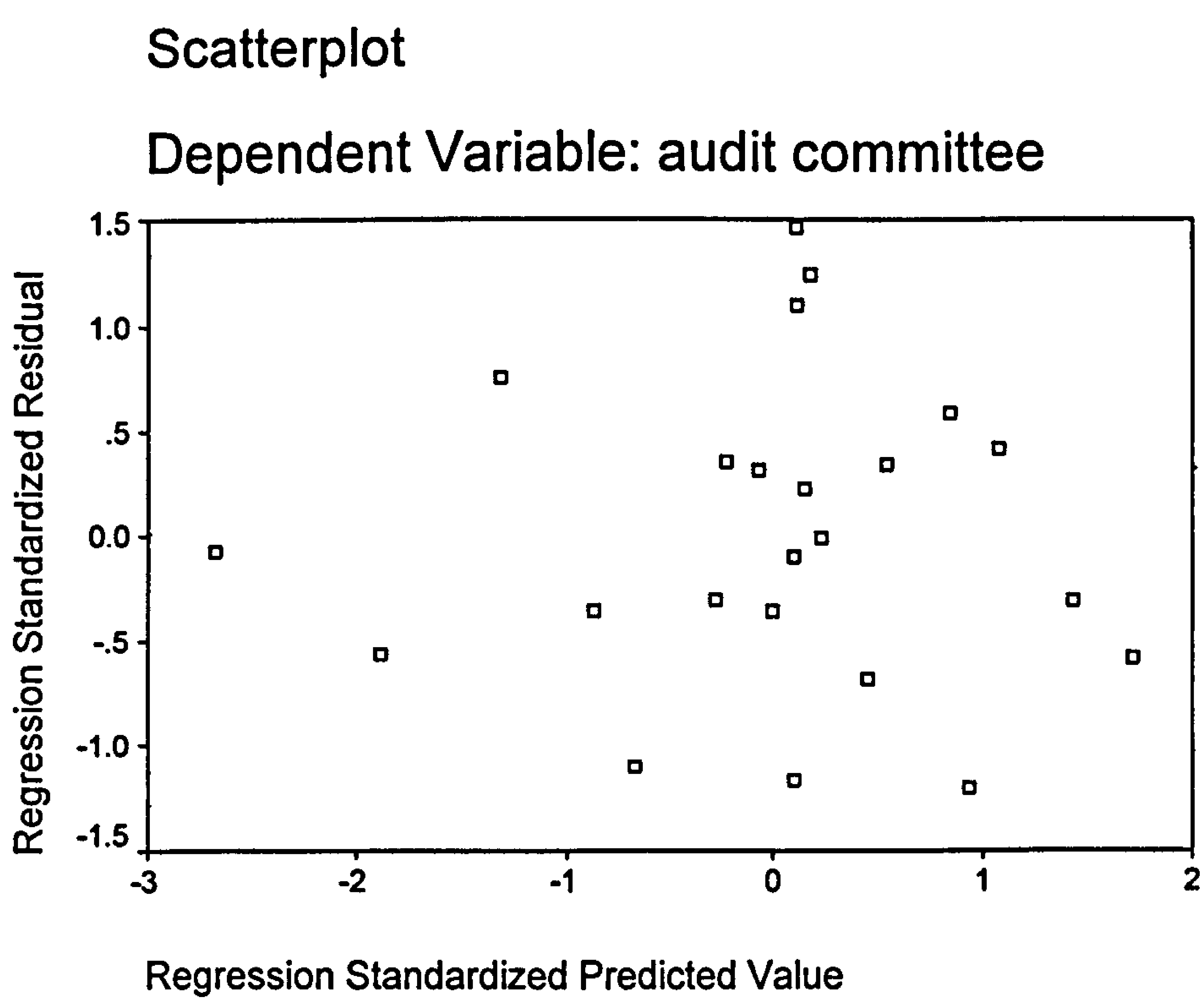
Variables	Audit Committee				
	Regression coefficient (B)	Standard error	t-Statistics	Sig.	N
Constant	134.635	157.661	.854	.410	23
PDI	-1.879	2.202	-.854	.410	23
UAV	.439	1.422	.309	.763	23
IND	-1.215	1.966	-.618	.548	23
MAS	.000	1.795	.000	1.00	23
PDI_UAV	-.002	.015	-.113	.912	23
PDI_IND	.024	.028	.877	.398	23
PDI_MAS	.019	.022	.889	.391	23
UAV_IND	.001	.012	.113	.912	23
UAV_MAS	-.025	.013	-1.886	.084	23
IND_MAS	.011	.019	.602	.558	23
Multiple correlation coefficient			.881		
R-square			.777		
Adjusted R^2			.590		
Regression standard error			16.937		
F-test			4.172**		
Sig.			.011		

(5/6/1/1) Evaluation and assessment

The evaluation and assessment of the previous model show that: first, the analysis of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual value more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) used in this analysis equal to 23. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Second, the Variance Inflation Factors (VIF) for all independent variables are greater than the rule of thumb benchmark of 5 degrees (See Table 5.3). This means that the study model suffers from the problem of multicollinearity between independent variables. Therefore, the stepwise multiple regression analysis technique is used to improve the overall fit of the model and to exclude any independent variables, which may have some impact on other independent variables.

Figure 5.6: The full regression standardized predicted and residuals values for the relationship between cultural values and audit committee. Source: Study analysis results using SPSS software (Version 14.00)



Finally, the scatter plot (Figure 5.6) for the relationship between the regression standardized predicted value (x-axis) and regression standardized residuals (Y-axis) shows that data points are not scattered evenly across the centre of the panel. As a rule of thumb, this may indicates that the model suffers from heteroscedasticity of residuals. This is an issue that is going to be further addressed in subsequent analysis. The next section takes a step forward in the analysis process by implementing the stepwise multiple regression analysis technique on the data set.

(5/6/2) Stepwise multiple regression analysis

The full multiple regression analysis model in the previous section shows no significant relationship between cultural values and audit committee. In this section the stepwise multiple regression analysis technique is used to eliminate the multicollinearity among the independent variables. In general, the overall fit statistics for the model shows that the R-square has a value of 56.5% compared to a value of 77.7% for the full model. The F-statistic has almost tripled to reach a value of 13.01, compared to a value of 4.17 for the full regression model, with a significant p-value of .000 at the 0.99 confidence level (Table 5.14). This means that the regression coefficients are significantly different from zero.

Table 5.14: The Stepwise Multiple regression analysis for the relationship between cultural values and audit committee. UAV= uncertainty avoidance, IND PDI_IND= interaction term of power distance and individuality. Sig= significance level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	audit committee				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	73.564	11.361	6.475***	.000	23
UAV	-.770	.160	-4.822***	.000	23
PDI_IND	.015	.004	3.648***	.002	23
Multiple correlation coefficient			.752		
R-square			.565		
Adjusted R^2			.522		
Regression standard error			18.298		
F-test			13.013***		
Sig.			.000		

The detailed test results show that two independent cultural values managed to explain the dependent corporate governance system "audit committee". The uncertainty avoidance cultural variable shows a significant negative relationship with the "audit committee". Since, it has a regression coefficient of -.770 and t-value of -4.82, with p-value of .000 at the 0.99 confidence level (Table 5.14). This means that an increase in uncertainty avoidance cultural value is usually associated with a significant decrease in audit committee across the sample countries.

In addition, results show a significant positive relationship between the interaction term "power distance/individuality" (PDI_IND) and the audit committee, since the regression coefficient has a value of .015 and t-value of 3.648, with p-value of .002 at the 0.99 confidence level (Table 5.14). This means that an increase in power distance or individuality cultural values is usually associated with an increase of corporate governance system "audit committee" across the sample countries. Note that the power distance and individuality variables show a high negative correlation coefficient at the 0.99 confidence level (Table 5.3).

In contrast, test results show that t-values for other eight independent variables are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level. These independent variables are excluded from the analysis. These excluded variables include: power distance, individuality, and masculinity, power distance/uncertainty avoidance, power distance/individuality, power distance/masculinity, and finally individuality/masculinity.

(5/6/2/1) Evaluation and assessment

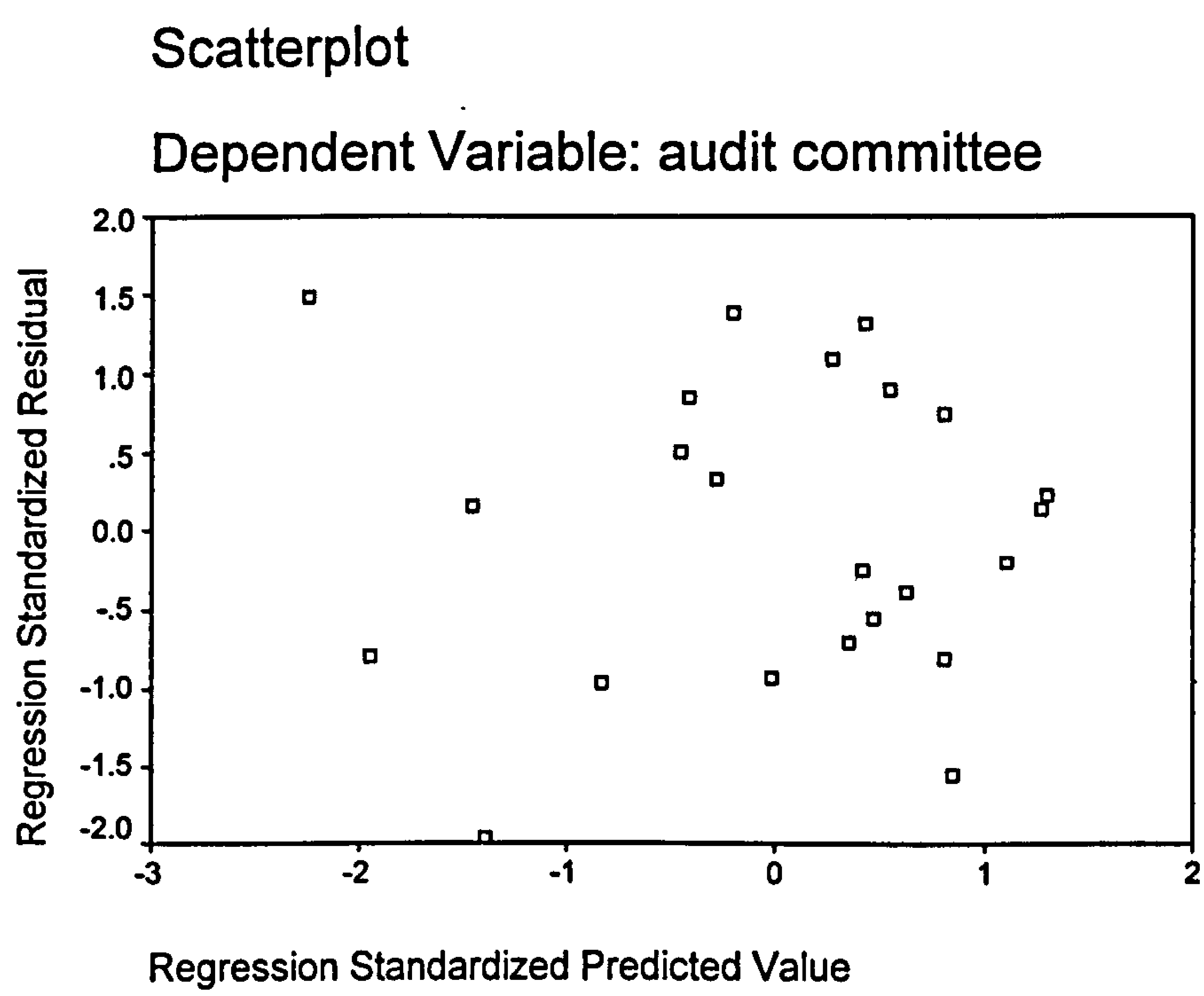
A further assessment and review of the stepwise multiple regression model is conducted using several test statistics. First, a review of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) which is used in this analysis is 23 observations. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Table 5.15: The Variance Inflation Factors (VIF) for the independent cultural values and audit committee. UAV= uncertainty avoidance, PDI_IND= interaction term of power distance and individuality. Source: Study analysis results using SPSS software (Version 14.00)

	Collinearity Statistics	
Independent Variables	**Tolerance**	**VIF**
Constant		
UAV	.800	1.251
PDI_IND	.800	1.251

Second, test results show that there is no multicollinearity between uncertainty avoidance and power distance/individuality, since the Variance Inflation Factors (VIF) has a value of 1.251 for both variables (Table 5.15). This result is lower than the rule of thumb benchmark of 5 degrees. This means that the study model does not suffer anymore from the problem of multicollinearity between independent variables.

Figure 5.7: The stepwise regression standardized predicted and residuals values for the relationship between cultural values and audit committee. Source: Study analysis results using SPSS software (Version 14.00)



Third, the scatter plot (Figure 5.7) for the stepwise regression model shows that data points are still not scattered evenly across the centre of the panel. Consequently, the full data set is tested for the existence of heteroscedasticity of residuals using Goldfield-Quandt (G-Q) test statistics (Table 5.16). Test results show that the G-Q (F) statistic has a value of 1.131, which is higher than the F (critical value) of 0.531 at the 0.95 confidence level. This means that the full regression model results suffer from the problem of heteroscedasticity of residuals. Therefore, the null hypothesis of no heteroscedasticity is rejected. As a result, the weighted least square regression analysis (WLS) is implemented to overcome this problem in the next section

Table 5.16: The Goldfeld-Quandt (F) Statistic for the relationship between cultural values and audit committee. Source: Study analysis results using E-views statistical software package (Version 3.1)

Goldfeld-Quandt F Statistic	1.131846
$F_{(.95, 10, 10)}$ critical value	0.531523

(5/6/3)Weighted least square regression analysis

In this section the weighted least square regression analysis is used to eliminate the problem of heteroscedasticity of residuals (Appendix 19). The overall fit statistics for the model shows that the overall R-square has a value of 71.9% compared to a value of 56.5% for the stepwise model (Table 5.17). The F-statistic has increased to a value of 25.61, compared to a value of 13.01 for the stepwise model, with a significant p-value of .000 at the 0.99 confidence level. This result shows that the regression coefficients are significantly different from zero.

Further results show that individuality cultural value has a significant positive relationship with the "audit committee", which is inconsistent with previous stepwise model results. The regression coefficient has a value of .917 and t-value of 5.061 with p-value of .000 at the 0.99 confidence level Table (5.17). This means that an increase in individuality is significantly associated with an increase in audit committee and vice versa. Therefore, the alternative hypothesis which states that "There is a relationship between cultural values and audit committee" is not rejected.

Table 5.17: The Weighted Least Square regression analysis for the relationship between cultural values and audit committee. IND= individuality. Sig= significance level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Audit committee				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	21.694	12.340	1.758	.109	23
IND	.917	.181	5.061***	.000	23
Multiple correlation coefficient			.848		
R-square			.719		
Adjusted R^2			.691		
Regression standard error			39.26		
F-test			25.61***		
Sig.			.000		

To sum up, the statistical analysis in this section has successfully managed to identify significant positive relationship between individuality and the audit committee across twenty three sample countries. The next section concentrates on the relationship between cultural values and remuneration disclosure.

(5/7) Cultural values and remuneration disclosure

The relationship between cultural values and the "remuneration disclosure" corporate governance system is identified by using multiple regression analysis for the full study variables. Afterwards, a stepwise multiple regression analysis is implemented to exclude any multicollinearity in the model. Then, a weighted least squares regression analysis is implemented to overcome the problem of heteroscedasticity of residuals. Note that each model is followed by an evaluation and assessment process. This is as follows:

(5/7/1) Multiple regression analysis (full model)

The multiple regression analysis technique for the full model is used to explore the relationships between the independent cultural values and the dependent corporate governance systems across the sample countries (Appendix 20). Cultural values are represented by four independent variables which include: power distance (PDI), uncertainty avoidance (UAV), individualism (IND), and masculinity (MAS). In addition, six interaction terms are added to the analysis to represent the interrelationships among these independent variables. Corporate governance system is represented by the dependent variable "remuneration disclosure".

In general, the overall results of the model show that the R-square has a moderate value of 59.4%; the F-statistic has an insignificant value of 1.757 with a p-value of 0.176 at the 0.95 confidence level (Table 5.18). The detailed analysis of the results shows that there is no significant relationship between cultural values and remuneration disclosure. Test results show that t-values for all cultural values are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level.

Table 5.18: The full multiple regression analysis model for the relationship between cultural values and remuneration disclosure. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Sig= significance level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

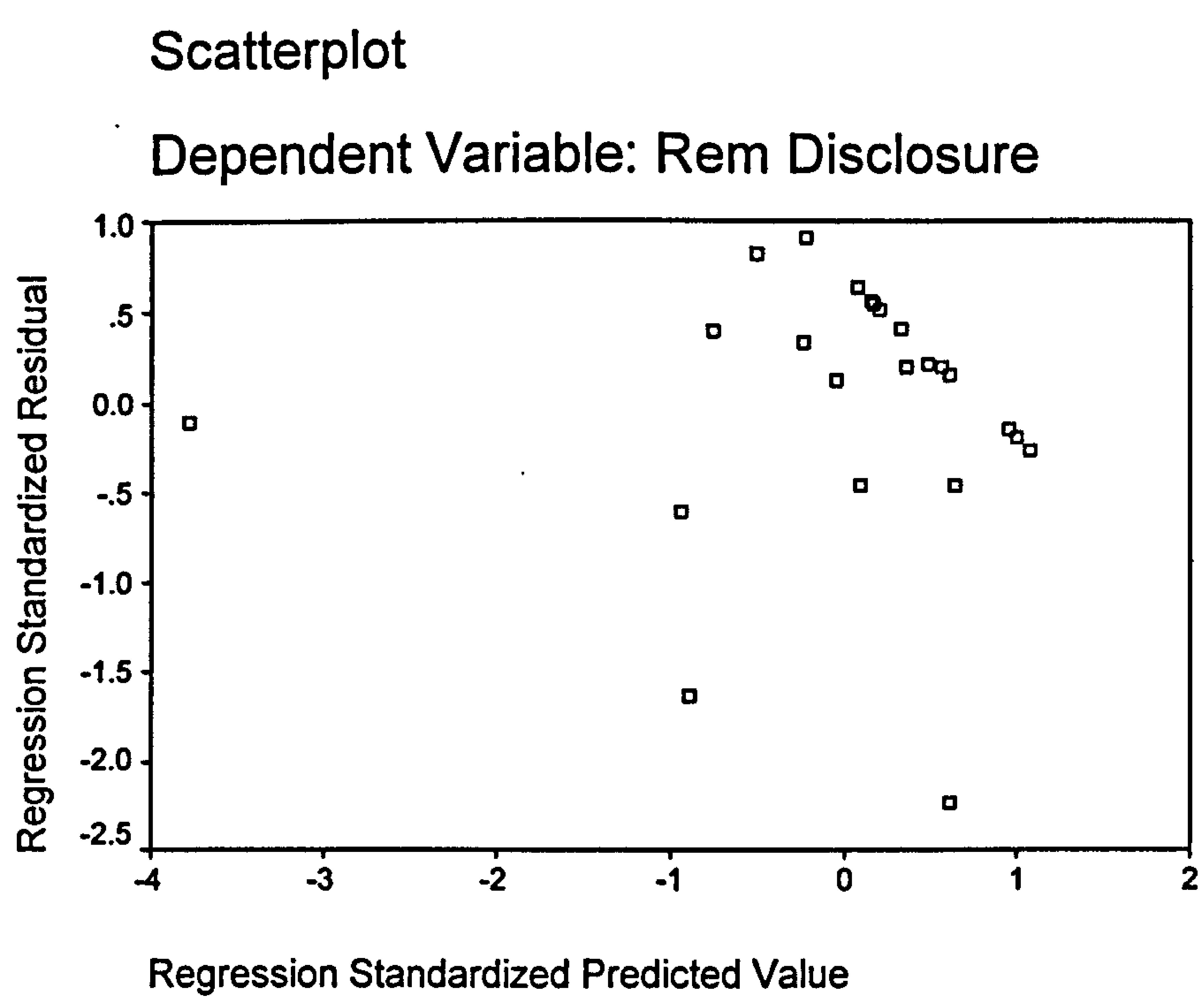
Variables	Remuneration disclosure				
	Regression coefficient (B)	Standard error	t-Statistics	Sig.	N
Constant	244.086	123.940	1.969	.072	23
PDI	-.818	1.731	-.473	.645	23
UAV	.467	1.118	.417	.684	23
IND	-2.647	1.545	-1.713	.112	23
MAS	-1.748	1.411	-1.239	.239	23
PDI_UAV	-.013	.012	-1.110	.239	23
PDI_IND	.033	.022	1.498	.160	23
PDI_MAS	-.005	.017	-.301	.769	23
UAV_IND	-.003	.010	-.351	.732	23
UAV_MAS	.000	.010	-.040	.968	23
IND_MAS	.027	.015	1.834	.092	23
Multiple correlation coefficient			.771		
R-square			.594		
Adjusted R^2			.256		
Regression standard error			13.314		
F-test			1.757		
Sig.			.176		

(5/7/1/1) Evaluation and assessment

The evaluation and assessment of the previous full regression model shows that: first, the analysis of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual value more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) used in this analysis equal to 23. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Second, the Variance Inflation Factors (VIF) for all independent variables are greater than the rule of thumb benchmark of 5 degrees (See Table 5.3). This means that the study model does suffer from the problem of multicollinearity between independent variables. Therefore, the stepwise multiple regression analysis technique is used to improve the overall fit of the model, and to exclude any independent variables which may have some impact on other independent variables.

Figure 5.8: The full regression standardized predicted and residuals values for the relationship between cultural values and remuneration disclosure. Source: Study analysis results using SPSS software (Version 14.00)



Finally, the scatter plot (Figure 5.8) for the relationship between the regression standardized predicted value (x-axis) and regression standardized residuals (Y-axis) shows that data points a sign of a trend at the top right of the graph. It seems that this is due to the nature of the data set. It appears that ten countries out of the twenty four sample countries happen to have identical remuneration disclosure scores of 100. Therefore, this indicates that the model may suffer from heteroscedasticity of residuals. This is an issue that is going to be further addressed in subsequent analysis. The next section takes a step forward in the analysis process by implementing the stepwise multiple regression analysis technique on the data set.

(5/7/2) Stepwise multiple regression analysis

The full multiple regression analysis in the previous section shows no significant relationship between cultural values and remuneration disclosure. In this section the stepwise multiple regression analysis technique is used to reduce the multicollinearity among the independent variables (Appendix 20). In general, the overall fit statistics for the model shows that the R-square has a value of 18.5% compared to a value of 59.4% for the full model. The F-statistic has almost tripled to reach a value of 4.78, compared to a value of 1.75 for the full regression model, with a significant p-value of 0.040 at the 0.95 confidence level (Table 5.19). This indicates that the regression coefficients for the independent variables are significantly different from zero.

Further results show that one independent cultural value has managed to explain the dependent corporate governance system "remuneration disclosure". The interaction term "uncertainty avoidance/masculinity" cultural variable shows a significant negative relationship with the remuneration disclosure across the twenty three sample countries. The regression coefficient has a value of -.003 and t-value of -2.18, with p-value of .040 at the 0.95 confidence level. This means that an increase in uncertainty avoidance and/or masculinity cultural values is expected to cause a significant decrease in remuneration disclosure across the sample countries.

Table 5.19: The Stepwise Multiple regression analysis for the relationship between cultural values and remuneration disclosure. UAV_MAS= interaction term of uncertainty avoidance and masculinity. Sig= significance level. (**) indicates value significant at the 0.95 confidence level. (***) indicates value significant at the 0.99 confidence level N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Remuneration disclosure				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	100.201	5.321	18.830***	.000	23
UAV_MAS	-.003	.001	-2.186**	.040	23
Multiple correlation coefficient			.431		
R-square			.185		
Adjusted R^2			.147		
Regression standard error			14.258		
F-test			4.780**		
Sig.			.040		

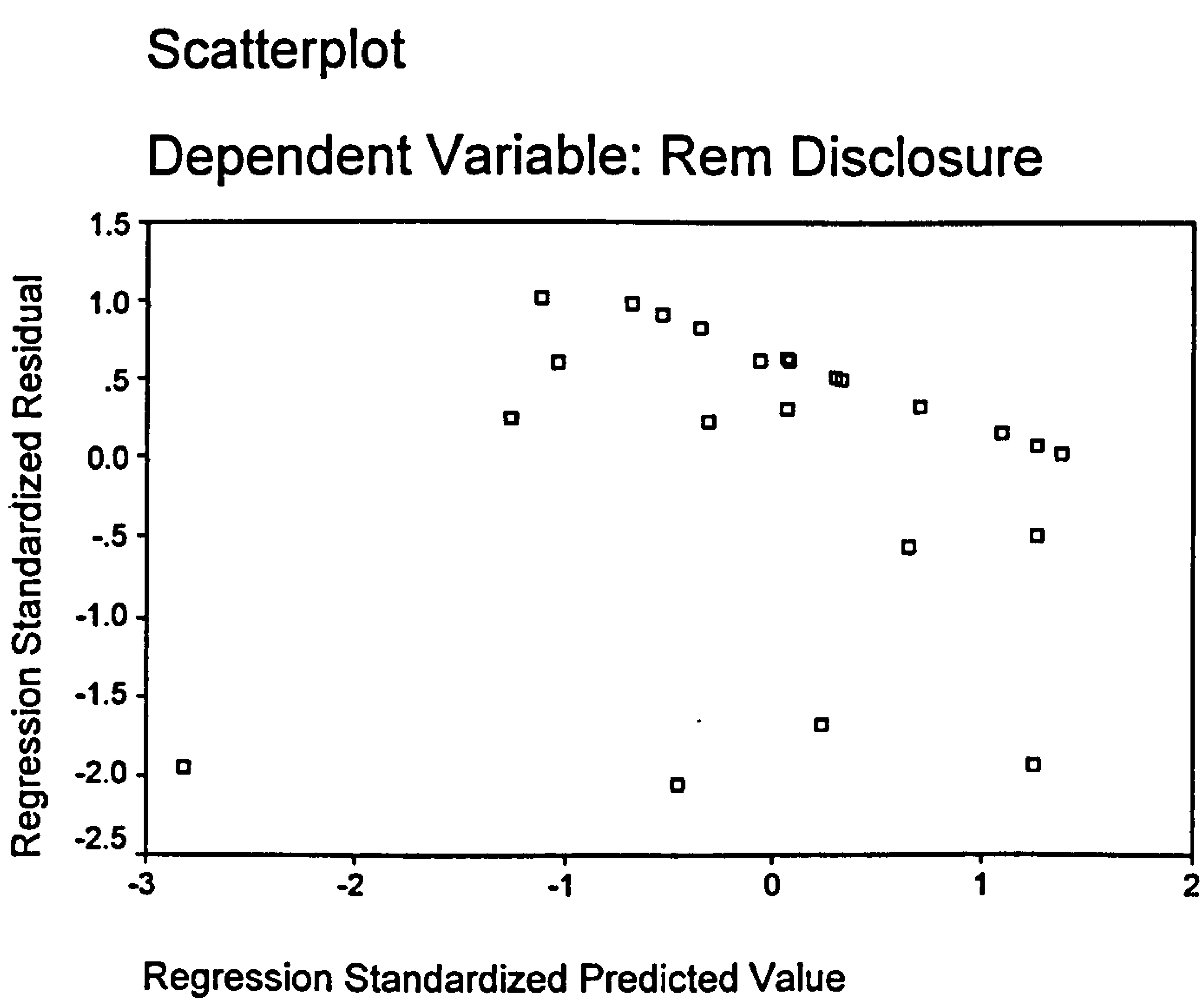
In contrast, test results show that there are other nine excluded independent variables from this model. The t-values for these variables are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level. These excluded independent variables include: power distance, uncertainty avoidance, individuality, masculinity, power distance/uncertainty avoidance, power distance/individuality, power distance/masculinity, uncertainty avoidance/ individuality and finally individuality/masculinity.

(5/7/2/1) Evaluation and assessment

The assessment and review of the stepwise multiple regression model results is conducted using several test statistics. First, a review of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) which is used in this analysis is 23 observations. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values. Second, the multicollinearity problem has disappeared completely due to the exclusion of nine of the independent variables.

Figure 5.9: The stepwise regression standardized predicted and residuals values for the relationship between cultural values and remuneration disclosure.

Source: Study analysis results using SPSS software (Version 14.00)



Third, the scatter plot (Figure 5.9) for the dependent remuneration disclosure regression results shows that data points are still showing a trend at the top right of the graph. Consequently, the full data set is tested for the existence of heteroscedasticity of residuals using Goldfield-Quandt (G-Q) test statistics (Table 5.20). Test results show that the G-Q (F) statistic has a value of 3.16, which is higher than the F (critical value) of 0.531 at the 0.95 confidence level. This means that the full regression model results suffer from the problem of heteroscedasticity of residuals. Therefore, the null hypothesis of no heteroscedasticity is rejected. As a result, the weighted least square regression analysis (WLS) is implemented to overcome this problem in the next section

Table 5.20: The Goldfeld-Quandt (F) Statistic for the relationship between cultural values and remuneration disclosure. Source: Study analysis results using E-views statistical software package (Version 3.1)

Goldfeld-Quandt F Statistic	3.164345
$F_{(.95, 10, 10)}$ critical value	0.531523

(5/7/3)Weighted least square regression analysis

In this section the weighted least square regression analysis is used to eliminate the problem of heteroscedasticity of residuals (Appendix 20). The overall fit statistics for the model shows that the overall R-square has a value of 24.1% compared to a value of 18.5% for the stepwise model (Table 5.21). The F-statistic has decreased to a value of 4.77, compared to a value of 4.78 for the stepwise model, with a significant p-value of 0.045 at the 0.95 confidence level. This result shows that the regression coefficients are significantly different from zero.

Further results show that uncertainty avoidance/masculinity cultural value has a significant negative relationship with remuneration disclosure which is consistent with previous stepwise model results. The regression coefficient has a value of -0.001 and t-value of -2.184 with p-value of .045 at the 0.95 confidence level. This means that an increase in uncertainty avoidance and/or masculinity cultural value is significantly associated with a decrease in remuneration disclosure and vise versa. Therefore, the alternative hypothesis which states that "There is a relationship between cultural values and remuneration disclosure" is not rejected.

Table 5.21: The Weighted Least Square regression analysis for the relationship between cultural values and remuneration disclosure. UAV_MAS= interaction term of uncertainty avoidance and masculinity. Sig= significance level. (**) indicates value significant at the 0.95 confidence level. (***) indicates value significant at the 0.99 confidence level N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Remuneration disclosure				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	103.132	2.315	44.552***	.000	23
UAV_MAS	-.001	.001	-2.184**	.045	23
Multiple correlation coefficient			.491		
R-square			.241		
Adjusted R^2			.191		
Regression standard error			8.044		
F-test			4.770**		
Sig.			.045		

Finally, the statistical analysis in this section shows a significant negative relationship between one cultural value, which is "uncertainty avoidance/masculinity, and remuneration disclosure across the twenty three sample countries. The next section concentrates on the relationship between cultural values and women on board.

(5/8) Cultural values and women on board

The multiple regression analysis is used to explore the relationship between cultural values and the corporate governance system "women on board". This is followed by a stepwise multiple regression analysis to exclude any multicollinearity among independent variables in the model. Note that each model is followed by an evaluation and assessment process. This is as follows:

(5/8/1) Multiple regression analysis (full model)

The multiple regression analysis technique for the full model is used to explore the relationships between the independent cultural values and the dependent corporate governance systems across the sample countries. Cultural values are represented by four independent variables which include: power distance (PDI), uncertainty avoidance (UAV), individualism (IND), and masculinity (MAS). In addition, six interaction terms for cultural values are added to the analysis to represent the interrelationships among these independent variables. While, corporate governance system is represented by the dependent variable "women on board" (Appendix 21).

The overall results of the model show that the R-square has a moderate value of 68.5%; the F-statistic has an insignificant value of 2.61 with a p-value of 0.059 at the 0.95 confidence level (Table 5.22). The detailed analysis of the results shows that there is no significant relationship between cultural values and women on board. Test results show that t-values for all cultural values are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level.

Table 5.22: The full multiple regression analysis model for the relationship between cultural values and women on board. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Sig= significance level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

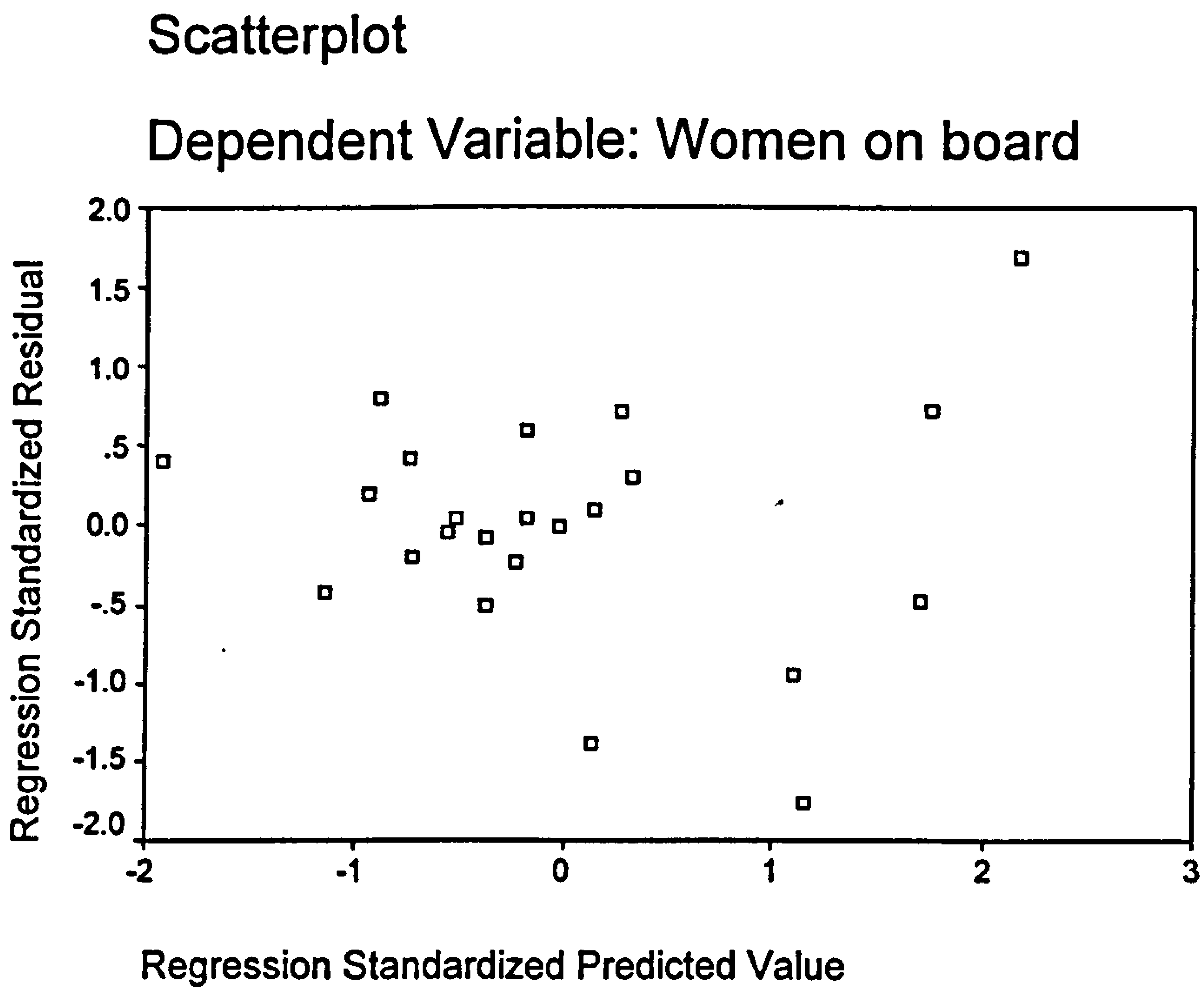
Variables	Women on Board				
	Regression coefficient (B)	Standard error	t-Statistics	Sig.	N
Constant	49.863	41.579	1.199	.254	23
PDI	-.491	.581	-.845	.414	23
UAV	.311	.375	.829	.423	23
IND	-.480	.518	-.926	.373	23
MAS	-.729	.473	-1.540	.150	23
PDI_UAV	-.006	.004	-1.597	.136	23
PDI_IND	.006	.007	.874	.399	23
PDI_MAS	.007	.006	1.209	.250	23
UAV_IND	.000	.003	-.070	.946	23
UAV_MAS	.000	.004	-.055	.957	23
IND_MAS	.005	.005	.940	.366	23
Multiple correlation coefficient			.828		
R-square			.685		
Adjusted R^2			.423		
Regression standard error			4.466		
F-test			2.613		
Sig.			.059		

(5/8/1/1) Evaluation and assessment

The evaluation and assessment process for the full multiple regression model shows that: first, the analysis of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual value more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) used in this analysis equal to 23. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Second, the Variance Inflation Factors (VIF) for all independent variables are greater than the rule of thumb benchmark of 5 degrees (Table 5.3). This means that the study model does suffer from the problem of multicollinearity between independent variables. Therefore, the stepwise multiple regression analysis technique is used to improve the overall fit of the model and to exclude any independent variables which may have some impact on other independent variables.

Figure 5.10: The full regression standardized predicted and residuals values for the relationship between cultural values and women on board. Source: Study analysis results using SPSS software (Version 14.00)



Finally, the scatter plot (Figure 5.10) for the relationship between the regression standardized predicted value (x-axis) and regression standardized residuals (Y-axis) shows that data points are not scattered evenly across the centre of the panel.

Therefore, this may indicates that the model suffers from heteroscedasticity of residuals. This is an issue that is going to be further addressed in subsequent analysis. The next section takes a step forward in the analysis process by implementing the stepwise multiple regression analysis technique on the data set.

(5/8/2) Stepwise multiple regression analysis

Test results for the full multiple regression analysis in the previous section shows no significant relationship between cultural values and corporate governance system "women on board". In this section the stepwise multiple regression analysis technique is used to reduce the multicollinearity among the independent variables. The overall fit statistics for the model shows that the R-square has a value of 38.6% compared to a value of 68.5% for the full model. The F-statistics has jumped to reach a value of 13.21, compared to only 2.61 for the full regression model, with a significant p-value of 0.002 at the 0.99 confidence level (Table 5.23). This indicates that the regression coefficients for the independent variables are significantly different from zero.

The detailed results show that one independent cultural value has successfully managed to explain the dependent corporate governance system "women on board". The interaction term "power distance/masculinity" cultural variable shows a significant negative relationship with the "women on board" score across the twenty three sample countries. The regression coefficient has a value of -0.003 and t-value of -3.635, with p-value of 0.002 at the 0.99 confidence level. This means that an increase in power distance and/or masculinity cultural values is associated with a significant decrease in women on board across the sample countries. Therefore, the alternative hypothesis which states that "There is a relationship between cultural values and women on board" is not rejected.

Table 5.23: The Stepwise Multiple regression analysis for the relationship between cultural values and women on board. PDI_MAS= interaction term of power distance and masculinity. Sig= significance level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

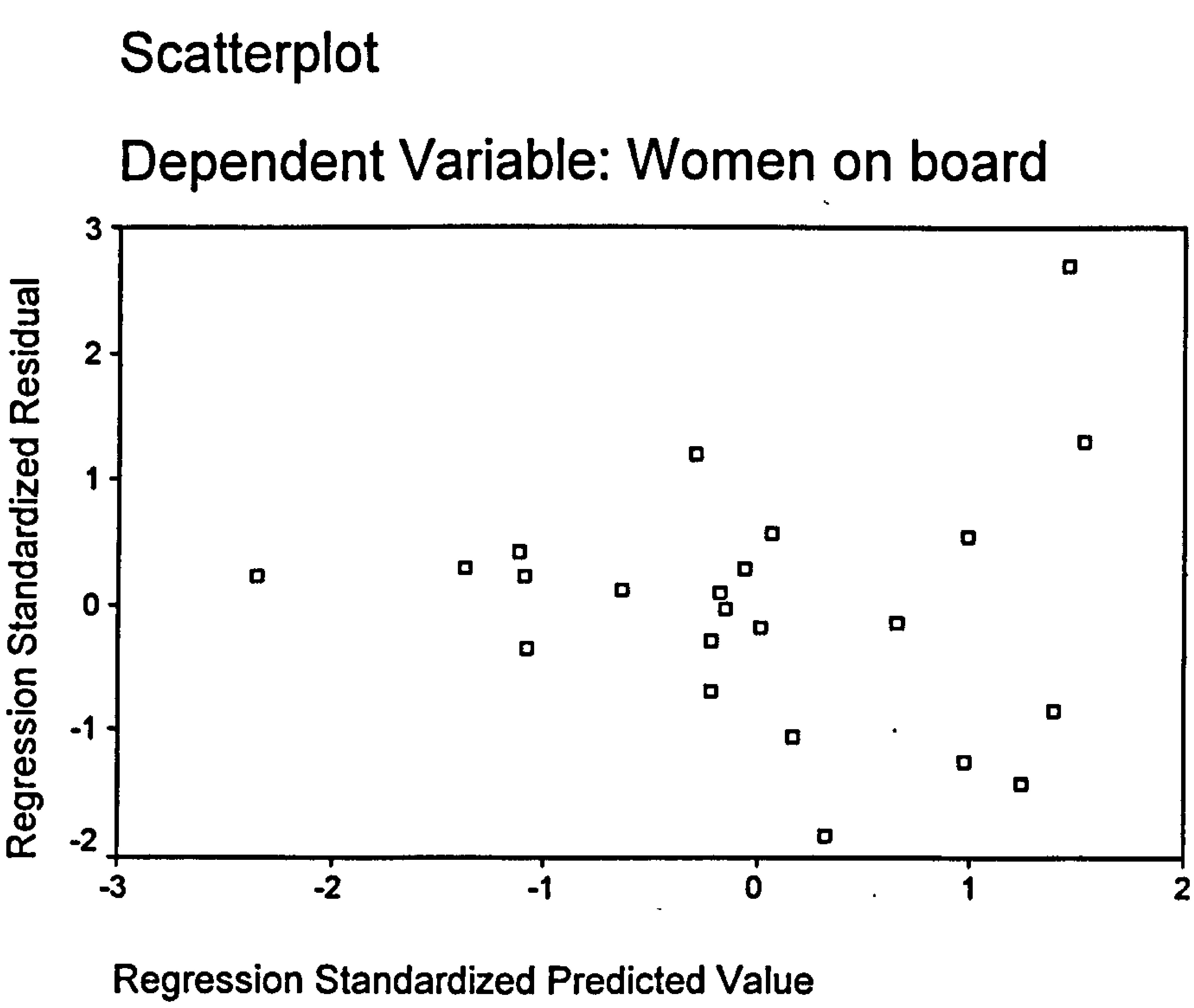
Variables	Women on Board				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	14.158	1.925	7.356***	.000	23
PDI_MAS	-.003	.001	-3.635***	.002	23
Multiple correlation coefficient			.621		
R-square			.386		
Adjusted R^2			.357		
Regression standard error			4.715		
F-test			13.212***		
Sig.			.002		

In contrast, test results show that there are other nine excluded independent variables from this model. The t-values for these variables are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level. These excluded independent variables include: power distance, uncertainty avoidance, individuality, masculinity, power distance/uncertainty avoidance, power distance/individuality, uncertainty avoidance/individuality and finally individuality/masculinity.

(5/8/2/1) Evaluation and assessment

The assessment and review of the stepwise multiple regression model results is conducted using several test statistics. First, a review of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) which is used in this analysis is 23 observations. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values. Second, the multicollinearity problem has disappeared completely among the independent variables due to the exclusion of nine dependent variables in the stepwise regression model.

Figure 5.11: The stepwise regression standardized predicted and residuals values for the relationship between cultural values and women on board. Source: Study analysis results using SPSS software (Version 14.00)



Third, the scatter plot (Figure 5.11) for the dependent remuneration disclosure regression results shows that data points are still not scattered evenly across the centre of the panel. Consequently, the full data set is tested for the existence of heteroscedasticity of residuals using Goldfield-Quandt (G-Q) test statistics (Table 5.22). Test results show that the G-Q (F) statistic has a value of 0.407, which is lower than the F (critical value) of 0.531 at the 0.95 confidence level. This means that the full regression model results do not suffer from the problem of heteroscedasticity of residuals. Therefore, the null hypothesis of no heteroscedasticity is not rejected.

Table 5.24: The Goldfeld-Quandt (F) Statistic for the relationship between cultural values and women on board. Source: Study analysis results using E-views statistical software package (Version 3.1)

Goldfeld-Quandt F Statistic	0.407700
$F_{(.95, 10, 10)}$ critical value	0.531523

Finally, the statistical analysis of the data set in this section shows a significant negative relationship between one cultural value, which is "power distance/masculinity, and "women on board" across the sample twenty three countries. The next section concentrates on the relationship between cultural values and ethics code.

(5/9) Cultural values and code of ethics

The relationship between cultural values and the corporate governance system "code of ethics" is identified by using multiple regression analysis for the full study variables. Afterwards, a stepwise multiple regression analysis is implemented to exclude any multicollinearity in the model. Then, a weighted least squares regression analysis is implemented to overcome the problem of heteroscedasticity of residuals. Note that an evaluation and assessment process is conducted for each model. This is as follows:

(5/9/1) Multiple regression analysis (full model)

The multiple regression analysis technique for the full model is used to explore the relationships between the independent cultural values and the dependent corporate governance systems across the sample countries. Cultural values are represented by four independent variables which include: power distance (PDI), uncertainty avoidance (UAV), individualism (IND), and masculinity (MAS). In addition, six interaction terms for cultural values are added to the analysis to represent the interrelationships among these independent variables. Corporate governance system is represented by the dependent variable "code of ethics" (Appendix 22).

In general, the overall results of the model show that the R-square has a moderate value of 74.1%; the F-statistic has a significant value of 3.42, with a p-value of 0.024 at the 0.95 confidence level (Table 5.25). The detailed analysis of the results shows that there is a significant negative relationship between uncertainty avoidance/individuality and code of ethics. The regression coefficient has a value of -.023 and a t-value of -2.230, with p-value of .046 at the 0.95 confidence level. This means that an increase in avoidance/individuality is usually associated with a decrease in code of ethics across the 23 sample countries.

Table 5.25: The full multiple regression analysis model for the relationship between cultural values and code of ethics. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Sig= significance level. (**) indicates significant values at the 0.95 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

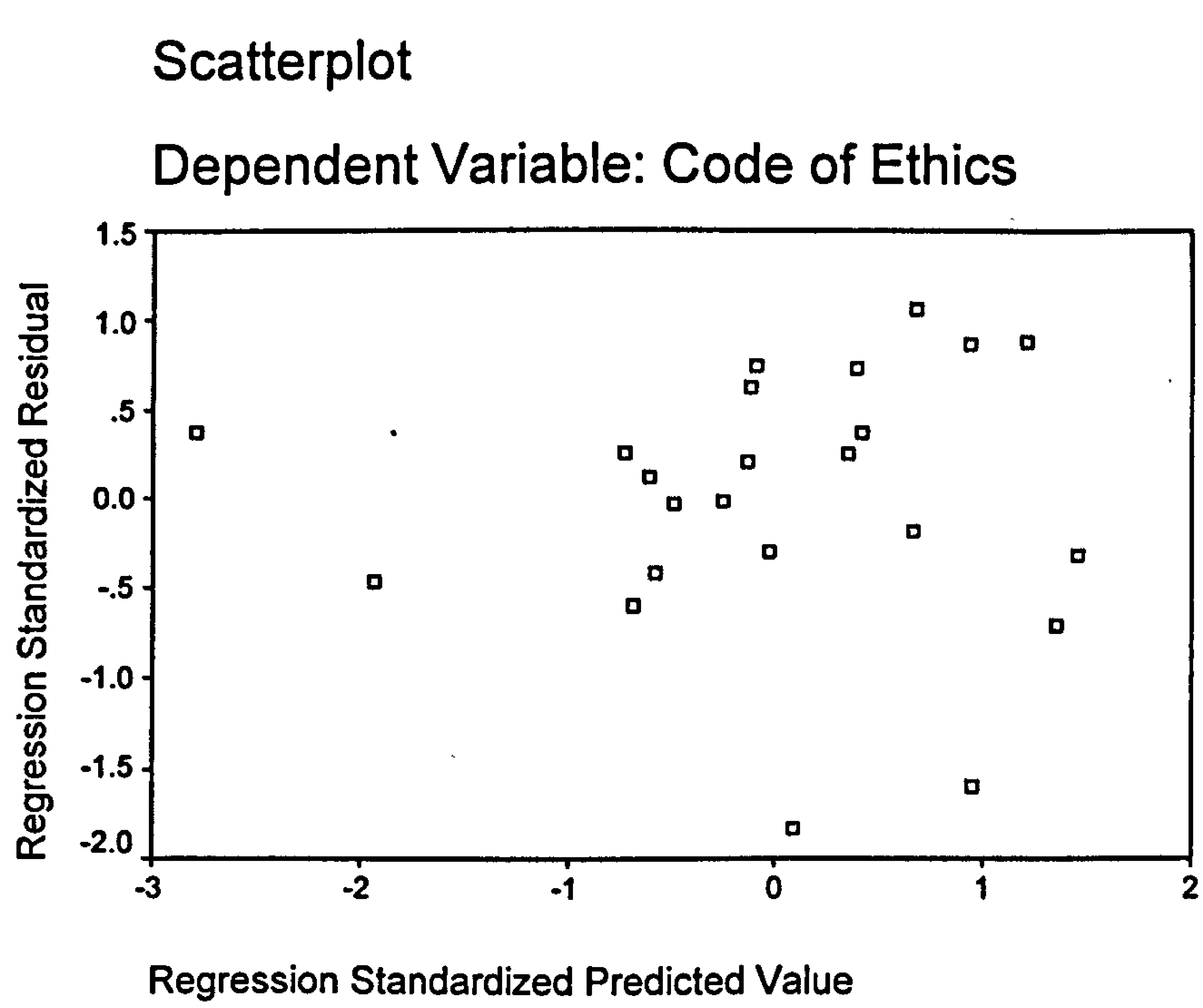
Variables	Code of ethics				
	Regression coefficient (B)	Standard error	t-Statistics	Sig.	N
Constant	138.37	132.22	1.046	.316	23
PDI	-2.180	1.847	-1.181	.261	23
UAV	2.459	1.19	2.062	.062	23
IND	-1.053	1.64	-.638	.535	23
MAS	-2.011	1.50	-1.33	.206	23
PDI_UAV	-.024	.013	-1.95	.075	23
PDI_IND	.042	.023	1.81	.094	23
PDI_MAS	.023	.018	1.24	.236	23
UAV_IND	-.023	.010	-2.23**	.046	23
UAV_MAS	-.002	.011	-.167	.870	23
IND_MAS	.013	.016	.822	.427	23
Multiple correlation coefficient			.861		
R-square			.741		
Adjusted R^2			.525		
Regression standard error			14.20		
F-test			3.429**		
Sig.			.024		

(5/9/1/1) Evaluation and assessment

The evaluation and assessment of the full multiple regression model shows that: first, the analysis of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual value more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) used in this analysis equal to 23. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Second, the Variance Inflation Factors (VIF) for all independent variables are greater than the rule of thumb benchmark of 5 degrees (See Table 5.3). This means that the study model does suffer from the problem of multicollinearity between independent variables. Therefore, the stepwise multiple regression analysis technique is implemented to avoid this problem.

Figure 5.12: The full regression standardized predicted and residuals values for the relationship between cultural values and code of ethics. Source: Study analysis results using SPSS software (Version 14.00)



Finally, the scatter plot (Figure 5.12) for the relationship between the regression standardized predicted value (x-axis) and regression standardized residuals (Y-axis) shows that data points are scattered are not scattered evenly across the centre of the panel. As a rule of thumb, this may indicates that the model suffers from heteroscedasticity of residuals. This is an issue that is going to be further addressed in subsequent analysis. The next section takes a step forward in the analysis process by implementing the stepwise multiple regression analysis technique on the data set.

(5/9/2) Stepwise multiple regression analysis

The full multiple regression analysis in the previous section shows a significant relationship between uncertainty avoidance/individuality cultural value and code of ethics. In this section the stepwise multiple regression analysis technique is used to eliminate the multicollinearity problem (Appendix 21). In general, the overall fit statistics for the stepwise regression model shows that the R-square has a value of 51.1% compared to a value of 74.1% for the full model. The F-statistic increases sharply to a value of 10.460, compared to a value of 3.429 for the full regression model, with a significant p-value of 0.001 at the 0.99 confidence level. This indicates that the regression coefficients for the independent variables are significantly different from zero (Table 5.26).

Further test results show that two independent cultural values have managed to explain the dependent corporate governance system "code of ethics" (Table 5.26). The independent individuality cultural variable shows a significant positive relationship with the code of ethics across the twenty three sample countries, since it has a regression coefficient of .638 and t-value of 3.897 with p-value of 0.001 at the 0.99

confidence level. This means that an increase in individuality cultural value is significantly associated with an increase in code of ethics across the sample countries. In addition, test results show a significant negative relationship between masculinity and code of ethics, since the regression coefficient has a value of -0.323 and t-value of -2.390, with p-value of .027 at the 0.95 confidence level. This means that an increase in masculinity is significantly associated with a decrease in code of ethics.

Table 5.26: The Stepwise Multiple regression analysis for the relationship between cultural values and code of ethics. IND= individuality, MAS= masculinity. Sig= significance level. (**) indicates value significant at the 0.95 confidence level. (***) indicates value significant at the 0.99 confidence level N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Code of Ethics				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	40.415	12.95	3.120***	.005	23
IND	.638	.164	3.897***	.001	23
MAS	-.323	.135	-2.390**	.027	23
Multiple correlation coefficient			.715		
R-square			.511		
Adjusted R^2			.462		
Regression standard error			15.10		
F-test			10.460***		
Sig.			.001		

In contrast, test results show that eight independent variables have been excluded from this model. The t-values for these variables are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level. These excluded independent variables include: power distance, uncertainty avoidance, power distance/uncertainty avoidance, power distance/individuality, power distance/masculinity, uncertainty avoidance/ individuality, individuality/masculinity and individuality/masculinity.

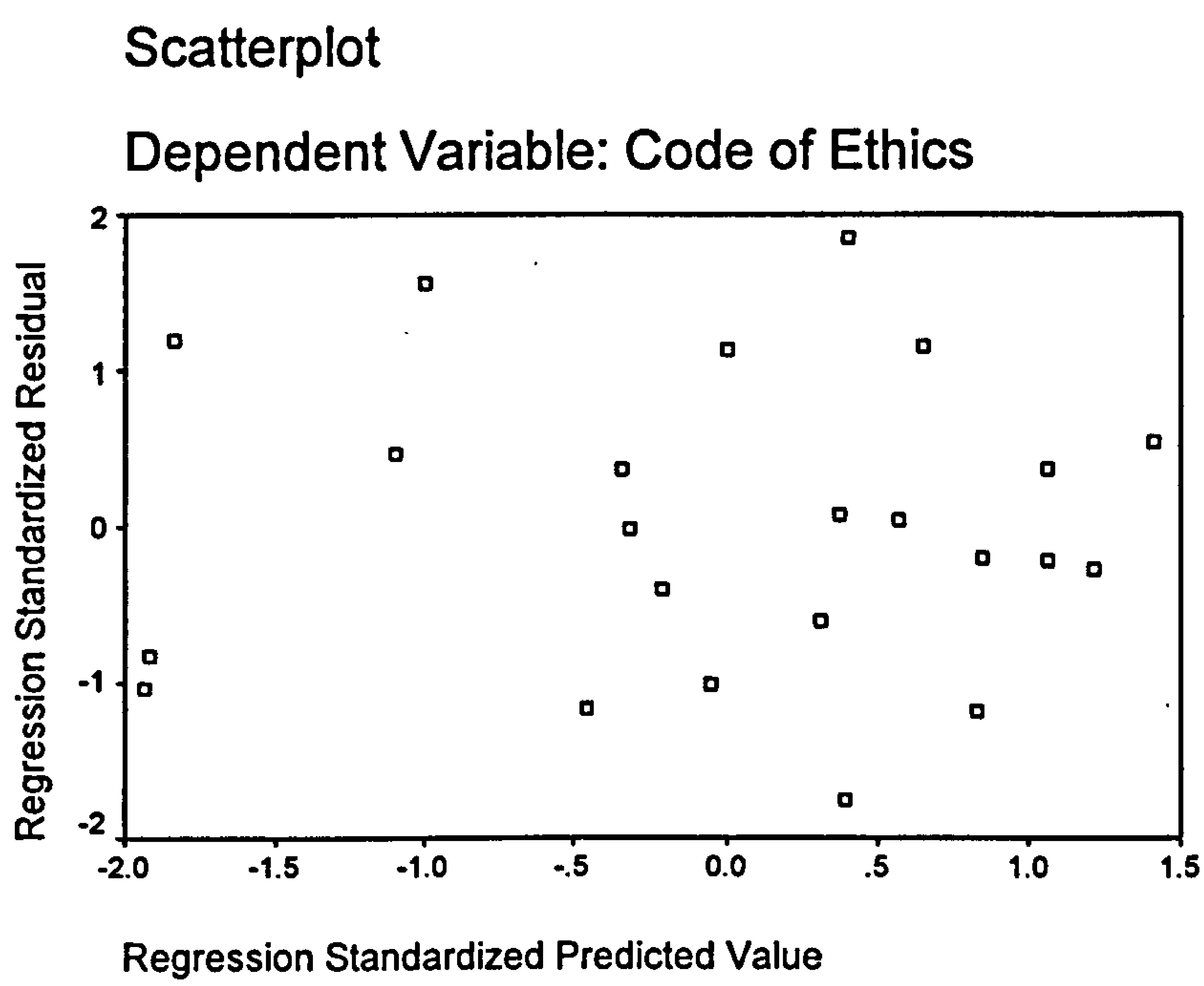
(5/9/2/1) Evaluation and assessment

The assessment and review of the stepwise multiple regression model results is conducted using several test statistics. First, a review of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) which is used in this analysis is 23 observations. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values. Second, test results show that the Variance Inflation Factor (VIF) for both individuality and masculinity has a value of 1.00, which is below the accepted benchmark of 5.00 (Table 5.27). This means that the regression model does not suffer any more from the problem of multicollinearity.

Table 5.27: The Variance Inflation Factors (VIF) for the relationship between independent cultural values and code of ethics. IND= individuality, MAS= masculinity. Source: Study analysis results using SPSS software (Version 14.00)

	Collinearity Statistics	
Independent Variables	**Tolerance**	**VIF**
Constant		
IND	1.00	1.00
MAS	1.00	1.00

Figure 5.13: The stepwise regression standardized predicted and residuals values for the relationship between cultural values and code of ethics. Source: Study analysis results using SPSS software (Version 14.00)



Third, the scatter plot (Figure 5.13) for the dependent remuneration disclosure regression results shows that data points are still not scattered evenly across the centre of the panel. Consequently, the full data set is tested for the existence of heteroscedasticity of residuals using Goldfield-Quandt (G-Q) test statistics (Table 5.28). Test results show that the G-Q (F) statistic has a value of 1.374, which is higher than the F (critical value) of 0.531 at the 0.95 confidence level. This means that the full regression model results suffer from the problem of heteroscedasticity of residuals. Therefore, the null hypothesis of no heteroscedasticity is rejected. As a result, the weighted least square regression analysis (WLS) is implemented to overcome this problem in the next section

Table 5.28: The Goldfeld-Quandt (F) Statistic for the relationship between cultural values and code of ethics. Source: Study analysis results using E-views statistical software package (Version 3.1).

Goldfeld-Quandt F Statistic	1.374917
$F_{(.95, 10, 10)}$ critical value	0.531523

(5/9/3)Weighted least square regression analysis

In this section the weighted least square regression analysis is used to eliminate the problem of heteroscedasticity of residuals. The overall fit statistics for the model shows that the overall R-square has a value of 68.3% compared to a value of 51.5% for the stepwise model (Table 5.29). The F-statistic has increased to a value of 19.40, compared to a value of 10.46 for the stepwise model, with a significant p-value of 0.002 at the 0.99 confidence level. This result shows that the regression coefficients are significantly different from zero (Appendix 22).

Further results show that uncertainty avoidance/masculinity cultural value has a significant negative relationship with code of ethics which is inconsistent with the previous stepwise model results. The regression coefficient has a value of -0.005 and t-value of -4.40, with p-value of 0.002 at the 0.95 confidence level. This means that an increase in uncertainty avoidance and/or masculinity cultural values is significantly associated with a decrease in code of ethics and vice versa. Therefore, the alternative hypothesis which states that "There is a relationship between cultural values and code of ethics" is not rejected.

Table 5.29: The Weighted Least Square regression analysis for the relationship between cultural values and code of ethics. UAV_MAS= interaction term of uncertainty avoidance and masculinity. Sig= significance level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Code of Ethics				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	99.68	4.99	19.96***	.000	23
UAV_MAS	-.005	.001	-4.40***	.002	23
Multiple correlation coefficient			.827		
R-square			.683		
Adjusted R^2			.648		
Regression standard error			33.00		
F-test			19.401***		
Sig.			.002		

To sum up, the statistical analysis in this section shows an interesting result concerning the relationship between cultural values and code of ethics. Test results show a significant negative relationship between uncertainty avoidance/masculinity and code of ethics across the sample twenty three sample countries. The next section deals with the last relationship between cultural values and ethics systems.

(5/10) Cultural values and ethics systems

The multiple regression analysis is used to explore the relationship between cultural values and the corporate governance system "ethics systems". This process is followed by a stepwise multiple regression analysis. Then, a weighted least squares regression analysis is implemented to overcome the problem of heteroscedasticity of residuals. Note that each model is followed by an evaluation and assessment process. This is as follows:

(5/10/1) Multiple regression analysis (full model)

The multiple regression analysis technique for the full model is used to explore the relationships between the independent cultural values and the dependent corporate governance systems across the sample countries. Cultural values are represented by four independent variables which include: power distance (PDI), uncertainty avoidance (UAV), individualism (IND), and masculinity (MAS). In addition, six interaction terms for cultural values are added to the analysis to represent the interrelationships among the independent variables. Corporate governance system is represented by the dependent variable "ethics systems" (Appendix 23).

The overall results of the model show that the R-square has a high value of 81.1%, the F-statistic has a significant value of 5.13, with a p-value of .005 the 0.99 confidence level (Table 5.30). The detailed analysis of the results shows that there are some significant relationships between cultural values and ethics systems across the sample countries. There is a significant positive relationship between uncertainty-avoidance and power distance/individuality on one side, and ethics systems on the other. Test results show that the uncertainty-avoidance and power distance/individuality have a regression coefficients of 2.317 and 0.048 respectively, and t-values of 2.504 and 2.637 respectively, with p- values of 0.028 and 0.022 respectively at the 0.95 confidence level. In contrast, there are significant negative relationship between power distance/uncertainty-avoidance and uncertainty-avoidance/individuality on one side and ethics systems on the other side (Table 5.30). Test results show that the power distance/uncertainty-avoidance and uncertainty-avoidance/individuality independent variables have regression coefficients of -0.021 and -0.029 respectively, and t-values of -2.187 and -3.692 respectively, with p-values of 0.049 and 0.003 respectively at the 0.95 and 0.99 confidence levels respectively.

Table 5.30: The full multiple regression analysis model for the relationship between cultural values and ethics system. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity, other variables are interaction terms. Sig= significance level. (**) indicates significant values at the 0.95 confidence level. (***) indicates significant values at the 0.99 confidence level N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

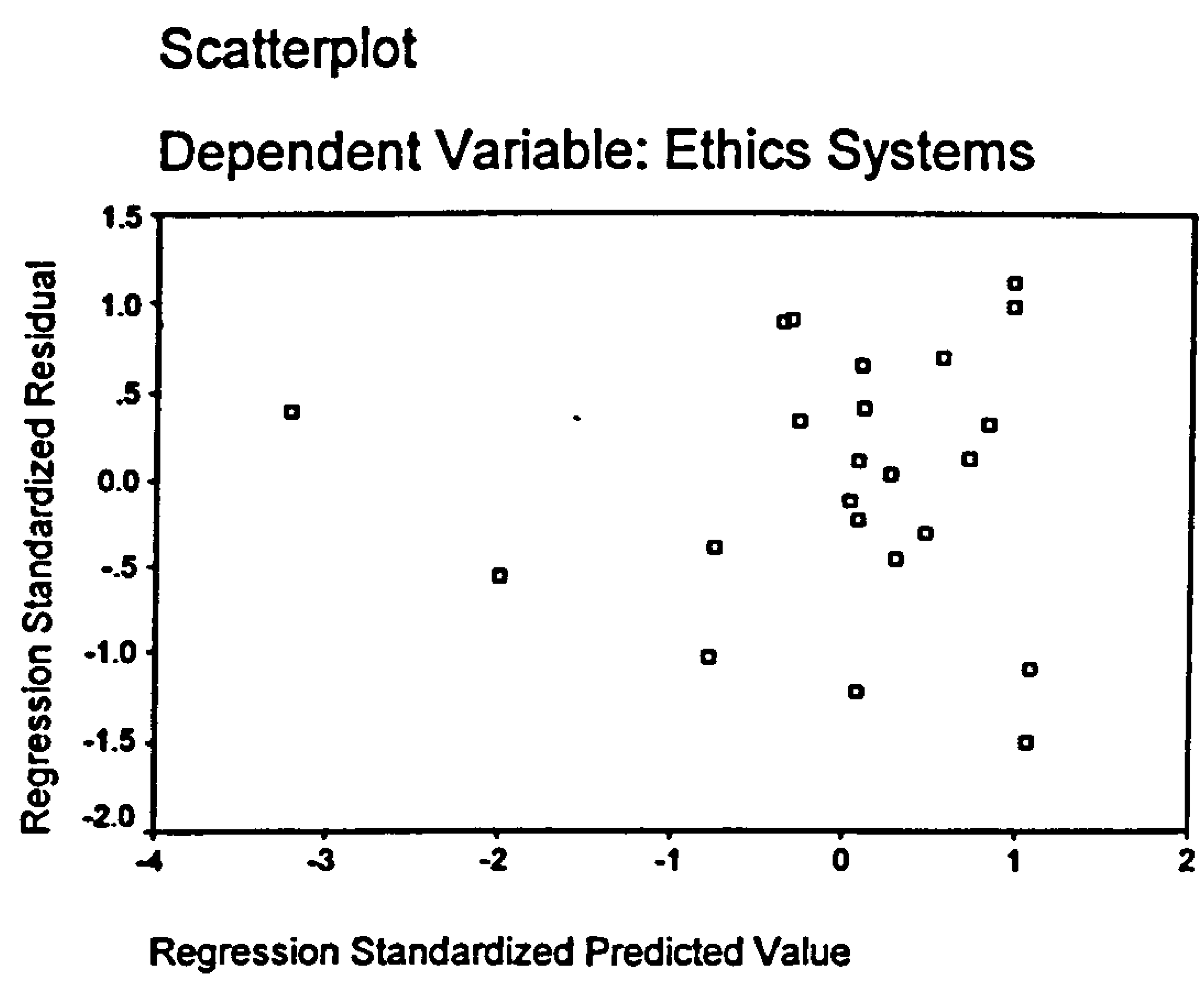
Variables	Ethics system				
	Regression coefficient (B)	Standard error	t-Statistics	Sig.	N
Constant	24.39	102.56	.238	.816	23
PDI	-1.130	1.432	-.789	.446	23
UAV	2.317	.925	2.504**	.028	23
IND	-.082	1.27	-.064	.950	23
MAS	.091	1.16	.078	.939	23
PDI_UAV	-.021	.010	-2.187**	.049	23
PDI_IND	.048	.018	2.637**	.022	23
PDI_MAS	-.003	.014	-.179	.861	23
UAV_IND	-.029	.008	-3.692***	.003	23
UAV_MAS	.002	.009	.213	.835	23
IND_MAS	-.004	.012	-.293	.775	23
Multiple correlation coefficient			.900		
R-square			.811		
Adjusted R^2			.653		
Regression standard error			11.01		
F-test			5.138***		
Sig.			.005		

(5/10/1/1) Evaluation and assessment

The evaluation and assessment process for the full multiple regression model shows that: first, the analysis of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual value more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) used in this analysis equal to 23. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values.

Second, the Variance Inflation Factors (VIF) for all independent variables are greater than the rule of thumb benchmark of 5 degrees (See Table 5.3). This means that the study model does suffer from the problem of multicollinearity between independent variables. Therefore, the stepwise multiple regression analysis technique is used to exclude any independent variables which may have some impact on other independent variables.

Figure 5.14: The full regression standardized predicted and residuals values for the relationship between cultural values and ethics system. Source: Study analysis results using SPSS software (Version 14.00)



Finally, the scatter plot (Figure 5.14) for the relationship between the regressions standardized predicted value (x-axis) and regression standardized residuals (Y-axis) shows that data points are not scattered evenly across the centre of the panel. Therefore, this may indicates that the model suffers from heteroscedasticity of residuals. This is an issue that is going to be further addressed in subsequent analysis. The next section takes a step forward in the analysis process by implementing the stepwise multiple regression analysis technique on the data set.

(5/10/2) Stepwise multiple regression analysis

Test results for the full multiple regression analysis in the previous section shows some significant relationships between cultural values and corporate governance system "ethics systems" (Appendix 22). In this section the stepwise multiple regression analysis technique is used to eliminate the multicollinearity among the independent variables. The overall fit statistics for the stepwise model shows that the R-square has a value of 42.4% compared to a value of 81.1% for the full regression model (Table 5.31). The F-statistic has jumped to reach a value of 15.475, compared to only 5.138 for the full regression model, with a significant p-value of 0.001 at the 0.99 confidence level. This indicates that the regression coefficients for the independent variables are significantly different from zero.

The detailed test results show that one independent cultural value has successfully managed to explain the dependent corporate governance system "ethics systems" (Table 5.31). The individuality cultural variable shows a significant positive relationship with the ethics systems score across the twenty three sample countries. The regression coefficient has a value of 0.619 and t-value of 3.934 with p-value of 0.001 at the 0.99 confidence level. This means that an increase in individuality cultural value is associated with a significant increase in ethics systems across the sample countries and vice versa.

Table 5.31: The Stepwise Multiple regression analysis for the relationship between cultural values and ethics system. IND= individuality. Sig= significance level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

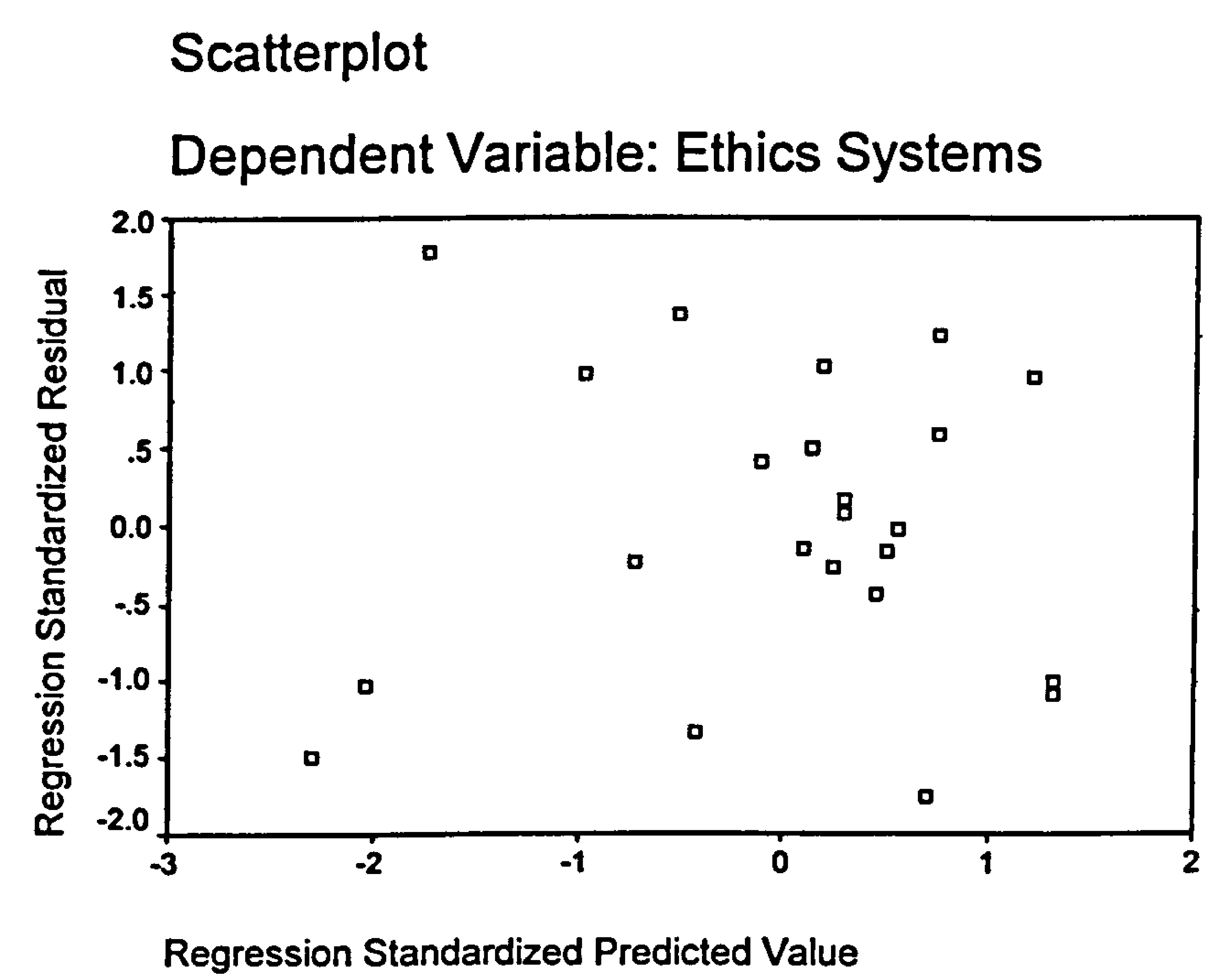
Variables	Ethics systems				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	17.533	10.70	1.639	.116	23
IND	.619	.157	3.93***	.001	23
Multiple correlation coefficient			.651		
R-square			.424		
Adjusted R^2			.397		
Regression standard error			14.52		
F-test			15.47***		
Sig.			.001		

In contrast, test results show that nine independent variables are excluded from this stepwise model. The t-values for these variables are below the 1.96 benchmark, with insignificant p-values at the 0.95 confidence level. These excluded independent variables include: power distance, uncertainty avoidance, masculinity, power distance/uncertainty avoidance, power distance/individuality, power distance/masculinity, uncertainty avoidance/ individuality, uncertainty avoidance/masculinity and finally individuality/masculinity.

(5/10/2/1) Evaluation and assessment

The assessment and review of the stepwise multiple regression model results is conducted using several test statistics. First, a review of the case-wise diagnostics output of all study observations shows that there are no observations with standard residual more than the rule of thumb benchmark of (±3) standard deviation control limit. Note that the number of observations (N) which is used in this analysis is 23 observations. During the analysis process the observation for "Luxembourg" is excluded list-wise due to the existence of missing values. Second, the multicollinearity problem has disappeared completely among the independent variables due to the exclusion of nine independent variables using stepwise regression.

Figure 5.15: The stepwise regression standardized predicted and residuals values for the relationship between cultural values and ethics system. Source: Study analysis results using SPSS software (Version 14.00)



Third, the scatter plot (Figure 5.15) for the stepwise regression results shows that data points are still not scattered evenly across the centre of the panel. Consequently, the full data set is tested for the existence of heteroscedasticity of residuals using Goldfield-Quandt (G-Q) test statistics (Table 5.32). Test results show that the G-Q (F) statistic has a value of 2.59, which is higher than the F (critical value) of 0.531 at the

0.95 confidence level. This means that the full regression model results suffer from the problem of heteroscedasticity of residuals. Therefore, the null hypothesis of no heteroscedasticity is rejected. As a result, the weighted least square regression analysis (WLS) is implemented to overcome this problem in the next section

Table 5.32: The Goldfeld-Quandt (F) Statistic for the relationship between cultural values and ethics system. Source: Study analysis results using E-views statistical software package (Version 3.1)

Goldfeld-Quandt F Statistic	2.599461
$F_{(.95, 10, 10)}$ critical value	0.531523

(5/10/3)Weighted least square regression analysis

In this section the weighted least square regression analysis is used to eliminate the problem of heteroscedasticity (Table 5.33). The overall fit statistics for the model shows that the overall R-square has a value of 72.3% compared to a value of 42.4% for the stepwise model. The F-statistics has increased to a value of 23.50, compared to a value of 15.47 for the stepwise model, with a significant p-value of 0.001 at the 0.99 confidence level. This result shows that the regression coefficients are significantly different from zero (Appendix 22).

Further results show that individuality cultural value has a significant positive relationship with ethics systems, which is inconsistent with previous stepwise model results. The regression coefficient has a value of 0.410 and t-value of 4.84 with p-value of 0.001 at the 0.99 confidence level. This means that an increase in individuality cultural values is significantly associated with a increase in ethics systems and vise versa. Therefore, the alternative hypothesis which states that "There is a relationship between cultural values and ethics systems" is not rejected.

Table 5.33: The Weighted Least Square regression analysis for the relationship between cultural values and ethics system. IND= individuality. Sig= significance level. (***) indicates value significant at the 0.99 confidence level. N= number of observations. Source: Study analysis results using SPSS software (Version 14.00)

Variables	Ethics systems				
	Regression coefficient	Standard error	t-Statistics	Sig.	N
Constant	46.66	5.40	8.62***	.000	23
IND	.410	.085	4.84***	.001	23
Multiple correlation coefficient			.850		
R-square			.723		
Adjusted R^2			.692		
Regression standard error			18.71		
F-test			23.50***		
Sig.			.001		

Finally, the statistical analysis of the data set in this section shows a significant positive relationship between one cultural value, which is individuality, and ethics systems across the sample twenty three countries. The next section presents the overall summary and conclusion for the statistical analysis process implemented in this chapter.

(5/11) Summary

The main aim of this chapter is to present the detailed statistical data analysis procedures and results. The explanatory statistical analysis process starts with data screening, then the full multiple regression analysis model is implemented. This is followed by the stepwise multiple regression analysis to eliminate the problem of multicollinearity. The weighted least square regression analysis technique is implemented whenever necessary to overcome the problem of heteroscedasticity of residuals. An assessment and review process is implemented for each model.

In general, the statistical analysis process has successfully managed to achieve the study objectives by highlighting the significant relationships between the independent cultural values and the independent corporate governance systems. Cultural values are represented by four variables which are labeled: power distance (PDI), uncertainty-avoidance (UAV), individualism (IND), and masculinity (MAS). In addition, six interaction terms are added to the analysis to represent the interrelationships between the cultural values. While, corporate governance systems are represented by eight main variables which are labeled: board size, separation chair and CEO, independence per board, audit committee, remuneration disclosure, women on board, code of ethics and ethics systems.

The details of the analysis show interesting significant relationships between cultural values and several corporate governance systems, which is as follows: first, test results show a significant negative relationship between power distance and separation chair and CEO. Second, there are significant positive relationships between individuality and independence per board, audit committee, and ethics systems. Third, the power distance/masculinity interaction term shows a significant negative relationship with women on board. Finally, the uncertainty- avoidance/masculinity interaction term also shows a significant negative relationship with independence per board, remuneration disclosure and code of ethics. These findings shed some light on the origins of corporate governance systems across the sample countries. Finally, the next chapter will present the discussions for these results in detail.

CHAPTER 6 DISCUSSION

The main aim of this chapter is to present a detailed discussion of the research findings, in the light of the previous literature review, and their important theoretical and practical consequences. Consequently, this chapter is divided into three main sections. The first section deals with the impact of cultural values on stock market development in the United Kingdom. Correspondingly, the second section presents the impact of cultural values on corporate governance systems across twenty four countries. Finally this chapter concludes with summary and discussion.

(6/1) The impact of cultural values on stock market development

This study has investigated the dynamic relationship between cultural values and stock market development indicators in the United Kingdom during the period 1990 – 2004. Cultural values are represented by the cultural value model of Hofstede (1980) which consists of five dimensions, which are: power distance, uncertainty avoidance, individualism, masculinity and time orientation. Stock market development is represented by the most commonly used indicators in previous empirical research, which are: stock market activity, size, liquidity and concentration. Consequently, the structure equation modeling (SEM) is used to analyze the relationship between cultural values and stock market development indicators. The linear structural relations (LISREL) software package by Joreskog and Sorbom (1993) (Version 8.72) is implemented following the methodology of Sudarwan and Fogarty (1996) and Noravesh et al. (2005). Two types of linear structural relations models are presented: the uni-dimensional and the multi-dimensional models. In general, empirical results show that cultural values have a significant impact on stock market development in the United Kingdom over time, which have important consequences on both firm and country levels, this is detailed as follows:

(6/1/1) The uni-dimensional impact of cultural values on stock market development

The uni-dimensional structural equation models are used to investigate the relationship between each cultural value and stock market development indicators. In general, empirical results show that cultural values have a significant impact on stock market development in the United Kingdom during the period 1991-2004. These results are consistent with previous theoretical and empirical research by Hofstede (1980), Gray (1988), Amat et al. (1996), Sudarwan and Fogarty (1996), and Noravesh et al. (2005), who have found that cultural values have a significant influence on accounting practice. There is also consistency with De-Jong and Semenov (2000, 2002) who have found that cultural values have a significant impact on stock market development, such as the pattern of ownership and market capitalization.

First of all, the empirical results show that there is a significant negative relationship between power distance and stock market activity in the United Kingdom during the period 1991 – 2004 (Table 6.1). This means that a decrease in power distance is usually associated with more stock market activity and vice versa.

Table 6.1: The uni-dimensional relationships between power distance and stock market development indicators. (***) indicates significance at 0.99 confidence level. Source: Study analysis results using LISREL software package (Version 8.72)

	Stock market development indicators			
	Market Activity		Market Size	
Cultural values	**Hypothized**	**Actual**	**Hypothized**	**Actual**
Power Distance	N/A	(-)***	N/A	(-)***

This is consistent with the theoretical and empirical predictions by Hofstede (1980), which show a low power-distance score in the United Kingdom (Table 2.1). People in a small power distance society usually believe in equal distribution of power. They feel that inequality among individuals should be clearly justified (Amat et al., 1996). They feel less threatened; and they usually trust and easily cooperate with each other (De Jong and Semenov, 2002). In such a society, the relationship between superiors and subordinates is characterized by less interdependence, and a consultative communication mode (Sudarwan and Fogarty, 1996).

As a result, a low power-distance society may be characterized by a low concentration of economic power, high independence in decision-making and high self-regulation, which may encourage competition among members of the society (Gray, 1988). The low preference for concentration of power may force the regulatory system to provide more favourable conditions that facilitate competition, such as to increase minority shareholder's rights (De-Jong and Semenov, 2002). Furthermore, a low power distance society may have a low level of conservatism and secrecy of information in accounting practice (Gray, 1988), which may enhance the disclosure of information about companies' performance. Moreover, a low power distance society, like the United Kingdom, may have a high tendency towards self-regulation, flexibility and decentralization, which may force effective regulation in favour of stock market development (Gray, 1988). Therefore, it is not surprising to find that the low power distance cultural value in the United Kingdom to be associated with more support for stock market development. The increase in competition, disclosure of information and effective regulations may increase investors' confidence in the stock market, which in turn may result in an increase in market activity over time.

Second, empirical results show that there is a significant negative relationship between power distance and stock market size (Table 6.1). This means that a decrease in power distance is usually associated with an increase of stock market size in the United Kingdom during period 1991 – 2004. This empirical result is also consistent with previous theoretical and empirical research as mentioned earlier. The tendency towards low power distance in the United Kingdom may support competition, disclosure of information and hence may encourage investors to increase their investments in the stock market, which in turn may result in an increase in stock market capitalization over time.

Third, empirical results show that there is a negative relationship between uncertainty avoidance and stock market activity (Table 6.2). This means that a decrease of uncertainty avoidance is usually associated with an increase of stock market activity in the United Kingdom during the period 1991 – 2004. This is consistent with the theoretical and empirical predictions by Hofstede (1980), which show low uncertainty avoidance score for the United Kingdom (Table 2.1). Hofstede (1980) has mentioned that uncertainty avoidance refers to the extent that people can tolerate the anxiety emerging from unknown or ambitious situations in daily life.

Nevertheless, a low uncertainty avoidance society usually feels at ease and relaxes within ambiguous situation. People are usually motivated by recognition by others rather than by security preferences. They focus on practice more than principles in life and they can accept more deviance, conflict and competition and use it to the benefit of their society (De Jong and Semenov, 2002). High changes in the levels of foreign currency rate, gross domestic product (GDP) and gross national product (GNP) in the United Kingdom, for example, may show that people are more likely to accept changes in their disposal income and living standards, and hence can accept more uncertainty in their life.

Table 6.2: The uni-dimensional relationships between uncertainty avoidance and stock market development indicators. (**) indicates significance at 0.95 confidence level, * indicates significance at 0.99 confidence level. Source: Study analysis results using LISREL software package (Version 8.72)**

	Stock market development indicators			
	Market Activity		Market Size	
Cultural values	**Hypothized**	**Actual**	**Hypothized**	**Actual**
Uncertainty Avoidance	(-)	(-)**	(-)	(-)***
Stock market size	N/A	(+)***		

As a result, a low uncertainty avoidance society may be characterized by a high independence among people of the society, which may result in more competition among members of the nation. Further, high self-regulation, flexibility and decentralization may be dominant, which may result in flexible legislations that foster stock market development (Gray, 1988). Therefore, low uncertainty avoidance is expected to provide more support for stock market development. The increase in competition, flexible legislations may encourage more investors to participate in the stock market and hence increase market activity over time.

Fourth, empirical results show that there is a significant negative relationship between uncertainty avoidance and stock market size in the United Kingdom during the period 1991 – 2004 (Table 6.2). This means that a decrease of uncertainty avoidance is usually associated with an increase of stock market size. This is consistent with previous theoretical and empirical research. As mentioned earlier, low uncertainty avoidance is expected to encourage more investors to participate in the stock market, to increase competition among members of a nation and to support flexible regulations, which may enhance stock market capitalization over time. More interestingly, empirical results show that there is a significant positive association between stock market size and activity. This means that an increase in stock market size is usually associated with stock market activity, since large stock markets are more able to attract more investments and hence can enjoy more stock market activity.

Fifth, empirical results show that there is a positive relationship between individualism and stock market activity in the United Kingdom during the period 1991 – 2004 (Table 6.3). This means that an increase in individuality is usually associated with an increase of stock market activity. Hofstede (1980) has mentioned that the individualism cultural dimension reflects high preference for personal freedom and freedom of choice.

Table 6.3: The uni-dimensional relationships between individualism and stock market development indicators. (***) indicates significance at 0.99 confidence level. Source: Study analysis results using LISREL software package (Version 8.72).

	Stock market development indicators			
	Market Activity		Market Size	
Cultural values	Hypothized	Actual	Hypothized	Actual
Individualism	(+)	(+)***	(+)	(+)***
Stock market size	N/A	(+)***		

This is consistent with the theoretical and empirical predictions by Hofstede (1980) which show a high individualism score in the United Kingdom (Table 2.1), whereby, people are considered to be responsible only for themselves and their immediate family. They usually prefer loose social ties and they have an I-consciousness in the society (De Jong and Semenov, 2002).

As a result, a high individualism society is characterized by more tendencies towards self-independence in decision-making, which may result in more competition among members of a society. Competition may be more favourable to an individualistic society as people prefer limited government intervention and dispersed concentration of power

(De-Jong and Semenov, 2002). Further, a high individualism society may have low conservatism and secrecy in financial reporting practices, which may increase the disclosure of financial information. Moreover, high self-regulation, flexibility and decentralization of regulations are expected to prevail, which may result in flexible legislations to support stock market development (Gray, 1988). Therefore, high individualism may result in more stock market development. The increase in competition, financial disclosure and flexible legislations may increase investors' confidence in the financial market, and hence may foster stock market activity over time.

Sixth, empirical results show that there is a positive relationship between individualism and stock market size in the United Kingdom during the period 1991 – 2004 (Table 6.3). This means that an increase in individuality is usually associated with an increase of stock market size. As mentioned earlier, this is consistent with previous theoretical and empirical research. The tendency towards high individualism in the United Kingdom can support competition, and disclosure of information, which can encourage shareholders and investors to increase their investments in the stock market, which in turn may result in an increase in stock market capitalization over time. More interestingly, empirical results show that there is a significant positive association between stock market size and activity. As mentioned earlier, this means that an increase in stock market size is usually associated with stock market activity.

(6/1/2) The multi-dimensional impact of cultural values on stock market development

The multi-dimensional structural equation model is implemented to highlight the relationships between all cultural values and stock market development indicators simultaneously. Empirical results show two significant relationships among the variables (Table 6.4), which are: first, there is a significant negative relationship between power distance and stock market size in the United Kingdom during the period 1991-2004. This means that a decrease in power distance is usually associated with an increase in stock market size. This is consistent with previous results from the uni-dimensional structure equation model. As mentioned earlier, this can be justified on the basis that low power distance is usually associated with more competition among members of a society, more information disclosures and flexible regulations to secure power equalities in the society (Gray, 1988), that can reduce cost of transactions and increase investors' confidence in the financial sector, which in turn can provide more support for stock market development

Table 6.4: The multidimensional relationship between cultural values and stock market development indicators. (*) indicates significance at 0.90 confidence level. (***) indicates significance at 0.99 confidence level. Source: Study analysis results using LISREL software package (Version 8.72)

	Stock market development indicators			
	Market Activity		Market Size	
Cultural values	Hypothized	Actual	Hypothized	Actual
Power Distance	N/A	(+)	N/A	(-)*
Uncertainty avoidance	(-)	(+)	(-)	(-)
Individualism	(+)	(+)*	(+)	(-)
Stock market size	N/A	(+)***		

These results have some important consequences at the country level. People in wealthy countries like the United Kingdom usually have less dependence on power to secure a higher position and have fewer tendencies towards creating powerful groups. Wealth can be considered as a substitute of power satisfaction. Therefore, it can be concluded that national wealth of a country has a negative relationship with power distance (Hofstede, 1980).

Furthermore, it is assumed that countries which have technological advances in the field of information and communication, like the United Kingdom, are capable of creating more national wealth than others and hence reduce power distance (Sudarwan and Fogarty, 1996). In addition, a high level of literacy rate in the United Kingdom allows various people in the society to use modern technology and to communicate effectively with each other. This can help people to create more wealth, reduce power distance and have more awareness about the performance of listed companies on the stock market as well as the general economic performance.

Second, empirical results show that there is a significant positive relationship between individualism and stock market activity in the United Kingdom during the period 1991-2004 (Table 6.4). Individualism is the degree to which people feel responsible for themselves and/or their immediate family. This is consistent with the previous empirical results of the uni-dimensional structure equation model (Table 6.3). As mentioned earlier, this can be justified on the basis that there is a significant relationship between individualism and secrecy of accounting practice. As low secrecy of information in the accounting practice is usually dominant in an individualistic society, with more concern about a firm's outside stakeholders. Low secrecy may encourage disclosure of information, which may in turn enhance stock market activity (Gray, 1988).

Furthermore, it is assumed that wealthy nations like the United Kingdom have the ability to build towns and cities that result in an increase in self-independence and competition among members of a society (Hofstede, 1980). As more people live in urban areas greater pressure of competition and struggle for self-survival are likely to prevail in such a society (Sudarwan and Fogarty, 1996). In addition, people living in wealthy nations can have more disposable income to pursue their own interests and objectives apart from other colleagues, which in turn can increase individuality. Hofstede (1980) has asserted that people living in wealthy nations tend to be more independent from others. They are more likely to follow their own goals and objectives in isolation from others.

Therefore, the national wealth of a country may have a positive relationship with individualism. The increase in individuality may result in more self survival, independence and hence competitions among members of the society, which may in turn foster stock market activity. However, these empirical results should be taken with some caution due to the existence of multicollinarity among the independent cultural variables in the multi-dimensional structure equation model. The correlation matrix for the independent cultural variables shows that there is a significant negative relationship between individuality and both power distance and uncertainty avoidance. This means that as more individuality prevail in the society, power distance and uncertainty avoidance tend to diminish, which can result in favourable conditions for stock market development over time. More interestingly, empirical results show that there is a significant positive relationship between stock market size and activity. As mentioned earlier, this means that an increase in stock market size fosters stock market activity and vice versa.

The imperfect multicollinearity can be defined as: "A linear functional relationship between two or more independent variables that is so strong that it can significantly affect the estimation of the coefficients of the variables" (Studenmund, 2001). The existence of multicollinearity among the explanatory variables may be due to the theoretical relationships between the variables and/or the particular sample chosen, which means that two variables which are only slightly related in one sample may be so strongly related in another (Studenmund, 2001). The existence of multicollinearity among the independent variables in the multi-dimensional structural equation model has increased the variances and standard errors of the estimated coefficients and therefore it has decreased the calculated t-values of those coefficients.

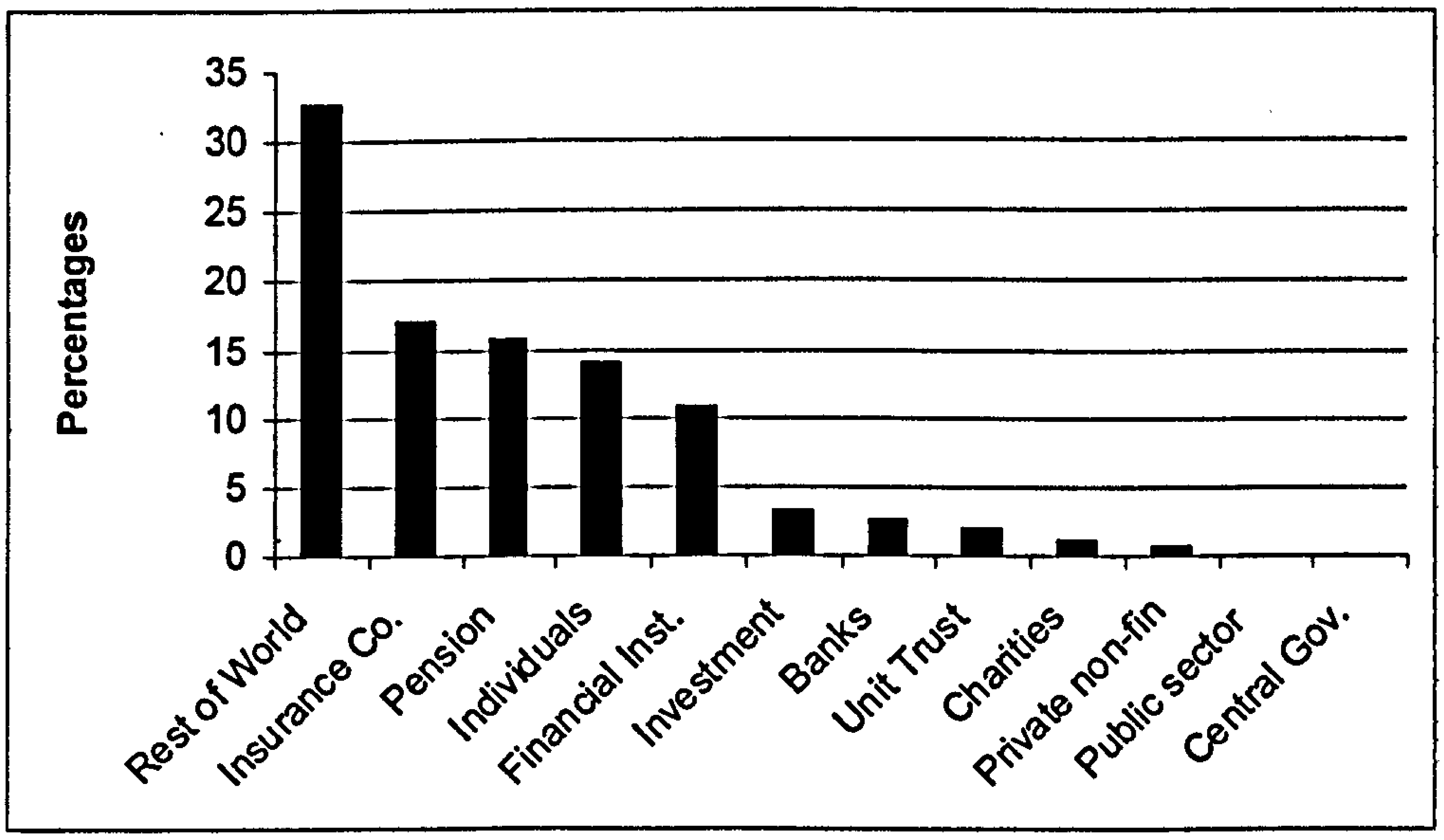
Nevertheless, multicollinearity will cause no bias in the estimated coefficients, but these estimates will become very sensitive to changes in specification. The overall fit of the equation and the estimation of non-multicollinearity variables will be largely unaffected. This means that the model can still be used in prediction or forecasting purposes, as long as the independent variables maintain the same pattern of multicollinearity in the forecast period that they demonstrated in the sample (Studenmund, 2001). Finally, the most appropriate remedies for multicollinearity in this case are to look for new and innovative explanatory proxy variables for cultural values based on previous theoretical and empirical evidence, and to attempt to increase the sample size to reduce the degree of multicollinearity.

On another aspect, some researchers have argued that the international culture may have an additional influence on the development of the national stock market. Recent stock market statistics show that in the rest of the world investors own about 33% of the United Kingdom shares listed on the London Stock Exchange at the end of 2004 (Figure 6.1).

However, De-Jong and Semenov (2002) have argued that national cultural values may have more importance than international values on stock market development, this is because: first, foreign capital usually flows to stock markets with favourable conditions and vice versa. Second, there is a strong bias of portfolio holdings towards domestic securities (Tesar and Werner, 1995). Third, the international flow of investment remains low, despite the decrease of structural barriers across countries (Rowland, 1999, mentioned in De-Jong and Semenov, 2002).

Figure 6.1: The share ownership percentages in London stock at end of 2004.

Source: U.K. Office for National Statistics (ONS).



More generally, the long term trend shows that the percentages of shares held by rest of the world, or foreign, investors continues to increase, while the percentage holdings of individuals is decreasing (Figure 6.2 a, b). So, it may be an interesting topic for future research to investigate the impact of international culture on the development of national stock markets around the world.

Figure 6.2a: Total market value for share ownership during period 1989-2004.

Source: U.K. Office for National Statistics (ONS).

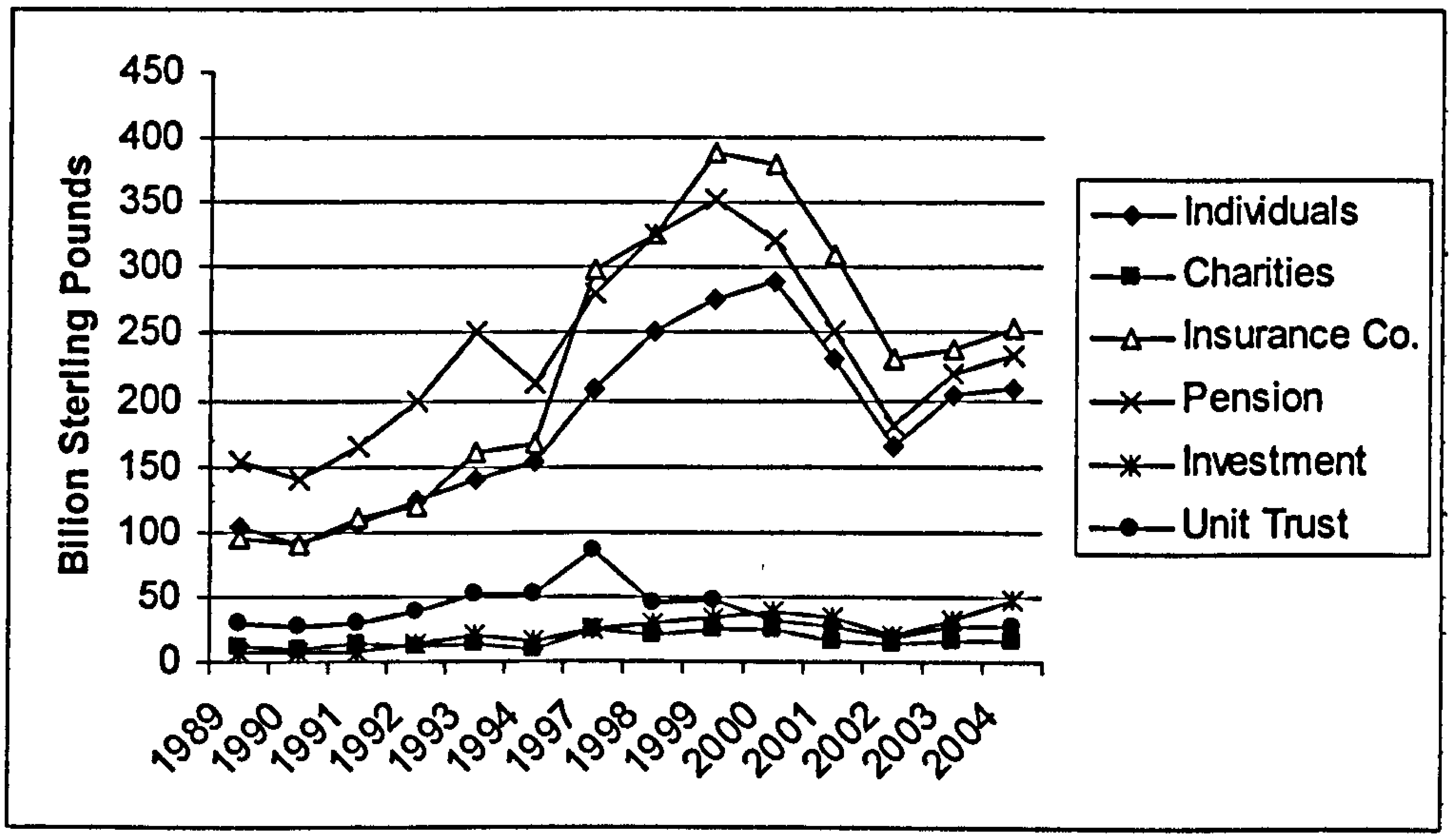
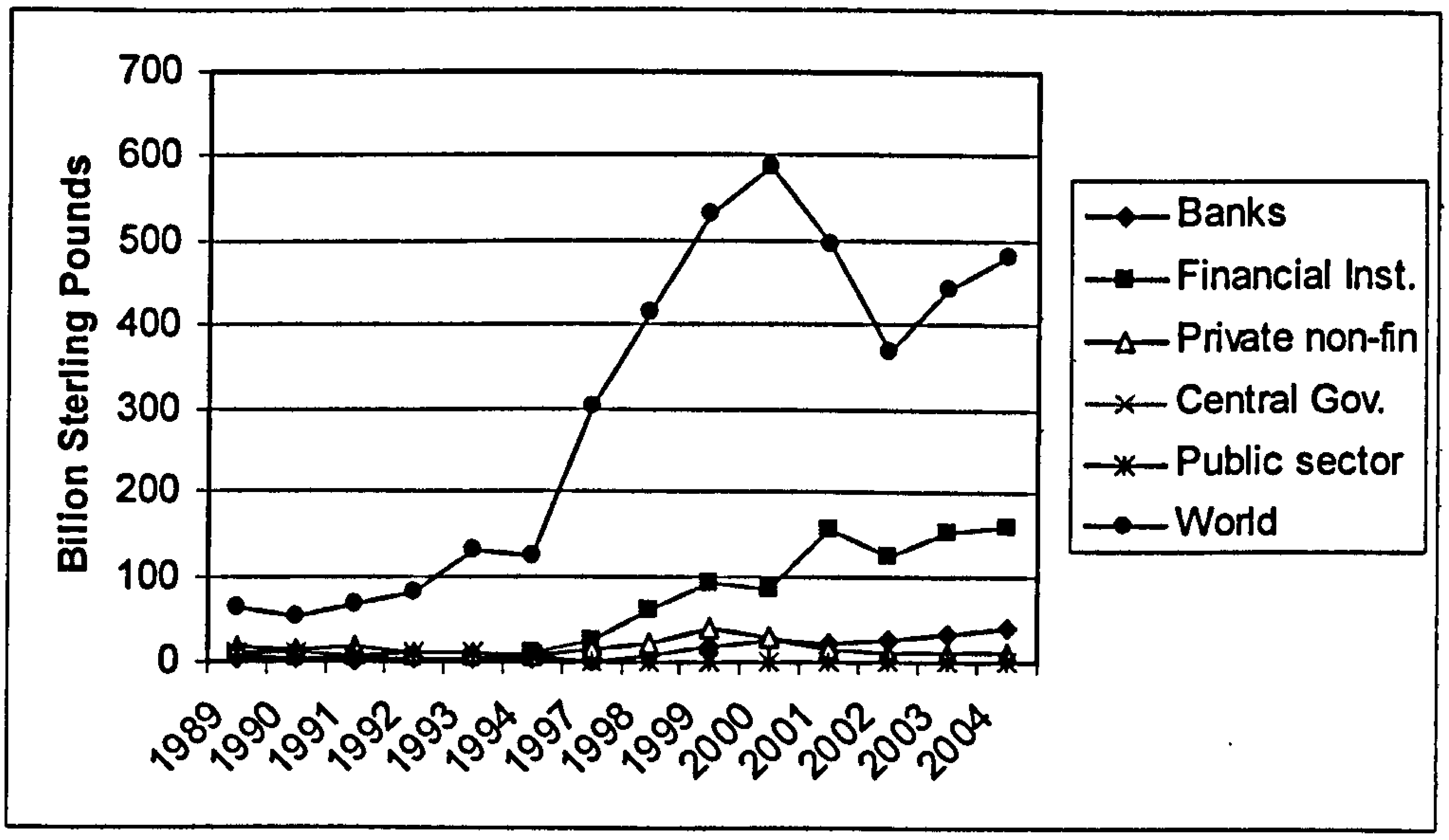


Figure 6.2b: Total market value for share ownership during period 1989-2004.

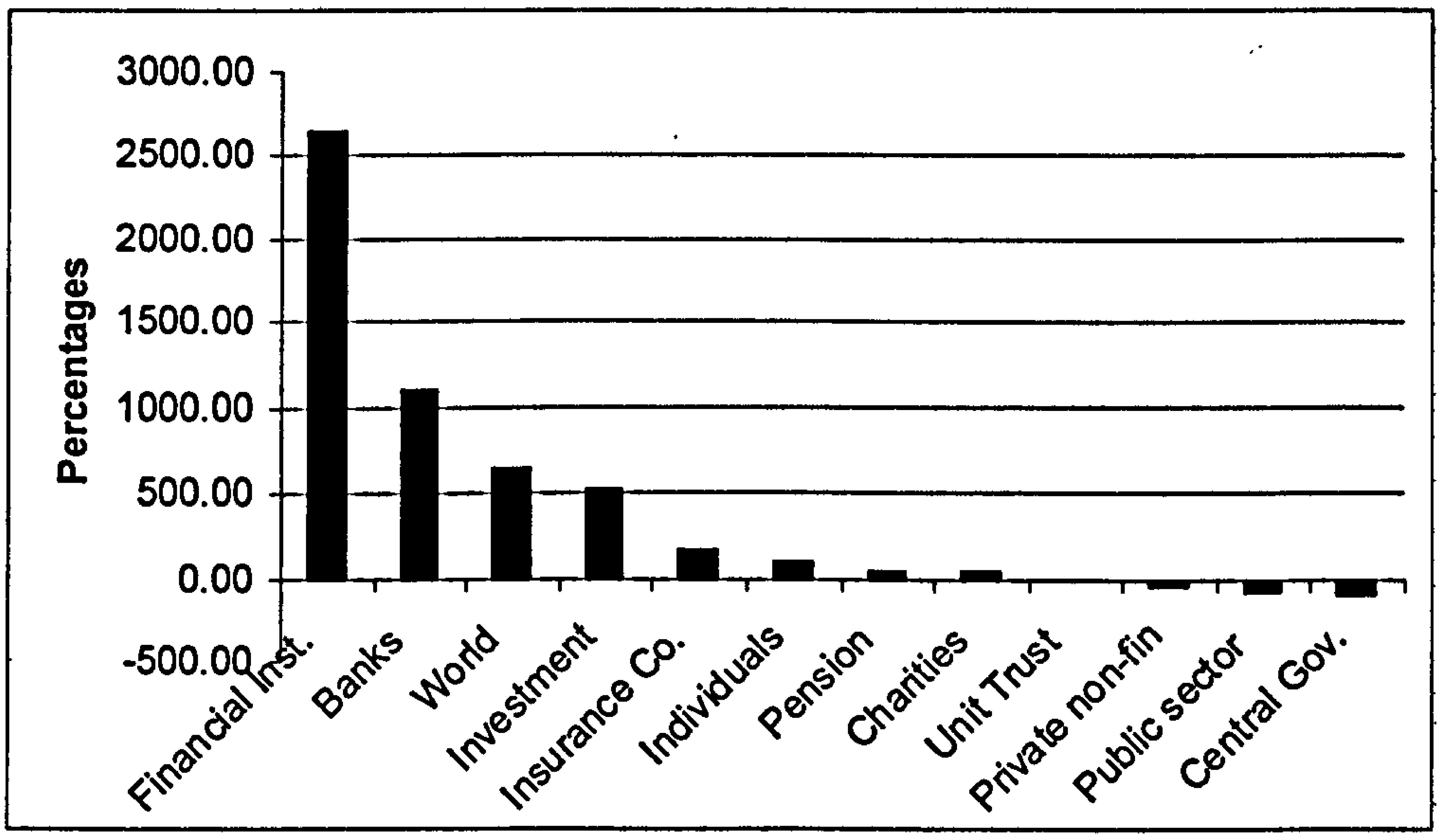
Source: U.K. Office for National Statistics (ONS)



Finally, a comparison of the growth rates of share ownership during period 1989-2004 shows that the highest growth rate is by the financial institutions, followed by banks, world; investments and insurance companies (Table 6.3). More interestingly, the public sector and central government had a negative growth rate, which is consistent with the cultural environment in the United Kingdom, which support competition and discourages government direct intervention in business activities.

Figure 6.3: The growth rates of share ownership during period 1989-2004.

Source: U.K. Office for National Statistics (ONS).



(6/2) The impact of cultural values on corporate governance systems

This study has investigated the relationship between cultural values and corporate governance systems across twenty four countries in Western Europe, North America and Asia Pacific. Cultural values are represented by the cultural value model of Hofstede (1980) which consists of five dimensions, which are: power distance, uncertainty avoidance, individualism, masculinity and time orientation. Meanwhile, corporate governance systems are represented by eight systems, which are: board size, separation of chair and CEO, independence per board, independent audit committee, remuneration disclosure, women on board, code of ethics and ethics systems.

Several regression analysis models are implemented to investigate the relationship between cultural values and corporate governance systems across countries, such as the multiple regression analysis for the full model, the stepwise regression analysis model, and the weighted least square regression (WLS) model, using the SPSS and E-views statistical software packages. In general, empirical results show that cultural values have an impact on several corporate governance systems across countries, which have important consequences at both firm and country levels.

The preliminary analysis results show that there is a significant interrelationship between the independent cultural values across countries (Table 6.5). Empirical results show that there is a significant negative relationship between individuality and power distance cultural values at the 0.99 confidence level. This means that an increase in the individuality cultural value in a society is usually associated with a decrease in power distance. This is consistent with previous longitudinal empirical results which show a significant negative relationship between individuality and power distance in the United Kingdom during the period 1991-2004. As mentioned earlier, this relationship is considered favourable for the development of the stock market and to foster good corporate governance systems. In addition, it can be noticed that there is almost a significant positive relationship between power distance and uncertainty avoidance cultural values at the 0.90 confidence level. This means that high power distance societies are usually associated with high uncertainty avoidance. This is also consistent with previous longitudinal results in the United Kingdom during period 1991-2004.

Table 6.5: The cross-correlation matrix between the independent cultural values across countries. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity. (*) indicate values are significant at the 0.90 confidence level. (***) Indicates values are significant at 0.99 confidence level. Values in brackets are p-values. Source: Study analysis results using SPSS software package (Version 14.00)

Cultural values	PDI	UAV	IND	MAS
PDI	1.00			
UAV	.349* (.051)	1.00		
IND	-.550*** (.003)	-.089 (.343)	1.00	
MAS	.018 (.467)	.135 (.269)	-.001 (.498)	1.00

Furthermore, empirical results show that there are significant relationships between cultural values and several corporate governance systems, which are detailed as follows: first, empirical results show that there is no significant relationship between cultural values and corporate board size. This means that differences in cultural values across countries do not have an impact on the number of corporate board members. It seems that board size is influenced by other independent variables rather than the cultural values across country societies. There are some previous studies which show a relationship between board size and company performance (see Caroline et al., 2002, and Beiner et al., 2004). Unfortunately, there are seldom studies that deal with the determinants of board size. This is an issue that needs to be further investigated in future research.

Second, empirical results show that there is a significant relationship between separation of chair and CEO and cultural values (Table 6.6). The overall fit statistics for this model shows that the overall R-square has a considerably high value of 90.6% (Table 5.8). The F-statistics has a value of 96.240, with a significant p-value of .000 at the 0.99 confidence level. Further detailed results show that power distance cultural value has a significant negative relationship with "separation chair and CEO". The regression coefficient has a value of -.499, and t-value of -9.810, with p-value of .000 at the 0.99 confidence level. This means that an increase in power distance is significantly associated with a decrease in "separation chair and CEO" across the sample countries and vice versa

Table 6.6: Summary of the relationships between cultural values, separation chair and CEO, and independence per board. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity. * Indicates significance at the 0.99 confidence level. Source: Study analysis results using SPSS software package (Version 14.00)**

Corporate governance systems / Cultural values	Separation chair and CEO	Independence per board
PDI	(-)***	
IND		(+)***
UAV_MAS		(-)***

This is consistent with the previous theoretical and empirical research. As Hofstede (1980) has mentioned, people in large power distance societies usually accept the existence of a hierarchy of inequality, that is perceived to provide the best protection for everyone in the society (De Jong and Semenov, 2002). As a result, co-operation among people is usually difficult to maintain, as everyone perceives the other as a potential threat to his/her power. Also, this implies an automatic or paternalistic relationship between subordinates and superiors, whereby the latter are usually dependent on the former, and they seldom contradict each other and neither would a subordinate normally approach a superior directly (Sudarwan and Fogarty, 1996).

By contrast, people in small power distance societies usually believe in equal distribution of power. They usually feel less threatened, trust each other and feel more at ease to cooperate with others (De Jong and Semenov, 2002). The relationship between superiors and subordinates may be characterized by less interdependence, and a consultative communication mode, whereby subordinates feel free to approach and contradict superiors (Sudarwan and Fogarty, 1996).

Consequently, a high power-distance society may be characterized by a high concentration of economic power, low independence in decision-making and low self-regulation, which may discourage competition among members of the society (Gray, 1988). The high preference for concentration of power may force the regulatory system to provide conditions that encourage companies to combine the Chair and CEO positions. A high power-distance society with high level of conservatism and secrecy in accounting practices may discourage disclosure of information about companies' performance (Gray, 1988). As high self-regulation, flexibility and decentralization deteriorates in a high power distance society, more regulation that discourages stock market development and good corporate governance will prevail (Gray, 1988). Though, it is not surprising to find that companies in large power distance societies tend to combine the chair and CEO positions to secure power inequalities and concentration of economic power.

Good governance systems usually entail that the chair and CEO position should be separated. The idea behind the separation of chairman and CEO is to prevent a single individual to have unfettered powers of decision. The chairman is usually responsibly for running the board, while the chief executive is usually responsible for running the company's business. In some countries, the corporate law requires the separation between the executive and non-executive managing directors such as in Sweden, while in other countries, such as in Germany, the two-tier board structure ensures the separation of roles. The EIRIS indices show that the highest proportions of companies with separation chair and CEO, within a unitary board structure, are in Ireland and Luxemburg, whereas Australia, United Kingdom and New Zealand have over 95% of companies separating the roles (Stephanie, 2005). However, it can be noticed that in the U.S.A. only about 25% of companies separate the two roles despite its low score on power distance (Table 2.1). This may be due to the relatively small number of large and medium capital companies listed on the EIRIS index (Stephanie, 2005), or perhaps due to the existence of other forces that influence the separation of CEO and chair in the U.S., an issue that need to be further investigated in future research.

Third, empirical results show that there is a significant relationship between independence per board and cultural values (Table 6.6). The "independence per board" corporate governance system refers to the proportion of independent directors on the corporate board. Good corporate governance systems usually suggest that the existence of independent directors on the board usually enhances the decision-making process, maintains accountability and transparency. The overall fit statistics for the model shows that the overall R-square has a relatively low value of 43.3% (Table 5.10). The F-statistics have a value of 7.628, with a significant p-value of .003 at the 0.99 confidence level. Further results show that the individuality cultural value has a significant positive relationship with "independence per board". The regression coefficient has a value of .538 and t-value of 2.850, with p-value of .010 at the 0.99 confidence level. This means that an increase in individuality cultural value is usually associated with an increase in independence per board.

This is consistent with the previous theoretical and empirical research. As mentioned by Hofstede (1980), people in an individualistic society are usually considered to be responsible only for themselves and their immediate family. They usually prefer loose social ties in the society. On the other hand, collectivistic societies accept responsibility for family, tribal or in-groups in exchange for loyalty (Amat et al., 1996). People in collectivist societies have a We-consciousness versus an I-consciousness in individualist societies (De Jong and Semenov, 2002). A high individualism society may have more tendencies towards self-independence in decision-making, limited government intervention and dispersed concentration of power (De-Jong and Semenov, 2002). A highly individualistic society usually prefers low conservatism and secrecy in financial reporting practices, which may increase the disclosure of financial information. The society is expected to have high self-regulation, flexibility and decentralization, which may result in flexible legislations to improve stock market development (Gray, 1988). Therefore, these characteristics are expected to support more the inclusion of independent directors to the corporate boards.

Further test results show a significant negative relationship between the interaction term "uncertainty avoidance/masculinity" (UAV_MAS) and the "independence per board" (Table 6.6). The regression coefficient has a t-value of -.005 and t-value of -2.578 with p-value of .018 at the 0.95 confidence level. This means that an increase in uncertainty avoidance and masculinity cultural values is usually associated with a decrease in the "independence per board" across the sample countries.

This is consistent with previous theoretical and empirical results. As mentioned by Hofstede (1980) the uncertainty avoidance cultural value refers to the extent that people can tolerate the anxiety emerging from unknown or ambitious situations in daily life. People usually try to avoid and/or reduce these situations by using technology, rules and rituals. High uncertainty-avoidance societies feel that uncertainty inherent in life is a continuous threat that must be fought. These societies are motivated by security preference, which is considered as an achievement in itself. By contrast, low uncertainty-avoidance societies are more at ease and relax within ambiguous situations. Motivation is perceived as recognition by others rather than security. People focus more on practice rather than principles in life. They can accept more deviance, conflict and competition and use it to the benefit of their society (De Jong and Semenov, 2002).

Consequently, a high uncertainty-avoidance society may be characterized by dependence among people and managers of the society, which may result in less competition between members of the nation. Low self-regulation, inflexibility and centralization are expected to prevail, which may result in inflexible legislations to support stock market development and good corporate governance systems (Gray, 1988). Therefore, it is natural to expect that the existence of high uncertainty-avoidance among the members of the society can result in less preference for more independent directors on corporate boards across countries.

In addition, people in a masculine society usually emphasize material achievement, assertiveness, material success and competition. They feel that the strong should be supported, conflicts are resolved by fighting them out, and managers prefer to have more independence in decision-making. By contrast, a feminine society usually tends to focus on feminine nurturance, care for others, the living environment and the quality of life. As more preference is given to modest behavior, equality and solidarity against competition, and managers usually look for consensus-decisions (De Jong and Semenov, 2002).

Consequently, a high masculinity society may be characterized by a high preference for independence in decision-making among members of the society, which may result in more competition among members of a society. Further, high self-regulation, regulation flexibility and decentralization in a masculine society may lead to positive legislations towards good corporate governance systems. Some intermediary channels support these relationships through managers' high independence (arm's length relationships with stakeholders); dominant private pension funds, and low preference for ownership concentration (De Jong and Semenov, 2002).

Moreover, a masculine society may be characterized by low conservatism and secrecy in financial reporting practices, which may increase information content of company reports (Gray, 1988). Therefore, the existence of a high masculinity in a society may result in more preference to independence per board. The existence of both uncertainty-avoidance and masculinity in a society seems to create a suspicious environment that can hinder the inclusion of more independent directors on corporate board of directors. The EIRIS indices show that a high percentage of independent directors on the board are found in Switzerland, Canada and U.S. By contrast, a low percentage is found in Germany and Austria (Stephanie, 2005).

Fourth, empirical results show that there is a significant relationship between audit committee corporate governance system and cultural values. In fact, the main responsibilities of an independent audit committee are usually to monitor and review the financial statements, the internal financial controls, the external auditors' independence and objectivity, and the effectiveness of the audit process. The overall fit statistics for this model shows that the overall R-square has a relatively high value of 71.9%. The F-statistic has a value of 25.61, with a significant p-value of .000 at the 0.99 confidence level (Table 5.17). Further results show that the individuality cultural value has a significant positive relationship with the "audit committee". The regression coefficient has a value of .917 and t-value of 5.061 with p-value of .000 at the 0.99 confidence level (Table 6.7). This means that an increase in individuality is significantly associated with an increase in audit committee across countries and vice versa.

This is consistent with the previous theoretical and empirical research. As mentioned by Hofstede (1980) people in an individualistic society usually prefer loose social ties. A high individualism society may have more tendencies towards self-independence in decision-making, low conservatism and secrecy in financial reporting practices, high self-regulation, flexibility and decentralization of regulations (Gray, 1988). Therefore, these characteristics are expected to support the formation of independent audit committee.

The EIRIS indices show that the independence of the audit committee varies considerably across countries. For example the percentage of companies with majority independent audit committee is approximately 50% in Norway, 56% in Sweden, while it is approximately above 95% in the U.K, Netherlands, Canada, U.S., Ireland and Luxemburg. By contrast, Japan has only 4% of companies with majority independent audit committee (Stephanie, 2005).

Table 6.7: Summary of the relationships between cultural values, audit committee, remuneration disclosure and women on board. PDI= power distance, UAV= uncertainty avoidance, IND= individuality, MAS= masculinity. * Indicates significance at the 0.99 confidence level. Source: Study analysis results using SPSS software (Version 14.00)**

Corporate governance systems / Cultural values	Audit Committee	Remuneration disclosure	Women on board
IND	(+)***		
PDI_MAS			(-)***
UAV_MAS		(-)***	

Fifth, test results show that there is a significant relationship between remuneration disclosure and cultural values. Remuneration disclosure refers to the disclosure of the CEO's salary, or the salaries of all directors individually or as a whole. Good corporate governance practices advise that remuneration should be linked to corporate and individual performance. The overall fit statistics for this model shows that the overall R-square has a considerably low value of 24.1%; the F-statistic has a value of 4.77, with a significant p-value of .045 at the 0.95 confidence level (Table 5.21). Further results show that the interaction term "uncertainty avoidance/masculinity" cultural value has a significant negative relationship with remuneration disclosure. The regression coefficient has a value of -.001 and t-value of -2.184 with p-value of .045 at the 0.95 confidence level (Table 6.7). This means that an increase in uncertainty avoidance and masculinity cultural value is significantly associated with a decrease in remuneration disclosure and vice versa.

This is consistent with previous theoretical and empirical results. As mentioned by Hofstede (1980) the uncertainty avoidance cultural value refers to the extent that people can tolerate the anxiety emerging from unknown or ambiguous situations in daily life. People usually try to avoid and/or reduce these situations by using technology, rules and rituals. High uncertainty avoidance societies usually feel that uncertainty inherent in life is a continuous threat that must be fought. These societies can be motivated by security preference, which is considered as an achievement in itself (De Jong and Semenov, 2002). Consequently, a high uncertainty avoidance society may be characterized by dependence among people and managers of the society, which may result in less competition between members of the nation. Low self-regulation, inflexibility and centralization in regulations are expected to prevail, which may result in inflexible legislations that hinder stock market development and good corporate governance systems (Gray, 1988). Therefore, these characteristics are expected to make managers less reluctant to disclosure of their remuneration packages.

In addition, Hofstede (1980) has mentioned that people in a masculine society emphasize material achievement, assertiveness, material success and competition. They feel that the strong should be supported, conflicts are resolved by fighting them out, and managers prefer to have more independence in decision-making (De Jong and Semenov, 2002).

Consequently, a high masculinity society may be characterized by a high preference for independence in decision-making among members of the society, which may result in more competition among members of a society. Further, high self-regulation, regulation flexibility and decentralization in a masculine society may lead to positive legislations towards good corporate governance systems. Moreover, a masculine society may be characterized by low conservatism and secrecy in financial reporting practices, which may increase information content of company reports (Gray, 1988). Therefore, the existence of a high masculinity in a society may result in more preference to remuneration disclosure. However, the existence of both uncertainty avoidance and masculinity in a society can create a suspicious environment about the future and hence may create resistance by mangers towards remuneration disclosure. The EIRIS indices show that Greece and Japan have the lowest remuneration disclosure with only 58% and 44% of companies discloses remuneration to public respectively (Stephanie, 2005).

Sixth, empirical results show that there is a significant relationship between women on board and cultural values. The overall fit statistics for this model shows that the R-square has a considerably low value of 38.6%. The F-statistic has a value of 13.21, with a significant p-value of .002 at the 0.99 confidence level (Table 5.23). The detailed results show that one independent cultural value has successfully managed to explain the dependent corporate governance system "women on board". The interaction term "power distance/masculinity" cultural variable shows a significant negative relationship with the "women on board" score across the twenty three sample countries. The regression coefficient has a value of -.003 and t-value of -3.635, with p-value of .002 at the 0.99 confidence level. This means that an increase in power distance and masculinity cultural values is associated with a significant decrease in women on board across the sample countries.

This is consistent with the previous theoretical and empirical research. As Hofstede (1980) has mentioned that people in large power distance societies may accept the existence of a hierarchy of inequality, which is perceived to provide the best protection for everyone (De Jong and Semenov, 2002). As a result, co-operation among people may be difficult to maintain, as everyone may perceive the other as a potential threat to his/her power.

In the light of Gray's (1988) predictions, a high power-distance society may be characterized by a high concentration of economic power, low independence in decision-making and low self-regulation, which may discourage competition among members of the society. The high preference for concentration of power may support informal regulatory systems that prevent the inclusion of more women on corporate boards. Low self-regulation and centralization in a high power distance society may discourage regulations that foster good corporate governance systems. So, it can be expected that companies in large power distance societies tend to have low women on board to secure power inequalities and concentration of economic power.

Furthermore, people in a masculine society usually emphasize material achievement, assertiveness, material success and competition. They usually feel that the strong should be supported, conflicts are resolved by fighting them out, and managers prefer to have more independence in decision-making. By contrast, a feminine society usually tends to focus on feminine nurturance, care for others, the living environment and the quality of life. As more preference is given to modest behaviour, equality and solidarity against competition, managers usually look for consensus-decisions (De Jong and Semenov, 2002). Therefore, it seems natural that the existence of a high masculinity in a society may result in fewer women on corporate boards. Moreover, the existence of both high power distance and masculinity in a society can further create an environment that discourage women participation on corporate boards, to support competition and power inequalities among members of a society.

The presence of more women on corporate board usually increases the diversity of the backgrounds, skills and experience of board members, which may increase the effectiveness of decision-making process. The EIRIS indices show that Norway and Sweden have the highest percentages of 26% and 20% of board members on average respectively. In contrast, Japan has the lowest percentage of women on board of only 0.4% of board members (Stephanie, 2005).

Seventh, test results show that there is a significant relationship between code of ethics and cultural values. The overall fit statistics for this model shows that the overall R-square has a moderate value of 68.3%. The F-statistic has a value of 19.40, with a significant p-value of .002 at the 0.99 confidence level (Table 5.29). Further results show that the interaction term "uncertainty avoidance/masculinity" cultural value has a significant negative relationship with code of ethics. The regression coefficient has a value of -.005 and t-value of -4.40, with p-value of .002 at the 0.99 confidence level (Table 6.8). This means that an increase in uncertainty avoidance and masculinity cultural values is significantly associated with a decrease in code of ethics and vice versa.

Table 6.8: Summary of the relationships between cultural values, code of ethics and ethics systems. UAV= uncertainty avoidance, IND= individuality, MAS= masculinity. * Indicates significance at the 0.99 confidence level.**

Source: Study analysis results using SPSS software (Version 14.00)

Corporate governance systems / Cultural values	Code of ethics	Ethics systems
UAV/MAS	(-)***	
IND		(+)***

This is consistent with previous theoretical and empirical results. As mentioned by Hofstede (1980) the uncertainty avoidance cultural value refers to the extent that people can tolerate the anxiety emerging from unknown or ambiguous situations in daily life. High uncertainty avoidance societies usually feel that uncertainty inherent in life is a continuous threat that must be fought. People usually try to avoid and/or reduce these situations by using technology, rules and rituals (De Jong and Semenov, 2002). Therefore, it is expect that the existence of high uncertainty avoidance among the members of the society can result in less preference for code of ethics, perhaps to avoid the ambiguous consequences of its implementation.

In addition, people in a masculine society usually emphasize material achievement, assertiveness, material success and competition. They feel that the strong should be supported, conflicts are resolved by fighting them out, and managers prefer to have more independence in decision-making (De Jong and Semenov, 2002). Therefore, it can be expected that the existence of high masculinity in a society may result in less preference for the adoption of corporate code of ethics, perhaps to secure competition and material achievement. Furthermore, the existence of both uncertainty-avoidance and masculinity in a society can create more resistance to the adoption of such corporate codes. Note that some good corporate governance practices require companies to adopt and disclose a code of business conduct and ethics for directors, officers and employees. The EIRIS indices show that the highest percentage of companies with basic ethics policies is found in Finland and the Netherlands. By contrast, Hong Kong and Singapore have the lowest percentages of less than 25% of companies (Stephanie, 2005).

Finally, empirical results show that there is a significant relationship between ethics system and cultural values. The overall fit statistics for this model shows that the overall R-square has a relatively high value of 72.3%. The regression coefficient has a t-value of

4.84, with a significant p-value of .001 at the 0.99 confidence level (Table 5.33). Further results show that individuality cultural value has a significant positive relationship with ethics systems (Table 6.8). The regression coefficient has a value of .410 and t-value of 4.84 with p-value of .001 at the 0.99 confidence level. This means that an increase in individuality cultural values is significantly associated with an increase in ethics systems and vice versa.

This is consistent with the previous theoretical and empirical research. As mentioned by Hofstede (1980) people in an individualistic society are usually responsible only for themselves and their immediate family. They usually prefer loose social ties in the society. On the other hand, collectivist societies accept responsibility for family, tribal or in-groups in exchange for loyalty (Amat et al., 1996). Consequently, a high individualism society may have more tendencies towards self-independence in decision-making, limited government intervention and dispersed concentration of power (De-Jong and Semenov, 2002). A high individualistic society usually prefers low conservatism and secrecy in financial reporting practices, which may increase the disclosure of financial information. The society is expected to have high self-regulation, flexibility and decentralization of regulations, which may result in flexible legislations to improve stock market development (Gray, 1988). Therefore, these characteristics are expected to support more ethics systems in corporate practices.

Good corporate governance systems usually have management systems to support the enforcement of codes of ethics. These systems can improve standards of corporate governance, ethics, transparency and integrity. The EIRIS indices show that 86.4% of companies in the United Kingdom have basic management systems. By contrast Luxemburg has 0% of companies with management systems (Stephanie, 2005).

(6/3) Summary

Overall, empirical results have highlighted the influence of culture values on corporate governance systems across countries. Individuality is the most important cultural value in terms of its impact on corporate governance systems. The individuality cultural value has significant positive relationships with three corporate governance systems, which are: independence per board, audit committee, and ethics systems. This means that an increase in the individuality cultural value is associated with an increase in independent directors on corporate board, audit committee and ethics systems across counties. This is consistent with Grief (1994) who has noted that the individualistic cultural value may be more efficient than the collectivism-values in the long run. He has explained that the formal enforcement institutions in an individualistic society may provide more support for anonymous exchange, which is useful for the economic development. He has concluded that cultural values influence coordination processes which may create different paths of development

In addition, the power distance cultural value is ranked in the second place in terms of its impact on corporate governance systems, with only one significant positive impact on separation chair and CEO. Similarly, the uncertainty avoidance/masculinity is the most important interaction term among cultural values, since it has significant negative impact on three corporate governance systems, which are: independence per board, remuneration disclosure, and code of ethics. In addition, the interaction term power distance/masculinity comes in the second place with only one significant negative impact on women on board.

These results are consistent with Gorga (2003) who has suggested that the introduction of culture may shed some light on corporate governance systems across countries. He has explained that the core cultural values and basic assumptions of certain stakeholders may have an impact on the relationships between the CEO, directors, officers and employees, press and public opinion. Consequently, he has suggested that a strong ideology or belief system should be in place to build trust and good governance practices in the capital markets across countries.

This study has shown that several cultural values play an important role in the formation and behaviour of stock market development over time, and on corporate governance systems across countries. These relationships may have important consequences at both firm and country levels. At the country level, it can be suggested that the imposition of hard stock market development policies based on imposing only strict legal reforms may not yield the expected results. Conversely, soft stock market development policies based on cultural values improvements can be more reliable and sustainable overtime. For example, countries may pursue development programs to reduce the power distance cultural value among members of the society to improve stock market and corporate governance systems. This can be done through more emphasis on developing the education system to raise public awareness, and to support more technological developments to encourage information disclosure and to create more wealth to members of the society. This means that continuous improvements in the education systems, information technology and standard of living should be a basic component of any stock market development policy to ensure successful results. At the firm level, multinational companies, which operate in an unfavourable business environment to stock market development, can create more value for their shareholders and potential investors by developing their own good corporate governance systems. Finally, it is time now to turn to the final chapter which deals with the study's conclusions.

CHAPTER 7 CONCLUSION

The main aim of this chapter is to present the conclusions and recommendations of the research findings in the light of the main aims and objectives of the study. This chapter is divided into three sections. The first section presents the summary of the research study findings, while the second section presents the study scope and limitations. Finally, this chapter concludes with recommendations for future research.

(7/1) The research study findings

The main objective of this study is to explore the impact of culture values on stock market development and on corporate governance systems. Consequently, this section is divided into two sub-sections to highlight the findings on these relationships, which are detailed as follows:

(7/1/1) Cultural values and stock market development

One of the main objectives of this study is to explore the impact of cultural values on stock market development in the United Kingdom during period 1991-2004. Cultural values are represented by the five dimensions cultural value model of Hofstede (1980) which consists of: power distance, uncertainty avoidance, individualism, masculinity and time orientation, while stock market development is represented by four indicators, which are: stock market activity, size, liquidity and concentration. In general, empirical results, using structural equation modeling (SEM), show that cultural values have a significant impact on stock market development. These results are consistent with previous theoretical and empirical research by Hofstede (1980), Gray (1988), Amat et al. (1996), Sudarwan and Fogarty (1996), and Noravesh et al. (2005), who have found that cultural values have a significant influence on accounting practice, and consistent with De-Jong and Semenov (2000, 2002), who have found that cultural values have a significant impact on stock market development, such as the pattern of ownership and market capitalization. This is detailed as follows:

The uni-dimensional structural equation models have shown that: first, there is a significant negative relationship between power distance and both stock market activity and size. This means that a decrease in power distance is usually associated with more stock market activity/size and vice versa. Second, there is a negative relationship between uncertainty avoidance and stock market activity and size. This means that a decrease of uncertainty avoidance is usually associated with an increase in stock market activity/size and vice versa. Third, there is a positive relationship between individualism and both stock market activity and size. This means that an increase in individuality is usually associated with an increase in stock market activity/size and vice versa. Fourth, there is a significant positive association between stock market size and stock market activity. This means that an increase in stock market size is usually associated with an increase in stock market activity and vice versa.

Furthermore, empirical results using the multi-dimensional structural equation model show two significant relationships between cultural values and stock market development indicators. First, there is a significant negative relationship between power distance and stock market size in the United Kingdom during period 1991-2004. This means that a decrease in power distance is usually associated with an increase in stock market size and vice versa. This is consistent with previous results from the uni-dimensional structure equation model. As mentioned earlier, this can be justified on the basis that low power distance is usually associated with more competition among members of a society, more information disclosures and flexible regulations to secure power equalities in the society (Gray, 1988), that can reduce the cost of transactions and increase investors' confidence in the financial sector, which in turn can provide more support for stock market development. These results have some important consequences on the country level. People in wealthy countries, like the United Kingdom, consider wealth as a substitute for power satisfaction. They usually have less dependence on power to secure a higher position and have fewer tendencies towards creating powerful groups. Therefore, it can be concluded that national wealth of a country has a negative relationship with power distance (Hofstede, 1980).

Furthermore, it is assumed that countries that can develop technological advances in the field of information and communication, like the United Kingdom, are capable of creating more national wealth than others and hence can reduce power distance (Sudarwan and Fogarty, 1996). In addition, the high level of literacy rate in the United Kingdom allows many people in the society to use modern technology and to communicate effectively with each other. This allows people to develop more awareness about the performance of listed companies on the stock market as well as the general economic performance. Therefore, it can be concluded that the reduction of power distance can be done through the creation of more wealth, technological advances, and improvement in the education system and awareness among members of the society, which can result in favorable conditions for stock market development.

Second, empirical results show that there is a significant positive relationship between individualism and stock market activity in the United Kingdom during the period 1991-2004. This can be justified on the basis that there is a suggested significant negative relationship between individualism and secrecy of accounting practice. Low secrecy may encourage disclosure of information which may in turn enhance stock market activity (Gray, 1988). Furthermore, it is assumed that wealthy nations, like the United Kingdom, have the ability to build towns and cities that result in an increase in self-independence and competition among members of a society (Hofstede, 1980). As more people live in urban areas, greater pressure of competition and struggle for self-survival are likely to prevail in such a society (Sudarwan and Fogarty, 1996). In addition, people living in wealthy nations can have more disposable income to pursue their own interests and objectives apart from other colleagues, which in turn can increase individuality. Hofstede (1980) has asserted that people living in wealthy nations tend to be more independent from others. They are more likely to follow their own goals and objectives in isolation from others.

Therefore, the national wealth of a country may have a positive relationship with individualism. The increase in individuality may result in more self survival, independence and hence competitions among members of the society, which may in turn foster stock market activity. More interestingly, results show that there is a significant positive relationship between stock market size and activity. As mentioned earlier, this means that an increase in stock market size fosters stock market activity and vice versa.

However, these empirical results should be taken with some cautions due to the existence of unavoidable multicollinarity among the independent cultural variables in the multi-dimensional structure equation model. The correlation matrix for the independent cultural variables shows that there is a significant negative relationship between individuality and both power distance and uncertainty avoidance. This means that as more individuality prevails in the society, power distance and uncertainty avoidance tend to diminish, which can result in favorable conditions for stock market development over time.

(7/1/2) Cultural values and corporate governance systems

Some researchers have argued that the existence of good corporate governance systems is an important component of stock market development across countries. Consequently, this study has been extended to explore the impact of cultural values on corporate governance differences across twenty four countries in Western Europe, North America and Asia Pacific. Cultural values are represented by the cultural value model of Hofstede (1980) as mentioned earlier in this chapter. Correspondingly, corporate governance systems are represented by eight systems, which are: board size, separation of chair and CEO, independence per board, independent audit committee, remuneration disclosure, women on board, code of ethics and ethics systems.

The preliminary analysis results show that there are significant relationships between the independent cultural values across countries. Empirical results show that there is a significant negative relationship between individuality and power distance cultural values at the 0.99 confidence level. This means that an increase in the individuality cultural value in a society is usually associated with a decrease in power distance.

This is consistent with previous longitudinal empirical results which show similar relationships in the United Kingdom during the period 1991-2004. This relationship is considered favourable for the development of the stock market and to support good corporate governance systems. In addition, there is a significant positive relationship between power distance and the uncertainty avoidance cultural values at the 0.90 confidence level. This means that high power distance societies are usually associated with high uncertainty avoidance. This is also consistent with previous longitudinal results in the United Kingdom during period 1991-2004.

Furthermore, empirical results have highlighted the influence of culture values on corporate governance systems across countries. Test results show that the "Individuality" is the most important cultural value in terms of its impact on corporate governance systems. The individuality cultural value has significant positive relationships with three corporate governance systems, which are: independence per board, audit committee, and ethics systems. This means that an increase in the individuality cultural value is associated with an (increase) in independent directors on the corporate board, audit committee and ethics systems across counties. This is consistent with Grief (1994), who has highlighted the importance of the individualistic cultural value in the long run. He has explained that the formal enforcement institutions in an individualistic society may provide more support for anonymous exchange which is useful for economic development.

In addition, the power distance cultural value is ranked in the second place in terms of its impact on corporate governance systems, with only one significant negative impact on separation chair and CEO. This means that an increase in power distance is usually associated with a decrease in the "separation chair and CEO". Similarly, the uncertainty avoidance/masculinity is the most important interaction term among cultural values. This is because it has significant negative impact on three corporate governance systems, which are: independence per board, remuneration disclosure, and code of ethics. This means than an increase in the uncertainty avoidance/masculinity cultural value is usually associated with a decrease in the number of independent directors on corporate boards, remuneration disclosure and code of ethics across countries. Moreover, the interaction term power distance/masculinity comes in the second place with only one significant negative impact on women on board. This means that an increase in power distance/masculinity cultural value is usually associated with a decrease in women on corporate boards.

Overall, this study has shown that several cultural values play an important role in the formation and behaviour of stock market development over time, and on corporate governance systems across countries. These results have important implications for the businesses, politicians, investors and regulators. Multinational companies investing aboard may not recognize the national cultural values at first sight. However, these collective values are manifested at least partly in the form of legislations, ways of enforcement of legislations, press reactions, government decisions, labor unions and other stakeholders' such as consumers and environmentalists.

Hofstede and Hofstede (2005) have mentioned that organizations moving to unfamiliar cultural environments are often badly surprised by unexpected reactions of the public or the authorities to what they do or want to do. The failure to recognize and adapt to national culture may have devastating effects on the operations and success of the business activities in foreign countries. Thus, organizations who intend to go aboard should provide appropriate cross-cultural training to their managers to develop more understanding of the national limits before exporting any management or organization ideas. The design of the organizational structure, as a tool to coordinate activities, should adapt continuously to the variety of cultural environments in which the company operates. Cultural aspects should be incorporated as part of strategic planning to ensure efficient allocation of activities in countries that have suitable cultural characteristics to achieve business objectives (Hofstede and Hofstede, 2005).

In addition, multinational corporations and investors should take into consideration the cultural as well as the financial aspects in the case of international mergers, acquisitions, joint ventures, and alliances. Previous business practice can tell many stories in which some cross-national ventures did not manage to succeed, due to operation problems inside the newly formed hybrid organizations such as Leyland-Innocenti, Renault-Volvo, and Daimler-Chrysler. Hofstede and Hofstede (2005) have argued that successful management and operations of the new cooperative structure depends on successful cultural integration. However, cultural integration is not a straight forward process as it requires a large amount of time, energy and money that the company should be prepared for (Hofstede and Hofstede, 2005).

Politicians usually take decisions that are likely to be backed up by the majority of the population to ensure their re-election. In this context, they are likely to evaluate the financial system in terms of economic efficiency, certainty of income and stability, and normative considerations for evaluating outcomes and characteristics of economic organizations (De-Jong and Semenov, 2002). Also, they are likely to attach some values to these considerations, and they will start to trade-off between efficiency and stability to achieve their goals (Black, 1987, Altman, 1995), Quinn and Wooley, 2001). De-Jong and Semenov (2002) have argued that "politicians are likely to put more emphasis on theoretical explanations which correspond to their basic values and beliefs, which are largely shaped by their cultural values". For example, politicians in a society which prefers stability and certainty are more likely to implement regulatory provisions that hinder the development of stock market, on the basis that stock markets usually increase competition which increases the unfavorable level of instability and uncertainty among the population (De-Jung and Semenov, 2002). Therefore, it is important that politicians strike an adequate balance between policies that promote stability as well as efficiency to ensure sustainable economic prosperity and living standards for their people.

Several previous empirical research studies have emphasized the impact of the regulatory environment of the financial system on stock market development across countries (see, for example, La Porta et al., 1997). By contrast other researchers have suggested that these legal provisions are influenced by more fundamental aspects such as cultural values (see, for example, De-Jong and Semenov, 2002, Licht, A., 2001). However, De-Jong and Semenov (2002) have claimed that "Cultural values may not be the only and perhaps not the major channel through which values influence financial development". Nevertheless, regulators should be fully aware of the cultural background of the legal provisions, and that copying foreign laws may not result in much improvement in the local business environment, unless those laws are in line with the national cultural values and are accompanied by suitable enforcement procedures. Consequently, careful consideration should be taken to allow for gradual evolution of efficiency and development measures in the society without deeply distorting the stability of the local cultural environment. Fundamental social development aspects should accompany, or perhaps, lead economic development programs, such as education and training, to set the scene for more economic development.

Finally, the study results have important consequences at both firm and country levels. At the country level, it can be suggested that the imposition of hard stock market development policies based on imposing only strict legal reforms may not yield the expected results. Alternatively, the implementation of soft stock market development policies based on cultural value-improvements can be more reliable and sustainable over-time. For example, high power distance countries can pursue some development programs to reduce power distance cultural value among members of the society, and hence can provide more support for improvements in the stock market and in corporate governance systems. This can be done through placing more emphasis on developing the education system to raise public awareness, and to support the creation of technological developments to create more wealth to members of the society.

This entails that continuous improvements in the education systems, information technology and the standard of living should be a basic component of any stock market development policy to ensure successful results. At the firm level, the relationship between cultural values and both stock market development and corporate governance systems necessities that multinational companies, which operate in an unfavorable business environment to stock market development, can create more value for their shareholders and potential investors, by developing their own organizational culture which supports a good corporate governance system.

(7/2) Scope and limitations of the research study

This study has presented two different types of relationships, which are: First, this study has investigated the impact of cultural values on stock market development in the United Kingdom during period 1991-2004, though; these findings are confined to only one country during a period of fifteen years. Furthermore, the cultural values are represented by the five dimensions in the cultural value model of Hofstede (1980), which consists of: power distance, uncertainty avoidance, individualism, masculinity and time orientation. Correspondingly, stock market development is represented by four indicators, which are: stock market activity, size, liquidity and concentration.

The study's empirical results, using the multi-dimensional structural equation model, should be taken with some cautions due to the existence of multicollinearity among the independent cultural variables. Similar to some econometric models, this multicollinearity problem is unavoidable due to the strong interrelationship between cultural values by nature. The correlation matrix for the independent cultural variables shows that there is a significant negative relationship between individuality and both power distance and uncertainty avoidance. This means that as more individuality prevails in the society, power distance and uncertainty avoidance tend to diminish, which can result in favourable conditions for stock market development over time. The data for cultural values and stock market development indicators are obtained form several sources, such as Datastream database and the U.K. Office for National Statistics (ONS). However, the data set had different frequency distributions, though a uniform scale has been created on a monthly basis to ensure comparability of results.

This study has presented a time-series data analysis for the relationship between cultural values and stock market development in the United Kingdom. Time series data analysis is for the same economic entity (observation) from different time periods. The main strength of this type of analysis is that it allows for the study of change and development in the variables (Saunders et al., 2003). However, the problem with time series analysis is that it may not be helpful when the variables are moving very slowly over time, which may be the case for cultural values as suggested by Hofstede (1980). In this case, it may be advisable to increase the time span of the analysis in future research to allow for more causal relationships to appear.

Second, this study has been extended to explore the impact of cultural values on corporate governance differences across countries. The study is confined to cover twenty four countries in Western Europe, North America and Asia Pacific. Cultural values are also represented by the cultural value model of Hofstede (1980) as mentioned earlier in this chapter. The corporate governance systems are confined to only eight aspects, which are: board size, separation of chair and CEO, independence per board, independent audit committee, remuneration disclosure, women on board, code of ethics and ethics systems. Corporate governance systems indices are obtained from the Ethical Research Services (EIRIS) as at the year 2005.

It can be noticed that the study of the relationship between cultural values and corporate governance system depends on a relatively small sample size of 23 countries. Although this may be sufficient for the purposes of this analysis, it may have some unfavorable consequences in terms of the degree of reliability of the results. This is because the sample size is directly related to the degrees of freedom (df) of the regression equation. The degrees of freedom (df) are the excess number of observations over the number of coefficients to be estimated (Studenmund, 2001). If the degrees of freedom (df) are low, due to the small sample size and/or large number of independent variables, the less reliable the estimates are likely to be. The high degrees of freedom ensure that the error term is less likely to affect inference about the deterministic portion of the regression equation and vice versa. This is because when the number of degrees of freedom is large, every positive error is likely to be balanced by a large negative error, with only few points; the random element is likely to fail to provide such offsetting observations (Studenmund, 2001). Therefore, it is advisable to try to increase the number of observations in future research by incorporating more countries in the analysis to ensure the reliability of the results.

This study has implemented a cross-section data analysis technique to investigate the relationship between cultural values and corporate governance systems. This analysis represents a 'snap shot' for a number of individual economic entities (observations) at the same point in time. This type of analysis allows for a deep investigation of particular phenomena at a particular time, however, the problem with cross-section analysis is that it is restricted to one point in time without showing the impact of change or development of the variables over time (Saunders et al., 2003). Therefore, to overcome this problem in future research it may be suggested to create a panel data set for the cross-sectional data over a number of time periods, which will allow for more insights into the impact of change in the variables, increase the number of observations, and increase the degree of precision and reliability of results at the same time.

In general, there are three main requirements for establishing a causal relationship between two or more variables (De-Jong and Semenov, 2002). First, there should be a statistical relationship between the variables. The regression analysis usually attempts to explain movements in one variable, the dependent variable, as a function of movements in a set of other variables, the independent variables, through the quantification of a single equation. The regression technique attempts to test whether a significant quantitative relationship exists between the variables, but it can not prove economic causality even if the results bear high statistical significance. Instead, the establishment of a causal relationship needs support from economic theory and common sense, rather than on the results of an estimated regression equation (Studenmund, 2001).

Second, the cause must temporally precede the effect. In this study the independent cultural values are based on data collected in the late 1960s by Hofstede (1980), while the data on the independent variables are much more recent than that; the stock market development in the United Kingdom refers to the period 1991-2004, while corporate governance indices refer to the year 2005. Thus, it is obvious that the time order required for establishing causality has been violated. However, Punch (1998) has suggested that the validity of causal relationships in these situations can be established on the basis on relative fixity or alterability of the variables, that is the expected cause should be less alterable than the expected effect (De-Jong and Semenov, 2002). Hofstede (2001) has shown that his cultural dimensions have not changed much significantly during the past decades (except individualism), which may indicate the validity of the established causality in this respect.

Third, the relationship between the variables should not be due to a third variable. This highlights the importance of investigating all possible transmission mechanisms between cultural values and stock market development and/or corporate governance system based on economic theory. In addition, the single equation regression models used in this study to investigate the relationship between cultural values and corporate governance systems ignore much of the possible interdependence or simultaneity among the variables. Nevertheless, the implementation of the structural equation modelling to investigate the relationship between culture and stock market development has managed to highlight a great deal of the simultaneity and feedback loops among the variables. However, this model still lacks the feedback loop between culture and institutions. As mentioned by Hofstede (1980) there is a two-way causation between culture and institutions. That is, culture has an impact on the performance of institutions, and at the same time institutions' performance can have a feedback loop, which can modify predominant culture in a society. These kinds of possible feedback loops and dual causality, as well as transmission mechanisms between culture and institutions and the economic performance in general, provide ample research opportunities for future research.

(7/3) Recommendations for future research

This study has successfully managed to highlight the importance of cultural values on both the stock market development in the United Kingdom, and on the corporate governance systems across countries. Therefore, this study represents a building block to the efforts of some researchers to incorporate human preferences in empirical econometric models in Accounting and Finance studies. Nevertheless, there are plenty of potential future research opportunities which can add value to the existing research.

As for the relationship between cultural values and stock market development, at first this study depends on one cultural value model by Hofstede (1980), though it may be useful to explore the applicability of other cultural models, such as Schwartz (1999) and/or Trompenaar and Turner (1997), to represent cultural values in a society. Similarly, stock market development indicators in this study are limited by only four indicators in the light of work by Demirguc-Kunt and Levine (1995), which are widely open to incorporate further indicators in future research. Second, the study covers a period of fifteen years which extends form 1991 up to 2004. Since some researchers have argued that cultural values usually change slowly over time, it may be worth trying to extend the research to a longer time period to explore whether or not the same results will hold.

Third, both the cultural values and the stock market development indicators in the United Kingdom are represented by thirty six empirical proxy variables based on previous empirical and theoretical research. It seems that an extended effort is still needed to continue to explore new and innovative proxy variables that better represent these constructs to improve the outcomes of the econometric models. Fourth, this study can be further extended to cover countries other than the United Kingdom to check the comparability of results on the relationship between cultural values and stock market development over time. Finally, some researchers have argued that the international culture may have an additional influence on the development of national stock market. So, it may be an interesting topic for future research to investigate the impact of international culture on the development of national stock markets around the world.

As for the relationship between cultural values and corporate governance systems, the recommendations for future research include: first, this study has depended on only eight corporate governance systems which are: board size, separation of chair and CEO, independence per board, independent audit committee, remuneration disclosure, women on board, code of ethics and ethics systems. Therefore, it may be worth investigating the impact of cultural values on other corporate governance systems, such as the level of benefits and rewards, in future research. Second, empirical results show that there is no significant relationship between cultural values and corporate board size. This means that differences in cultural values across countries do not have an impact on the number of corporate board members. It seems that board size is influenced by other independent variables rather than the cultural values across countries. There are several previous studies which show a relationship between board size and company performance. Unfortunately, there are seldom studies that deal with the determinants of corporate board size. This is an issue that needs to be further investigated in future research.

Third, the empirical results show that there is a significant negative relationship between power distance and separation chair and CEO. The idea behind the separation of chairman and CEO is to prevent a single individual to have unfettered powers of decision. However, it can be noticed that the EIRIS indices on this aspect show that in the U.S.A. only about 25% of companies separate the two roles, despite its low score on power distance according to the cultural value by Hofstede (1980). This may be due to the composition of the indices which contains a relatively small number of large and medium capital companies (Stephanie, 2005), and/or perhaps due to the existence of other forces that influence the separation of CEO and chair in the U.S. This is an issue that needs to be further investigated in future research.

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Appendices

Appendix 1: The Dickey Fuller test statistic (ADF) for the independent cultural values.

-3.4839	1% Critical Value*	-5.592971	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX1,2)
Method: Least Squares
Date: 10/22/06 Time: 19:05
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-5.592971	0.072949	-0.408000	D(SQX1(-1))
0.0003	3.724650	6.97E-05	0.000260	C

1.52E-06	Mean dependent var	0.204078	R-squared
0.000649	S.D. dependent var	0.197554	Adjusted R-squared
-12.04517	Akaike info criterion	0.000582	S.E. of regression
-11.99968	Schwarz criterion	4.13E-05	Sum squared resid
31.28132	F-statistic	748.8005	Log likelihood
0.000000	Prob(F-statistic)	1.682554	Durbin-Watson stat

-3.4839	1% Critical Value*	-4.688691	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX2,2)
Method: Least Squares
Date: 10/22/06 Time: 19:08
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-4.688691	0.065802	-0.308526	D(SQX2(-1))
0.0079	2.702708	8.41E-05	0.000227	C

-5.74E-06	Mean dependent var	0.152683	R-squared
0.000818	S.D. dependent var	0.145737	Adjusted R-squared
-11.52140	Akaike info criterion	0.000756	S.E. of regression
-11.47591	Schwarz criterion	6.97E-05	Sum squared resid
21.98382	F-statistic	716.3265	Log likelihood
0.000007	Prob(F-statistic)	1.768372	Durbin-Watson stat

-3.4839	1% Critical Value*	-3.928077	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX3,2)
Method: Least Squares
Date: 10/22/06 Time: 19:12
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0001	-3.928077	0.058874	-0.231261	D(SQX3(-1))
0.0013	3.287628	2.42E-05	7.94E-05	C

-1.18E-06	Mean dependent var	0.112274	R-squared
0.000150	S.D. dependent var	0.104998	Adjusted R-squared
-14.86559	Akaike info criterion	0.000142	S.E. of regression
-14.82010	Schwarz criterion	2.46E-06	Sum squared resid
15.42979	F-statistic	923.6665	Log likelihood
0.000142	Prob(F-statistic)	2.655844	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.74200	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX4,2)
Method: Least Squares
Date: 10/22/06 Time: 19:23
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.74200	0.089898	-1.055578	D(SQX4(-1))
0.0000	7.072325	5.83E-05	0.000412	C

-8.94E-06	Mean dependent var	0.530543	R-squared
0.000743	S.D. dependent var	0.526695	Adjusted R-squared
-12.30326	Akaike info criterion	0.000511	S.E. of regression
-12.25777	Schwarz criterion	3.19E-05	Sum squared resid
137.8747	F-statistic	764.8022	Log likelihood
0.000000	Prob(F-statistic)	1.971149	Durbin-Watson stat

-3.4843	1% Critical Value*	-11.22558	ADF Test Statistic
-2.8849	5% Critical Value		
-2.5791	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX5,3)
Method: Least Squares
Date: 10/28/06 Time: 18:16
Sample(adjusted): 4 126
Included observations: 123 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.22558	0.090891	-1.020299	D(SQX5(-1),2)
0.6549	0.448013	6.48E-05	2.91E-05	C

4.98E-07	Mean dependent var	0.510149	R-squared
0.001023	S.D. dependent var	0.506100	Adjusted R-squared
-11.62226	Akaike info criterion	0.000719	S.E. of regression
-11.57654	Schwarz criterion	6.25E-05	Sum squared resid
126.0137	F-statistic	716.7693	Log likelihood
0.000000	Prob(F-statistic)	1.999319	Durbin-Watson stat

-3.4839	1% Critical Value*	-8.405770	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX6,2)
Method: Least Squares
Date: 10/22/06 Time: 19:37
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-8.405770	0.087320	-0.733991	D(SQX6(-1))
0.7456	0.325116	6.71E-05	2.18E-05	C

-4.90E-07	Mean dependent var	0.366750	R-squared
0.000934	S.D. dependent var	0.361560	Adjusted R-squared
-11.54610	Akaike info criterion	0.000747	S.E. of regression
-11.50061	Schwarz criterion	6.80E-05	Sum squared resid
70.65697	F-statistic	717.8582	Log likelihood
0.000000	Prob(F-statistic)	1.930911	Durbin-Watson stat

-3.4839	1% Critical Value*	-3.944041	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX7,2)
Method: Least Squares
Date: 10/22/06 Time: 19:39
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0001	-3.944041	0.056097	-0.221247	D(SQX7(-1))
0.0005	3.594888	7.06E-06	2.54E-05	C

3.43E-07	Mean dependent var	0.113085	R-squared
3.64E-05	S.D. dependent var	0.105815	Adjusted R-squared
-17.70163	Akaike info criterion	3.44E-05	S.E. of regression
-17.65615	Schwarz criterion	1.44E-07	Sum squared resid
15.55546	F-statistic	1099.501	Log likelihood
0.000134	Prob(F-statistic)	1.811610	Durbin-Watson stat

-3.4839	1% Critical Value*	-8.046504	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX8,2)
Method: Least Squares
Date: 10/22/06 Time: 19:40
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-8.046504	0.086032	-0.692258	D(SQX8(-1))
0.0005	3.592103	0.000112	0.000402	C

-6.06E-06	Mean dependent var	0.346707	R-squared
0.001370	S.D. dependent var	0.341352	Adjusted R-squared
-10.75021	Akaike info criterion	0.001112	S.E. of regression
-10.70472	Schwarz criterion	0.000151	Sum squared resid
64.74622	F-statistic	668.5127	Log likelihood
0.000000	Prob(F-statistic)	1.882615	Durbin-Watson stat

-3.4835	1% Critical Value*	-20.67992	ADF Test Statistic
-2.8845	5% Critical Value		
-2.5789	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX9)
Method: Least Squares
Date: 10/28/06 Time: 18:18
Sample(adjusted): 2 126
Included observations: 125 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-20.67992	0.006184	-0.127886	SQX9(-1)
0.0000	20.75487	0.003501	0.072659	C

0.000266	Mean dependent var	0.776631	R-squared
0.000836	S.D. dependent var	0.774815	Adjusted R-squared
-12.81165	Akaike info criterion	0.000397	S.E. of regression
-12.76640	Schwarz criterion	1.93E-05	Sum squared resid
427.6592	F-statistic	802.7283	Log likelihood
0.000000	Prob(F-statistic)	0.388075	Durbin-Watson stat

-3.4839	1% Critical Value*	-13.79722	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQ10,2)
Method: Least Squares
Date: 10/22/06 Time: 19:46
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-13.79722	0.088417	-1.219912	D(SQ10(-1))
0.0000	9.487924	6.71E-06	6.36E-05	C

8.96E-07	Mean dependent var	0.609429	R-squared
8.75E-05	S.D. dependent var	0.606228	Adjusted R-squared
-16.76624	Akaike info criterion	5.49E-05	S.E. of regression
-16.72076	Schwarz criterion	3.68E-07	Sum squared resid
190.3632	F-statistic	1041.507	Log likelihood
0.000000	Prob(F-statistic)	1.933295	Durbin-Watson stat

-3.4839	1% Critical Value*	-4.761455	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX11,2)
Method: Least Squares
Date: 10/22/06 Time: 19:47
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-4.761455	0.068452	-0.325932	D(SQX11(-1))
0.0001	4.181311	7.49E-05	0.000313	C

1.05E-05	Mean dependent var	0.156710	R-squared
0.000478	S.D. dependent var	0.149798	Adjusted R-squared
-12.59833	Akaike info criterion	0.000441	S.E. of regression
-12.55284	Schwarz criterion	2.37E-05	Sum squared resid
22.67145	F-statistic	783.0963	Log likelihood
0.000005	Prob(F-statistic)	1.713298	Durbin-Watson stat

-3.4839	1% Critical Value*	-14.80998	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX12,2)
Method: Least Squares
Date: 10/22/06 Time: 19:48
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-14.80998	0.087369	-1.293938	D(SQX12(-1))
0.0000	7.814476	3.67E-05	0.000287	C

6.43E-06	Mean dependent var	0.642580	R-squared
0.000584	S.D. dependent var	0.639651	Adjusted R-squared
-13.05853	Akaike info criterion	0.000350	S.E. of regression
-13.01304	Schwarz criterion	1.50E-05	Sum squared resid
219.3354	F-statistic	811.6289	Log likelihood
0.000000	Prob(F-statistic)	2.180064	Durbin-Watson stat

-3.4835	1% Critical Value*	-8.383266	ADF Test Statistic
-2.8845	5% Critical Value		
-2.5789	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX13)
Method: Least Squares
Date: 10/28/06 Time: 18:21
Sample(adjusted): 2 126
Included observations: 125 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-8.383266	0.007575	-0.063505	SQX13(-1)
0.0000	8.361095	0.005600	0.046821	C

-0.000124	Mean dependent var	0.363615	R-squared
0.000313	S.D. dependent var	0.358441	Adjusted R-squared
-13.72972	Akaike info criterion	0.000251	S.E. of regression
-13.68447	Schwarz criterion	7.72E-06	Sum squared resid
70.27916	F-statistic	860.1076	Log likelihood
0.000000	Prob(F-statistic)	1.943598	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.20941	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX14,2)
Method: Least Squares
Date: 10/28/06 Time: 18:22
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.20941	0.090526	-1.014742	D(SQX14(-1))
0.1792	-1.351071	1.27E-05	-1.72E-05	C

0.000000	Mean dependent var	0.507371	R-squared
0.000200	S.D. dependent var	0.503333	Adjusted R-squared
-14.88382	Akaike info criterion	0.000141	S.E. of regression
-14.83833	Schwarz criterion	2.42E-06	Sum squared resid
125.6508	F-statistic	924.7969	Log likelihood
0.000000	Prob(F-statistic)	1.994401	Durbin-Watson stat

-3.4839	1% Critical Value*	-5.024139	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX15,2)
Method: Least Squares
Date: 10/28/06 Time: 18:23
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-5.024139	0.068243	-0.342864	D(SQX15(-1))
0.2098	-1.260890	4.72E-05	-5.95E-05	C

0.000000	Mean dependent var	0.171432	R-squared
0.000556	S.D. dependent var	0.164640	Adjusted R-squared
-12.31504	Akaike info criterion	0.000508	S.E. of regression
-12.26955	Schwarz criterion	3.15E-05	Sum squared resid
25.24198	F-statistic	765.5326	Log likelihood
0.000002	Prob(F-statistic)	2.604960	Durbin-Watson stat

-3.4839	1% Critical Value*	-10.42709	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX16,2)
Method: Least Squares
Date: 10/28/06 Time: 18:24
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-10.42709	0.091186	-0.950800	D(SQX16(-1))
0.0000	-8.614439	5.82E-05	-0.000502	C

5.54E-06	Mean dependent var	0.471230	R-squared
0.000488	S.D. dependent var	0.466896	Adjusted R-squared
-13.02482	Akaike info criterion	0.000356	S.E. of regression
-12.97933	Schwarz criterion	1.55E-05	Sum squared resid
108.7241	F-statistic	809.5390	Log likelihood
0.000000	Prob(F-statistic)	2.011553	Durbin-Watson stat

-3.4839	1% Critical Value*	-10.57907	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX17,2)
Method: Least Squares
Date: 10/28/06 Time: 18:24
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-10.57907	0.090444	-0.956817	D(SQX17(-1))
0.2220	1.227394	0.000445	0.000546	C

5.05E-06	Mean dependent var	0.478447	R-squared
0.006792	S.D. dependent var	0.474172	Adjusted R-squared
-7.772932	Akaike info criterion	0.004925	S.E. of regression
-7.727443	Schwarz criterion	0.002959	Sum squared resid
111.9168	F-statistic	483.9218	Log likelihood
0.000000	Prob(F-statistic)	1.996427	Durbin-Watson stat

-3.4839	1% Critical Value*	-5.553401	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX18,2)
Method: Least Squares
Date: 10/28/06 Time: 18:25
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-5.553401	0.085441	-0.474490	D(SQX18(-1))
0.0820	1.753544	4.95E-05	8.68E-05	C

1.73E-05	Mean dependent var	0.201781	R-squared
0.000595	S.D. dependent var	0.195238	Adjusted R-squared
-12.21880	Akaike info criterion	0.000533	S.E. of regression
-12.17331	Schwarz criterion	3.47E-05	Sum squared resid
30.84026	F-statistic	759.5653	Log likelihood
0.000000	Prob(F-statistic)	1.746491	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.20075	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX19,2)
Method: Least Squares
Date: 10/28/06 Time: 18:26
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.20075	0.091895	-1.029289	D(SQX19(-1))
0.3842	0.873361	0.000586	0.000511	C
-9.52E-05	Mean dependent var		0.506985	R-squared
0.009208	S.D. dependent var		0.502944	Adjusted R-squared
-7.220489	Akaike info criterion		0.006492	S.E. of regression
-7.175000	Schwarz criterion		0.005142	Sum squared resid
125.4569	F-statistic		449.6703	Log likelihood
0.000000	Prob(F-statistic)		1.974241	Durbin-Watson stat

-3.4839	1% Critical Value*	-5.865094	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQX20,2)
Method: Least Squares
Date: 10/28/06 Time: 18:26
Sample(adjusted): 3 126
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-5.865094	0.075505	-0.442841	D(SQX20(-1))
0.9355	0.081152	0.000180	1.46E-05	C
-2.84E-05	Mean dependent var		0.219945	R-squared
0.002261	S.D. dependent var		0.213552	Adjusted R-squared
-9.570629	Akaike info criterion		0.002005	S.E. of regression
-9.525140	Schwarz criterion		0.000490	Sum squared resid
34.39932	F-statistic		595.3790	Log likelihood
0.000000	Prob(F-statistic)		1.809448	Durbin-Watson stat

Appendix 2: The Dickey Fuller test statistic (ADF) for the dependent stock market development indicators.

-3.4682	1% Critical Value*	-14.06543	ADF Test Statistic
-2.8777	5% Critical Value		
-2.5753	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(Y1,2)
Method: Least Squares
Date: 03/11/07 Time: 07:15
Sample(adjusted): 3 180
Included observations: 178 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-14.06543	0.075250	-1.058425	D(Y1(-1))
0.5483	-0.601411	0.001493	-0.000898	C

4.49E-06	Mean dependent var	0.529206	R-squared
0.028929	S.D. dependent var	0.526531	Adjusted R-squared
-4.984433	Akaike info criterion	0.019906	S.E. of regression
-4.948683	Schwarz criterion	0.069739	Sum squared resid
197.8364	F-statistic	445.6145	Log likelihood
0.000000	Prob(F-statistic)	2.000503	Durbin-Watson stat

-3.4682	1% Critical Value*	-16.36598	ADF Test Statistic
-2.8777	5% Critical Value		
-2.5753	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(Y2,2)
Method: Least Squares
Date: 03/11/07 Time: 07:18
Sample(adjusted): 3 180
Included observations: 178 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-16.36598	0.073745	-1.206913	D(Y2(-1))
0.7004	-0.385353	0.006488	-0.002500	C

6.97E-05	Mean dependent var	0.603465	R-squared
0.137029	S.D. dependent var	0.601212	Adjusted R-squared
-2.045402	Akaike info criterion	0.086533	S.E. of regression
-2.009652	Schwarz criterion	1.317891	Sum squared resid
267.8452	F-statistic	184.0408	Log likelihood
0.000000	Prob(F-statistic)	2.029600	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.11303	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY3,3)
Method: Least Squares
Date: 03/11/07 Time: 08:06
Sample(adjusted): 4 127
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.11303	0.090536	-1.006123	D(SQY3(-1),2)
0.6603	0.440639	2.03E-05	8.93E-06	C

-6.26E-08	Mean dependent var	0.503054	R-squared
0.000319	S.D. dependent var	0.498980	Adjusted R-squared
-13.94033	Akaike info criterion	0.000226	S.E. of regression
-13.89484	Schwarz criterion	6.20E-06	Sum squared resid
123.4993	F-statistic	866.3005	Log likelihood
0.000000	Prob(F-statistic)	2.000038	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.51184	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY4,3)
Method: Least Squares
Date: 03/11/07 Time: 08:07
Sample(adjusted): 4 127
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.51184	0.090466	-1.041428	D(SQY4(-1),2)
0.7384	0.334706	0.000181	6.05E-05	C

9.92E-07	Mean dependent var	0.520671	R-squared
0.002897	S.D. dependent var	0.516742	Adjusted R-squared
-9.561772	Akaike info criterion	0.002014	S.E. of regression
-9.516283	Schwarz criterion	0.000495	Sum squared resid
132.5224	F-statistic	594.8298	Log likelihood
0.000000	Prob(F-statistic)	2.000832	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.87008	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY5,3)
Method: Least Squares
Date: 03/11/07 Time: 08:08
Sample(adjusted): 4 127
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.87008	0.090361	-1.072592	D(SQY5(-1),2)
0.8929	0.134939	0.000355	4.79E-05	C

1.10E-05	Mean dependent var	0.535943	R-squared
0.005773	S.D. dependent var	0.532139	Adjusted R-squared
-8.214666	Akaike info criterion	0.003949	S.E. of regression
-8.169178	Schwarz criterion	0.001903	Sum squared resid
140.8988	F-statistic	511.3093	Log likelihood
0.000000	Prob(F-statistic)	2.001842	Durbin-Watson stat

-3.4835	1% Critical Value*	-11.17681	ADF Test Statistic
-2.8845	5% Critical Value		
-2.5789	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(Y6,2)
Method: Least Squares
Date: 03/11/07 Time: 08:09
Sample(adjusted): 3 127
Included observations: 125 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.17681	0.092739	-1.036528	D(Y6(-1))
0.0380	2.096932	0.000179	0.000376	C

-4.59E-05	Mean dependent var	0.503874	R-squared
0.002774	S.D. dependent var	0.499841	Adjusted R-squared
-9.614164	Akaike info criterion	0.001962	S.E. of regression
-9.568911	Schwarz criterion	0.000473	Sum squared resid
124.9210	F-statistic	602.8852	Log likelihood
0.000000	Prob(F-statistic)	1.948412	Durbin-Watson stat

-3.4835	1% Critical Value*	-11.27352	ADF Test Statistic
-2.8845	5% Critical Value		
-2.5789	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(Y7,2)
Method: Least Squares
Date: 03/11/07 Time: 08:11
Sample(adjusted): 3 127
Included observations: 125 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.27352	0.092369	-1.041320	D(Y7(-1))
0.3081	1.023519	0.000383	0.000392	C

-9.64E-05	Mean dependent var	0.508181	R-squared
0.006049	S.D. dependent var	0.504183	Adjusted R-squared
-8.063499	Akaike info criterion	0.004259	S.E. of regression
-8.018246	Schwarz criterion	0.002232	Sum squared resid
127.0923	F-statistic	505.9687	Log likelihood
0.000000	Prob(F-statistic)	1.955208	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.13010	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY8,3)
Method: Least Squares
Date: 03/11/07 Time: 08:15
Sample(adjusted): 4 127
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.13010	0.090366	-1.005779	D(SQY8(-1),2)
0.9142	-0.107962	9.05E-05	-9.77E-06	C

-5.46E-06	Mean dependent var	0.503821	R-squared
0.001424	S.D. dependent var	0.499754	Adjusted R-squared
-10.94704	Akaike info criterion	0.001007	S.E. of regression
-10.90155	Schwarz criterion	0.000124	Sum squared resid
123.8790	F-statistic	680.7164	Log likelihood
0.000000	Prob(F-statistic)	2.000092	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.65534	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY9,3)
Method: Least Squares
Date: 03/11/07 Time: 08:17
Sample(adjusted): 4 127
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.65534	0.090405	-1.053701	D(SQY9(-1),2)
0.7752	-0.286235	2.17E-05	-6.20E-06	C

-1.99E-08	Mean dependent var	0.526851	R-squared
0.000349	S.D. dependent var	0.522973	Adjusted R-squared
-13.80681	Akaike info criterion	0.000241	S.E. of regression
-13.76133	Schwarz criterion	7.09E-06	Sum squared resid
135.8471	F-statistic	858.0225	Log likelihood
0.000000	Prob(F-statistic)	2.003003	Durbin-Watson stat

-3.4684	1% Critical Value*	-13.49099	ADF Test Statistic
-2.8778	5% Critical Value		
-2.5754	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY10,3)
Method: Least Squares
Date: 03/24/07 Time: 17:48
Sample(adjusted): 4 180
Included observations: 177 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-13.49099	0.075578	-1.019628	D(SQY10(-1),2)
0.7697	0.293264	5.74E-05	1.68E-05	C

-4.12E-08	Mean dependent var	0.509813	R-squared
0.001088	S.D. dependent var	0.507012	Adjusted R-squared
-11.50516	Akaike info criterion	0.000764	S.E. of regression
-11.46928	Schwarz criterion	0.000102	Sum squared resid
182.0067	F-statistic	1020.207	Log likelihood
0.000000	Prob(F-statistic)	2.000386	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.38052	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY11,3)
Method: Least Squares
Date: 03/11/07 Time: 08:21
Sample(adjusted): 4 127
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.38052	0.090550	-1.030503	D(SQY11(-1),2)
0.5801	0.554668	4.86E-05	2.69E-05	C
1.92E-06	Mean dependent var		0.514942	R-squared
0.000773	S.D. dependent var		0.510966	Adjusted R-squared
-12.19220	Akaike info criterion		0.000540	S.E. of regression
-12.14671	Schwarz criterion		3.56E-05	Sum squared resid
129.5162	F-statistic		757.9165	Log likelihood
0.000000	Prob(F-statistic)		1.998370	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.21603	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY12,3)
Method: Least Squares
Date: 03/11/07 Time: 08:21
Sample(adjusted): 4 127
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.21603	0.090604	-1.016216	D(SQY12(-1),2)
0.7216	-0.357143	0.000145	-5.16E-05	C
5.75E-06	Mean dependent var		0.507666	R-squared
0.002283	S.D. dependent var		0.503631	Adjusted R-squared
-10.01070	Akaike info criterion		0.001609	S.E. of regression
-9.965210	Schwarz criterion		0.000316	Sum squared resid
125.7994	F-statistic		622.6633	Log likelihood
0.000000	Prob(F-statistic)		1.998606	Durbin-Watson stat

-3.4839	1% Critical Value*	-11.16686	ADF Test Statistic
-2.8847	5% Critical Value		
-2.5790	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY13,3)
Method: Least Squares
Date: 03/11/07 Time: 09:04
Sample(adjusted): 4 127
Included observations: 124 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.16686	0.090539	-1.011034	D(SQY13(-1),2)
0.7418	0.330231	8.80E-05	2.91E-05	C
-9.09E-07	Mean dependent var		0.505470	R-squared
0.001388	S.D. dependent var		0.501416	Adjusted R-squared
-11.00203	Akaike info criterion		0.000980	S.E. of regression
-10.95654	Schwarz criterion		0.000117	Sum squared resid
124.6988	F-statistic		684.1256	Log likelihood
0.000000	Prob(F-statistic)		1.999775	Durbin-Watson stat

-3.4835	1% Critical Value*	-11.88732	ADF Test Statistic
-2.8845	5% Critical Value		
-2.5789	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY14,2)
Method: Least Squares
Date: 03/11/07 Time: 09:05
Sample(adjusted): 3 127
Included observations: 125 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.88732	0.089159	-1.059858	D(SQY14(-1))
0.3568	-0.925008	0.000710	-0.000657	C
-6.18E-05	Mean dependent var		0.534634	R-squared
0.011562	S.D. dependent var		0.530851	Adjusted R-squared
-6.823207	Akaike info criterion		0.007919	S.E. of regression
-6.777954	Schwarz criterion		0.007714	Sum squared resid
141.3083	F-statistic		428.4505	Log likelihood
0.000000	Prob(F-statistic)		2.001139	Durbin-Watson stat

-3.4835	1% Critical Value*	-11.27047	ADF Test Statistic
-2.8845	5% Critical Value		
-2.5789	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY15,2)
Method: Least Squares
Date: 03/11/07 Time: 09:06
Sample(adjusted): 3 127
Included observations: 125 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.27047	0.089221	-1.005566	D(SQY15(-1))
0.0222	-2.316863	0.000839	-0.001944	C

-0.000105	Mean dependent var	0.508046	R-squared
0.013069	S.D. dependent var	0.504046	Adjusted R-squared
-6.522561	Akaike info criterion	0.009204	S.E. of regression
-6.477308	Schwarz criterion	0.010419	Sum squared resid
127.0234	F-statistic	409.6601	Log likelihood
0.000000	Prob(F-statistic)	1.992576	Durbin-Watson stat

-3.4835	1% Critical Value*	-11.25323	ADF Test Statistic
-2.8845	5% Critical Value		
-2.5789	10% Critical Value		

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(SQY16,2)
Method: Least Squares
Date: 03/11/07 Time: 09:07
Sample(adjusted): 3 127
Included observations: 125 after adjusting endpoints

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.0000	-11.25323	0.089734	-1.009795	D(SQY16(-1))
0.2927	1.056709	0.000835	0.000882	C

-8.83E-05	Mean dependent var	0.507281	R-squared
0.013176	S.D. dependent var	0.503275	Adjusted R-squared
-6.504739	Akaike info criterion	0.009286	S.E. of regression
-6.459486	Schwarz criterion	0.010606	Sum squared resid
126.6352	F-statistic	408.5462	Log likelihood
0.000000	Prob(F-statistic)	1.998583	Durbin-Watson stat

Appendix 3: The confirmatory factor analysis (CFA) for cultural values, one factor model: power distance.

```
                              DATE: 11/18/2006
                                      TIME: 16:39


                                     L I S R E L  8.72

                                           BY

                              Karl G. Jreskog and Dag Srbom



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```

The following lines were read from file **C:\Documents and Settings\A\Desktop\lisral file\New Folder\nor15.spj:**

```
 Sample Size = 126
 Latent Variables  pdi
 Relationships
 sqx1 = pdi
 sqx2 = pdi
 sqx3 = pdi
 sqx4 = pdi
 Set the Variance of pdi to 1.00
 Set the Error Covariance of sqx2 and sqx1 Free
 Path Diagram
 End of Problem

 Sample Size =   126
```

Covariance Matrix

	sqx1	sqx2	sqx3	sqx4
sqx1	0.00			
sqx2	0.00	0.00		
sqx3	0.00	0.00	0.00	
sqx4	0.00	0.00	0.00	0.00

```
Number of Iterations = 11

LISREL Estimates (Maximum Likelihood)

        Measurement Equations


    sqx1 = 0.026*pdi, Errorvar.= 0.00 , R = 0.90
          (0.0018)              (0.00)
           14.27                 7.77

    sqx2 = 0.030*pdi, Errorvar.= 0.00 , R = 0.95
          (0.0020)              (0.00)
           15.08                 7.57

    sqx3 = 0.014*pdi, Errorvar.= 0.00 , R = 1.00
          (0.00090)             (0.00)
           15.77                 1.82

    sqx4 = 0.016*pdi, Errorvar.= 0.00 , R = 0.99
          (0.0010)              (0.00)
           15.70                 4.22


Error Covariance for sqx2 and sqx1 = 0.00
                                    (0.00)
                                    -3.33


        Correlation Matrix of Independent Variables

                pdi
            --------
               1.00


                          Goodness of Fit Statistics

                             Degrees of Freedom = 1
              Minimum Fit Function Chi-Square = 1.75 (P = 0.19)
       Normal Theory Weighted Least Squares Chi-Square = 1.74 (P =
0.19)
               Estimated Non-centrality Parameter (NCP) = 0.74
            90 Percent Confidence Interval for NCP = (0.0 ; 8.78)

                      Minimum Fit Function Value = 0.014
             Population Discrepancy Function Value (F0) = 0.0059
            90 Percent Confidence Interval for F0 = (0.0 ; 0.070)
           Root Mean Square Error of Approximation (RMSEA) = 0.077
           90 Percent Confidence Interval for RMSEA = (0.0 ; 0.27)
             P-Value for Test of Close Fit (RMSEA < 0.05) = 0.25

               Expected Cross-Validation Index (ECVI) = 0.16
           90 Percent Confidence Interval for ECVI = (0.15 ; 0.22)
                       ECVI for Saturated Model = 0.16
                      ECVI for Independence Model = 5.55
```

Chi-Square for Independence Model with 6 Degrees of Freedom = 686.14

Independence AIC = 694.14
Model AIC = 19.74
Saturated AIC = 20.00
Independence CAIC = 709.48
Model CAIC = 54.27
Saturated CAIC = 58.36

Normed Fit Index (NFI) = 1.00
Non-Normed Fit Index (NNFI) = 0.99
Parsimony Normed Fit Index (PNFI) = 0.17
Comparative Fit Index (CFI) = 1.00
Incremental Fit Index (IFI) = 1.00
Relative Fit Index (RFI) = 0.98

Critical N (CN) = 474.51

Root Mean Square Residual (RMR) = 0.00
Standardized RMR = 0.00093
Goodness of Fit Index (GFI) = 0.99
Adjusted Goodness of Fit Index (AGFI) = 0.93
Parsimony Goodness of Fit Index (PGFI) = 0.099

Time used: 0.070 Seconds

Appendix 4: The confirmatory factor analysis (CFA) for cultural values, two factors model: power distance, and uncertainty avoidance.

```
DATE: 11/18/2006
                                    TIME: 16:43

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 Sample Size = 126
 Latent Variables  pdi uav
 Relationships
 sqx1 = pdi
 sqx2 = pdi
 sqx3 = pdi
 sqx4 = pdi uav
 sqx6 = uav
 sqx7 = uav
 sqx8 = uav
 Set the Variance of pdi to 1.00
 Set the Variance of uav to 1.00
 Path Diagram
 End of Problem

 Sample Size =   126


         Covariance Matrix

                  sqx1        sqx2        sqx3        sqx4        sqx6
sqx7
              --------    --------    --------    --------    --------    --
------
```

```
     sqx1        0.00
     sqx2        0.00        0.00
     sqx3        0.00        0.00        0.00
     sqx4        0.00        0.00        0.00        0.00
     sqx6        0.00        0.00        0.00        0.00        0.00
     sqx7        0.00        0.00        0.00        0.00        0.00
0.00
     sqx8        0.00        0.00        0.00        0.00        0.00
0.00

         Covariance Matrix

                 sqx8
               --------
     sqx8        0.00



 Number of Iterations = 30

 LISREL Estimates (Maximum Likelihood)

         Measurement Equations


     sqx1 = 0.026*pdi, Errorvar.= 0.00 , R = 0.89
           (0.0018)              (0.00)
            14.22                 7.83

     sqx2 = 0.030*pdi, Errorvar.= 0.00 , R = 0.95
           (0.0020)              (0.00)
            15.06                 7.65

     sqx3 = 0.014*pdi, Errorvar.= 0.00 , R = 1.00
           (0.00090)             (0.00)
            15.80                 0.39

     sqx4 = 0.012*pdi + 0.0048*uav, Errorvar.= 0.00 , R = 0.99
           (0.0014)     (0.0012)               (0.00)
            8.43         3.93                   5.86

     sqx6 = 0.0029*uav, Errorvar.= 0.00 , R = 0.32
           (0.00042)              (0.00)
            6.96                   7.92

     sqx7 = 0.0045*uav, Errorvar.= -0.00 , R = 1.00
           (0.00028)               (0.00)
            15.85                  -1.76

 W_A_R_N_I_N_G : Error variance is negative.

     sqx8 = 0.022*uav, Errorvar.= 0.00 , R = 0.98
           (0.0014)              (0.00)
            15.55                 6.71


         Correlation Matrix of Independent Variables
```

	pdi	uav
pdi	1.00	
uav	0.99 (0.00) 432.83	1.00

Goodness of Fit Statistics

Degrees of Freedom = 12
Minimum Fit Function Chi-Square = 36.99 (P = 0.00022)
Normal Theory Weighted Least Squares Chi-Square = 33.28 (P = 0.00087)
Estimated Non-centrality Parameter (NCP) = 21.28
90 Percent Confidence Interval for NCP = (7.78 ; 42.42)

Minimum Fit Function Value = 0.30
Population Discrepancy Function Value (F0) = 0.17
90 Percent Confidence Interval for F0 = (0.062 ; 0.34)
Root Mean Square Error of Approximation (RMSEA) = 0.12
90 Percent Confidence Interval for RMSEA = (0.072 ; 0.17)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.011

Expected Cross-Validation Index (ECVI) = 0.52
90 Percent Confidence Interval for ECVI = (0.41 ; 0.69)
ECVI for Saturated Model = 0.45
ECVI for Independence Model = 16.05

Chi-Square for Independence Model with 21 Degrees of Freedom = 1992.52
Independence AIC = 2006.52
Model AIC = 65.28
Saturated AIC = 56.00
Independence CAIC = 2033.37
Model CAIC = 126.66
Saturated CAIC = 163.42

Normed Fit Index (NFI) = 0.98
Non-Normed Fit Index (NNFI) = 0.98
Parsimony Normed Fit Index (PNFI) = 0.56
Comparative Fit Index (CFI) = 0.99
Incremental Fit Index (IFI) = 0.99
Relative Fit Index (RFI) = 0.97

Critical N (CN) = 89.59

```
Root Mean Square Residual (RMR) = 0.00
                                 Standardized RMR = 0.014
                            Goodness of Fit Index (GFI) = 0.93
                   Adjusted Goodness of Fit Index (AGFI) = 0.84
                  Parsimony Goodness of Fit Index (PGFI) = 0.40

 The Modification Indices Suggest to Add an Error Covariance
  Between     and     Decrease in Chi-Square    New Estimate
 sqx2       sqx1              10.2                  0.00
 sqx4       sqx3               9.3                  0.00
 sqx7       sqx3              10.5                  0.00

                     Time used:    0.070 Seconds
```

Appendix 5: The confirmatory factor analysis (CFA) for cultural values, three factors model: power distance, uncertainty avoidance and individualism.

```
                              DATE: 11/15/2006
                                  TIME: 17:35

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```

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```
 Sample Size = 126
 Latent Variables  pdi uav ind
 Relationships
 sqx1 = pdi
 sqx2 = pdi
 sqx3 = pdi
 sqx4 = pdi uav
 sqx6 = uav ind
 sqx7 = uav
 sqx8 = uav ind
 sqx10 = ind
 sqx11 = ind uav
 sqx12 = ind
 Set the Variance of pdi to 1.00
 Set the Variance of uav to 1.00
 Set the Variance of ind to 1.00
 set covariance of sq10 and sqx4 free
 set covariance of sqx4 and sqx1 free
 number of decimals = 4
 admissibility check = off
 Path Diagram
 End of Problem

 Sample Size =   126
```

Covariance Matrix

	sqx1	sqx2	sqx3	sqx4	sqx6	sqx7
sqx1	0.0008					
sqx2	0.0008	0.0009				
sqx3	0.0004	0.0004	0.0002			
sqx4	0.0004	0.0005	0.0002	0.0003		
sqx6	0.0001	0.0001	0.0000	0.0000	0.0000	
sqx7	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000
sqx8	0.0006	0.0006	0.0003	0.0004	0.0001	0.0001
sq10	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
sqx11	0.0009	0.0010	0.0005	0.0006	0.0001	0.0002
sqx12	0.0002	0.0002	0.0001	0.0001	0.0000	0.0000

Covariance Matrix

	sqx8	sqx10	sqx11	sqx12
sqx8	0.0005			
sq10	0.0000	0.0000		
sqx11	0.0008	0.0001	0.0012	
sqx12	0.0002	0.0000	0.0003	0.0001

Number of Iterations = 36

LISREL Estimates (Maximum Likelihood)

Measurement Equations

```
sqx1 = 0.02595*pdi, Errorvar.= 0.0001 , R = 0.8908
       (0.001831)             (0.0000)
        14.1738                8.0919

sqx2 = 0.02947*pdi, Errorvar.= 0.0000 , R = 0.9495
       (0.001961)             (0.0000)
        15.0327                8.1896

sqx3 = 0.01429*pdi, Errorvar.= -0.0000 , R = 1.0021
       (0.0009017)             (0.0000)
        15.8437                -3.1694
```

W_A_R_N_I_N_G : Error variance is negative.

```
sqx4 = 0.009688*pdi + 0.006827*uav, Errorvar.= 0.0000 , R = 0.9921
        (0.001082)       (0.0009901)                (0.0000)
         8.9511           6.8954                     8.0319

     sqx6 = 0.0002654*uav + 0.002684*ind, Errorvar.= 0.0000 , R =
0.3335
        (0.003247)        (0.003251)                 (0.0000)
         0.08173           0.8255                     7.9050

     sqx7 = 0.004462*uav, Errorvar.= 0.00    , R = 0.9998
        (0.0002823)                (0.0000)
         15.8070                    0.1731

     sqx8 = 0.02856*uav - 0.006626*ind, Errorvar.= 0.0000 , R =
0.9873
        (0.003537)      (0.003068)                  (0.0000)
         8.0736         -2.1593                      4.9166

     sqx10 = 0.001957*ind, Errorvar.= 0.0000, R = 0.9949
        (0.0001244)                (0.00)
         15.7304                    7.5071

    sqx11 =  - 0.005967*uav + 0.04086*ind, Errorvar.= 0.0000 , R =
0.9996
           (0.001476)      (0.002948)                (0.0000)
           -4.0431          13.8566                   1.6749

    sqx12 = 0.007577*ind, Errorvar.= 0.0000 , R = 0.9981
        (0.0004802)                (0.0000)
         15.7808                    6.5323


 Error Covariance for sqx4 and sqx1 = 0.0000
                                     (0.0000)
                                      2.9199

 Error Covariance for sq10 and sqx4 = 0.0000
                                     (0.0000)
                                      3.5230
```

Correlation Matrix of Independent Variables

	pdi	uav	ind
pdi	1.0000		
uav	0.9882 (0.0021) 466.5047	1.0000	
ind	0.9971 (0.0006) 1697.9933	0.9932 (0.0014) 698.4306	1.0000

Goodness of Fit Statistics

Degrees of Freedom = 26
Minimum Fit Function Chi-Square = 31.7689 (P = 0.2009)
Normal Theory Weighted Least Squares Chi-Square = 30.2443 (P = 0.2576)
Estimated Non-centrality Parameter (NCP) = 4.2443
90 Percent Confidence Interval for NCP = (0.0 ; 22.1352)

Minimum Fit Function Value = 0.2542
Population Discrepancy Function Value (F0) = 0.03395
90 Percent Confidence Interval for F0 = (0.0 ; 0.1771)
Root Mean Square Error of Approximation (RMSEA) = 0.03614
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.08253)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.6370

Expected Cross-Validation Index (ECVI) = 0.7060
90 Percent Confidence Interval for ECVI = (0.6720 ; 0.8491)
ECVI for Saturated Model = 0.8800
ECVI for Independence Model = 37.3418

Chi-Square for Independence Model with 45 Degrees of Freedom = 4647.7282
Independence AIC = 4667.7282
Model AIC = 88.2443
Saturated AIC = 110.0000
Independence CAIC = 4706.0910
Model CAIC = 199.4965
Saturated CAIC = 320.9955

Normed Fit Index (NFI) = 0.9932
Non-Normed Fit Index (NNFI) = 0.9978
Parsimony Normed Fit Index (PNFI) = 0.5738
Comparative Fit Index (CFI) = 0.9987
Incremental Fit Index (IFI) = 0.9988
Relative Fit Index (RFI) = 0.9882

Critical N (CN) = 180.5856

Root Mean Square Residual (RMR) = 0.0000
Standardized RMR = 0.007852
Goodness of Fit Index (GFI) = 0.9538
Adjusted Goodness of Fit Index (AGFI) = 0.9024
Parsimony Goodness of Fit Index (PGFI) = 0.4509

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
sqx2	sqx1	9.5	0.00

Time used: 0.090 Seconds

Appendix 6: The confirmatory factor analysis (CFA) for cultural values, four factors model: power distance, uncertainty avoidance, individualism and masculinity.

```
DATE: 11/18/2006
                                  TIME: 16:47

                                   L I S R E L  8.72

                                         BY

                              Karl G. Jreskog and Dag Srbom



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```

The following lines were read from file **C:\Documents and Settings\A\Desktop\lisral file\New Folder\nor18.spj:**

```
 Sample Size = 126
 Latent Variables  pdi uav ind mas
 Relationships
 sqx1 = pdi
 sqx2 = pdi
 sqx3 = pdi
 sqx4 = pdi uav
 sqx6 = uav
 sqx7 = uav
 sqx8 = uav ind
 sqx10 = ind
 sqx11 = uav ind
 sqx12 = ind
 sqx14 = mas
 sqx15 = mas
 sqx16 = mas
 Set the Variance of pdi to 1.0000
 Set the Variance of uav to 1.0000
 Set the Variance of ind to 1.0000
 Set the Variance of mas to 1.0000
 Set the Error Covariance of sqx2 and sqx1 Free
 Set the Error Covariance of sqx4 and sqx1 Free
 Set the Error Covariance of sqx7 and sqx3 Free
 Set the Error Covariance of sqx10 and sqx4 Free
```

Path Diagram
Number of Decimals = 4
Admissibility Check = Off
End of Problem

Sample Size = 126

Covariance Matrix

	sqx1	sqx2	sqx3	sqx4	sqx6	sqx7
sqx1	0.0008					
sqx2	0.0008	0.0009				
sqx3	0.0004	0.0004	0.0002			
sqx4	0.0004	0.0005	0.0002	0.0003		
sqx6	0.0001	0.0001	0.0000	0.0000	0.0000	
sqx7	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000
sqx8	0.0006	0.0006	0.0003	0.0004	0.0001	0.0001
sq10	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
sqx11	0.0009	0.0010	0.0005	0.0006	0.0001	0.0002
sqx12	0.0002	0.0002	0.0001	0.0001	0.0000	0.0000
sqx14	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
sqx15	-0.0001	-0.0001	0.0000	-0.0001	0.0000	0.0000
sqx16	-0.0005	-0.0005	-0.0003	-0.0003	-0.0001	-0.0001

Covariance Matrix

	sqx8	sqx10	sqx11	sqx12	sqx14	sqx15
sqx8	0.0005					
sqx10	0.0000	0.0000				
sqx11	0.0008	0.0001	0.0012			
sqx12	0.0002	0.0000	0.0003	0.0001		
sqx14	0.0000	0.0000	0.0000	0.0000	0.0000	
sqx15	-0.0001	0.0000	-0.0001	0.0000	0.0000	0.0001
sqx16	-0.0004	0.0000	-0.0006	-0.0001	0.0000	0.0001

Covariance Matrix

	sqx16
sqx16	0.0003

```
Number of Iterations = 84

LISREL Estimates (Maximum Likelihood)

        Measurement Equations


    sqx1 = 0.02597*pdi, Errorvar.= 0.0001 , R = 0.8900
          (0.001834)             (0.0000)
           14.1588                7.9872

    sqx2 = 0.02949*pdi, Errorvar.= 0.0000 , R = 0.9504
          (0.001960)             (0.0000)
           15.0467                7.9870

    sqx3 = 0.01428*pdi, Errorvar.= -0.0000 , R = 1.0005
          (0.0009024)             (0.0000)
           15.8198                -1.3078

W_A_R_N_I_N_G : Error variance is negative.

    sqx4 = 0.01028*pdi + 0.006234*uav, Errorvar.= 0.0000 , R =
0.9924
          (0.001127)    (0.001001)                  (0.0000)
           9.1172        6.2289                      7.9517

    sqx6 = 0.002930*uav, Errorvar.= 0.0000 , R = 0.3294
          (0.0004173)             (0.0000)
           7.0207                  7.9048

    sqx7 = 0.004462*uav, Errorvar.= 0.00   , R = 0.9995
          (0.0002824)             (0.0000)
           15.8026                 0.3613

    sqx8 = 0.02922*uav - 0.007288*ind, Errorvar.= 0.0000 , R =
0.9878
          (0.003740)    (0.003282)                  (0.0000)
           7.8134       -2.2205                      4.4928

    sqx10 = 0.001957*ind, Errorvar.= 0.0000, R = 0.9949
          (0.0001244)             (0.00)
           15.7304                 7.5643

   sqx11 =  - 0.006077*uav + 0.04097*ind, Errorvar.= 0.0000 , R =
0.9997
             (0.001503)     (0.002967)                  (0.0000)
             -4.0442         13.8067                     1.5457

   sqx12 = 0.007577*ind, Errorvar.= 0.0000 , R = 0.9980
          (0.0004802)             (0.0000)
           15.7803                 6.7234

   sqx14 = 0.0003142*mas, Errorvar.= 0.0000 , R = 0.4722
          (0.0000)                 (0.0000)
           8.7923                   7.9101

   sqx15 = 0.003207*mas, Errorvar.= 0.0001 , R = 0.1482
          (0.0007155)             (0.0000)
           4.4819                  7.9118
```

```
sqx16 = 0.01774*mas, Errorvar.= -0.0000 , R = 1.0020
       (0.001120)              (0.0000)
        15.8386                -0.6686

W_A_R_N_I_N_G : Error variance is negative.


Error Covariance for sqx2 and sqx1 = 0.0000
                                    (0.0000)
                                    -3.2048

Error Covariance for sqx4 and sqx1 = 0.0000
                                    (0.0000)
                                     3.2287

Error Covariance for sqx7 and sqx3 = 0.0000
                                    (0.0000)
                                    -2.1708

Error Covariance for sq10 and sqx4 = 0.0000
                                    (0.0000)
                                     3.5938
```

Correlation Matrix of Independent Variables

	pdi	uav	ind	mas
pdi	1.0000			
uav	0.9896 (0.0021) 480.4365	1.0000		
ind	0.9979 (0.0004) 2327.4533	0.9933 (0.0014) 693.9870	1.0000	
mas	-0.9979 (0.0015) -650.3786	-0.9888 (0.0025) -391.9389	-0.9976 (0.0015) -650.1454	1.0000

Goodness of Fit Statistics

Degrees of Freedom = 52
Minimum Fit Function Chi-Square = 227.5060 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 180.8590 (P = 0.00)
Estimated Non-centrality Parameter (NCP) = 128.8590
90 Percent Confidence Interval for NCP = (91.6587 ; 173.6556)

Minimum Fit Function Value = 1.8200
Population Discrepancy Function Value (F0) = 1.0309
90 Percent Confidence Interval for F0 = (0.7333 ; 1.3892)
Root Mean Square Error of Approximation (RMSEA) = 0.1408
90 Percent Confidence Interval for RMSEA = (0.1187 ; 0.1635)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0000

Expected Cross-Validation Index (ECVI) = 2.0709
90 Percent Confidence Interval for ECVI = (1.7733 ;
2.4292)
ECVI for Saturated Model = 1.4560
ECVI for Independence Model = 52.7953

Chi-Square for Independence Model with 78 Degrees of Freedom =
6573.4176
Independence AIC = 6599.4176
Model AIC = 258.8590
Saturated AIC = 182.0000
Independence CAIC = 6649.2893
Model CAIC = 408.4740
Saturated CAIC = 531.1017

Normed Fit Index (NFI) = 0.9654
Non-Normed Fit Index (NNFI) = 0.9595
Parsimony Normed Fit Index (PNFI) = 0.6436
Comparative Fit Index (CFI) = 0.9730
Incremental Fit Index (IFI) = 0.9731
Relative Fit Index (RFI) = 0.9481

Critical N (CN) = 44.1945

Root Mean Square Residual (RMR) = 0.0000
Standardized RMR = 0.05125
Goodness of Fit Index (GFI) = 0.8179
Adjusted Goodness of Fit Index (AGFI) = 0.6814
Parsimony Goodness of Fit Index (PGFI) = 0.4674

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
sqx14	sqx1	14.2	0.00
sqx14	sqx2	20.4	0.00
sqx14	sqx6	12.3	0.00
sqx15	sqx2	32.2	0.00
sqx15	sqx6	12.2	0.00
sqx15	sqx14	31.1	0.00
sqx16	sqx8	7.9	0.00

Time used: 0.180 Seconds

Appendix 7: The confirmatory factor analysis (CFA) for cultural values, five factors model: power distance, uncertainty avoidance, individualism, masculinity and time horizon.

```
DATE: 11/18/2006
                                        TIME: 16:48

                                       L I S R E L  8.72

                                             BY

                                 Karl G. Jreskog and Dag Srbom



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```

The following lines were read from file **C:\Documents and Settings\A\Desktop\lisral file\New Folder\nor19.spj:**

```
 Sample Size = 126
 Latent Variables  pdi uav ind mas toi
 Relationships
 sqx1 = pdi
 sqx2 = pdi
 sqx3 = pdi
 sqx4 = pdi uav
 sqx6 = uav
 sqx7 = uav
 sqx8 = uav ind
 sqx10 = ind
 sqx11 = uav ind
 sqx12 = ind
 sqx14 = mas
 sqx15 = mas
 sqx16 = mas
 sqx17 = toi
 sqx18 = toi
 sqx19 = toi
 sqx20 = ind toi
 Set the Variance of pdi to 1.0000
 Set the Variance of uav to 1.0000
 Set the Variance of ind to 1.0000
 Set the Variance of mas to 1.0000
```

```
Set the Variance of toi to 1.0000
Set the Error Covariance of sqx2 and sqx1 Free
Set the Error Covariance of sqx4 and sqx1 Free
Set the Error Covariance of sqx7 and sqx3 Free
Set the Error Covariance of sq10 and sqx4 Free
Set the Error Covariance of sqx20 and sqx19 Free
Path Diagram
Number of Decimals = 4
Admissibility Check = Off
End of Problem

Sample Size =   126
```

Covariance Matrix

	sqx1	sqx2	sqx3	sqx4	sqx6	sqx7
sqx1	0.0008					
sqx2	0.0008	0.0009				
sqx3	0.0004	0.0004	0.0002			
sqx4	0.0004	0.0005	0.0002	0.0003		
sqx6	0.0001	0.0001	0.0000	0.0000	0.0000	
sqx7	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000
sqx8	0.0006	0.0006	0.0003	0.0004	0.0001	0.0001
sq10	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
sqx11	0.0009	0.0010	0.0005	0.0006	0.0001	0.0002
sqx12	0.0002	0.0002	0.0001	0.0001	0.0000	0.0000
sqx14	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
sqx15	-0.0001	-0.0001	0.0000	-0.0001	0.0000	0.0000
sqx16	-0.0005	-0.0005	-0.0003	-0.0003	-0.0001	-0.0001
sqx17	0.0005	0.0005	0.0003	0.0003	0.0001	0.0001
sqx18	0.0001	0.0001	0.0001	0.0001	0.0000	0.0000
sqx19	0.0007	0.0007	0.0004	0.0004	0.0001	0.0001
sqx20	0.0002	0.0002	0.0001	0.0001	0.0000	0.0000

Covariance Matrix

	sqx8	sqx10	sqx11	sqx12	sqx14	sqx15
sqx8	0.0005					
sqx10	0.0000	0.0000				
sqx11	0.0008	0.0001	0.0012			
sqx12	0.0002	0.0000	0.0003	0.0001		

```
    sqx14      0.0000       0.0000       0.0000       0.0000       0.0000
    sqx15     -0.0001       0.0000      -0.0001       0.0000       0.0000
0.0001
    sqx16     -0.0004       0.0000      -0.0006      -0.0001       0.0000
0.0001
    sqx17      0.0004       0.0000       0.0007       0.0001       0.0000     -
0.0001
    sqx18      0.0001       0.0000       0.0001       0.0000       0.0000
0.0000
    sqx19      0.0006       0.0000       0.0009       0.0002       0.0000     -
0.0001
    sqx20      0.0001       0.0000       0.0002       0.0000       0.0000
0.0000

        Covariance Matrix

               sqx16        sqx17        sqx18        sqx19        sqx20
             --------     --------     --------     --------     --------
    sqx16      0.0003
    sqx17     -0.0003       0.0004
    sqx18     -0.0001       0.0001       0.0000
    sqx19     -0.0004       0.0005       0.0001       0.0008
    sqx20     -0.0001       0.0001       0.0000       0.0002       0.0001
```

```
 Number of Iterations = 94

 LISREL Estimates (Maximum Likelihood)

        Measurement Equations


    sqx1 = 0.02597*pdi, Errorvar.= 0.0001 , R = 0.8901
          (0.001834)              (0.0000)
           14.1610                 7.9854

    sqx2 = 0.02949*pdi, Errorvar.= 0.0000 , R = 0.9504
          (0.001960)              (0.0000)
           15.0458                 7.9893

    sqx3 = 0.01428*pdi, Errorvar.= -0.0000 , R = 1.0005
          (0.0009024)              (0.0000)
           15.8197                 -1.2894

 W_A_R_N_I_N_G : Error variance is negative.
```

```
    sqx4 = 0.01006*pdi + 0.006450*uav, Errorvar.= 0.0000 , R =
0.9925
          (0.001128)    (0.001016)                (0.0000)
           8.9170        6.3470                    7.9146

    sqx6 = 0.002945*uav, Errorvar.= 0.0000 , R = 0.3328
          (0.0004170)              (0.0000)
           7.0617                   7.9014

    sqx7 = 0.004459*uav, Errorvar.= 0.0000 , R = 0.9980
          (0.0002826)              (0.0000)
           15.7795                  1.6681
```

```
sqx8 = 0.03227*uav - 0.01033*ind, Errorvar.= 0.0000 , R = 0.9906
       (0.003887)    (0.003373)              (0.0000)
        8.3012       -3.0638                  3.6929

sqx10 = 0.001957*ind, Errorvar.= 0.0000, R = 0.9949
       (0.0001244)               (0.00)
        15.7310                   7.5110

sqx11 =  - 0.006149*uav + 0.04104*ind, Errorvar.= 0.0000 , R =
0.9996
          (0.001574)     (0.003008)              (0.0000)
          -3.9052         13.6455                 1.8730

sqx12 = 0.007577*ind, Errorvar.= 0.0000 , R = 0.9981
       (0.0004802)               (0.0000)
        15.7807                   6.6341

sqx14 = 0.0003141*mas, Errorvar.= 0.0000 , R = 0.4721
       (0.0000)                   (0.0000)
        8.7912                     7.9107

sqx15 = 0.003208*mas, Errorvar.= 0.0001 , R = 0.1483
       (0.0007153)               (0.0000)
        4.4848                    7.9124

sqx16 = 0.01774*mas, Errorvar.= -0.0000 , R = 1.0021
       (0.001120)                (0.0000)
        15.8402                  -0.7066

W_A_R_N_I_N_G : Error variance is negative.

sqx17 = 0.01872*toi, Errorvar.= 0.0001 , R = 0.8334
       (0.001405)               (0.0000)
        13.3310                  7.2969

sqx18 = 0.004204*toi, Errorvar.= 0.0000 , R = 0.9291
       (0.0002861)               (0.0000)
        14.6951                   5.8119

sqx19 = 0.02506*toi, Errorvar.= 0.0001571, R = 0.7999
       (0.001947)               (0.0000)
        12.8726                  7.4175

sqx20 =  - 0.008737*ind + 0.01482*toi, Errorvar.= 0.0000 , R =
0.5752
          (0.003938)     (0.004037)              (0.0000)
          -2.2186         3.6711                  6.7175


Error Covariance for sqx2 and sqx1 = 0.0000
                                    (0.0000)
                                    -3.1471

Error Covariance for sqx4 and sqx1 = 0.0000
                                    (0.0000)
                                     3.1490

Error Covariance for sqx7 and sqx3 = 0.0000
                                    (0.0000)
                                    -2.6286
```

```
Error Covariance for sq10 and sqx4 = 0.0000
                                    (0.0000)
                                     3.4921

Error Covariance for sqx20 and sqx19 = 0.0001
                                      (0.0000)
                                       6.0996
```

Correlation Matrix of Independent Variables

	pdi	uav	ind	mas	toi
pdi	1.0000				
uav	0.9903 (0.0020) 507.5037	1.0000			
ind	0.9980 (0.0004) 2350.6864	0.9939 (0.0013) 744.3579	1.0000		
mas	-0.9978 (0.0015) -653.8463	-0.9893 (0.0025) -401.9051	-0.9976 (0.0015) -653.7873	1.0000	
toi	0.9866 (0.0053) 187.7792	0.9900 (0.0047) 210.2962	0.9890 (0.0050) 199.0337	-0.9864 (0.0054) -182.4829	1.0000

Goodness of Fit Statistics

Degrees of Freedom = 100
Minimum Fit Function Chi-Square = 393.2481 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 327.3249 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 227.3249
90 Percent Confidence Interval for NCP = (176.2991 ; 285.9595)

Minimum Fit Function Value = 3.1460
Population Discrepancy Function Value (F0) = 1.8186
90 Percent Confidence Interval for F0 = (1.4104 ; 2.2877)
Root Mean Square Error of Approximation (RMSEA) = 0.1349
90 Percent Confidence Interval for RMSEA = (0.1188 ; 0.1513)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0000

Expected Cross-Validation Index (ECVI) = 3.4666
90 Percent Confidence Interval for ECVI = (3.0584 ; 3.9357)
ECVI for Saturated Model = 2.4480
ECVI for Independence Model = 89.8149

Chi-Square for Independence Model with 136 Degrees of Freedom = 11192.8615
Independence AIC = 11226.8615

Model AIC = 433.3249
Saturated AIC = 306.0000
Independence CAIC = 11292.0783
Model CAIC = 636.6478
Saturated CAIC = 892.9511

Normed Fit Index (NFI) = 0.9649
Non-Normed Fit Index (NNFI) = 0.9639
Parsimony Normed Fit Index (PNFI) = 0.7095
Comparative Fit Index (CFI) = 0.9735
Incremental Fit Index (IFI) = 0.9736
Relative Fit Index (RFI) = 0.9522

Critical N (CN) = 44.1698

Root Mean Square Residual (RMR) = 0.0000
Standardized RMR = 0.05063
Goodness of Fit Index (GFI) = 0.7645
Adjusted Goodness of Fit Index (AGFI) = 0.6397
Parsimony Goodness of Fit Index (PGFI) = 0.4997

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
sqx3	ind	8.0	0.01
sqx6	toi	14.4	0.02

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
sqx11	sqx8	8.6	0.00
sqx14	sqx1	14.2	0.00
sqx14	sqx2	20.5	0.00
sqx14	sqx6	12.4	0.00
sqx15	sqx2	32.1	0.00
sqx15	sqx6	12.1	0.00
sqx15	sqx14	31.1	0.00
sqx17	sqx6	15.6	0.00
sqx20	sqx1	12.1	0.00
sqx20	sqx6	8.8	0.00
sqx20	sqx15	12.4	0.00

Time used: 0.290 Seconds

Appendix 8: The confirmatory factor analysis (CFA) for stock market development indicators, one factor model: stock market activity.

```
DATE: 11/23/2006
                                        TIME: 15:15

                                      L I S R E L  8.72

                                            BY

                              Karl G. Jreskog and Dag Srbom



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```

The following lines were read from file **C:\Documents and Settings\A\Desktop\lisral file\New Folder\nor20.SPJ:**

```
 Sample Size = 126
 Latent Variables  act
 Relationships
 y1 = act
 y2 = act
 dsqy3 = act
 dsqy5 = act
 Set the Variance of act to 1.00
 Path Diagram
 End of Problem

 Sample Size =   126
```

Covariance Matrix

	y1	y2	dsqy3	dsqy5
y1	0.00			
y2	0.01	0.01		
dsqy3	0.00	0.00	0.00	
dsqy5	0.00	0.00	0.00	0.00

```
Number of Iterations = 12

LISREL Estimates (Maximum Likelihood)

        Measurement Equations


      y1 = 0.064*act, Errorvar.= -0.00045 , R = 1.12
          (0.0040)              (0.00024)
           16.00                -1.89

W_A_R_N_I_N_G : Error variance is negative.

      y2 = 0.085*act, Errorvar.= 0.0028  , R = 0.72
          (0.0075)             (0.00053)
           11.28                5.23

   dsqy3 = 0.00043*act, Errorvar.= 0.00 , R = 0.39
          (0.00)                 (0.00)
           7.59                   7.63

   dsqy5 = 0.00087*act, Errorvar.= 0.00 , R = 0.013
          (0.00062)              (0.00)
           1.40                   7.63


        Correlation Matrix of Independent Variables

                act
          --------
               1.00


                              Goodness of Fit Statistics

                                 Degrees of Freedom = 2
                 Minimum Fit Function Chi-Square = 19.82 (P = 0.00)
     Normal Theory Weighted Least Squares Chi-Square = 18.41 (P =
0.00010)
                  Estimated Non-centrality Parameter (NCP) = 16.41
              90 Percent Confidence Interval for NCP = (6.21 ; 34.05)

                          Minimum Fit Function Value = 0.16
                 Population Discrepancy Function Value (F0) = 0.13
               90 Percent Confidence Interval for F0 = (0.050 ; 0.27)
               Root Mean Square Error of Approximation (RMSEA) = 0.26
              90 Percent Confidence Interval for RMSEA = (0.16 ; 0.37)
               P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00058

                  Expected Cross-Validation Index (ECVI) = 0.28
              90 Percent Confidence Interval for ECVI = (0.19 ; 0.42)
                           ECVI for Saturated Model = 0.16
                          ECVI for Independence Model = 1.74

       Chi-Square for Independence Model with 6 Degrees of Freedom =
209.37
```

Independence AIC = 217.37
Model AIC = 34.41
Saturated AIC = 20.00
Independence CAIC = 232.71
Model CAIC = 65.10
Saturated CAIC = 58.36

Normed Fit Index (NFI) = 0.91
Non-Normed Fit Index (NNFI) = 0.74
Parsimony Normed Fit Index (PNFI) = 0.30
Comparative Fit Index (CFI) = 0.91
Incremental Fit Index (IFI) = 0.91
Relative Fit Index (RFI) = 0.72

Critical N (CN) = 59.08

Root Mean Square Residual (RMR) = 0.00
Standardized RMR = 0.095
Goodness of Fit Index (GFI) = 0.93
Adjusted Goodness of Fit Index (AGFI) = 0.66
Parsimony Goodness of Fit Index (PGFI) = 0.19

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
y2	y1	16.7	0.02
dsqy5	dsqy3	16.7	0.00

Time used: 0.060 Seconds

Appendix 9: The confirmatory factor analysis (CFA) for stock market development indicators, two factor model: stock market activity and size.

```
                                 DATE: 10/28/2006
                                         TIME: 18:00

                                    L I S R E L  8.72

                                           BY

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The following lines were read from file  C:\Documents and
Settings\A\Desktop\lisral file\New Folder\nor21.spj:


 Sample Size = 126
 Latent Variables  act size
 Relationships
 y1 = act
 y2 = act
 y6 = size
 y7 = size
 dsqy8 = size
 dsqy9 = size
 dsqy3 = act
 dsqy5 = act
 Set the Variance of act to 1.00
 Set the Variance of size to 1.00
 Set the Error Covariance of y2 and y1 Free
 Set the Error Covariance of dsqy3 and dsqy9 Free
 Set the Error Covariance of dsqy5 and y6 Free
 Path Diagram
 End of Problem

 Sample Size =   126
```

Covariance Matrix

	y1	y2	y6	y7	dsqy8	dsqy9
y1	0.00					
y2	0.01	0.01				
y6	0.00	0.00	0.00			
y7	0.00	0.00	0.00	0.00		
dsqy8	0.00	0.00	0.00	0.00	0.00	
dsqy9	0.00	0.00	0.00	0.00	0.00	0.00
dsqy3	0.00	0.00	0.00	0.00	0.00	0.00
dsqy5	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix

	dsqy3	dsqy5
dsqy3	0.00	
dsqy5	0.00	0.00

Number of Iterations = 22

LISREL Estimates (Maximum Likelihood)

Measurement Equations

```
y1 = 0.055*act, Errorvar.= 0.00065 , R = 0.82
    (0.0043)               (0.00014)
     12.85                  4.60

y2 = 0.076*act, Errorvar.= 0.0042  , R = 0.58
    (0.0077)               (0.00059)
     9.88                   7.05

y6 = 0.019*size, Errorvar.= 0.00 , R = 0.98
    (0.0013)                (0.00)
     15.46                   3.50

y7 = 0.027*size, Errorvar.= 0.00 , R = 0.99
    (0.0017)                (0.00)
     15.71                   1.00

dsqy8 =  - 0.0011*size, Errorvar.= 0.00 , R = 0.21
          (0.00020)                (0.00)
          -5.39                     7.90

dsqy9 =  - 0.00038*size, Errorvar.= 0.00 , R = 0.24
          (0.00)                    (0.00)
          -5.77                      7.90
```

```
dsqy3 = 0.00051*act, Errorvar.= 0.00 , R = 0.54
        (0.00)                  (0.00)
         9.42                    7.43

    dsqy5 = 0.0015*act, Errorvar.= 0.00 , R = 0.038
        (0.00068)              (0.00)
         2.15                   7.89


 Error Covariance for y2 and yl = 0.0012
                                (0.00025)
                                    4.94

 Error Covariance for dsqy3 and dsqy9 = 0.00
                                      (0.00)
                                      -4.15

 Error Covariance for dsqy5 and y6 = 0.00
                                   (0.00)
                                   -5.46


         Correlation Matrix of Independent Variables

                  act        size
               --------   --------
      act         1.00

     size         0.98        1.00
                (0.02)
                 51.78



                              Goodness of Fit Statistics

                                Degrees of Freedom = 16
                 Minimum Fit Function Chi-Square = 114.06 (P = 0.00)
         Normal Theory Weighted Least Squares Chi-Square = 91.70 (P =
0.00)
                   Estimated Non-centrality Parameter (NCP) = 75.70
              90 Percent Confidence Interval for NCP = (49.28 ; 109.64)

                            Minimum Fit Function Value = 0.91
                  Population Discrepancy Function Value (F0) = 0.61
                90 Percent Confidence Interval for F0 = (0.39 ; 0.88)
                Root Mean Square Error of Approximation (RMSEA) = 0.19
               90 Percent Confidence Interval for RMSEA = (0.16 ; 0.23)
                 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

                    Expected Cross-Validation Index (ECVI) = 1.05
               90 Percent Confidence Interval for ECVI = (0.84 ; 1.33)
                             ECVI for Saturated Model = 0.58
                            ECVI for Independence Model = 9.03

      Chi-Square for Independence Model with 28 Degrees of Freedom =
1112.37
                                 Independence AIC = 1128.37
                                     Model AIC = 131.70
                                   Saturated AIC = 72.00
                                Independence CAIC = 1159.06
```

Model CAIC = 208.43
Saturated CAIC = 210.11

Normed Fit Index (NFI) = 0.90
Non-Normed Fit Index (NNFI) = 0.84
Parsimony Normed Fit Index (PNFI) = 0.51
Comparative Fit Index (CFI) = 0.91
Incremental Fit Index (IFI) = 0.91
Relative Fit Index (RFI) = 0.82

Critical N (CN) = 36.07

Root Mean Square Residual (RMR) = 0.00
Standardized RMR = 0.089
Goodness of Fit Index (GFI) = 0.85
Adjusted Goodness of Fit Index (AGFI) = 0.65
Parsimony Goodness of Fit Index (PGFI) = 0.38

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
dsqy8	y7	7.9	0.00
dsqy5	dsqy3	8.6	0.00

Time used: 0.070 Seconds

Appendix 10: The confirmatory factor analysis (CFA) for stock market development indicators, three factor model: stock market activity, size and liquidity.

```
DATE: 11/16/2006
                                        TIME: 18:12

                                     L I S R E L  8.72

                                           BY

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Settings\A\Desktop\lisral file\New Folder\nor22.spj:


 Sample Size = 126
 Latent Variables  act size liq
 Relationships
 y1 = act
 y2 = act
 y6 = size
 y7 = size
 sqy8 = size liq
 sqy9 = size
 sqy11 = liq
 sqy12 = liq
 sqy13 = liq
 sqy3 = act
 sqy5 = act
 Set the Variance of act to 1.0000
 Set the Variance of size to 1.0000
 Set the Variance of liq to 1.0000
 Set the Error Covariance of y2 and y1 Free
 Set the Error Covariance of dsqy3 and dsqy9 Free
 Set the Error Covariance of dsqy5 and y6 Free
 Path Diagram
 Number of Decimals = 4
 End of Problem
```

Sample Size =   126

Covariance Matrix

	y1	y2	y6	y7	sqy8	sqy9
y1	0.0037					
y2	0.0055	0.0100				
y6	0.0011	0.0015	0.0004			
y7	0.0015	0.0020	0.0005	0.0007		
sqy8	0.0009	0.0009	0.0003	0.0005	0.0009	
sqy9	-0.0001	-0.0005	0.0000	0.0000	0.0002	0.0002
dsqy9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
sqy11	0.0013	0.0021	0.0005	0.0006	0.0003	-0.0001
sqy12	0.0062	0.0090	0.0022	0.0029	0.0017	-0.0002
sqy13	0.0036	0.0058	0.0012	0.0016	0.0005	-0.0004
sqy3	0.0016	0.0025	0.0005	0.0007	0.0004	-0.0001
dsqy3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
sqy5	0.0030	0.0044	0.0011	0.0015	0.0008	-0.0002
dsqy5	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000

Covariance Matrix

	dsqy9	sqy11	sqy12	sqy13	sqy3	dsqy3
dsqy9	0.0000					
sqy11	0.0000	0.0008				
sqy12	0.0000	0.0030	0.0142			
sqy13	0.0000	0.0017	0.0073	0.0057		
sqy3	0.0000	0.0008	0.0033	0.0022	0.0009	
dsqy3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
sqy5	0.0000	0.0014	0.0063	0.0034	0.0015	0.0000
dsqy5	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000

Covariance Matrix

	sqy5	dsqy5
sqy5	0.0047	
dsqy5	0.0000	0.0001

```
Number of Iterations = 31

LISREL Estimates (Maximum Likelihood)

        Measurement Equations


      y1 = 0.05281*act, Errorvar.= 0.0009179 , R = 0.7523
          (0.004313)              (0.0001210)
           12.2439                 7.5876

      y2 = 0.08053*act, Errorvar.= 0.003489  , R = 0.6502
          (0.007361)              (0.0004508)
           10.9410                 7.7400

      y6 = 0.01996*size, Errorvar.= -0.0000 , R = 1.0089
          (0.001245)                (0.0000)
           16.0314                  -1.6526

W_A_R_N_I_N_G : Error variance is negative.

      y7 = 0.02644*size, Errorvar.= 0.0000 , R = 0.9675
          (0.001728)               (0.0000)
           15.2959                  5.2915

    sqy8 = 0.01784*size - 0.002877*liq, Errorvar.= 0.0006523, R =
0.2605
          (0.006372)      (0.006309)                  (0.0001)
           2.7998         -0.4561                      7.9894

    sqy9 =  - 0.001128*size, Errorvar.= 0.0001693, R = 0.007454
              (0.001149)                (0.0000)
              -0.9815                    7.9074

   dsqy9 = , Errorvar.= 0.0000 ,
                       (0.0000)
                        7.9057

   sqy11 = 0.02514*liq, Errorvar.= 0.0001960, R = 0.7633
          (0.002025)              (0.0000)
           12.4180                 7.8684

   sqy12 = 0.1129*liq, Errorvar.= 0.001448  , R = 0.8979
          (0.007921)             (0.0002103)
           14.2481                6.8860

   sqy13 = 0.06853*liq, Errorvar.= 0.001026  , R = 0.8208
          (0.005200)              (0.0001334)
           13.1786                 7.6852

    sqy3 = 0.02964*act, Errorvar.= 0.0001 , R = 0.9423
          (0.001993)              (0.0000)
           14.8734                 4.5198

   dsqy3 = , Errorvar.= 0.0000 ,
                       (0.0000)
                        7.9057

    sqy5 = 0.05306*act, Errorvar.= 0.001922  , R = 0.5942
```

```
          (0.005177)               (0.0002469)
           10.2488                  7.7861

    dsqy5 = , Errorvar.= 0.0001 ,
                        (0.0000)
                         7.9057


 Error Covariance for y2 and y1 = 0.001205
                                 (0.0002001)
                                     6.0220

 Error Covariance for dsqy3 and dsqy9 = 0.0000
                                       (0.0000)
                                       -5.7142

 Error Covariance for dsqy5 and y6 = 0.0000
                                    (0.0000)
                                    -5.3575


         Correlation Matrix of Independent Variables

                  act         size         liq
               --------    --------    --------
        act     1.0000

       size     0.9251      1.0000
               (0.0155)
                59.6569

        liq     1.0243      0.9432      1.0000
               (0.0073)    (0.0132)
               140.4760     71.7196


 W_A_R_N_I_N_G:


                               Goodness of Fit Statistics

                                  Degrees of Freedom = 73
                Minimum Fit Function Chi-Square = 854.3803 (P = 0.0)
        Normal Theory Weighted Least Squares Chi-Square = 719.7486 (P
= 0.0)
                Estimated Non-centrality Parameter (NCP) = 646.7486
           90 Percent Confidence Interval for NCP = (564.4472 ;
736.5030)

                       Minimum Fit Function Value = 6.8350
                Population Discrepancy Function Value (F0) = 5.1740
             90 Percent Confidence Interval for F0 = (4.5156 ; 5.8920)
              Root Mean Square Error of Approximation (RMSEA) = 0.2662
            90 Percent Confidence Interval for RMSEA = (0.2487 ;
0.2841)
               P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0000

                 Expected Cross-Validation Index (ECVI) = 6.2700
            90 Percent Confidence Interval for ECVI = (5.6116 ;
6.9880)
                        ECVI for Saturated Model = 1.6800
```

ECVI for Independence Model = 33.1072

Chi-Square for Independence Model with 91 Degrees of Freedom = 4110.4059

Independence AIC = 4138.4059
Model AIC = 783.7486
Saturated AIC = 210.0000
Independence CAIC = 4192.1138
Model CAIC = 906.5096
Saturated CAIC = 612.8096

Normed Fit Index (NFI) = 0.7921
Non-Normed Fit Index (NNFI) = 0.7577
Parsimony Normed Fit Index (PNFI) = 0.6355
Comparative Fit Index (CFI) = 0.8056
Incremental Fit Index (IFI) = 0.8065
Relative Fit Index (RFI) = 0.7409

Critical N (CN) = 16.2173

Root Mean Square Residual (RMR) = 0.0001166
Standardized RMR = 0.2554
Goodness of Fit Index (GFI) = 0.5487
Adjusted Goodness of Fit Index (AGFI) = 0.3508
Parsimony Goodness of Fit Index (PGFI) = 0.3815

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
y1	size	31.0	0.03
y1	liq	10.9	0.04
y2	size	10.5	-0.03
y6	act	29.2	0.01
y7	act	25.2	-0.01
sqy9	act	19.6	-0.01
sqy9	liq	15.0	-0.01
sqy11	act	18.3	0.04
sqy12	size	55.0	0.10
sqy13	act	22.4	-0.14
sqy13	size	37.4	-0.06
sqy3	size	32.9	-0.02
sqy3	liq	35.5	-0.07
dsqy3	act	17.2	0.00
dsqy3	size	29.6	0.00
dsqy3	liq	23.1	0.00
sqy5	size	11.9	0.03

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
y7	y1	10.0	0.00
sqy8	y1	18.3	0.00
sqy8	y2	12.1	0.00
sqy8	y6	22.4	0.00
sqy8	y7	28.9	0.00
sqy9	y1	33.2	0.00
sqy9	y2	48.3	0.00
sqy9	sqy8	58.5	0.00
dsqy9	sqy9	17.0	0.00
sqy11	y1	18.2	0.00
sqy12	y6	22.8	0.00
sqy12	y7	11.1	0.00

sqy12	sqy11	17.7	0.00
sqy13	y1	15.4	0.00
sqy13	y2	9.3	0.00
sqy13	sqy8	20.7	0.00
sqy13	sqy9	36.9	0.00
sqy13	sqy12	22.3	0.00
sqy3	sqy12	18.7	0.00
sqy3	sqy13	85.0	0.00
dsqy3	y1	18.5	0.00
dsqy3	y2	8.2	0.00
dsqy3	sqy8	8.2	0.00
dsqy3	sqy9	8.1	0.00
dsqy3	sqy11	9.1	0.00
sqy5	sqy3	12.0	0.00
dsqy5	y7	8.6	0.00
dsqy5	dsqy9	12.4	0.00
dsqy5	sqy11	17.6	0.00
dsqy5	dsqy3	17.6	0.00

Time used: 0.130 Seconds

Appendix 11: The confirmatory factor analysis (CFA) for stock market development indicators, four factor model: stock market activity, size, liquidity and concentration.

```
DATE: 10/28/2006
                                        TIME: 12:36


                                L I S R E L  8.72

                                      BY

                          Karl G. Jreskog and Dag Srbom



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Settings\A\Desktop\lisral file\New Folder\nor23.spj:


 Sample Size = 126
 Latent Variables  act size liq conc
 Relationships
 y1 = act
 y2 = act
 y6 = size
 y7 = size
 dsqy8 = size
 dsqy9 = size
 dsqy11 = liq
 dsqy12 = liq
 dsqy13 = liq
 sqy14 = conc
 sqy15 = conc
 sqy16 = size conc
 dsqy3 = act
 dsqy5 = act
 Set the Variance of act to 1.00
 Set the Variance of size to 1.00
 Set the Variance of liq to 1.00
 Set the Variance of conc to 1.00
 Set the Error Covariance of y2 and y1 Free
 Set the Error Covariance of dsqy3 and dsqy9 Free
 Set the Error Covariance of dsqy5 and y6 Free
```

Path Diagram
End of Problem

Sample Size = 126

Covariance Matrix

	y1	y2	y6	y7	dsqy8	dsqy9
y1	0.00					
y2	0.01	0.01				
y6	0.00	0.00	0.00			
y7	0.00	0.00	0.00	0.00		
dsqy8	0.00	0.00	0.00	0.00	0.00	
dsqy9	0.00	0.00	0.00	0.00	0.00	0.00
dsqy11	0.00	0.00	0.00	0.00	0.00	0.00
dsqy12	0.00	0.00	0.00	0.00	0.00	0.00
dsqy13	0.00	0.00	0.00	0.00	0.00	0.00
sqy14	0.00	0.00	0.00	0.00	0.00	0.00
sqy15	0.00	0.00	0.00	0.00	0.00	0.00
sqy16	0.00	0.00	0.00	0.00	0.00	0.00
dsqy3	0.00	0.00	0.00	0.00	0.00	0.00
dsqy5	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix

	dsqy11	dsqy12	dsqy13	sqy14	sqy15	sqy16
dsqy11	0.00					
dsqy12	0.00	0.00				
dsqy13	0.00	0.00	0.00			
sqy14	0.00	0.00	0.00	0.00		
sqy15	0.00	0.00	0.00	0.00	0.00	
sqy16	0.00	0.00	0.00	0.00	0.00	0.00
dsqy3	0.00	0.00	0.00	0.00	0.00	0.00
dsqy5	0.00	0.00	0.00	0.00	0.00	0.00

Covariance Matrix

	dsqy3	dsqy5
dsqy3	0.00	
dsqy5	0.00	0.00

```
Number of Iterations = 41

LISREL Estimates (Maximum Likelihood)

        Measurement Equations


      y1 = 0.055*act, Errorvar.= 0.00070 , R = 0.81
          (0.0043)              (0.00014)
           12.72                 4.99

      y2 = 0.076*act, Errorvar.= 0.0042  , R = 0.58
          (0.0077)              (0.00058)
           9.92                  7.25

      y6 = 0.019*size, Errorvar.= 0.00 , R = 0.98
          (0.0013)               (0.00)
           15.56                  3.74

      y7 = 0.027*size, Errorvar.= 0.00 , R = 0.99
          (0.0017)               (0.00)
           15.63                  3.14

   dsqy8 =  - 0.0011*size, Errorvar.= 0.00 , R = 0.21
             (0.00020)               (0.00)
             -5.47                    7.90

   dsqy9 =  - 0.00038*size, Errorvar.= 0.00 , R = 0.24
             (0.00)                   (0.00)
             -5.82                     7.90

  dsqy11 = 0.0015*liq, Errorvar.= -0.00 , R = 1.02
          (0.00014)              (0.00)
           11.17                 -0.18

W_A_R_N_I_N_G : Error variance is negative.

  dsqy12 = 0.00099*liq, Errorvar.= 0.00 , R = 0.070
          (0.00033)              (0.00)
           2.99                   7.89

  dsqy13 = 0.0020*liq, Errorvar.= 0.00 , R = 0.35
          (0.00030)             (0.00)
           6.56                  6.95

   sqy14 = 0.027*conc, Errorvar.= 0.00 , R = 0.95
          (0.0019)              (0.00)
           14.83                 1.97

   sqy15 = 0.061*conc, Errorvar.= 0.00067 , R = 0.85
          (0.0046)              (0.00012)
           13.37                 5.36

   sqy16 = 0.085*size + 0.037*conc, Errorvar.= 0.00096 , R = 0.80
          (0.0070)      (0.0052)                (0.00013)
           12.09         7.19                    7.21
```

```
dsqy3 = 0.00051*act, Errorvar.= 0.00 , R = 0.55
       (0.00)                 (0.00)
        9.56                   7.46

dsqy5 = 0.0014*act, Errorvar.= 0.00 , R = 0.032
       (0.00068)             (0.00)
        2.01                  7.90


Error Covariance for y2 and y1 = 0.0013
                                 (0.00025)
                                     5.20

Error Covariance for dsqy3 and dsqy9 = 0.00
                                       (0.00)
                                       -4.04

Error Covariance for dsqy5 and y6 = 0.00
                                    (0.00)
                                    -5.58
```

Correlation Matrix of Independent Variables

	act	size	liq	conc
act	1.00			
size	0.99 (0.02) 52.80	1.00		
liq	0.51 (0.08) 6.44	0.46 (0.08) 6.12	1.00	
conc	-0.70 (0.06) -12.56	-0.75 (0.04) -17.92	-0.63 (0.07) -9.04	1.00

Goodness of Fit Statistics

```
                          Degrees of Freedom = 67
             Minimum Fit Function Chi-Square = 741.26 (P = 0.0)
     Normal Theory Weighted Least Squares Chi-Square = 585.34 (P =
0.0)
             Estimated Non-centrality Parameter (NCP) = 518.34
         90 Percent Confidence Interval for NCP = (444.75 ;
599.39)

                     Minimum Fit Function Value = 5.93
             Population Discrepancy Function Value (F0) = 4.15
           90 Percent Confidence Interval for F0 = (3.56 ; 4.80)
           Root Mean Square Error of Approximation (RMSEA) = 0.25
          90 Percent Confidence Interval for RMSEA = (0.23 ; 0.27)
            P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

               Expected Cross-Validation Index (ECVI) = 5.29
```

90 Percent Confidence Interval for ECVI = (4.70 ; 5.94)
ECVI for Saturated Model = 1.68
ECVI for Independence Model = 23.13

Chi-Square for Independence Model with 91 Degrees of Freedom = 2862.97
Independence AIC = 2890.97
Model AIC = 661.34
Saturated AIC = 210.00
Independence CAIC = 2944.68
Model CAIC = 807.12
Saturated CAIC = 612.81

Normed Fit Index (NFI) = 0.74
Non-Normed Fit Index (NNFI) = 0.67
Parsimony Normed Fit Index (PNFI) = 0.55
Comparative Fit Index (CFI) = 0.76
Incremental Fit Index (IFI) = 0.76
Relative Fit Index (RFI) = 0.65

Critical N (CN) = 17.33

Root Mean Square Residual (RMR) = 0.00015
Standardized RMR = 0.14
Goodness of Fit Index (GFI) = 0.60
Adjusted Goodness of Fit Index (AGFI) = 0.37
Parsimony Goodness of Fit Index (PGFI) = 0.38

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
y6	act	11.5	-0.01
y6	conc	9.7	0.00
y7	act	13.5	0.01
y7	conc	8.3	0.00
dsqy9	conc	11.8	0.00
dsqy11	act	12.5	0.00
dsqy11	size	9.6	0.00
dsqy11	conc	8.8	0.00
dsqy12	conc	16.6	0.00
dsqy13	act	13.2	0.00
dsqy13	size	11.8	0.00
dsqy3	conc	15.7	0.00

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
y7	y6	14.8	0.00
dsqy8	y6	8.7	0.00
dsqy12	y2	23.0	0.00
dsqy12	y6	34.4	0.00
dsqy12	y7	27.4	0.00
dsqy13	dsqy8	49.4	0.00
dsqy13	dsqy9	19.2	0.00
sqy14	y1	8.2	0.00
sqy14	dsqy9	29.6	0.00
sqy14	dsqy12	12.1	0.00
sqy15	y2	13.7	0.00
sqy15	y6	8.9	0.00
sqy15	y7	16.2	0.00
sqy15	dsqy9	17.8	0.00
sqy15	dsqy12	39.7	0.00

sqy15	sqy14	20.8	0.00
sqy16	dsqy8	12.2	0.00
sqy16	dsqy11	8.1	0.00
sqy16	sqy15	15.3	0.00
dsqy3	y6	9.0	0.00
dsqy3	dsqy11	8.0	0.00
dsqy3	dsqy12	41.8	0.00
dsqy3	dsqy13	11.1	0.00
dsqy3	sqy16	15.3	0.00

Time used: 0.120 Seconds

Appendix 12: The uni-dimensional structure equation model for the relationship between power distance and stock market development indicators.

```
                         DATE: 11/18/2006
                                 TIME: 14:43

                                L I S R E L  8.72

                                       BY

                         Karl G. Jreskog and Dag Srbom



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The following lines were read from file  C:\Documents and
Settings\A\Desktop\lisral file\New Folder\nor12.spj:


 Sample Size = 126
 Latent Variables  act size pdi
 Relationships
 y1 = act size
 y2 = act
 y6 = size
 y7 = size act
 dsqy8 = size
 dsqy9 = size
 dsqy3 = act
 dsqy5 = act
 sqx1 = pdi
 sqx2 = pdi
 sqx3 = pdi
 sqx4 = pdi
 act = pdi
 size = pdi
 Set the Variance of pdi to 1.00
 Path Diagram
 Number of Decimals = 4
 Admissibility Check = Off
 End of Problem

 Sample Size =   126
```

Covariance Matrix

	y1	y2	y6	y7	dsqy8	dsqy9
y1	0.0037					
y2	0.0055	0.0100				
y6	0.0011	0.0015	0.0004			
y7	0.0015	0.0020	0.0005	0.0007		
dsqy8	-0.0001	-0.0001	0.0000	0.0000	0.0000	
dsqy9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dsqy3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dsqy5	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
sqx1	0.0015	0.0021	0.0005	0.0007	0.0000	0.0000
sqx2	0.0015	0.0024	0.0005	0.0007	0.0000	0.0000
sqx3	0.0007	0.0011	0.0002	0.0003	0.0000	0.0000
sqx4	0.0008	0.0013	0.0003	0.0004	0.0000	0.0000

Covariance Matrix

	dsqy3	dsqy5	sqx1	sqx2	sqx3	sqx4
dsqy3	0.0000					
dsqy5	0.0000	0.0001				
sqx1	0.0000	0.0000	0.0008			
sqx2	0.0000	0.0000	0.0008	0.0009		
sqx3	0.0000	0.0000	0.0004	0.0004	0.0002	
sqx4	0.0000	0.0000	0.0004	0.0005	0.0002	0.0003

Number of Iterations = 60

LISREL Estimates (Maximum Likelihood)

Measurement Equations

```
y1 = 0.04657*act + 0.01561*size, Errorvar.= 0.0001159, R = 0.9676
     (0.003168)     (0.002356)               (0.0001)
     14.7007        6.6272                   1.8571

y2 = 0.08913*act, Errorvar.= 0.002031  , R = 0.7964
                             (0.0003103)
                             6.5445
```

```
      y6 = 0.02020*size, Errorvar.= -0.0000 , R = 1.0588
                                    (0.0000)
                                    -5.1793

 W_A_R_N_I_N_G : Error variance is negative.

      y7 = 0.004411*act + 0.02227*size, Errorvar.= 0.0000 , R =
0.9323
           (0.0007550)    (0.0008257)                (0.0000)
            5.8428         26.9704                    7.1580

   dsqy8 =  - 0.001263*size, Errorvar.= 0.0000 , R = 0.2790
              (0.0001684)                (0.0000)
              -7.5036                     8.3659

   dsqy9 =  - 0.0002650*size, Errorvar.= 0.0000 , R = 0.1154
              (0.0001)                    (0.0000)
              -4.4927                      8.1111

   dsqy3 = 0.0004825*act, Errorvar.= 0.0000 , R = 0.4869
           (0.0000)                 (0.0000)
            9.7223                   7.7594

   dsqy5 = 0.001485*act, Errorvar.= 0.0001 , R = 0.03833
           (0.0006717)             (0.0000)
            2.2103                  7.9026


    sqx1 = 0.02606*pdi, Errorvar.= 0.0001 , R = 0.8983
           (0.001826)             (0.0000)
            14.2747                7.7681

    sqx2 = 0.02950*pdi, Errorvar.= 0.0000 , R = 0.9513
           (0.001959)             (0.0000)
            15.0581                7.5825

    sqx3 = 0.01425*pdi, Errorvar.= 0.0000 , R = 0.9972
           (0.0009040)            (0.0000)
            15.7656                1.8312

    sqx4 = 0.01648*pdi, Errorvar.= 0.0000 , R = 0.9932
           (0.001049)             (0.0000)
            15.7027                3.9326


        Structural Equations


     act = 0.8301*pdi, Errorvar.= 0.3109  , R = 0.6891
           (0.08390)             (0.05513)
            9.8943                5.6393

    size = 0.8720*pdi, Errorvar.= 0.2397  , R = 0.7603
           (0.06696)             (0.02745)
            13.0219               8.7306
```

Correlation Matrix of Independent Variables

pdi
1.0000

Covariance Matrix of Latent Variables

	act	size	pdi
act	1.0000		
size	0.7238	1.0000	
pdi	0.8301	0.8720	1.0000

Goodness of Fit Statistics

Degrees of Freedom = 50
Minimum Fit Function Chi-Square = 426.5585 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 365.2503 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 315.2503
90 Percent Confidence Interval for NCP = (258.2661 ; 379.7205)

Minimum Fit Function Value = 3.4125
Population Discrepancy Function Value (F0) = 2.5220
90 Percent Confidence Interval for F0 = (2.0661 ; 3.0378)
Root Mean Square Error of Approximation (RMSEA) = 0.2246
90 Percent Confidence Interval for RMSEA = (0.2033 ; 0.2465)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0000

Expected Cross-Validation Index (ECVI) = 3.3700
90 Percent Confidence Interval for ECVI = (2.9141 ; 3.8858)
ECVI for Saturated Model = 1.2480
ECVI for Independence Model = 29.6266

Chi-Square for Independence Model with 66 Degrees of Freedom = 3679.3280
Independence AIC = 3703.3280
Model AIC = 421.2503
Saturated AIC = 156.0000
Independence CAIC = 3749.3634
Model CAIC = 528.6662
Saturated CAIC = 455.2300

Normed Fit Index (NFI) = 0.8841
Non-Normed Fit Index (NNFI) = 0.8624
Parsimony Normed Fit Index (PNFI) = 0.6697
Comparative Fit Index (CFI) = 0.8958
Incremental Fit Index (IFI) = 0.8962
Relative Fit Index (RFI) = 0.8470

Critical N (CN) = 23.3175

Root Mean Square Residual (RMR) = 0.0001
Standardized RMR = 0.1228

Goodness of Fit Index (GFI) = 0.6725
Adjusted Goodness of Fit Index (AGFI) = 0.4891
Parsimony Goodness of Fit Index (PGFI) = 0.4311

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
y2	size	16.7	0.03
dsqy9	act	15.1	0.00
act	size	13.4	0.39
size	act	13.4	0.30

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
size	act	13.4	0.09
y2	y1	23.3	0.00
y6	y2	26.6	0.00
y7	y2	35.8	0.00
dsqy9	y6	18.8	0.00
dsqy9	y7	10.3	0.00
dsqy9	dsqy8	9.7	0.00
dsqy3	y2	15.7	0.00
dsqy3	y6	30.7	0.00
dsqy3	y7	39.7	0.00
dsqy3	dsqy8	11.0	0.00
dsqy3	dsqy9	15.3	0.00
dsqy5	y2	8.6	0.00
dsqy5	y6	10.6	0.00
dsqy5	y7	19.1	0.00
dsqy5	dsqy8	8.9	0.00
dsqy5	dsqy3	13.8	0.00
sqx1	y1	8.8	0.00
sqx1	y6	12.2	0.00
sqx2	y6	14.3	0.00
sqx2	y7	11.4	0.00
sqx2	dsqy8	10.2	0.00
sqx2	dsqy9	15.1	0.00
sqx2	sqx1	12.9	0.00
sqx3	sqx2	11.2	0.00

Time used: 0.130 Seconds

Appendix 13: The uni-dimensional structure equation model for the relationship between uncertainty avoidance and stock market development indicators.

DATE: 11/18/2006
TIME: 15:06

L I S R E L 8.72

BY

Karl G. Jreskog and Dag Srbom

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The following lines were read from file **C:\Documents and Settings\A\Desktop\lisral file\New Folder\norl3.spj:**

```
Sample Size = 126
Latent Variables  act size uav
Relationships
y1 = act
y2 = act
y6 = size
y7 = size
dsqy8 = size
dsqy9 = size
dsqy3 = act
dsqy5 = act
sqx6 = uav
sqx7 = uav
sqx8 = uav
act = uav
size = uav
Set the Variance of uav to 1.00
act = size
Path Diagram
Number of Decimals = 4
Admissibility Check = Off
End of Problem

Sample Size =   126
```

Covariance Matrix

	y1	y2	y6	y7	dsqy8	dsqy9
y1	0.0037					
y2	0.0055	0.0100				
y6	0.0011	0.0015	0.0004			
y7	0.0015	0.0020	0.0005	0.0007		
dsqy8	-0.0001	-0.0001	0.0000	0.0000	0.0000	
dsqy9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dsqy3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dsqy5	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
sqx6	0.0002	0.0003	0.0001	0.0001	0.0000	0.0000
sqx7	0.0002	0.0004	0.0001	0.0001	0.0000	0.0000
sqx8	0.0011	0.0017	0.0004	0.0005	0.0000	0.0000

Covariance Matrix

	dsqy3	dsqy5	sqx6	sqx7	sqx8
dsqy3	0.0000				
dsqy5	0.0000	0.0001			
sqx6	0.0000	0.0000	0.0000		
sqx7	0.0000	0.0000	0.0000	0.0000	
sqx8	0.0000	0.0000	0.0001	0.0001	0.0005

Number of Iterations = 46

LISREL Estimates (Maximum Likelihood)

Measurement Equations

```
y1 = 0.06128*act, Errorvar.= -0.0000 , R = 1.0132
                             (0.0001)
                             -0.6742
```

W_A_R_N_I_N_G : Error variance is negative.

```
y2 = 0.08915*act, Errorvar.= 0.002028  , R = 0.7967
    (0.004301)              (0.0002971)
     20.7256                 6.8239

y6 = 0.01976*size, Errorvar.= -0.0000 , R = 1.0140
                               (0.0000)
                               -2.4201
```

W_A_R_N_I_N_G : Error variance is negative.

```
  y7 = 0.02634*size, Errorvar.= 0.0000 , R = 0.9605
      (0.0004181)               (0.0000)
       63.0001                   5.5015

dsqy8 =  - 0.001253*size, Errorvar.= 0.0000 , R = 0.2744
          (0.0001800)               (0.0000)
          -6.9590                    7.9692

dsqy9 =  - 0.0003653*size, Errorvar.= 0.0000 , R = 0.2193
          (0.0001)                   (0.0000)
          -5.9978                     7.9543

dsqy3 = 0.0004540*act, Errorvar.= 0.0000 , R = 0.4309
      (0.0000)                  (0.0000)
       9.6368                    7.9131

dsqy5 = 0.001114*act, Errorvar.= 0.0001 , R = 0.02156
      (0.0006663)               (0.0000)
       1.6711                    7.9082


 sqx6 = 0.002949*uav, Errorvar.= 0.0000 , R = 0.3338
      (0.0004172)               (0.0000)
       7.0688                    7.8942

 sqx7 = 0.004454*uav, Errorvar.= 0.0000 , R = 0.9961
      (0.0002830)               (0.0000)
       15.7377                   0.8056

 sqx8 = 0.02202*uav, Errorvar.= 0.0000 , R = 0.9897
      (0.001408)               (0.0000)
       15.6386                  2.0521
```

Structural Equations

```
 act = 0.6131*size + 0.2809*uav, Errorvar.= 0.2393  , R = 0.7607
      (0.09258)      (0.09457)                (0.03509)
       6.6229         2.9700                   6.8187

size = 0.8882*uav, Errorvar.= 0.2112  , R = 0.7888
      (0.06881)               (0.02662)
       12.9072                 7.9313
```

Reduced Form Equations

```
 act = 0.8254*uav, Errorvar.= 0.3187, R = 0.6813
      (0.07195)
       11.4722

size = 0.8882*uav, Errorvar.= 0.2112, R = 0.7888
      (0.06881)
       12.9072
```

Correlation Matrix of Independent Variables

uav
1.0000

Covariance Matrix of Latent Variables

	act	size	uav
act	1.0000		
size	0.8626	1.0000	
uav	0.8254	0.8882	1.0000

Goodness of Fit Statistics

Degrees of Freedom = 41
Minimum Fit Function Chi-Square = 328.8727 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 296.2151 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 255.2151
90 Percent Confidence Interval for NCP = (204.2846 ; 313.6333)

Minimum Fit Function Value = 2.6310
Population Discrepancy Function Value (F0) = 2.0417
90 Percent Confidence Interval for F0 = (1.6343 ; 2.5091)
Root Mean Square Error of Approximation (RMSEA) = 0.2232
90 Percent Confidence Interval for RMSEA = (0.1997 ; 0.2474)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0000

Expected Cross-Validation Index (ECVI) = 2.7697
90 Percent Confidence Interval for ECVI = (2.3623 ; 3.2371)
ECVI for Saturated Model = 1.0560
ECVI for Independence Model = 20.6874

Chi-Square for Independence Model with 55 Degrees of Freedom = 2563.9222
Independence AIC = 2585.9222
Model AIC = 346.2151
Saturated AIC = 132.0000
Independence CAIC = 2628.1213
Model CAIC = 442.1221
Saturated CAIC = 385.1946

Normed Fit Index (NFI) = 0.8717
Non-Normed Fit Index (NNFI) = 0.8461
Parsimony Normed Fit Index (PNFI) = 0.6498
Comparative Fit Index (CFI) = 0.8853
Incremental Fit Index (IFI) = 0.8859
Relative Fit Index (RFI) = 0.8279

Critical N (CN) = 25.6869

Root Mean Square Residual (RMR) = 0.0000
Standardized RMR = 0.1162

Goodness of Fit Index (GFI) = 0.6989
Adjusted Goodness of Fit Index (AGFI) = 0.5153
Parsimony Goodness of Fit Index (PGFI) = 0.4342

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
y6	act	23.7	0.00
y7	act	23.1	0.00

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
y7	y1	8.7	0.00
dsqy8	y6	10.0	0.00
dsqy8	y7	13.4	0.00
dsqy3	y6	12.7	0.00
dsqy3	y7	17.6	0.00
dsqy3	dsqy9	17.0	0.00
dsqy5	y6	23.4	0.00
dsqy5	y7	35.7	0.00
dsqy5	dsqy8	13.9	0.00
dsqy5	dsqy3	16.5	0.00
sqx6	y6	13.0	0.00
sqx6	y7	17.9	0.00
sqx6	dsqy9	16.3	0.00
sqx6	dsqy3	16.0	0.00
sqx8	sqx7	10.2	0.00

Time used: 0.140 Seconds

Appendix 14: The uni-dimensional structure equation model for the relationship between individuality and stock market development indicators.

```
                              DATE: 11/18/2006
                                  TIME: 14:59


                                L I S R E L  8.72

                                     BY

                         Karl G. Jreskog and Dag Srbom



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The following lines were read from file  C:\Documents and
Settings\A\Desktop\lisral file\New Folder\nor14.SPJ:


 Sample Size = 126
 Latent Variables  act size ind
 Relationships
 y1 = act
 y2 = act
 y6 = size
 y7 = act size
 dsqy8 = size
 dsqy9 = size
 dsqy3 = act
 dsqy5 = act
 sqx10 = ind
 sqx11 = ind
 x12 = ind
 act = size
 act = ind
 size = ind
 Set the Variance of ind to 1.0000
 admissibility check = off
 Path Diagram
 Number of Decimals = 4
 End of Problem

 Sample Size =   126
```

Covariance Matrix

	y1	y2	y6	y7	dsqy8	dsqy9
y1	0.0037					
y2	0.0055	0.0100				
y6	0.0011	0.0015	0.0004			
y7	0.0015	0.0020	0.0005	0.0007		
dsqy8	-0.0001	-0.0001	0.0000	0.0000	0.0000	
dsqy9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dsqy3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dsqy5	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
sqx10	0.0001	0.0002	0.0000	0.0000	0.0000	0.0000
sqx11	0.0018	0.0028	0.0006	0.0008	0.0000	0.0000
x12	0.0004	0.0007	0.0001	0.0002	0.0000	0.0000

Covariance Matrix

	dsqy3	dsqy5	sqx10	sqx11	x12
dsqy3	0.0000				
dsqy5	0.0000	0.0001			
sqx10	0.0000	0.0000	0.0000		
sqx11	0.0000	0.0000	0.0001	0.0012	
x12	0.0000	0.0000	0.0000	0.0003	0.0001

Number of Iterations = 45

LISREL Estimates (Maximum Likelihood)

Measurement Equations

```
y1 = 0.06112*act, Errorvar.= -0.0000 , R = 1.0079
                             (0.0001)
                             -0.4434
```

W_A_R_N_I_N_G : Error variance is negative.

```
y2 = 0.08941*act, Errorvar.= 0.001980   , R = 0.8015
     (0.004231)             (0.0002862)
     21.1328                 6.9191
```

```
y6 = 0.02007*size, Errorvar.= -0.0000 , R = 1.0450
                              (0.0000)
                              -3.9122
```

W_A_R_N_I_N_G : Error variance is negative.

```
      y7 = 0.005354*act + 0.02135*size, Errorvar.= 0.0000 , R =
0.9439
         (0.001241)       (0.001309)                  (0.0000)
          4.3152           16.3133                     6.3248

   dsqy8 =  - 0.001249*size, Errorvar.= 0.0000 , R = 0.2727
            (0.0001740)                (0.0000)
            -7.1807                     8.1908

   dsqy9 =  - 0.0002906*size, Errorvar.= 0.0000 , R = 0.1388
            (0.0001)                    (0.0000)
            -4.7821                      8.0625

   dsqy3 = 0.0004534*act, Errorvar.= 0.0000 , R = 0.4299
         (0.0000)                 (0.0000)
          9.6158                   7.8986

   dsqy5 = 0.001078*act, Errorvar.= 0.0001 , R = 0.02020
         (0.0006688)             (0.0000)
          1.6116                  7.9070


    sqx10 = 0.001960*ind, Errorvar.= 0.00   , R = 0.9977
         (0.0001242)             (0.00)
          15.7742                 1.7295

   sqx11 = 0.03488*ind, Errorvar.= 0.0000 , R = 0.9966
         (0.002214)             (0.0000)
          15.7570                2.4834

     x12 = 0.008129*ind, Errorvar.= 0.0000 , R = 0.9581
         (0.0005362)             (0.0000)
          15.1609                 7.6560


       Structural Equations


     act = 0.5472*size + 0.3618*ind, Errorvar.= 0.2239  , R = 0.7761
         (0.07936)      (0.08443)                (0.03110)
          6.8958         4.2857                   7.1991

    size = 0.8732*ind, Errorvar.= 0.2376  , R = 0.7624
         (0.06771)              (0.02966)
          12.8949                8.0099


       Reduced Form Equations

     act = 0.8396*ind, Errorvar.= 0.2950, R = 0.7050
         (0.07156)
          11.7339

    size = 0.8732*ind, Errorvar.= 0.2376, R = 0.7624
         (0.06771)
          12.8949


       Correlation Matrix of Independent Variables
```

	ind
	1.0000

Covariance Matrix of Latent Variables

	act	size	ind
act	1.0000		
size	0.8631	1.0000	
ind	0.8396	0.8732	1.0000

Goodness of Fit Statistics

Degrees of Freedom = 40
Minimum Fit Function Chi-Square = 240.8094 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 214.7599 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 174.7599
90 Percent Confidence Interval for NCP = (132.5530 ; 224.4876)

Minimum Fit Function Value = 1.9265
Population Discrepancy Function Value (F0) = 1.3981
90 Percent Confidence Interval for F0 = (1.0604 ; 1.7959)
Root Mean Square Error of Approximation (RMSEA) = 0.1870
90 Percent Confidence Interval for RMSEA = (0.1628 ; 0.2119)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0000

Expected Cross-Validation Index (ECVI) = 2.1341
90 Percent Confidence Interval for ECVI = (1.7964 ; 2.5319)
ECVI for Saturated Model = 1.0560
ECVI for Independence Model = 23.1821

Chi-Square for Independence Model with 55 Degrees of Freedom = 2875.7612
Independence AIC = 2897.7612
Model AIC = 266.7599
Saturated AIC = 132.0000
Independence CAIC = 2939.9603
Model CAIC = 366.5032
Saturated CAIC = 385.1946

Normed Fit Index (NFI) = 0.9163
Non-Normed Fit Index (NNFI) = 0.9021
Parsimony Normed Fit Index (PNFI) = 0.6664
Comparative Fit Index (CFI) = 0.9288
Incremental Fit Index (IFI) = 0.9292
Relative Fit Index (RFI) = 0.8849

Critical N (CN) = 34.0611

Root Mean Square Residual (RMR) = 0.0000
Standardized RMR = 0.1084
Goodness of Fit Index (GFI) = 0.7620
Adjusted Goodness of Fit Index (AGFI) = 0.6073

Parsimony Goodness of Fit Index (PGFI) = 0.4618

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
dsqy9	act	10.5	0.00
dsqy5	size	8.4	0.00

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
y2	y1	17.4	0.00
y7	y6	10.1	0.00
dsqy9	y6	20.4	0.00
dsqy9	y7	9.6	0.00
dsqy9	dsqy8	8.9	0.00
dsqy3	y6	29.0	0.00
dsqy3	y7	38.9	0.00
dsqy3	dsqy8	8.9	0.00
dsqy3	dsqy9	21.2	0.00
dsqy5	y6	17.2	0.00
dsqy5	y7	27.1	0.00
dsqy5	dsqy8	9.4	0.00
dsqy5	dsqy3	16.9	0.00

Time used: 0.120 Seconds

Appendix 15: The multi-dimensional structure equation model for the relationship between cultural values and stock market development indicators.

```
                              DATE: 11/15/2006
                                  TIME: 18:03


                                L I S R E L  8.72

                                       BY

                         Karl G. Jreskog and Dag Srbom



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```

The following lines were read from file **C:\Documents and Settings\A\Desktop\lisral file\New Folder\norl1.SPJ:**

```
 Sample Size = 126
 Latent Variables  act size pdi uav ind
 Relationships
 y1 = act
 y2 = act
 y6 = size
 y7 = size
 dsqy8 = size
 dsqy9 = size
 dsqy3 = act
 dsqy5 = act
 sqx1 = pdi
 sqx2 = pdi
 sqx3 = pdi
 sqx4 = pdi uav
 sqx6 = uav
 sqx7 = uav
 sqx8 = uav ind
 sqx10 = ind
 sqx11= ind uav
 sqx12 = ind
 act = size
 act = pdi uav ind
 size = pdi uav ind
 act = size
 Set the Variance of pdi to 1.00
```

Set the Variance of uav to 1.00
Set the Variance of ind to 1.00
admissibility check = off
number of decimals =4
Path Diagram
End of Problem

Sample Size = 126

Covariance Matrix

	y1	y2	y6	y7	dsqy8	dsqy9
y1	0.0037					
y2	0.0055	0.0100				
y6	0.0011	0.0015	0.0004			
y7	0.0015	0.0020	0.0005	0.0007		
dsqy8	-0.0001	-0.0001	0.0000	0.0000	0.0000	
dsqy9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dsqy3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
dsqy5	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
sqx1	0.0015	0.0021	0.0005	0.0007	0.0000	0.0000
sqx2	0.0015	0.0024	0.0005	0.0007	0.0000	0.0000
sqx3	0.0007	0.0011	0.0002	0.0003	0.0000	0.0000
sqx4	0.0008	0.0013	0.0003	0.0004	0.0000	0.0000
sqx6	0.0002	0.0003	0.0001	0.0001	0.0000	0.0000
sqx7	0.0002	0.0004	0.0001	0.0001	0.0000	0.0000
sqx8	0.0011	0.0017	0.0004	0.0005	0.0000	0.0000
sqx10	0.0001	0.0002	0.0000	0.0000	0.0000	0.0000
sqx11	0.0018	0.0028	0.0006	0.0008	0.0000	0.0000
sqx12	0.0004	0.0006	0.0001	0.0002	0.0000	0.0000

Covariance Matrix

	dsqy3	dsqy5	sqx1	sqx2	sqx3	sqx4
dsqy3	0.0000					
dsqy5	0.0000	0.0001				
sqx1	0.0000	0.0000	0.0008			
sqx2	0.0000	0.0000	0.0008	0.0009		
sqx3	0.0000	0.0000	0.0004	0.0004	0.0002	
sqx4	0.0000	0.0000	0.0004	0.0005	0.0002	0.0003
sqx6	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000
sqx7	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001
sqx8	0.0000	0.0000	0.0006	0.0006	0.0003	0.0004
sqx10	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000
sqx11	0.0000	0.0000	0.0009	0.0010	0.0005	0.0006
sqx12	0.0000	0.0000	0.0002	0.0002	0.0001	0.0001

Covariance Matrix

	sqx6	sqx7	sqx8	sqx10	sqx11	sqx12
sqx6	0.0000					
sqx7	0.0000	0.0000				
sqx8	0.0001	0.0001	0.0005			
sqx10	0.0000	0.0000	0.0000	0.0000		
sqx11	0.0001	0.0002	0.0008	0.0001	0.0012	
sqx12	0.0000	0.0000	0.0002	0.0000	0.0003	0.0001

Number of Iterations = 73

LISREL Estimates (Maximum Likelihood)

Measurement Equations

```
y1 = 0.06130*act, Errorvar.= -0.0001 , R = 1.0139
                             (0.0001)
                             -0.7205

W_A_R_N_I_N_G : Error variance is negative.

y2 = 0.08911*act, Errorvar.= 0.002034  , R = 0.7961
     (0.004292)             (0.0002964)
      20.7615                6.8630
```

```
      y6 = 0.01977*size, Errorvar.= -0.0000 , R = 1.0150
                                    (0.0000)
                                    -2.6170

 W_A_R_N_I_N_G : Error variance is negative.

      y7 = 0.02633*size, Errorvar.= 0.0000 , R = 0.9596
         (0.0004173)               (0.0000)
          63.0881                   5.6258

   dsqy8 =  - 0.001256*size, Errorvar.= 0.0000 , R = 0.2756
            (0.0001796)                (0.0000)
            -6.9904                     7.9770

   dsqy9 =  - 0.0003631*size, Errorvar.= 0.0000 , R = 0.2167
            (0.0001)                    (0.0000)
            -5.9598                      7.9591

   dsqy3 = 0.0004540*act, Errorvar.= 0.0000 , R = 0.4310
         (0.0000)                  (0.0000)
          9.6485                    7.9186

   dsqy5 = 0.001121*act, Errorvar.= 0.0001 , R = 0.02185
         (0.0006659)              (0.0000)
          1.6831                   7.9084


    sqx1 = 0.02591*pdi, Errorvar.= 0.0001 , R = 0.8878
         (0.001834)              (0.0000)
          14.1288                 8.0324

    sqx2 = 0.02951*pdi, Errorvar.= 0.0000 , R = 0.9517
         (0.001959)              (0.0000)
          15.0668                 8.1067

    sqx3 = 0.01428*pdi, Errorvar.= -0.0000 , R = 1.0015
         (0.0009019)              (0.0000)
          15.8352                 -2.5278

 W_A_R_N_I_N_G : Error variance is negative.

    sqx4 = 0.009645*pdi + 0.006870*uav, Errorvar.= 0.0000 , R =
0.9924
         (0.001141)     (0.001058)                (0.0000)
          8.4512         6.4950                    7.8571

    sqx6 = 0.002938*uav, Errorvar.= 0.0000 , R = 0.3314
         (0.0004171)              (0.0000)
          7.0440                   7.9026

    sqx7 = 0.004461*uav, Errorvar.= 0.0000 , R = 0.9990
         (0.0002824)              (0.0000)
          15.7955                  0.8098

    sqx8 = 0.02995*uav - 0.008018*ind, Errorvar.= 0.0000 , R =
0.9885
         (0.003628)    (0.003135)                (0.0000)
          8.2548       -2.5574                    4.5943
```

```
    sqx10 = 0.001957*ind, Errorvar.= 0.0000, R = 0.9949
          (0.0001244)               (0.00)
           15.7302                   7.4712

    sqx11 = - 0.006150*uav + 0.04104*ind, Errorvar.= 0.0000 , R =
0.9996
              (0.001541)      (0.002990)                (0.0000)
              -3.9901          13.7238                   1.8096

    sqx12 = 0.007577*ind, Errorvar.= 0.0000 , R = 0.9981
          (0.0004801)               (0.0000)
           15.7817                   6.3513
```

Structural Equations

```
      act = 0.5840*size - 0.4388*pdi - 0.4834*uav + 1.2329*ind,
Errorvar.= 0.2339  , R = 0.7661
          (0.09120)      (0.5134)      (0.3950)      (0.7240)
(0.03431)
           6.4030        -0.8548       -1.2237        1.7028
6.8182

     size = 0.8015*pdi + 0.4579*uav - 0.3657*ind, Errorvar.= 0.2058
, R = 0.7942
          (0.4872)      (0.3635)      (0.6779)                (0.02546)
           1.6450        1.2596       -0.5394                  8.0833
```

Reduced Form Equations

```
      act = 0.02919*pdi - 0.2160*uav + 1.0193*ind, Errorvar.= 0.3041,
R = 0.6959
          (0.5918)       (0.4561)      (0.8388)
           0.04933       -0.4735        1.2152

     size = 0.8015*pdi + 0.4579*uav - 0.3657*ind, Errorvar.= 0.2058,
R = 0.7942
          (0.4872)      (0.3635)      (0.6779)
           1.6450        1.2596       -0.5394
```

Correlation Matrix of Independent Variables

	pdi	uav	ind
pdi	1.0000		
uav	0.9888 (0.0020) 482.9101	1.0000	
ind	0.9974 (0.0005) 1848.2523	0.9936 (0.0014) 725.2856	1.0000

Covariance Matrix of Latent Variables

	act	size	pdi	uav	ind
act	1.0000				
size	0.8604	1.0000			
pdi	0.8323	0.8895	1.0000		
uav	0.8256	0.8871	0.9888	1.0000	
ind	0.8338	0.8887	0.9974	0.9936	1.0000

Goodness of Fit Statistics

Degrees of Freedom = 122
Minimum Fit Function Chi-Square = 593.0977 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 519.6294 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 397.6294
90 Percent Confidence Interval for NCP = (330.9132 ; 471.8957)

Minimum Fit Function Value = 4.7448
Population Discrepancy Function Value (F0) = 3.1810
90 Percent Confidence Interval for F0 = (2.6473 ; 3.7752)
Root Mean Square Error of Approximation (RMSEA) = 0.1615
90 Percent Confidence Interval for RMSEA = (0.1473 ; 0.1759)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0000

Expected Cross-Validation Index (ECVI) = 4.9410
90 Percent Confidence Interval for ECVI = (4.4073 ; 5.5352)
ECVI for Saturated Model = 2.7360
ECVI for Independence Model = 82.6813

Chi-Square for Independence Model with 153 Degrees of Freedom = 10299.1578
Independence AIC = 10335.1578
Model AIC = 617.6294
Saturated AIC = 342.0000
Independence CAIC = 10404.2109
Model CAIC = 805.6072
Saturated CAIC = 998.0042

Normed Fit Index (NFI) = 0.9424
Non-Normed Fit Index (NNFI) = 0.9418
Parsimony Normed Fit Index (PNFI) = 0.7515
Comparative Fit Index (CFI) = 0.9536
Incremental Fit Index (IFI) = 0.9537
Relative Fit Index (RFI) = 0.9278

Critical N (CN) = 34.9846

Root Mean Square Residual (RMR) = 0.0000
Standardized RMR = 0.08629
Goodness of Fit Index (GFI) = 0.6840
Adjusted Goodness of Fit Index (AGFI) = 0.5571
Parsimony Goodness of Fit Index (PGFI) = 0.4880

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
y6	act	24.5	0.00
y7	act	23.9	0.00

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
y7	y1	9.5	0.00
dsqy8	y6	9.7	0.00
dsqy8	y7	13.1	0.00
dsqy3	y6	12.5	0.00
dsqy3	y7	17.4	0.00
dsqy3	dsqy9	17.2	0.00
dsqy5	y6	22.8	0.00
dsqy5	y7	35.3	0.00
dsqy5	dsqy8	13.7	0.00
dsqy5	dsqy3	16.4	0.00
sqx1	y1	8.3	0.00
sqx1	y2	11.2	0.00
sqx1	y6	9.2	0.00
sqx2	y6	24.9	0.00
sqx2	y7	19.0	0.00
sqx2	dsqy8	19.3	0.00
sqx2	dsqy9	16.1	0.00
sqx4	sqx1	8.6	0.00
sqx6	y6	12.9	0.00
sqx6	y7	17.9	0.00
sqx6	dsqy9	16.1	0.00
sqx6	dsqy3	16.1	0.00
sqx10	sqx4	13.1	0.00

Time used: 0.391 Second

Appendix 16: The regression analysis models for the relationship between cultural values and board size.

Regression

Notes

Output Created		04-NOV-2006 06:59:59
Comments		
Input	Data	C:\Documents and Settings\A\Desktop\corporate governance paper\corporate governance paper.sav
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x1 /METHOD=ENTER x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.17
	Memory Required	4508 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

N	Std. Deviation	Mean	
23	3.42117	12.8478	board size
23	17.53044	43.0435	PDI
23	27.33629	59.0000	UAV
23	19.66458	65.1739	IND
23	23.80014	48.9130	MASC
23	2064.93094	2699.3913	PDI_UAV
23	1058.06523	2623.8696	PDI_IND
23	1283.72251	2112.6957	PDI_MAS
23	1664.82027	3799.4348	UAV_IND
23	2045.86661	2970.0870	UAV_MAS
23	1878.11431	3187.4783	IND_MAS

Correlations

		board size	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	board size	1.000	.052	.400	-.183	.191	.299	.007	.092	.219	.384	.061
	PDI	.052	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	.400	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	-.183	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	.191	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	.299	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.007	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	.092	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	.219	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	.384	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.061	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	board size	.	.407	.029	.202	.191	.083	.488	.338	.158	.035	.391
	PDI	.407	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.029	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.202	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.191	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.083	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.488	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.338	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.158	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.035	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.391	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	board size	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: board size

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.662(a)	.438	-.030	3.47253

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: board size

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	112.796	10	11.280	.935	.536(a)
	Residual	144.702	12	12.058		
	Total	257.497	22			

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: board size

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	47.574	32.325		1.472	.167		
	PDI	-.395	.451	-2.022	-.874	.399	.009	114.269
	UAV	-.052	.292	-.419	-.180	.860	.009	115.896
	IND	-.543	.403	-3.118	-1.346	.203	.009	114.588
	MASC	-.037	.368	-.254	-.099	.923	.007	139.921
	PDI_UAV	.000	.003	.280	.152	.882	.014	72.649
	PDI_IND	.009	.006	2.857	1.620	.131	.015	66.399
	PDI_MAS	-.003	.004	-1.163	-.692	.502	.017	60.331
	UAV_IND	-.001	.002	-.691	-.573	.577	.032	31.058
	UAV_MAS	.001	.003	.755	.463	.652	.018	56.805
	IND_MAS	.002	.004	.895	.424	.679	.011	95.181

a Dependent Variable: board size

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions										
				(Constant)	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
1	1	9.695	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.524	4.301	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.376	5.081	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.267	6.023	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.097	9.990	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
	6	.025	19.762	.00	.00	.00	.00	.00	.03	.00	.01	.01	.05	.03
	7	.011	29.676	.00	.01	.00	.01	.01	.06	.00	.01	.18	.02	.00
	8	.003	59.920	.00	.03	.00	.01	.02	.01	.21	.48	.26	.21	.00
	9	.001	90.092	.01	.11	.20	.00	.41	.54	.02	.02	.14	.16	.29
	10	.001	111.261	.01	.21	.74	.00	.08	.33	.32	.31	.36	.55	.12
	11	.000	214.659	.98	.64	.05	.97	.48	.01	.45	.17	.03	.00	.55

a Dependent Variable: board size

Residuals Statistics(a)

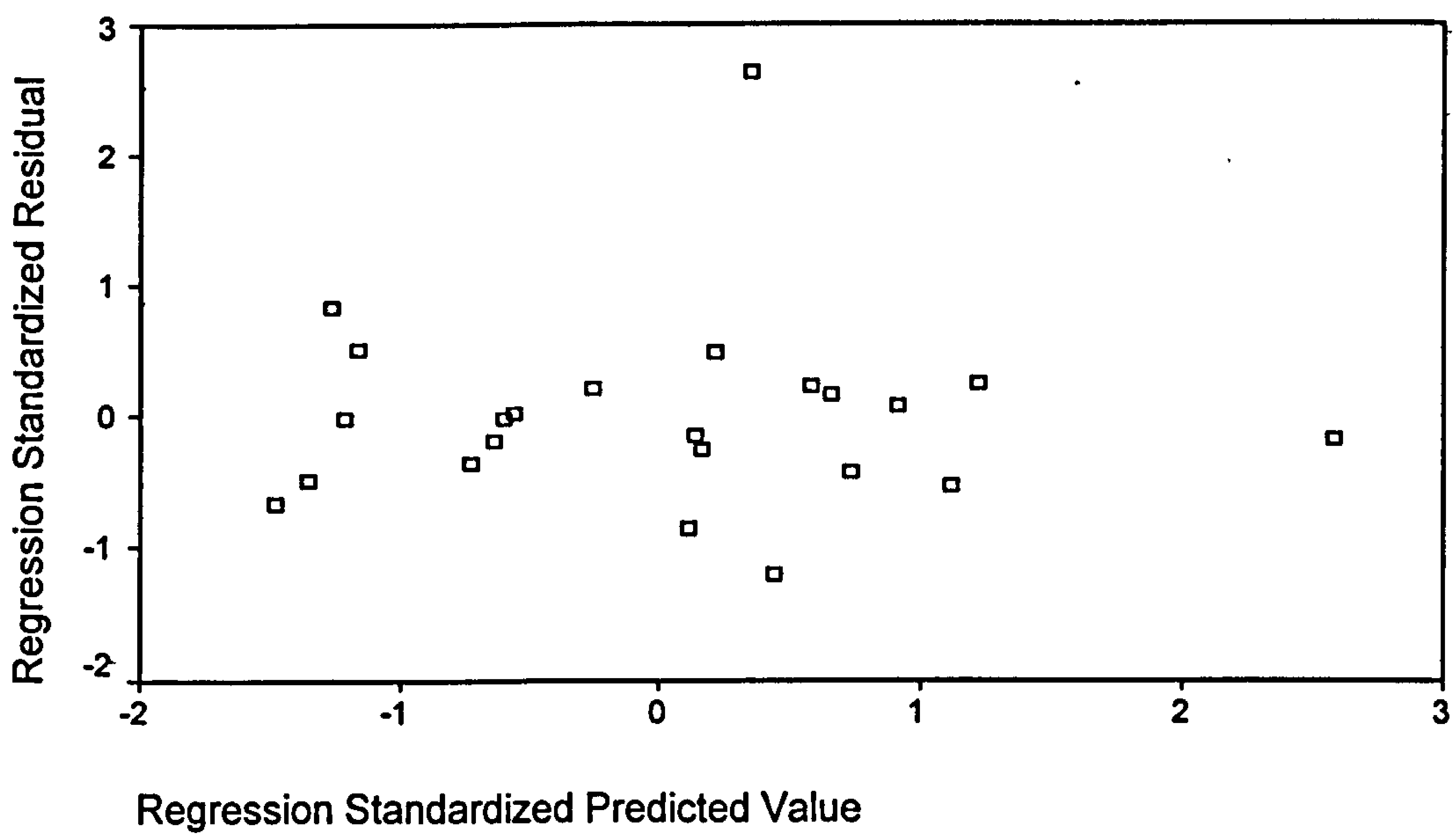
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	9.5111	18.6917	12.8478	2.26430	23
Residual	-4.1520	9.1563	.0000	2.56464	23
Std. Predicted Value	-1.474	2.581	.000	1.000	23
Std. Residual	-1.196	2.637	.000	.739	23

a Dependent Variable: board size

Charts

Scatterplot

Dependent Variable: board size



Regression

Notes

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	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x1 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.09
	Memory Required	5108 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
board size	12.8478	3.42117	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		board size	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	board size	1.000	.052	.400	-.183	.191	.299	.007	.092	.219	.384	.061
	PDI	.052	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	.400	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	-.183	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	.191	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	.299	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.007	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	.092	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	.219	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	.384	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.061	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	board size	.	.407	.029	.202	.191	.083	.488	.338	.158	.035	.391
	PDI	.407	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.029	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.202	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.191	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.083	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.488	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.338	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.158	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.035	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.391	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	board size	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(a)

a Dependent Variable: board size

Appendix 17: The regression analysis models for the relationship between cultural values and separation of chair and CEO.

Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x2 /METHOD=ENTER x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.10
	Memory Required	4508 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Separation chair & CEO	80.4522	20.87292	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Separation chair & CEO	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Separation chair & CEO	1.000	-.608	-.407	.265	-.194	-.561	-.377	-.541	-.215	-.334	-.040
	PDI	-.608	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.407	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.265	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.194	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.561	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	-.377	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.541	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.215	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.334	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	-.040	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Separation chair & CEO	.	.001	.027	.111	.188	.003	.038	.004	.163	.060	.428
	PDI	.001	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.027	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.111	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.188	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.003	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.038	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.004	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.163	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.060	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.428	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Separation chair & CEO	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: Separation chair & CEO

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.736(a)	.542	.160	19.13066

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Separation chair & CEO

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5193.149	10	519.315	1.419	.279(a)
	Residual	4391.788	12	365.982		
	Total	9584.937	22			

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Separation chair & CEO

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	255.041	178.080		1.432	.178		
	PDI	-1.145	2.487	-.962	-.461	.653	.009	114.269
	UAV	-1.838	1.606	-2.407	-1.144	.275	.009	115.896
	IND	-1.461	2.220	-1.376	-.658	.523	.009	114.588
	MASC	-1.034	2.027	-1.179	-.510	.619	.007	139.921
	PDI_UAV	.010	.017	1.021	.613	.551	.014	72.649
	PDI_IND	-.007	.031	-.377	-.237	.817	.015	66.399
	PDI_MAS	-.002	.025	-.131	-.086	.933	.017	60.331
	UAV_IND	.020	.014	1.623	1.490	.162	.032	31.058
	UAV_MAS	.004	.015	.413	.280	.784	.018	56.805
	IND_MAS	.011	.021	.995	.522	.611	.011	95.181

a Dependent Variable: Separation chair & CEO

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions										
				(Constant)	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
1	1	9.695	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.524	4.301	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.376	5.081	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.267	6.023	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.097	9.990	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
	6	.025	19.762	.00	.00	.00	.00	.00	.03	.00	.01	.01	.05	.03
	7	.011	29.676	.00	.01	.00	.01	.01	.06	.00	.01	.18	.02	.00
	8	.003	59.920	.00	.03	.00	.01	.02	.01	.21	.48	.26	.21	.00
	9	.001	90.092	.01	.11	.20	.00	.41	.54	.02	.02	.14	.16	.29
	10	.001	111.261	.01	.21	.74	.00	.08	.33	.32	.31	.36	.55	.12
	11	.000	214.659	.98	.64	.05	.97	.48	.01	.45	.17	.03	.00	.55

a Dependent Variable: Separation chair & CEO

Residuals Statistics(a)

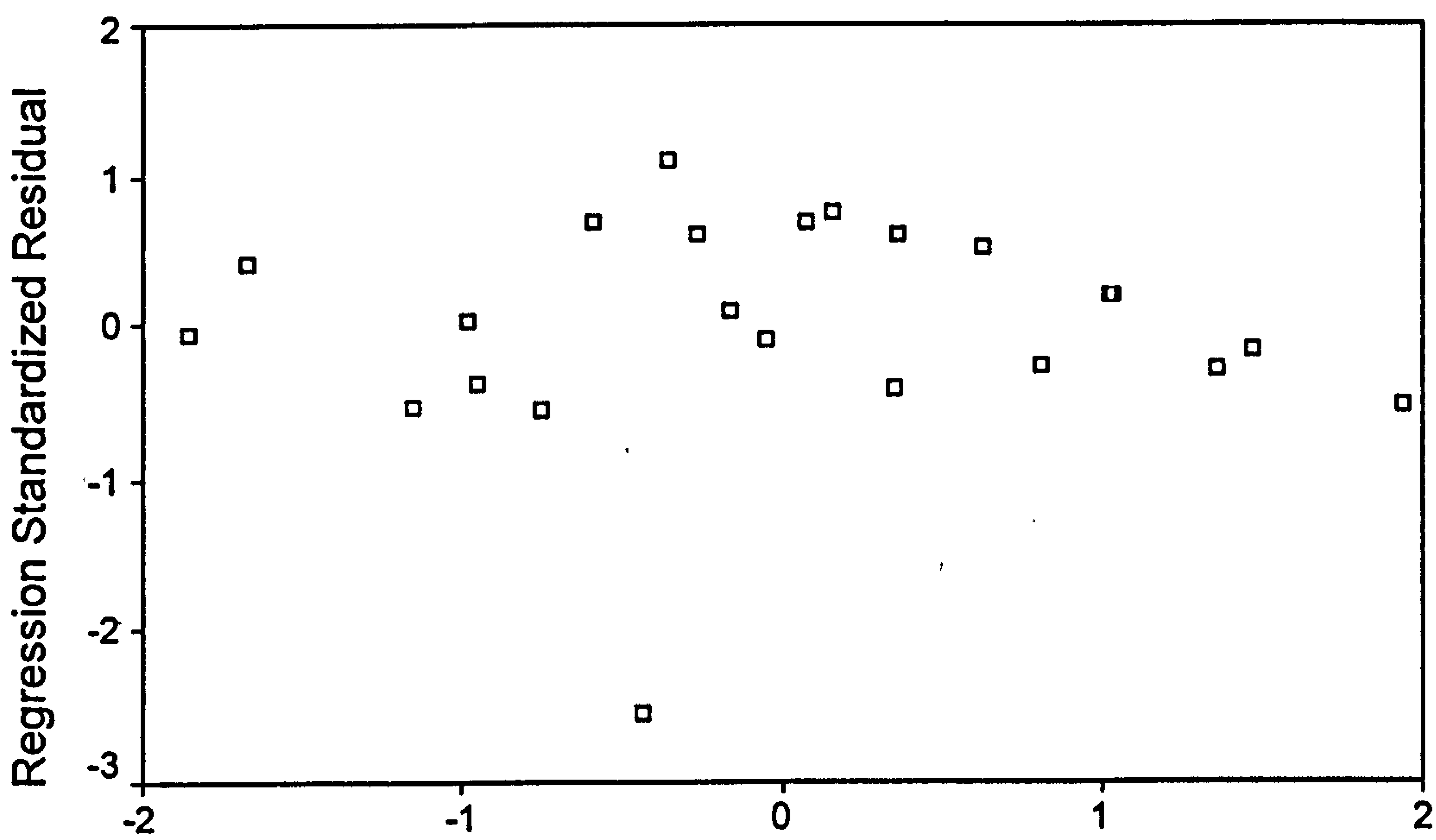
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	51.8424	110.2243	80.4522	15.36399	23
Residual	-48.9673	21.1976	.0000	14.12893	23
Std. Predicted Value	-1.862	1.938	.000	1.000	23
Std. Residual	-2.560	1.108	.000	.739	23

a Dependent Variable: Separation chair & CEO

Charts

Scatterplot

Dependent Variable: Separation chair & CEO



Regression Standardized Predicted Value

Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x2 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.09
	Memory Required	5108 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Separation chair & CEO	80.4522	20.87292	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Separation chair & CEO	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Separation chair & CEO	1.000	-.608	-.407	.265	-.194	-.561	-.377	-.541	-.215	-.334	-.040
	PDI	-.608	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.407	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.265	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.194	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.561	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	-.377	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.541	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.215	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.334	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	-.040	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Separation chair & CEO	.	.001	.027	.111	.188	.003	.038	.004	.163	.060	.428
	PDI	.001	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.027	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.111	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.188	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.003	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.038	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.004	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.163	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.060	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.428	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Separation chair & CEO	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	PDI	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Separation chair & CEO

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.608(a)	.370	.340	16.96071

a Predictors: (Constant), PDI
b Dependent Variable: Separation chair & CEO

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3543.960	1	3543.960	12.320	.002(a)
	Residual	6040.978	21	287.666		
	Total	9584.937	22			

a Predictors: (Constant), PDI
b Dependent Variable: Separation chair & CEO

Coefficients(a)

Model		Unstandardzed Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	111.616	9.557		11.679	.000		
	PDI	-.724	.206	-.608	-3.510	.002	1.000	1.000

a Dependent Variable: Separation chair & CEO

Excluded Variables(b)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	UAV	-.222(a)	-1.216	.238	-.262	.878	1.138	.878
	IND	-.100(a)	-.471	.643	-.105	.697	1.434	.697
	MASC	-.183(a)	-1.056	.303	-.230	1.000	1.000	1.000
	PDI_UAV	-.277(a)	-1.193	.247	-.258	.544	1.837	.544
	PDI_IND	-.123(a)	-.620	.542	-.137	.788	1.270	.788
	PDI_MAS	-.231(a)	-.960	.348	-.210	.522	1.917	.522
	UAV_IND	-.138(a)	-.780	.445	-.172	.983	1.017	.983
	UAV_MAS	-.245(a)	-1.433	.167	-.305	.976	1.025	.976
	IND_MAS	-.201(a)	-1.134	.270	-.246	.940	1.064	.940

a Predictors in the Model: (Constant), PDI
b Dependent Variable: Separation chair & CEO

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	PDI
1	1	1.929	1.000	.04	.04
	2	.071	5.213	.96	.96

a Dependent Variable: Separation chair & CEO

Casewise Diagnostics(a)

Case Number	Std. Residual	Separation chair & CEO	Predicted Value	Residual
24	-3.405	24.90	82.6557	-57.7557

a Dependent Variable: Separation chair & CEO

Residuals Statistics(a)

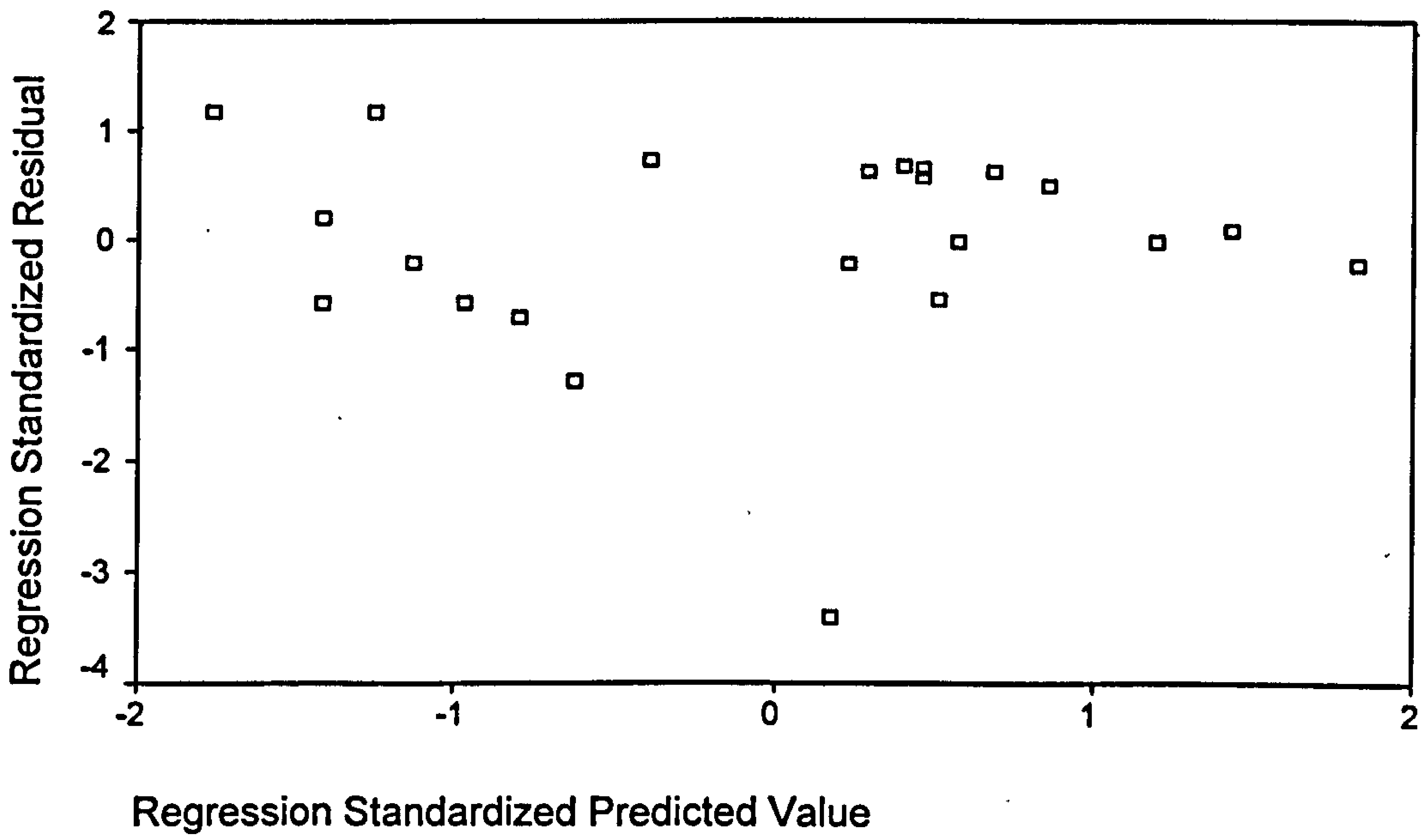
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	58.0396	103.6517	80.4522	12.69209	23
Residual	-57.7557	20.0444	.0000	16.57075	23
Std. Predicted Value	-1.766	1.828	.000	1.000	23
Std. Residual	-3.405	1.182	.000	.977	23

a Dependent Variable: Separation chair & CEO

Charts

Scatterplot

Dependent Variable: Separation chair & CEO



Regression

Notes

	Output Created	10-NOV-2006 09:48:26
	Comments	
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	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
	Syntax	REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /REGWGT=res_1 /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x2 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) /SAVE RESID .
Resources	Elapsed Time	0:00:00.10
	Memory Required	5132 bytes
	Additional Memory Required for Residual Plots	168 bytes
Variables Created or Modified	RES_2	Residual

Warnings

No plots are produced for Weighted Least Squares regression. You can SAVE the appropriate variables and use other procedures (e.g., EXAMINE and PLOT) to produce the requested plots. To plot weighted versions of the residuals and predicted values, use COMPUTE before plotting: COMPUTE RESID = SQRT(REGWGTvar) * RESID COMPUTE PRED = SQRT(REGWGTvar) * PRED.

Descriptive Statistics(a)

	Mean	Std. Deviation	N
Separation chair & CEO	91.1735	30.76560	12
PDI	46.7867	58.66292	12
UAV	49.7156	93.45125	12
IND	66.5436	77.46047	12
MASC	46.7779	80.30511	12
PDI_UAV	2320.2719	6313.98055	12
PDI_IND	2856.3436	3834.97707	12
PDI_MAS	2285.9258	4508.84491	12
UAV_IND	3673.2872	7543.65382	12
UAV_MAS	2473.9377	6825.24218	12
IND_MAS	3131.1342	7217.83553	12

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Correlations(a)

		Separation chair & CEO	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Separation chair & CEO	1.000	-.952	.099	.716	-.271	-.240	-.038	-.788	.185	-.078	.175
	PDI	-.952	1.000	-.013	-.677	.247	.337	.144	.797	-.084	.130	-.165
	UAV	.099	-.013	1.000	.604	.237	.921	.894	.183	.980	.841	.501
	IND	.716	-.677	.604	1.000	.035	.351	.613	-.393	.713	.437	.572
	MASC	-.271	.247	.237	.035	1.000	.273	.274	.773	.239	.702	.837
	PDI_UAV	-.240	.337	.921	.351	.273	1.000	.917	.431	.883	.810	.397
	PDI_IND	-.038	.144	.894	.613	.274	.917	1.000	.300	.931	.782	.550
	PDI_MAS	-.788	.797	.183	-.393	.773	.431	.300	1.000	.133	.557	.420
	UAV_IND	.185	-.084	.980	.713	.239	.883	.931	.133	1.000	.824	.568
	UAV_MAS	-.078	.130	.841	.437	.702	.810	.782	.557	.824	1.000	.799
	IND_MAS	.175	-.165	.501	.572	.837	.397	.550	.420	.568	.799	1.000
Sig. (1-tailed)	Separation chair & CEO	.	.000	.380	.004	.197	.226	.453	.001	.283	.405	.293
	PDI	.000	.	.485	.008	.219	.142	.327	.001	.397	.343	.304
	UAV	.380	.485	.	.019	.229	.000	.000	.284	.000	.000	.048
	IND	.004	.008	.019	.	.457	.131	.017	.103	.005	.078	.026
	MASC	.197	.219	.229	.457	.	.195	.194	.002	.228	.005	.000
	PDI_UAV	.226	.142	.000	.131	.195	.	.000	.081	.000	.001	.101
	PDI_IND	.453	.327	.000	.017	.194	.000	.	.172	.000	.001	.032
	PDI_MAS	.001	.001	.284	.103	.002	.081	.172	.	.340	.030	.087
	UAV_IND	.283	.397	.000	.005	.228	.000	.000	.340	.	.000	.027
	UAV_MAS	.405	.343	.000	.078	.005	.001	.001	.030	.000	.	.001
	IND_MAS	.293	.304	.048	.026	.000	.101	.032	.087	.027	.001	.
N	Separation chair & CEO	12	12	12	12	12	12	12	12	12	12	12
	PDI	12	12	12	12	12	12	12	12	12	12	12
	UAV	12	12	12	12	12	12	12	12	12	12	12
	IND	12	12	12	12	12	12	12	12	12	12	12
	MASC	12	12	12	12	12	12	12	12	12	12	12
	PDI_UAV	12	12	12	12	12	12	12	12	12	12	12
	PDI_IND	12	12	12	12	12	12	12	12	12	12	12
	PDI_MAS	12	12	12	12	12	12	12	12	12	12	12
	UAV_IND	12	12	12	12	12	12	12	12	12	12	12
	UAV_MAS	12	12	12	12	12	12	12	12	12	12	12
	IND_MAS	12	12	12	12	12	12	12	12	12	12	12

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Variables Entered/Removed(a,b)

Model	Variables Entered	Variables Removed	Method
1	PDI	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Separation chair & CEO
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Model Summary(b,c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952(a)	.906	.896	9.89960

a Predictors: (Constant), PDI
b Dependent Variable: Separation chair & CEO
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

ANOVA(b,c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9431.721	1	9431.721	96.240	.000(a)
	Residual	980.021	10	98.002		
	Total	10411.741	11			

a Predictors: (Constant), PDI
b Dependent Variable: Separation chair & CEO
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Coefficients(a,b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	114.527	2.532		45.232	.000		
	PDI	-.499	.051	-.952	-9.810	.000	1.000	1.000

a Dependent Variable: Separation chair & CEO
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Excluded Variables(b,c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	UAV	.087(a)	.885	.399	.283	1.000	1.000	1.000
	IND	.131(a)	.993	.347	.314	.541	1.848	.541
	MASC	-.037(a)	-.357	.729	-.118	.939	1.065	.939
	PDI_UAV	.091(a)	.877	.403	.281	.886	1.128	.886
	PDI_IND	.101(a)	1.038	.326	.327	.979	1.021	.979
	PDI_MAS	-.080(a)	-.477	.645	-.157	.365	2.743	.365
	UAV_IND	.105(a)	1.091	.304	.342	.993	1.007	.993
	UAV_MAS	.047(a)	.457	.659	.151	.983	1.017	.983
	IND_MAS	.018(a)	.177	.864	.059	.973	1.028	.973

a Predictors in the Model: (Constant), PDI
b Dependent Variable: Separation chair & CEO
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Collinearity Diagnostics(a,b)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	PDI
1	1	1.940	1.000	.03	.03
	2	.060	5.695	.97	.97

a Dependent Variable: Separation chair & CEO
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Residuals Statistics(b,c)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	77.5898	105.5425	93.3548	8.84622	12
Residual	-14.8847	2.5178	-1.4715	4.66190	12
Std. Predicted Value(a)	.	.	.	.	0
Std. Residual(a)	.	.	.	.	0

a Not computed for Weighted Least Squares regression.
b Dependent Variable: Separation chair & CEO
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Appendix 18: The regression analysis models for the relationship between cultural values and independence per board.

Regression

Notes

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Comments		
Input	Data	C:\Documents and Settings\A\Desktop\corporate governance paper\corporate governance paper.sav
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	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x4 /METHOD=ENTER x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.13
	Memory Required	4508 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Independence per board	43.1087	21.88478	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Independence per board	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Independence per board	1.000	-.177	-.428	.494	-.176	-.359	.231	-.214	-.063	-.450	.159
	PDI	-.177	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.428	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.494	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.176	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.359	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.231	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.214	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.063	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.450	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.159	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Independence per board	.	.210	.021	.008	.211	.046	.145	.163	.388	.016	.234
	PDI	.210	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.021	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.008	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.211	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.046	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.145	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.163	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.388	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.016	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.234	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Independence per board	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: Independence per board

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.771(a)	.594	.256	18.88130

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Independence per board

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6258.716	10	625.872	1.756	.176(a)
	Residual	4278.043	12	356.504		
	Total	10536.758	22			

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Independence per board

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	95.821	175.759		.545	.596		
	PDI	-1.765	2.455	-1.414	-.719	.486	.009	114.269
	UAV	1.157	1.585	1.445	.730	.480	.009	115.896
	IND	-.955	2.191	-.858	-.436	.671	.009	114.588
	MASC	-.628	2.001	-.683	-.314	.759	.007	139.921
	PDI_UAV	-.012	.017	-1.098	-.700	.497	.014	72.649
	PDI_IND	.024	.031	1.178	.786	.447	.015	66.399
	PDI_MAS	.024	.024	1.389	.972	.350	.017	60.331
	UAV_IND	-.003	.013	-.232	-.227	.824	.032	31.058
	UAV_MAS	-.018	.015	-1.676	-1.209	.250	.018	56.805
	IND_MAS	.009	.021	.815	.454	.658	.011	95.181

a Dependent Variable: Independence per board

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions										
				(Constant)	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
1	1	9.695	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.524	4.301	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.376	5.081	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.267	6.023	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.097	9.990	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
	6	.025	19.762	.00	.00	.00	.00	.00	.03	.00	.01	.01	.05	.03
	7	.011	29.676	.00	.01	.00	.01	.01	.06	.00	.01	.18	.02	.00
	8	.003	59.920	.00	.03	.00	.01	.02	.01	.21	.48	.26	.21	.00
	9	.001	90.092	.01	.11	.20	.00	.41	.54	.02	.02	.14	.16	.29
	10	.001	111.261	.01	.21	.74	.00	.08	.33	.32	.31	.36	.55	.12
	11	.000	214.659	.98	.64	.05	.97	.48	.01	.45	.17	.03	.00	.55

a Dependent Variable: Independence per board

Residuals Statistics(a)

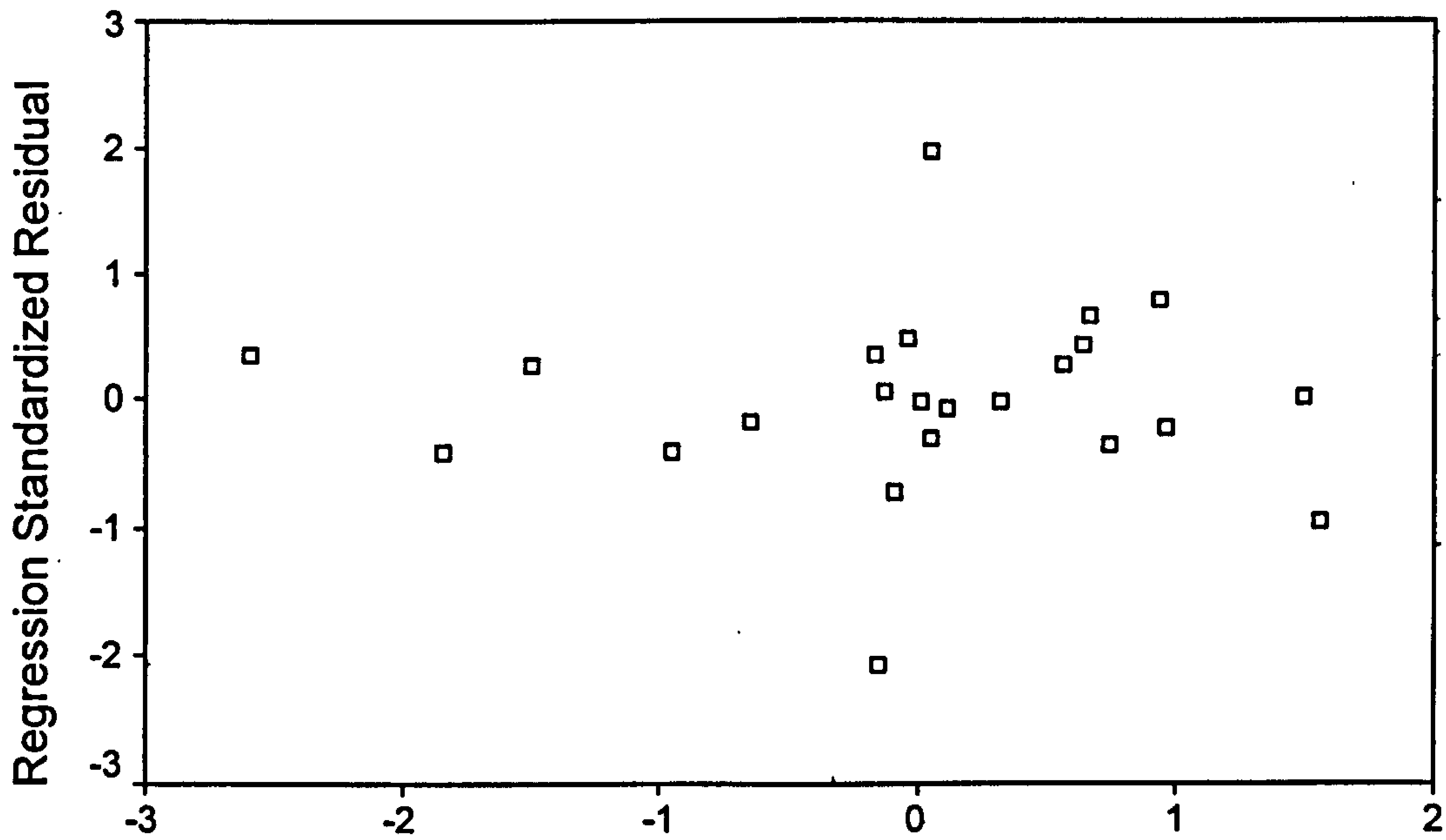
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.5995	69.2751	43.1087	16.86674	23
Residual	-39.1088	37.1964	.0000	13.94477	23
Std. Predicted Value	-2.591	1.551	.000	1.000	23
Std. Residual	-2.071	1.970	.000	.739	23

a Dependent Variable: Independence per board

Charts

Scatterplot

Dependent Variable: Independence per board



Regression Standardized Predicted Value

Regression

Notes

Output Created		04-NOV-2006 07:08:15
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	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x4 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.72
	Memory Required	5108 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Independence per board	43.1087	21.88478	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Independence per board	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Independence per board	1.000	-.177	-.428	.494	-.176	-.359	.231	-.214	-.063	-.450	.159
	PDI	-.177	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.428	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.494	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.176	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.359	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.231	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.214	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.063	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.450	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.159	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Independence per board	.	.210	.021	.008	.211	.046	.145	.163	.388	.016	.234
	PDI	.210	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.021	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.008	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.211	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.046	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.145	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.163	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.388	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.016	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.234	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Independence per board	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	IND	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	UAV_MAS	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Independence per board

Model Summary(c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.494(a)	.244	.208	19.47325
2	.658(b)	.433	.376	17.28784

a Predictors: (Constant), IND
b Predictors: (Constant), IND, UAV_MAS
c Dependent Variable: Independence per board

ANOVA(c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2573.402	1	2573.402	6.786	.017(a)
	Residual	7963.356	21	379.207		
	Total	10536.758	22			
2	Regression	4559.372	2	2279.686	7.628	.003(b)
	Residual	5977.386	20	298.869		
	Total	10536.758	22			

a Predictors: (Constant), IND
b Predictors: (Constant), IND, UAV_MAS
c Dependent Variable: Independence per board

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.263	14.347		.506	.618		
	IND	.550	.211	.494	2.605	.017	1.000	1.000
2	(Constant)	22.082	13.974		1.580	.130		
	IND	.534	.188	.480	2.850	.010	.999	1.001
	UAV_MAS	-.005	.002	-.434	-2.578	.018	.999	1.001

a Dependent Variable: Independence per board

Excluded Variables(c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	.137(a)	.592	.561	.131	.697	1.434	.697
	UAV	-.387(a)	-2.213	.039	-.444	.992	1.008	.992
	MASC	-.176(a)	-.923	.367	-.202	1.000	1.000	1.000
	PDI_UAV	-.261(a)	-1.369	.186	-.293	.949	1.053	.949
	PDI_IND	.006(a)	.028	.978	.006	.791	1.264	.791
	PDI_MAS	-.052(a)	-.254	.802	-.057	.884	1.131	.884
	UAV_IND	-.358(a)	-1.766	.093	-.367	.798	1.254	.798
	UAV_MAS	-.434(a)	-2.578	.018	-.499	.999	1.001	.999
	IND_MAS	-.152(a)	-.666	.513	-.147	.708	1.412	.708
2	PDI	.228(b)	1.123	.275	.249	.678	1.474	.678
	UAV	-.168(b)	-.720	.480	-.163	.532	1.879	.532
	MASC	.372(b)	1.470	.158	.320	.418	2.394	.417
	PDI_UAV	-.034(b)	-.164	.871	-.038	.682	1.466	.682
	PDI_IND	.184(b)	.917	.371	.206	.708	1.413	.708
	PDI_MAS	.432(b)	1.956	.065	.409	.508	1.967	.508
	UAV_IND	-.050(b)	-.190	.851	-.044	.429	2.332	.429
	IND_MAS	.451(b)	1.633	.119	.351	.343	2.917	.343

a Predictors in the Model: (Constant), IND
b Predictors in the Model: (Constant), IND, UAV_MAS
c Dependent Variable: Independence per board

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	IND	UAV_MAS
1	1	1.959	1.000	.02	.02	
	2	.041	6.922	.98	.98	
2	1	2.721	1.000	.01	.01	.04
	2	.241	3.363	.03	.07	.89
	3	.038	8.445	.97	.92	.08

a Dependent Variable: Independence per board

Residuals Statistics(a)

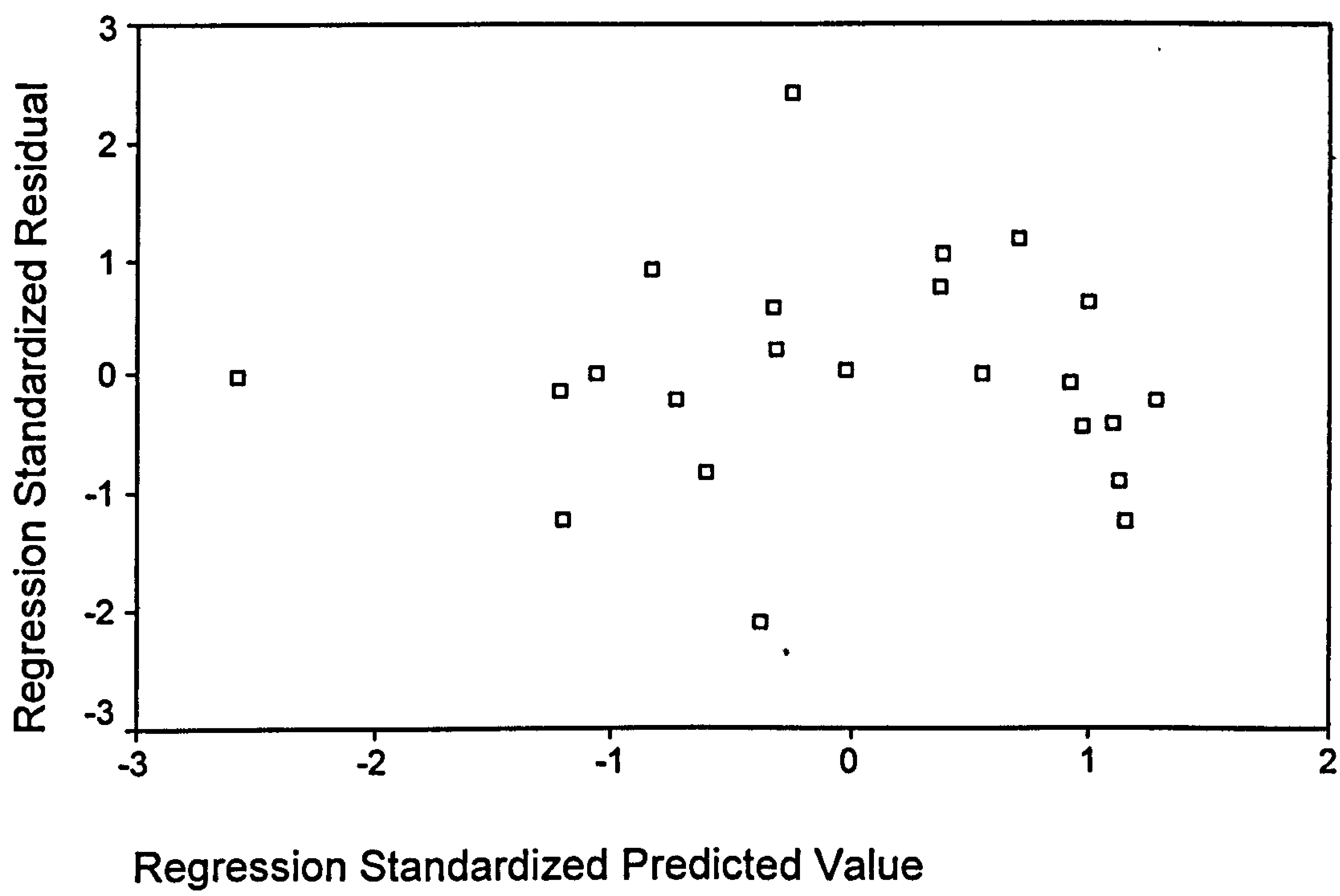
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	6.0527	61.3842	43.1087	14.39598	23
Residual	-36.1495	41.7454	.0000	16.48331	23
Std. Predicted Value	-2.574	1.269	.000	1.000	23
Std. Residual	-2.091	2.415	.000	.953	23

a Dependent Variable: Independence per board

Charts

Scatterplot

Dependent Variable: Independence per board



Appendix 19: The regression analysis models for the relationship between cultural values and audit committee.

Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x5 /METHOD=ENTER x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.10
	Memory Required	4508 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
audit committee	67.6261	26.46671	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		audit committee	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	audit committee	1.000	-.063	-.526	.431	-.075	-.385	.246	-.084	-.153	-.487	.230
	PDI	-.063	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.526	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.431	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.075	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.385	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.246	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.084	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.153	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.487	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.230	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	audit committee	.	.387	.005	.020	.366	.035	.129	.351	.242	.009	.146
	PDI	.387	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.005	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.020	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.366	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.035	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.129	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.351	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.242	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.009	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.146	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	audit committee	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: audit committee

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.881(a)	.777	.590	16.93702

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: audit committee

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11968.351	10	1196.835	4.172	.011(a)
	Residual	3442.353	12	286.863		
	Total	15410.704	22			

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: audit committee

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	134.635	157.661		.854	.410		
	PDI	-1.879	2.202	-1.245	-.854	.410	.009	114.269
	UAV	.439	1.422	.454	.309	.763	.009	115.896
	IND	-1.215	1.966	-.903	-.618	.548	.009	114.588
	MASC	.000	1.795	.000	.000	1.000	.007	139.921
	PDI_UAV	-.002	.015	-.132	-.113	.912	.014	72.649
	PDI_IND	.024	.028	.975	.877	.398	.015	66.399
	PDI_MAS	.019	.022	.942	.889	.391	.017	60.331
	UAV_IND	.001	.012	.086	.113	.912	.032	31.058
	UAV_MAS	-.025	.013	-1.939	-1.886	.084	.018	56.805
	IND_MAS	.011	.019	.801	.602	.558	.011	95.181

a Dependent Variable: audit committee

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions										
				(Constant)	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
1	1	9.695	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.524	4.301	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.376	5.081	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.267	6.023	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.097	9.990	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
	6	.025	19.762	.00	.00	.00	.00	.00	.03	.00	.01	.01	.05	.03
	7	.011	29.676	.00	.01	.00	.01	.01	.06	.00	.01	.18	.02	.00
	8	.003	59.920	.00	.03	.00	.01	.02	.01	.21	.48	.26	.21	.00
	9	.001	90.092	.01	.11	.20	.00	.41	.54	.02	.02	.14	.16	.29
	10	.001	111.261	.01	.21	.74	.00	.08	.33	.32	.31	.36	.55	.12
	11	.000	214.659	.98	.64	.05	.97	.48	.01	.45	.17	.03	.00	.55

a Dependent Variable: audit committee

Residuals Statistics(a)

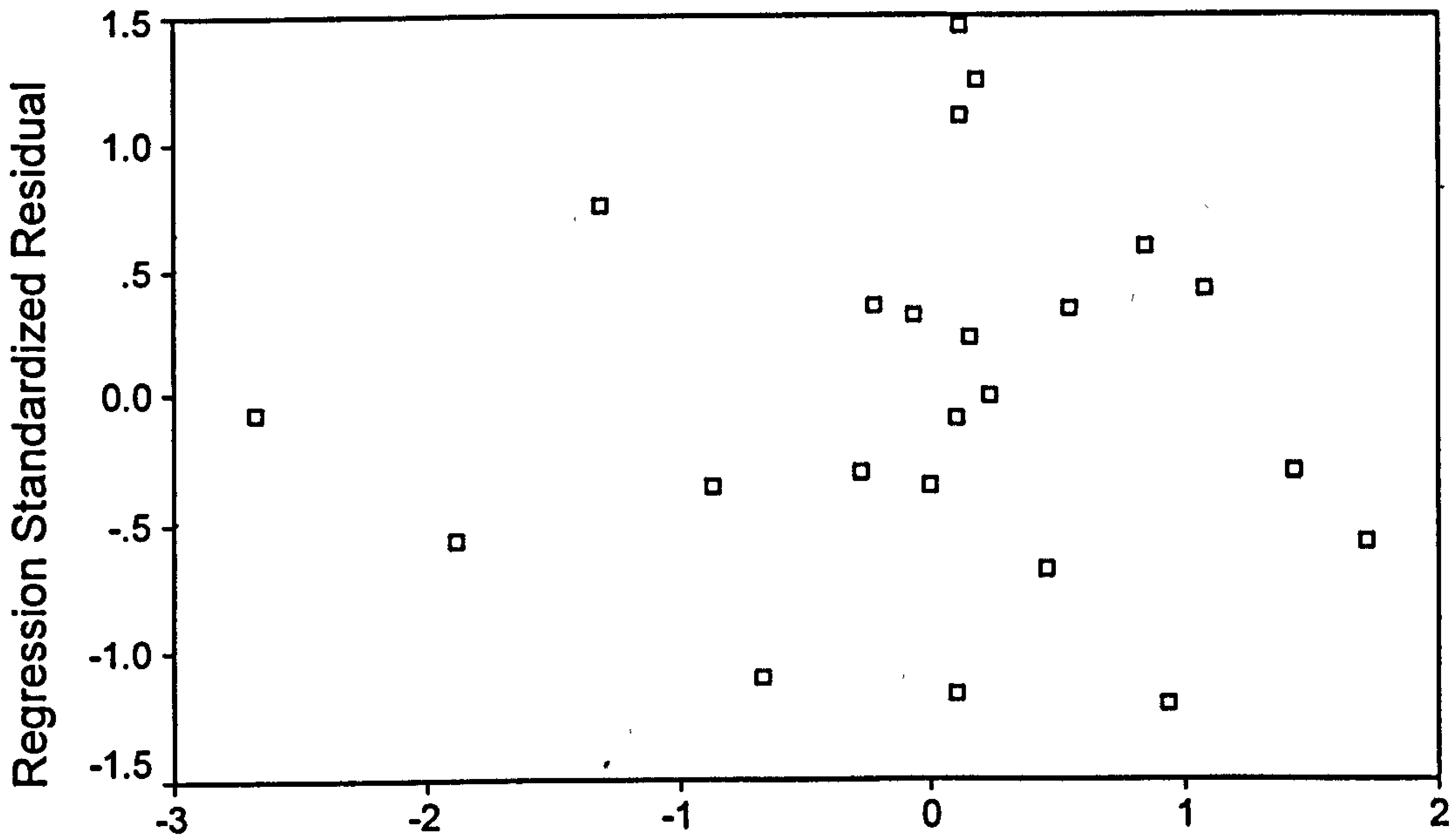
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.3694	107.5132	67.6261	23.32415	23
Residual	-20.4606	24.7748	.0000	12.50882	23
Std. Predicted Value	-2.669	1.710	.000	1.000	23
Std. Residual	-1.208	1.463	.000	.739	23

a Dependent Variable: audit committee

Charts

Scatterplot

Dependent Variable: audit committee



Regression Standardized Predicted Value

Regression

Notes

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	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x5 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.11
	Memory Required	5108 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
audit committee	67.6261	26.46671	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		audit committee	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	audit committee	1.000	-.063	-.526	.431	-.075	-.385	.246	-.084	-.153	-.487	.230
	PDI	-.063	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.526	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.431	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.075	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.385	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.246	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.084	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.153	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.487	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.230	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	audit committee	.	.387	.005	.020	.366	.035	.129	.351	.242	.009	.146
	PDI	.387	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.005	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.020	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.366	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.035	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.129	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.351	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.242	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.009	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.146	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	audit committee	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	UAV	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	PDI_IND	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: audit committee

Model Summary(c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.526(a)	.276	.242	23.04435
2	.752(b)	.565	.522	18.29818

a Predictors: (Constant), UAV
b Predictors: (Constant), UAV, PDI_IND
c Dependent Variable: audit committee

ANOVA(c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4258.823	1	4258.823	8.020	.010(a)
	Residual	11151.881	21	531.042		
	Total	15410.704	22			
2	Regression	8714.237	2	4357.118	13.013	.000(b)
	Residual	6696.467	20	334.823		
	Total	15410.704	22			

a Predictors: (Constant), UAV
b Predictors: (Constant), UAV, PDI_IND
c Dependent Variable: audit committee

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	97.655	11.642		8.388	.000		
	UAV	-.509	.180	-.526	-2.832	.010	1.000	1.000
2	(Constant)	73.564	11.361		6.475	.000		
	UAV	-.770	.160	-.795	-4.822	.000	.800	1.251
	PDI_IND	.015	.004	.601	3.648	.002	.800	1.251

a Dependent Variable: audit committee

Excluded Variables(c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	.137(a)	.682	.503	.151	.878	1.138	.878
	IND	.387(a)	2.275	.034	.453	.992	1.008	.992
	MASC	-.004(a)	-.022	.983	-.005	.982	1.019	.982
	PDI_UAV	.473(a)	1.110	.280	.241	.188	5.319	.188
	PDI_IND	.601(a)	3.648	.002	.632	.800	1.251	.800
	PDI_MAS	.052(a)	.266	.793	.059	.936	1.069	.936
	UAV_IND	.707(a)	2.630	.016	.507	.372	2.687	.372
	UAV_MAS	-.240(a)	-.945	.356	-.207	.537	1.864	.537
	IND_MAS	.278(a)	1.538	.140	.325	.992	1.008	.992
2	PDI	-.083(b)	-.481	.636	-.110	.762	1.312	.694
	IND	.125(b)	.693	.497	.157	.684	1.463	.551
	MASC	.004(b)	.025	.980	.006	.981	1.019	.787
	PDI_UAV	-.176(b)	-.442	.664	-.101	.143	6.991	.143
	PDI_MAS	-.122(b)	-.758	.458	-.171	.855	1.170	.730
	UAV_IND	.135(b)	.374	.713	.085	.174	5.764	.174
	UAV_MAS	-.207(b)	-1.027	.317	-.229	.535	1.868	.463
	IND_MAS	.123(b)	.782	.444	.177	.898	1.114	.723

a Predictors in the Model: (Constant), UAV
b Predictors in the Model: (Constant), UAV, PDI_IND
c Dependent Variable: audit committee

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	UAV	PDI_IND
1	1	1.911	1.000	.04	.04	
	2	.089	4.630	.96	.96	
2	1	2.838	1.000	.01	.02	.01
	2	.093	5.523	.28	.97	.13
	3	.069	6.391	.71	.01	.86

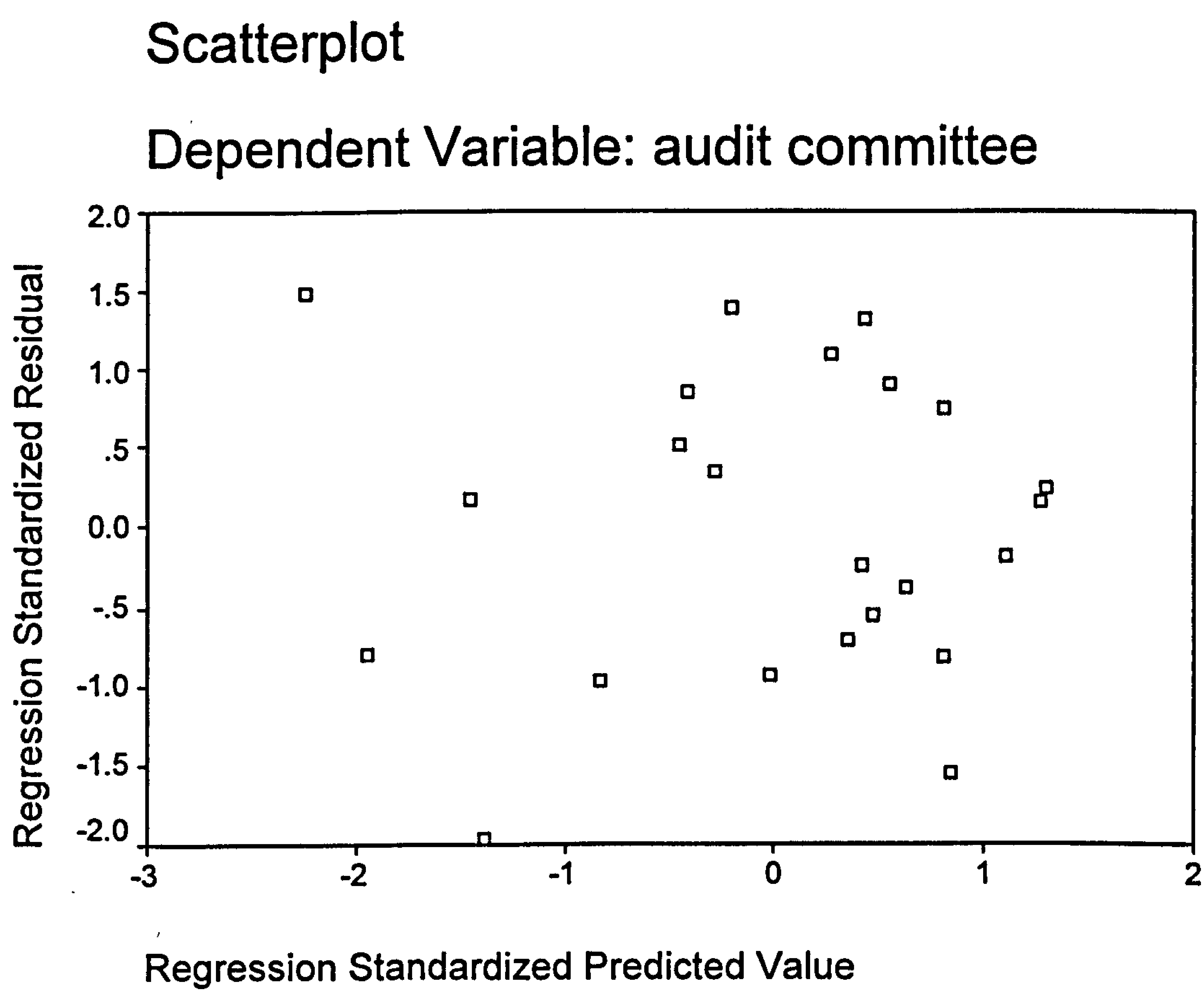
a Dependent Variable: audit committee

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	22.9060	93.4823	67.6261	19.90230	23
Residual	-36.0272	27.0940	.0000	17.44663	23
Std. Predicted Value	-2.247	1.299	.000	1.000	23
Std. Residual	-1.969	1.481	.000	.953	23

a Dependent Variable: audit committee

Charts



Regression

Notes

Output Created		10-NOV-2006 09:52:27
Comments		
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	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /REGWGT=res_3 /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x5 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) /SAVE RESID .
Resources	Elapsed Time	0:00:00.10
	Memory Required	5172 bytes
	Additional Memory Required for Residual Plots	168 bytes
Variables Created or Modified	RES_4	Residual

Warnings

No plots are produced for Weighted Least Squares regression. You can SAVE the appropriate variables and use other procedures (e.g., EXAMINE and PLOT) to produce the requested plots. To plot weighted versions of the residuals and predicted values, use COMPUTE before plotting: COMPUTE RESID = SQRT(REGWGTvar) * RESID COMPUTE PRED = SQRT(REGWGTvar) * PRED.

Descriptive Statistics(a)

	Mean	Std. Deviation	N
audit committee	82.2199	70.64478	12
PDI	40.6389	47.62329	12
UAV	63.1923	87.90701	12
IND	66.0075	65.33532	12
MASC	50.2095	82.98148	12
PDI_UAV	2822.6378	7429.86688	12
PDI_IND	2538.3167	2586.80376	12
PDI_MAS	1934.7145	3185.88792	12
UAV_IND	3868.0483	3717.41718	12
UAV_MAS	2973.8395	5063.40877	12
IND_MAS	3465.4615	7062.29176	12

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Correlations(a)

		audit committee	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	audit committee	1.000	-.658	-.848	.848	.483	-.800	.418	.190	.019	-.044	.635
	PDI	-.658	1.000	.924	-.704	-.407	.971	.184	.195	.257	.230	-.507
	UAV	-.848	.924	1.000	-.802	-.415	.976	-.014	.122	.293	.292	-.559
	IND	.848	-.704	-.802	1.000	.424	-.818	.554	.139	.307	-.007	.640
	MASC	.483	-.407	-.415	.424	1.000	-.424	.153	.786	.095	.709	.961
	PDI_UAV	-.800	.971	.976	-.818	-.424	1.000	-.004	.123	.187	.226	-.563
	PDI_IND	.418	.184	-.014	.554	.153	-.004	1.000	.477	.794	.336	.316
	PDI_MAS	.190	.195	.122	.139	.786	.123	.477	1.000	.455	.929	.726
	UAV_IND	.019	.257	.293	.307	.095	.187	.794	.455	1.000	.546	.173
	UAV_MAS	-.044	.230	.292	-.007	.709	.226	.336	.929	.546	1.000	.601
	IND_MAS	.635	-.507	-.559	.640	.961	-.563	.316	.726	.173	.601	1.000
Sig. (1-tailed)	audit committee	.	.010	.000	.000	.056	.001	.088	.277	.476	.445	.013
	PDI	.010	.	.000	.005	.095	.000	.284	.272	.210	.236	.046
	UAV	.000	.000	.	.001	.090	.000	.482	.353	.178	.178	.029
	IND	.000	.005	.001	.	.085	.001	.031	.334	.166	.491	.012
	MASC	.056	.095	.090	.085	.	.085	.318	.001	.385	.005	.000
	PDI_UAV	.001	.000	.000	.001	.085	.	.495	.351	.280	.240	.028
	PDI_IND	.088	.284	.482	.031	.318	.495	.	.058	.001	.143	.159
	PDI_MAS	.277	.272	.353	.334	.001	.351	.058	.	.069	.000	.004
	UAV_IND	.476	.210	.178	.166	.385	.280	.001	.069	.	.033	.295
	UAV_MAS	.445	.236	.178	.491	.005	.240	.143	.000	.033	.	.019
	IND_MAS	.013	.046	.029	.012	.000	.028	.159	.004	.295	.019	.
N	audit committee	12	12	12	12	12	12	12	12	12	12	12
	PDI	12	12	12	12	12	12	12	12	12	12	12
	UAV	12	12	12	12	12	12	12	12	12	12	12
	IND	12	12	12	12	12	12	12	12	12	12	12
	MASC	12	12	12	12	12	12	12	12	12	12	12
	PDI_UAV	12	12	12	12	12	12	12	12	12	12	12
	PDI_IND	12	12	12	12	12	12	12	12	12	12	12
	PDI_MAS	12	12	12	12	12	12	12	12	12	12	12
	UAV_IND	12	12	12	12	12	12	12	12	12	12	12
	UAV_MAS	12	12	12	12	12	12	12	12	12	12	12
	IND_MAS	12	12	12	12	12	12	12	12	12	12	12

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Variables Entered/Removed(a,b)

Model	Variables Entered	Variables Removed	Method
1	IND	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: audit committee
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Model Summary(b,c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.848(a)	.719	.691	39.26363

a Predictors: (Constant), IND
b Dependent Variable: audit committee
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

ANOVA(b,c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39481.208	1	39481.208	25.610	.000(a)
	Residual	15416.329	10	1541.633		
	Total	54897.537	11			

a Predictors: (Constant), IND
b Dependent Variable: audit committee
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Coefficients(a,b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	21.694	12.340		1.758	.109		
	IND	.917	.181	.848	5.061	.000	1.000	1.000

a Dependent Variable: audit committee
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Excluded Variables(b,c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	-.120(a)	-.489	.636	-.161	.504	1.983	.504
	UAV	-.469(a)	-1.870	.094	-.529	.357	2.803	.357
	MASC	.151(a)	.801	.444	.258	.820	1.219	.820
	PDI_UAV	-.323(a)	-1.121	.291	-.350	.331	3.021	.331
	PDI_IND	-.075(a)	-.354	.731	-.117	.693	1.444	.693
	PDI_MAS	.074(a)	.421	.684	.139	.981	1.020	.981
	UAV_IND	-.266(a)	-1.630	.137	-.478	.906	1.104	.906
	UAV_MAS	-.038(a)	-.218	.832	-.072	1.000	1.000	1.000
	IND_MAS	.157(a)	.699	.502	.227	.590	1.694	.590

a Predictors in the Model: (Constant), IND
b Dependent Variable: audit committee
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Collinearity Diagnostics(a,b)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	IND
1	1	1.969	1.000	.02	.02
	2	.031	8.002	.98	.98

a Dependent Variable: audit committee
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Residuals Statistics(b,c)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	50.1193	105.1370	86.7214	14.78792	12
Residual	-32.2603	14.1192	-5.8547	13.12400	12
Std. Predicted Value(a)	.	.	.	.	0
Std. Residual(a)	.	.	.	.	0

a Not computed for Weighted Least Squares regression.
b Dependent Variable: audit committee
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Appendix 20: The regression analysis models for the relationship between cultural values and remuneration disclosure.

Regression

Notes

Output Created		04-NOV-2006 07:24:48
Comments		
Input	Data	C:\Documents and Settings\A\Desktop\corporate governance paper\corporate governance paper.sav
	Filter	<none>
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	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x6 /METHOD=ENTER x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.13
	Memory Required	4508 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Rem Disclosure	90.5522	15.43514	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Rem Disclosure	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Rem Disclosure	1.000	-.133	-.270	.247	-.226	-.268	.074	-.330	-.071	-.431	.029
	PDI	-.133	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.270	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.247	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.226	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.268	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.074	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.330	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.071	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.431	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.029	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Rem Disclosure	.	.273	.106	.128	.150	.108	.368	.062	.374	.020	.448
	PDI	.273	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.106	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.128	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.150	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.108	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.368	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.062	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.374	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.020	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.448	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Rem Disclosure	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: Rem Disclosure

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.771(a)	.594	.256	13.31448

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Rem Disclosure

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3114.054	10	311.405	1.757	.176(a)
	Residual	2127.304	12	177.275		
	Total	5241.357	22			

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Rem Disclosure

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	244.086	123.940		1.969	.072		
	PDI	-.818	1.731	-.929	-.473	.645	.009	114.269
	UAV	.467	1.118	.826	.417	.684	.009	115.896
	IND	-2.647	1.545	-3.373	-1.713	.112	.009	114.588
	MASC	-1.748	1.411	-2.695	-1.239	.239	.007	139.921
	PDI_UAV	-.013	.012	-1.740	-1.110	.289	.014	72.649
	PDI_IND	.033	.022	2.244	1.498	.160	.015	66.399
	PDI_MAS	-.005	.017	-.430	-.301	.769	.017	60.331
	UAV_IND	-.003	.010	-.359	-.351	.732	.032	31.058
	UAV_MAS	.000	.010	-.056	-.040	.968	.018	56.805
	IND_MAS	.027	.015	3.290	1.834	.092	.011	95.181

a Dependent Variable: Rem Disclosure

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions										
				(Constant)	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
1	1	9.695	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.524	4.301	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.376	5.081	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.267	6.023	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.097	9.990	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
	6	.025	19.762	.00	.00	.00	.00	.00	.03	.00	.01	.01	.05	.03
	7	.011	29.676	.00	.01	.00	.01	.01	.06	.00	.01	.18	.02	.00
	8	.003	59.920	.00	.03	.00	.01	.02	.01	.21	.48	.26	.21	.00
	9	.001	90.092	.01	.11	.20	.00	.41	.54	.02	.02	.14	.16	.29
	10	.001	111.261	.01	.21	.74	.00	.08	.33	.32	.31	.36	.55	.12
	11	.000	214.659	.98	.64	.05	.97	.48	.01	.45	.17	.03	.00	.55

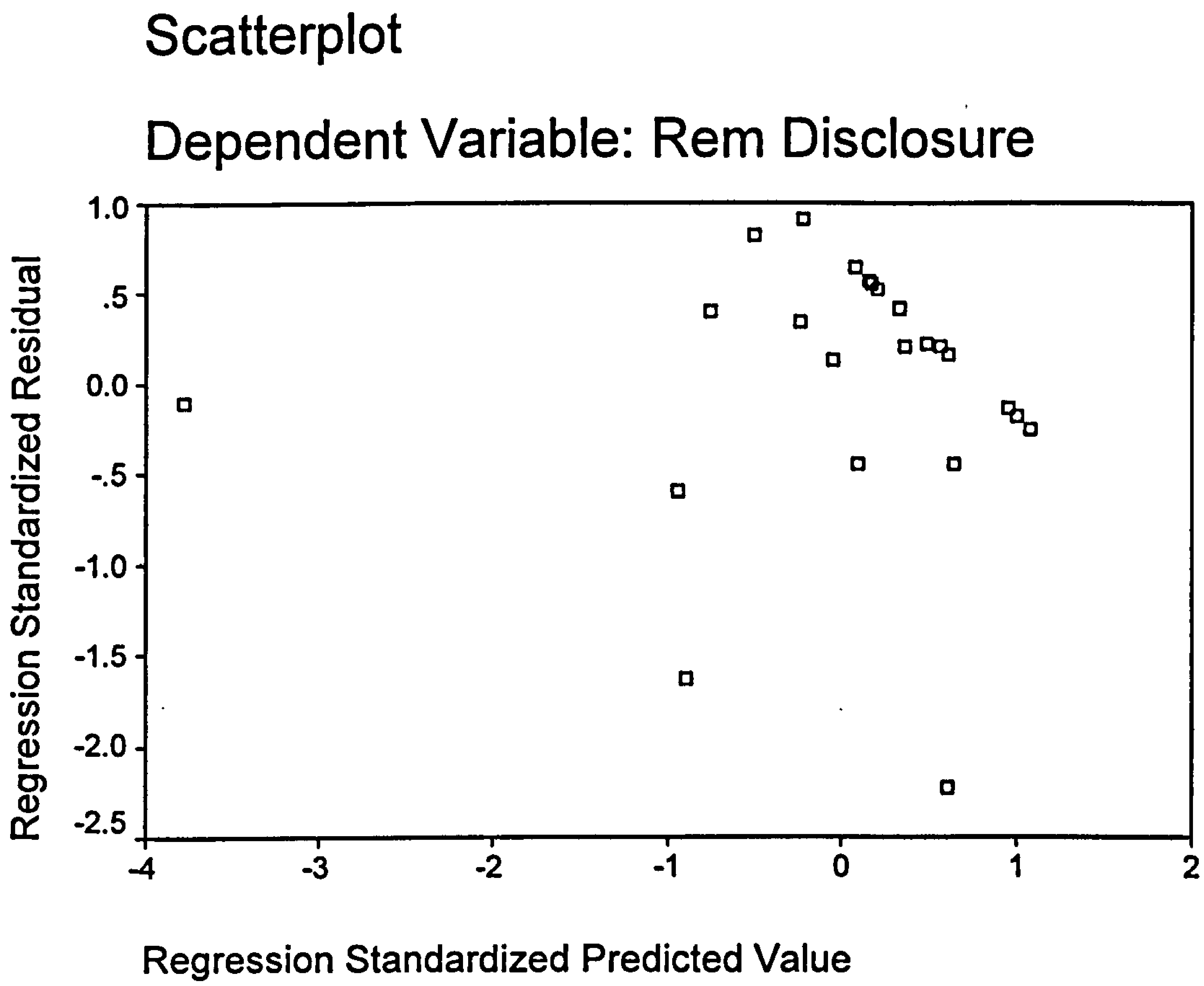
a Dependent Variable: Rem Disclosure

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	45.6253	103.4129	90.5522	11.89739	23
Residual	-29.7856	12.0766	.0000	9.83339	23
Std. Predicted Value	-3.776	1.081	.000	1.000	23
Std. Residual	-2.237	.907	.000	.739	23

a Dependent Variable: Rem Disclosure

Charts



Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x6 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.11
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	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Rem Disclosure	90.5522	15.43514	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Rem Disclosure	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Rem Disclosure	1.000	-.133	-.270	.247	-.226	-.268	.074	-.330	-.071	-.431	.029
	PDI	-.133	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.270	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.247	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.226	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.268	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.074	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.330	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.071	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.431	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.029	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Rem Disclosure	.	.273	.106	.128	.150	.108	.368	.062	.374	.020	.448
	PDI	.273	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.106	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.128	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.150	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.108	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.368	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.062	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.374	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.020	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.448	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Rem Disclosure	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	UAV_MAS	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Rem Disclosure

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.431(a)	.185	.147	14.25865

a Predictors: (Constant), UAV_MAS
b Dependent Variable: Rem Disclosure

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	971.866	1	971.866	4.780	.040(a)
	Residual	4269.492	21	203.309		
	Total	5241.357	22			

a Predictors: (Constant), UAV_MAS
b Dependent Variable: Rem Disclosure

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	100.201	5.321		18.830	.000		
	UAV_MAS	-.003	.001	-.431	-2.186	.040	1.000	1.000

a Dependent Variable: Rem Disclosure

Excluded Variables(b)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	-.068(a)	-.333	.742	-.074	.976	1.025	.976
	UAV	.042(a)	.154	.879	.034	.537	1.864	.537
	IND	.234(a)	1.198	.245	.259	.999	1.001	.999
	MASC	.246(a)	.800	.433	.176	.418	2.390	.418
	PDI_UAV	-.058(a)	-.245	.809	-.055	.725	1.379	.725
	PDI_IND	.208(a)	1.018	.321	.222	.925	1.081	.925
	PDI_MAS	-.100(a)	-.390	.701	-.087	.611	1.638	.611
	UAV_IND	.284(a)	1.171	.255	.253	.649	1.541	.649
	IND_MAS	.430(a)	1.868	.076	.385	.656	1.525	.656

a Predictors in the Model: (Constant), UAV_MAS
b Dependent Variable: Rem Disclosure

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	UAV_MAS
1	1	1.829	1.000	.09	.09
	2	.171	3.274	.91	.91

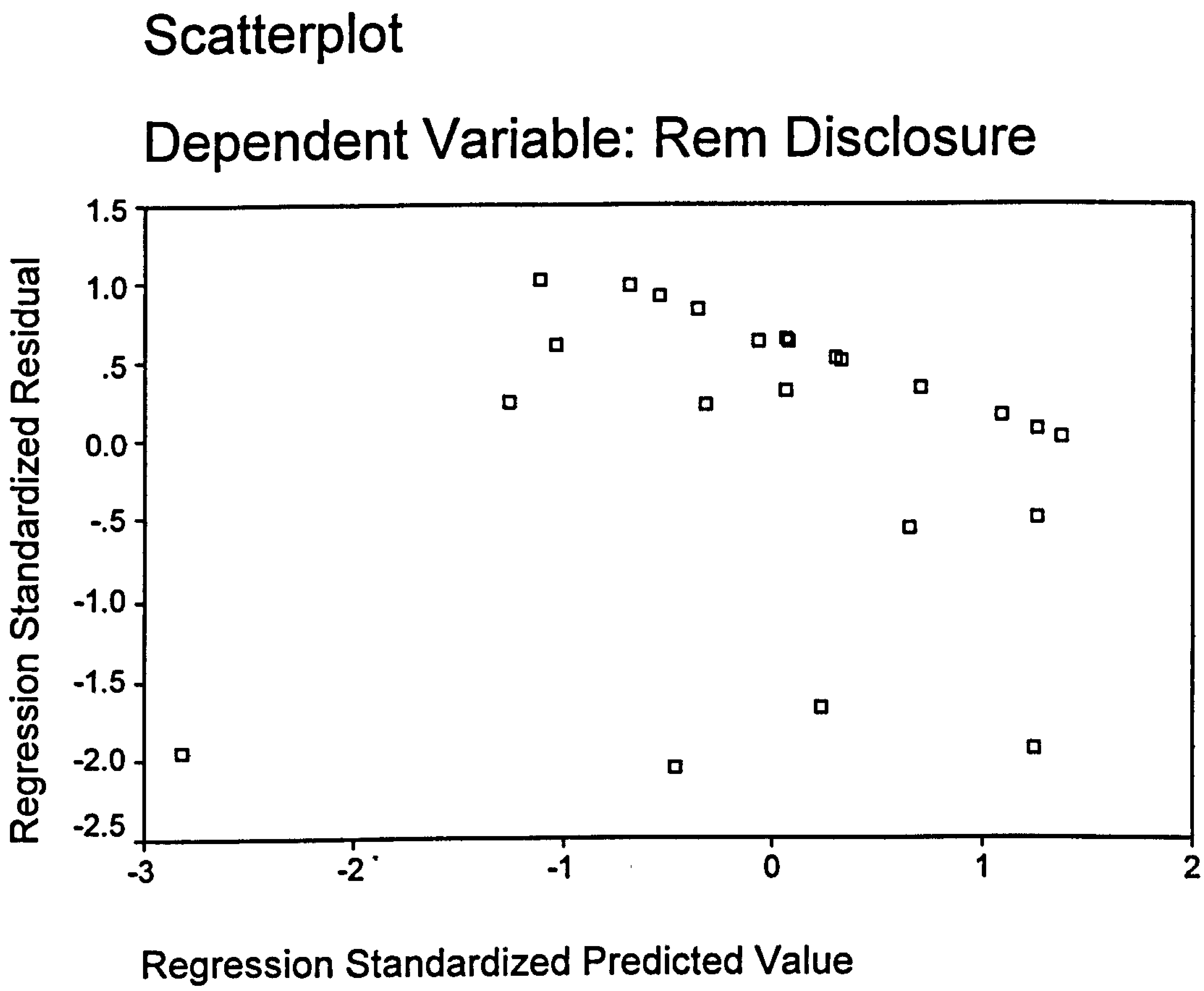
a Dependent Variable: Rem Disclosure

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	71.8073	99.7301	90.5522	6.64648	23
Residual	-29.1662	14.4547	.0000	13.93082	23
Std. Predicted Value	-2.820	1.381	.000	1.000	23
Std. Residual	-2.046	1.014	.000	.977	23

a Dependent Variable: Rem Disclosure

Charts



Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /REGWGT=res_5 /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x6 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) /SAVE RESID .
Resources	Elapsed Time	0:00:00.11
	Memory Required	5212 bytes
	Additional Memory Required for Residual Plots	168 bytes
Variables Created or Modified	RES_6	Residual

Warnings

No plots are produced for Weighted Least Squares regression. You can SAVE the appropriate variables and use other procedures (e.g., EXAMINE and PLOT) to produce the requested plots. To plot weighted versions of the residuals and predicted values, use COMPUTE before plotting: COMPUTE RESID = SQRT(REGWGTvar) * RESID COMPUTE PRED = SQRT(REGWGTvar) * PRED.

Descriptive Statistics(a)

	Mean	Std. Deviation	N
Rem Disclosure	98.3304	8.94184	17
PDI	43.3064	41.34072	17
UAV	65.7037	55.99717	17
IND	71.2917	41.58103	17
MASC	56.9067	45.26529	17
PDI_UAV	3085.9406	5329.62517	17
PDI_IND	3027.1948	3016.05064	17
PDI_MAS	2351.0499	2195.80594	17
UAV_IND	4490.7522	3371.63966	17
UAV_MAS	3599.8419	3292.94888	17
IND_MAS	4166.0100	4208.28604	17

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Correlations(a)

		Rem Disclosure	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Rem Disclosure	1.000	.010	-.311	.105	-.156	-.139	-.004	-.067	-.343	-.491	-.011
	PDI	.010	1.000	.800	-.270	-.467	.958	.730	.578	.642	.231	-.418
	UAV	-.311	.800	1.000	-.640	-.423	.929	.329	.344	.567	.465	-.584
	IND	.105	-.270	-.640	1.000	.446	-.483	.437	.283	.227	-.045	.766
	MASC	-.156	-.467	-.423	.446	1.000	-.499	-.073	.408	.015	.568	.900
	PDI_UAV	-.139	.958	.929	-.483	-.499	1.000	.554	.462	.598	.304	-.546
	PDI_IND	-.004	.730	.329	.437	-.073	.554	1.000	.768	.831	.285	.152
	PDI_MAS	-.067	.578	.344	.283	.408	.462	.768	1.000	.735	.702	.439
	UAV_IND	-.343	.642	.567	.227	.015	.598	.831	.735	1.000	.639	.077
	UAV_MAS	-.491	.231	.465	-.045	.568	.304	.285	.702	.639	1.000	.351
	IND_MAS	-.011	-.418	-.584	.766	.900	-.546	.152	.439	.077	.351	1.000
Sig. (1-tailed)	Rem Disclosure	.	.485	.112	.344	.275	.297	.495	.399	.089	.023	.483
	PDI	.485	.	.000	.148	.030	.000	.000	.008	.003	.187	.047
	UAV	.112	.000	.	.003	.045	.000	.099	.088	.009	.030	.007
	IND	.344	.148	.003	.	.036	.025	.040	.136	.190	.433	.000
	MASC	.275	.030	.045	.036	.	.021	.390	.052	.478	.009	.000
	PDI_UAV	.297	.000	.000	.025	.021	.	.010	.031	.006	.117	.012
	PDI_IND	.495	.000	.099	.040	.390	.010	.	.000	.000	.134	.280
	PDI_MAS	.399	.008	.088	.136	.052	.031	.000	.	.000	.001	.039
	UAV_IND	.089	.003	.009	.190	.478	.006	.000	.000	.	.003	.385
	UAV_MAS	.023	.187	.030	.433	.009	.117	.134	.001	.003	.	.084
	IND_MAS	.483	.047	.007	.000	.000	.012	.280	.039	.385	.084	.
N	Rem Disclosure	17	17	17	17	17	17	17	17	17	17	17
	PDI	17	17	17	17	17	17	17	17	17	17	17
	UAV	17	17	17	17	17	17	17	17	17	17	17
	IND	17	17	17	17	17	17	17	17	17	17	17
	MASC	17	17	17	17	17	17	17	17	17	17	17
	PDI_UAV	17	17	17	17	17	17	17	17	17	17	17
	PDI_IND	17	17	17	17	17	17	17	17	17	17	17
	PDI_MAS	17	17	17	17	17	17	17	17	17	17	17
	UAV_IND	17	17	17	17	17	17	17	17	17	17	17
	UAV_MAS	17	17	17	17	17	17	17	17	17	17	17
	IND_MAS	17	17	17	17	17	17	17	17	17	17	17

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Variables Entered/Removed(a,b)

Model	Variables Entered	Variables Removed	Method
1	UAV_MAS	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Rem Disclosure
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Model Summary(b,c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491(a)	.241	.191	8.04429

a Predictors: (Constant), UAV_MAS
b Dependent Variable: Rem Disclosure
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

ANOVA(b,c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	308.644	1	308.644	4.770	.045(a)
	Residual	970.660	15	64.711		
	Total	1279.303	16			

a Predictors: (Constant), UAV_MAS
b Dependent Variable: Rem Disclosure
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Coefficients(a,b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	103.132	2.315		44.552	.000		
	UAV_MAS	-.001	.001	-.491	-2.184	.045	1.000	1.000

a Dependent Variable: Rem Disclosure
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Excluded Variables(b,c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum olerance
1	PDI	.130(a)	.550	.591	.146	.947	1.056	.947
	UAV	-.105(a)	-.403	.693	-.107	.784	1.276	.784
	IND	.084(a)	.360	.724	.096	.998	1.002	.998
	MASC	.181(a)	.651	.526	.171	.677	1.477	.677
	PDI_UAV	.012(a)	.047	.963	.013	.907	1.102	.907
	PDI_IND	.148(a)	.619	.546	.163	.919	1.088	.919
	PDI_MAS	.548(a)	1.874	.082	.448	.507	1.972	.507
	UAV_IND	-.048(a)	-.160	.875	-.043	.592	1.690	.592
	IND_MAS	.184(a)	.754	.463	.198	.877	1.140	.877

a Predictors in the Model: (Constant), UAV_MAS
b Dependent Variable: Rem Disclosure
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Collinearity Diagnostics(a,b)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	UAV_MAS
1	1	1.950	1.000	.03	.03
	2	.050	6.228	.97	.97

a Dependent Variable: Rem Disclosure
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Residuals Statistics(b,c)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	95.7560	102.9384	99.1536	2.17902	17
Residual	-10.0560	2.6768	-1.3948	3.38038	17
Std. Predicted Value(a)	.	.	.	.	0
Std. Residual(a)	.	.	.	.	0

a Not computed for Weighted Least Squares regression.
b Dependent Variable: Rem Disclosure
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Appendix 21: The regression analysis models for the relationship between cultural values and women on board.

Regression

Notes

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	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x7 /METHOD=ENTER x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.12
	Memory Required	4508 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Women on board	8.1435	5.88054	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Women on board	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Women on board	1.000	-.417	-.372	.356	-.572	-.430	-.094	-.621	-.139	-.563	-.299
	PDI	-.417	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.372	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.356	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.572	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.430	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	-.094	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.621	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.139	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.563	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	-.299	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Women on board	.	.024	.040	.048	.002	.020	.335	.001	.263	.003	.083
	PDI	.024	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.040	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.048	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.002	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.020	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.335	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.001	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.263	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.003	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.083	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Women on board	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: Women on board

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.828(a)	.685	.423	4.46676

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Women on board

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	521.354	10	52.135	2.613	.059(a)
	Residual	239.423	12	19.952		
	Total	760.777	22			

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Women on board

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	49.863	41.579		1.199	.254		
	PDI	-.491	.581	-1.463	-.845	.414	.009	114.269
	UAV	.311	.375	1.445	.829	.423	.009	115.896
	IND	-.480	.518	-1.605	-.926	.373	.009	114.588
	MASC	-.729	.473	-2.950	-1.540	.150	.007	139.921
	PDI_UAV	-.006	.004	-2.204	-1.597	.136	.014	72.649
	PDI_IND	.006	.007	1.154	.874	.399	.015	66.399
	PDI_MAS	.007	.006	1.520	1.209	.250	.017	60.331
	UAV_IND	.000	.003	-.063	-.070	.946	.032	31.058
	UAV_MAS	.000	.004	-.067	-.055	.957	.018	56.805
	IND_MAS	.005	.005	1.485	.940	.366	.011	95.181

a Dependent Variable: Women on board

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions										
				(Constant)	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
1	1	9.695	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.524	4.301	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.376	5.081	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.267	6.023	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.097	9.990	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
	6	.025	19.762	.00	.00	.00	.00	.00	.03	.00	.01	.01	.05	.03
	7	.011	29.676	.00	.01	.00	.01	.01	.06	.00	.01	.18	.02	.00
	8	.003	59.920	.00	.03	.00	.01	.02	.01	.21	.48	.26	.21	.00
	9	.001	90.092	.01	.11	.20	.00	.41	.54	.02	.02	.14	.16	.29
	10	.001	111.261	.01	.21	.74	.00	.08	.33	.32	.31	.36	.55	.12
	11	.000	214.659	.98	.64	.05	.97	.48	.01	.45	.17	.03	.00	.55

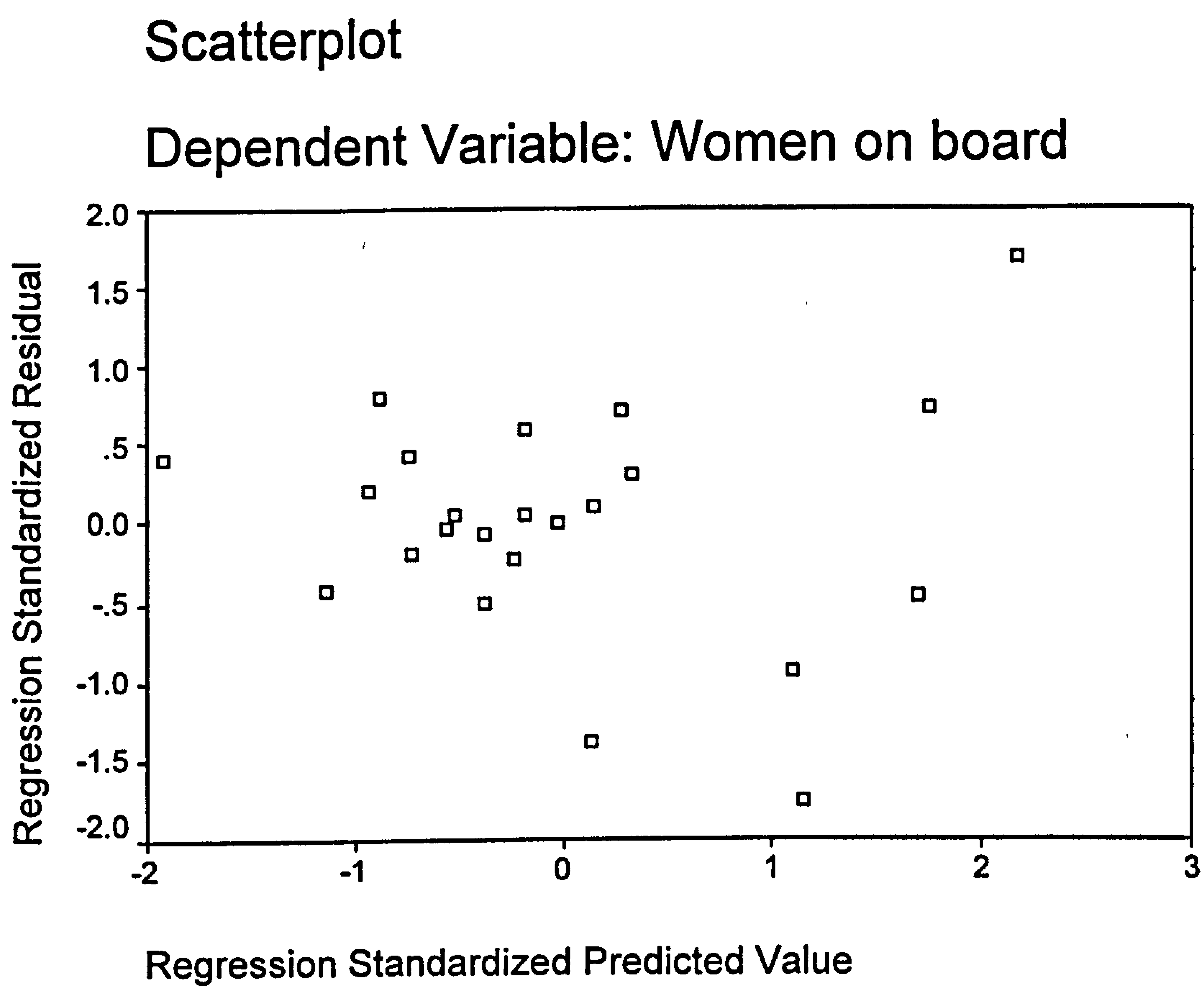
a Dependent Variable: Women on board

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-1.1899	18.6722	8.1435	4.86805	23
Residual	-7.8581	7.5278	.0000	3.29892	23
Std. Predicted Value	-1.917	2.163	.000	1.000	23
Std. Residual	-1.759	1.685	.000	.739	23

a Dependent Variable: Women on board

Charts



Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x7 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
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	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Women on board	8.1435	5.88054	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Women on board	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Women on board	1.000	-.417	-.372	.356	-.572	-.430	-.094	-.621	-.139	-.563	-.299
	PDI	-.417	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	-.372	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.356	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.572	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.430	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	-.094	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.621	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	-.139	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.563	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	-.299	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Women on board	.	.024	.040	.048	.002	.020	.335	.001	.263	.003	.083
	PDI	.024	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.040	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.048	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.002	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.020	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.335	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.001	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.263	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.003	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.083	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Women on board	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	PDI_MAS	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Women on board

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.621(a)	.386	.357	4.71560

a Predictors: (Constant), PDI_MAS
b Dependent Variable: Women on board

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	293.803	1	293.803	13.212	.002(a)
	Residual	466.974	21	22.237		
	Total	760.777	22			

a Predictors: (Constant), PDI_MAS
b Dependent Variable: Women on board

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	14.158	1.925		7.356	.000		
	PDI_MAS	-.003	.001	-.621	-3.635	.002	1.000	1.000

a Dependent Variable: Women on board

Excluded Variables(b)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	.025(a)	.103	.919	.023	.522	1.917	.522
	UAV	-.229(a)	-1.320	.202	-.283	.936	1.069	.936
	IND	.164(a)	.896	.381	.196	.884	1.131	.884
	MASC	-.275(a)	-1.179	.252	-.255	.527	1.896	.527
	PDI_UAV	-.198(a)	-1.043	.309	-.227	.812	1.232	.812
	PDI_IND	.156(a)	.844	.409	.185	.864	1.157	.864
	UAV_IND	-.039(a)	-.218	.829	-.049	.973	1.027	.973
	UAV_MAS	-.288(a)	-1.340	.195	-.287	.611	1.638	.611
	IND_MAS	-.072(a)	-.378	.709	-.084	.853	1.172	.853

a Predictors in the Model: (Constant), PDI_MAS
b Dependent Variable: Women on board

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	PDI_MAS
1	1	1.860	1.000	.07	.07
	2	.140	3.640	.93	.93

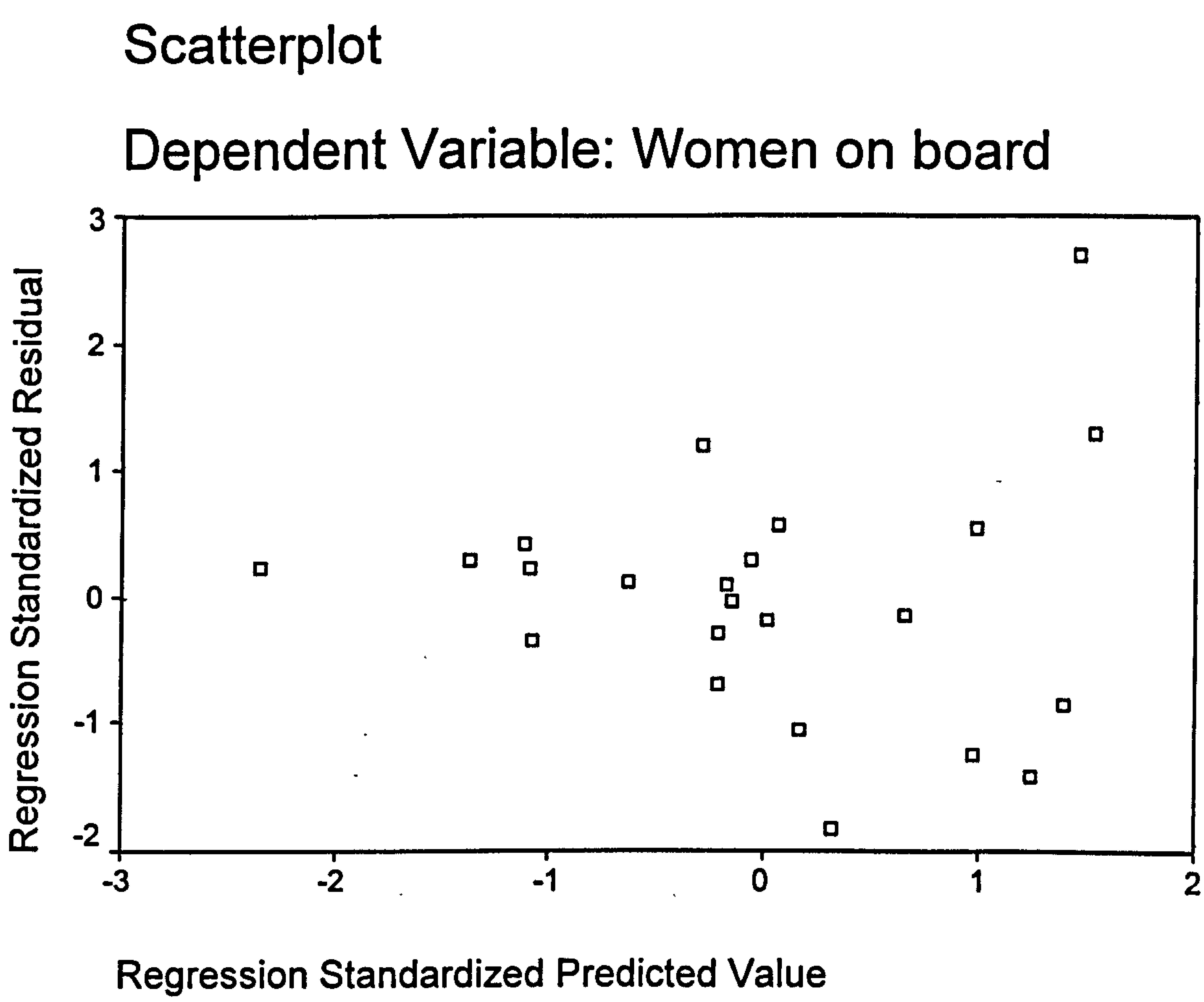
a Dependent Variable: Women on board

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.4460	13.7165	8.1435	3.65440	23
Residual	-8.6155	12.7482	.0000	4.60718	23
Std. Predicted Value	-2.350	1.525	.000	1.000	23
Std. Residual	-1.827	2.703	.000	.977	23

a Dependent Variable: Women on board

Charts



Appendix 22: The regression analysis models for the relationship between cultural values and code of ethics.

Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x8 /METHOD=ENTER x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.10
	Memory Required	4508 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Code of Ethics	66.1957	20.60356	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Code of Ethics	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Code of Ethics	1.000	-.424	.054	.610	-.374	-.070	.233	-.507	.268	-.176	.019
	PDI	-.424	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	.054	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.610	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.374	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.070	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.233	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.507	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	.268	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.176	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.019	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Code of Ethics	.	.022	.404	.001	.039	.376	.142	.007	.108	.211	.466
	PDI	.022	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.404	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.001	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.039	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.376	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.142	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.007	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.108	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.211	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.466	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Code of Ethics	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: Code of Ethics

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.861(a)	.741	.525	14.20464

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Code of Ethics

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6917.889	10	691.789	3.429	.024(a)
	Residual	2421.261	12	201.772		
	Total	9339.150	22			

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Code of Ethics

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	138.374	132.226		1.046	.316		
	PDI	-2.180	1.847	-1.855	-1.181	.261	.009	114.269
	UAV	2.459	1.193	3.263	2.062	.062	.009	115.896
	IND	-1.053	1.649	-1.005	-.638	.535	.009	114.588
	MASC	-2.011	1.505	-2.323	-1.336	.206	.007	139.921
	PDI_UAV	-.024	.013	-2.444	-1.951	.075	.014	72.649
	PDI_IND	.042	.023	2.178	1.819	.094	.015	66.399
	PDI_MAS	.023	.018	1.424	1.247	.236	.017	60.331
	UAV_IND	-.023	.010	-1.827	-2.230	.046	.032	31.058
	UAV_MAS	-.002	.011	-.185	-.167	.870	.018	56.805
	IND_MAS	.013	.016	1.179	.822	.427	.011	95.181

a Dependent Variable: Code of Ethics

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions										
				(Constant)	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
1	1	9.695	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.524	4.301	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.376	5.081	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.267	6.023	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.097	9.990	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
	6	.025	19.762	.00	.00	.00	.00	.00	.03	.00	.01	.01	.05	.03
	7	.011	29.676	.00	.01	.00	.01	.01	.06	.00	.01	.18	.02	.00
	8	.003	59.920	.00	.03	.00	.01	.02	.01	.21	.48	.26	.21	.00
	9	.001	90.092	.01	.11	.20	.00	.41	.54	.02	.02	.14	.16	.29
	10	.001	111.261	.01	.21	.74	.00	.08	.33	.32	.31	.36	.55	.12
	11	.000	214.659	.98	.64	.05	.97	.48	.01	.45	.17	.03	.00	.55

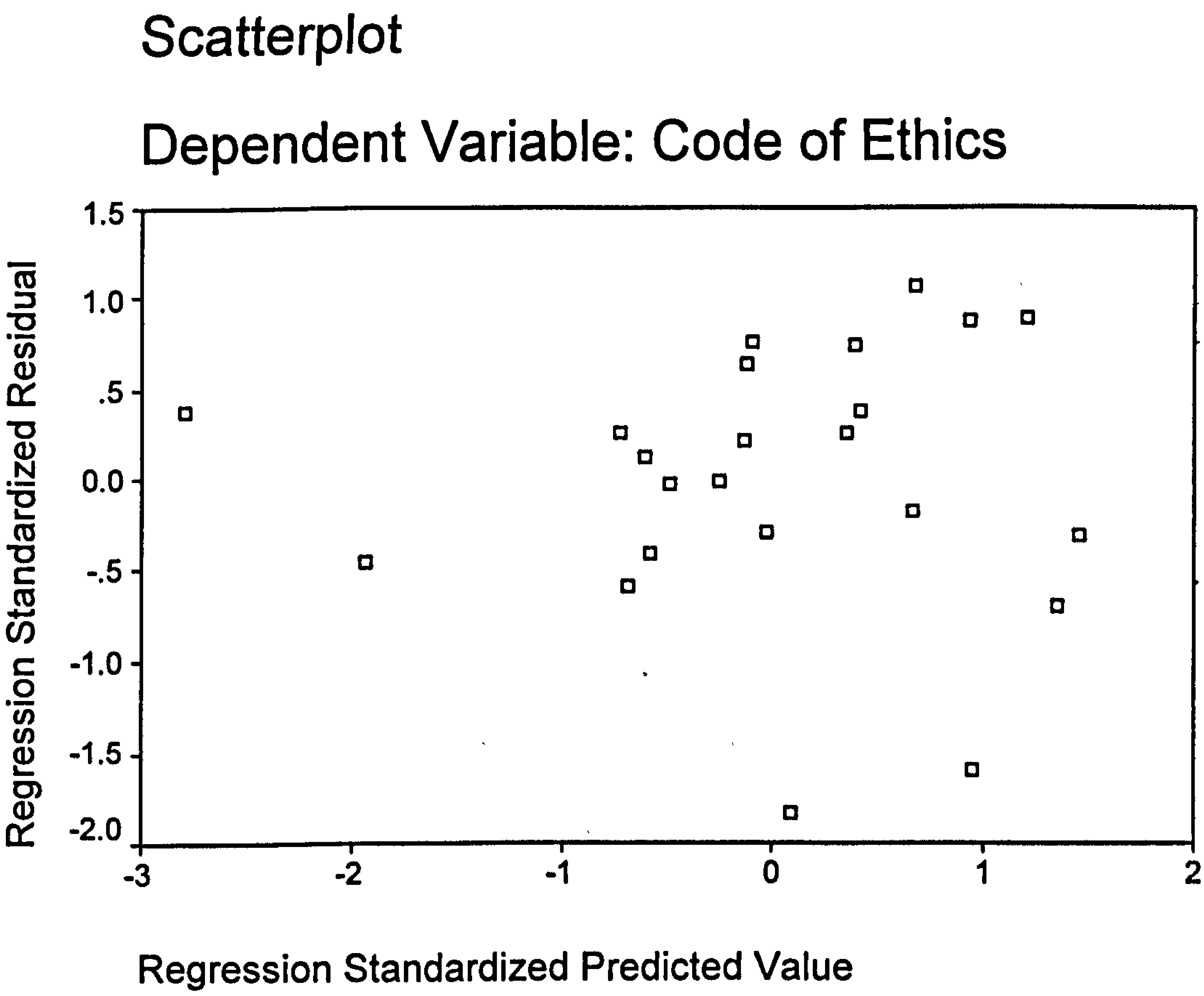
a Dependent Variable: Code of Ethics

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	16.7129	92.0119	66.1957	17.73272	23
Residual	-26.0236	15.1709	.0000	10.49082	23
Std. Predicted Value	-2.790	1.456	.000	1.000	23
Std. Residual	-1.832	1.068	.000	.739	23

a Dependent Variable: Code of Ethics

Charts



Regression

Notes

Output Created		04-NOV-2006 07:35:28
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	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x8 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.12
	Memory Required	5108 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Code of Ethics	66.1957	20.60356	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Code of Ethics	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Code of Ethics	1.000	-.424	.054	.610	-.374	-.070	.233	-.507	.268	-.176	.019
	PDI	-.424	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	.054	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.610	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.374	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.070	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.233	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.507	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	.268	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	-.176	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.019	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Code of Ethics	.	.022	.404	.001	.039	.376	.142	.007	.108	.211	.466
	PDI	.022	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.404	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.001	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.039	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.376	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.142	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.007	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.108	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.211	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.466	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Code of Ethics	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	IND	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	MASC	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Code of Ethics

Model Summary(c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.610(a)	.372	.342	16.71729
2	.715(b)	.511	.462	15.10741

a Predictors: (Constant), IND
b Predictors: (Constant), IND, MASC
c Dependent Variable: Code of Ethics

ANOVA(c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3470.325	1	3470.325	12.418	.002(a)
	Residual	5868.825	21	279.468		
	Total	9339.150	22			
2	Regression	4774.472	2	2387.236	10.460	.001(b)
	Residual	4564.677	20	228.234		
	Total	9339.150	22			

a Predictors: (Constant), IND
b Predictors: (Constant), IND, MASC
c Dependent Variable: Code of Ethics

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	24.570	12.316		1.995	.059		
	IND	.639	.181	.610	3.524	.002	1.000	1.000
2	(Constant)	40.415	12.954		3.120	.005		
	IND	.638	.164	.609	3.897	.001	1.000	1.000
	MASC	-.323	.135	-.374	-2.390	.027	1.000	1.000

a Dependent Variable: Code of Ethics

Excluded Variables(c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	-.128(a)	-.607	.551	-.134	.697	1.434	.697
	UAV	.109(a)	.617	.544	.137	.992	1.008	.992
	MASC	-.374(a)	-2.390	.027	-.471	1.000	1.000	1.000
	PDI_UAV	.071(a)	.391	.700	.087	.949	1.053	.949
	PDI_IND	-.057(a)	-.288	.776	-.064	.791	1.264	.791
	PDI_MAS	-.339(a)	-1.968	.063	-.403	.884	1.131	.884
	UAV_IND	-.008(a)	-.041	.968	-.009	.798	1.254	.798
	UAV_MAS	-.156(a)	-.899	.379	-.197	.999	1.001	.999
	IND_MAS	-.438(a)	-2.349	.029	-.465	.708	1.412	.708
2	PDI	-.118(b)	-.621	.542	-.141	.697	1.435	.697
	UAV	.163(b)	1.028	.317	.230	.974	1.027	.974
	PDI_UAV	.080(b)	.491	.629	.112	.949	1.054	.949
	PDI_IND	-.035(b)	-.193	.849	-.044	.789	1.267	.789
	PDI_MAS	-.106(b)	-.424	.676	-.097	.412	2.425	.412
	UAV_IND	.075(b)	.412	.685	.094	.768	1.302	.768
	UAV_MAS	.309(b)	1.297	.210	.285	.417	2.396	.417
	IND_MAS	-.087(b)	-.095	.925	-.022	.031	32.345	.031

a Predictors in the Model: (Constant), IND
b Predictors in the Model: (Constant), IND, MASC
c Dependent Variable: Code of Ethics

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	IND	MASC
1	1	1.959	1.000	.02	.02	
	2	.041	6.922	.98	.98	
2	1	2.819	1.000	.01	.01	.02
	2	.144	4.418	.03	.16	.83
	3	.036	8.810	.97	.83	.15

a Dependent Variable: Code of Ethics

Residuals Statistics(a)

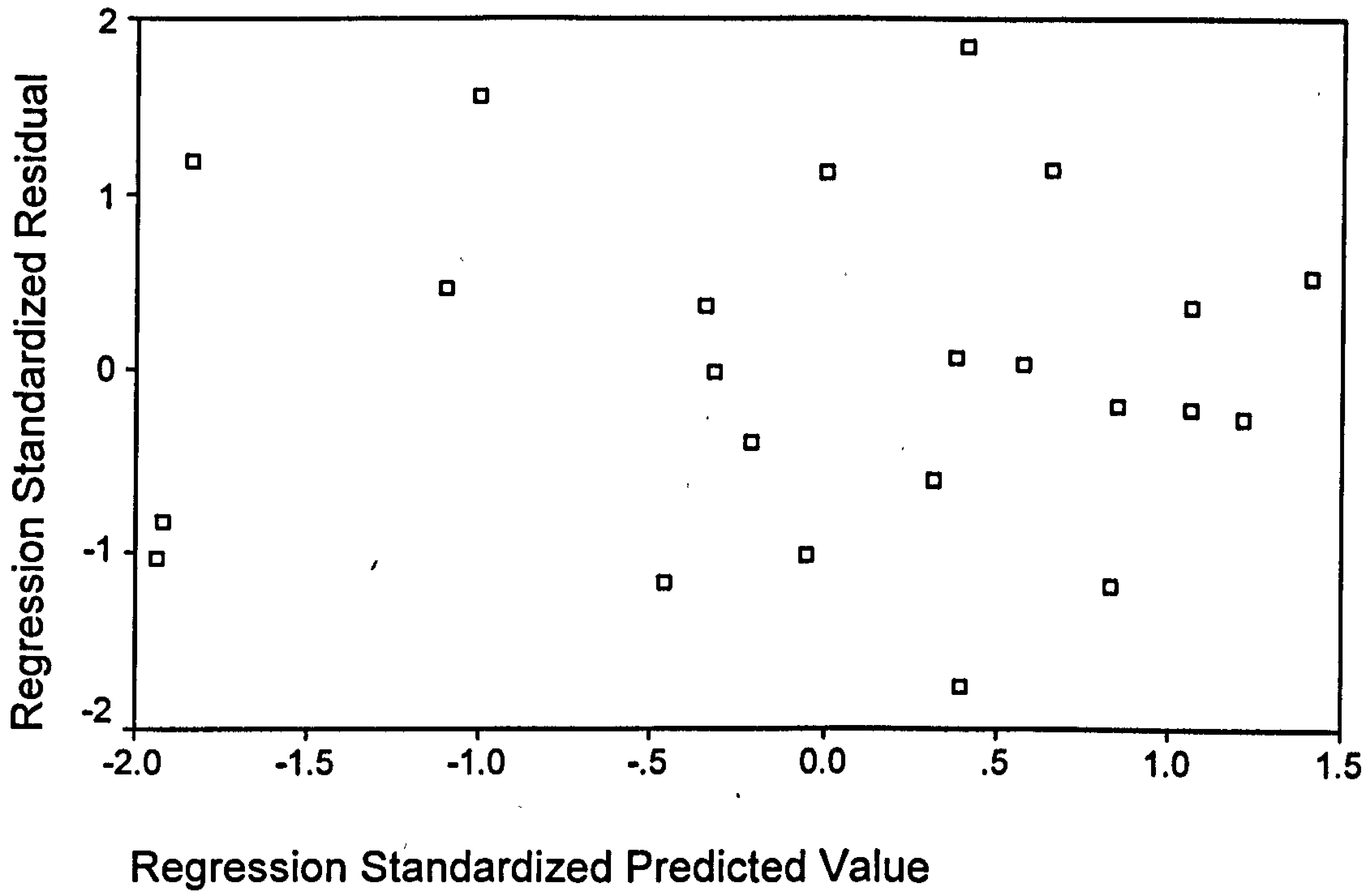
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	37.6538	86.9544	66.1957	14.73165	23
Residual	-26.5820	27.7797	.0000	14.40435	23
Std. Predicted Value	-1.937	1.409	.000	1.000	23
Std. Residual	-1.760	1.839	.000	.953	23

a Dependent Variable: Code of Ethics

Charts

Scatterplot

Dependent Variable: Code of Ethics



Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /REGWGT=res_7 /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x8 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) /SAVE RESID .
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	Additional Memory Required for Residual Plots	168 bytes
Variables Created or Modified	RES_8	Residual

Warnings

No plots are produced for Weighted Least Squares regression. You can SAVE the appropriate variables and use other procedures (e.g., EXAMINE and PLOT) to produce the requested plots. To plot weighted versions of the residuals and predicted values, use COMPUTE before plotting: COMPUTE RESID = SQRT(REGWGTvar) * RESID COMPUTE PRED = SQRT(REGWGTvar) * PRED.

Descriptive Statistics(a)

	Mean	Std. Deviation	N
Code of Ethics	81.7074	55.61501	11
PDI	43.0684	50.74276	11
UAV	70.4066	81.77942	11
IND	61.2967	68.47741	11
MASC	50.0206	102.30325	11
PDI_UAV	3274.9664	7224.92418	11
PDI_IND	2489.6261	2867.81086	11
PDI_MAS	2164.7258	5440.94858	11
UAV_IND	3933.4769	2943.41333	11
UAV_MAS	3573.9974	9136.14961	11
IND_MAS	3124.8478	7218.63382	11

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Correlations(a)

		Code of thics	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Code of Ethics	1.000	-.330	-.639	.551	-.645	-.498	.255	-.620	-.143	-.827	-.247
	PDI	-.330	1.000	.770	-.570	.026	.945	.296	.496	.138	.316	-.177
	UAV	-.639	.770	1.000	-.899	.082	.931	-.242	.374	.130	.494	-.326
	IND	.551	-.570	-.899	1.000	.110	-.793	.596	-.107	.255	-.288	.545
	MASC	-.645	.026	.082	.110	1.000	.022	.231	.842	.377	.877	.862
	PDI_UAV	-.498	.945	.931	-.793	.022	1.000	.003	.425	.070	.385	-.294
	PDI_IND	.255	.296	-.242	.596	.231	.003	1.000	.432	.601	.087	.497
	PDI_MAS	-.620	.496	.374	-.107	.842	.425	.432	1.000	.458	.898	.628
	UAV_IND	-.143	.138	.130	.255	.377	.070	.601	.458	1.000	.453	.386
	UAV_MAS	-.827	.316	.494	-.288	.877	.385	.087	.898	.453	1.000	.539
	IND_MAS	-.247	-.177	-.326	.545	.862	-.294	.497	.628	.386	.539	1.000
Sig. (1-tailed)	Code of Ethics	.	.161	.017	.040	.016	.060	.225	.021	.337	.001	.232
	PDI	.161	.	.003	.034	.469	.000	.188	.060	.343	.172	.302
	UAV	.017	.003	.	.000	.405	.000	.237	.128	.351	.061	.164
	IND	.040	.034	.000	.	.373	.002	.026	.377	.225	.195	.042
	MASC	.016	.469	.405	.373	.	.474	.248	.001	.126	.000	.000
	PDI_UAV	.060	.000	.000	.002	.474	.	.497	.096	.420	.121	.190
	PDI_IND	.225	.188	.237	.026	.248	.497	.	.092	.025	.399	.060
	PDI_MAS	.021	.060	.128	.377	.001	.096	.092	.	.078	.000	.019
	UAV_IND	.337	.343	.351	.225	.126	.420	.025	.078	.	.081	.121
	UAV_MAS	.001	.172	.061	.195	.000	.121	.399	.000	.081	.	.043
	IND_MAS	.232	.302	.164	.042	.000	.190	.060	.019	.121	.043	.
N	Code of Ethics	11	11	11	11	11	11	11	11	11	11	11
	PDI	11	11	11	11	11	11	11	11	11	11	11
	UAV	11	11	11	11	11	11	11	11	11	11	11
	IND	11	11	11	11	11	11	11	11	11	11	11
	MASC	11	11	11	11	11	11	11	11	11	11	11
	PDI_UAV	11	11	11	11	11	11	11	11	11	11	11
	PDI_IND	11	11	11	11	11	11	11	11	11	11	11
	PDI_MAS	11	11	11	11	11	11	11	11	11	11	11
	UAV_IND	11	11	11	11	11	11	11	11	11	11	11
	UAV_MAS	11	11	11	11	11	11	11	11	11	11	11
	IND_MAS	11	11	11	11	11	11	11	11	11	11	11

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Variables Entered/Removed(a,b)

Model	Variables Entered	Variables Removed	Method
1	UAV_MAS	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Code of Ethics
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Model Summary(b,c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.827(a)	.683	.648	33.00078

a Predictors: (Constant), UAV_MAS
b Dependent Variable: Code of Ethics
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

ANOVA(b,c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21128.823	1	21128.823	19.401	.002(a)
	Residual	9801.466	9	1089.052		
	Total	30930.289	10			

a Predictors: (Constant), UAV_MAS
b Dependent Variable: Code of Ethics
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Coefficients(a,b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	99.689	4.993		19.965	.000		
	UAV_MAS	-.005	.001	-.827	-4.405	.002	1.000	1.000

a Dependent Variable: Code of Ethics
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Excluded Variables(b,c)

Model		Beta In	t	Sig.	Partial Correlation	CollinearityStatistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	-.076(a)	-.365	.725	-.128	.900	1.111	.900
	UAV	-.305(a)	-1.513	.169	-.472	.756	1.323	.756
	IND	.341(a)	2.011	.079	.579	.917	1.091	.917
	MASC	.343(a)	.868	.411	.293	.231	4.322	.231
	PDI_UAV	-.211(a)	-1.040	.329	-.345	.852	1.174	.852
	PDI_IND	.329(a)	2.029	.077	.583	.992	1.008	.992
	PDI_MAS	.635(a)	1.614	.145	.496	.193	5.173	.193
	UAV_IND	.291(a)	1.469	.180	.461	.794	1.259	.794
	IND_MAS	.280(a)	1.304	.228	.419	.709	1.410	.709

a Predictors in the Model: (Constant), UAV_MAS
b Dependent Variable: Code of Ethics
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Collinearity Diagnostics(a,b)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	UAV_MAS
1	1	1.818	1.000	.09	.09
	2	.182	3.157	.91	.91

a Dependent Variable: Code of Ethics
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Residuals Statistics(b,c)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	55.7160	97.6765	82.5060	12.21041	11
Residual	-14.7663	10.0250	-4.0423	8.99817	11
Std. Predicted Value(a)	.	.	.	.	0
Std. Residual(a)	.	.	.	.	0

a Not computed for Weighted Least Squares regression.
b Dependent Variable: Code of Ethics
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Appendix 23: The regression analysis models for the relationship between cultural values and ethics systems.

Regression

Notes

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	N of Rows in Working Data File	24
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x9 /METHOD=ENTER x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
Resources	Elapsed Time	0:00:00.59
	Memory Required	4508 bytes
	Additional Memory Required for Residual Plots	168 bytes

Descriptive Statistics

	Mean	Std. Deviation	N
Ethics Systems	57.9048	18.70099	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Ethics Systems	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Ethics Systems	1.000	-.505	.152	.651	-.077	-.054	.236	-.396	.360	.096	.269
	PDI	-.505	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	.152	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.651	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.077	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.054	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.236	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.396	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	.360	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	.096	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.269	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Ethics Systems	.	.007	.244	.000	.364	.404	.139	.031	.046	.332	.107
	PDI	.007	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.244	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.000	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.364	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.404	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.139	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.031	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.046	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.332	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.107	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Ethics Systems	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: Ethics Systems

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.900(a)	.811	.653	11.01809

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Ethics Systems

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6237.213	10	623.721	5.138	.005(a)
	Residual	1456.779	12	121.398		
	Total	7693.992	22			

a Predictors: (Constant), IND_MAS, PDI_UAV, IND, PDI, UAV_MAS, UAV_IND, PDI_MAS, PDI_IND, UAV, MASC
b Dependent Variable: Ethics Systems

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	24.399	102.563		.238	.816		
	PDI	-1.130	1.432	-1.059	-.789	.446	.009	114.269
	UAV	2.317	.925	3.386	2.504	.028	.009	115.896
	IND	-.082	1.279	-.086	-.064	.950	.009	114.588
	MASC	.091	1.167	.116	.078	.939	.007	139.921
	PDI_UAV	-.021	.010	-2.342	-2.187	.049	.014	72.649
	PDI_IND	.048	.018	2.700	2.637	.022	.015	66.399
	PDI_MAS	-.003	.014	-.175	-.179	.861	.017	60.331
	UAV_IND	-.029	.008	-2.585	-3.692	.003	.032	31.058
	UAV_MAS	.002	.009	.202	.213	.835	.018	56.805
	IND_MAS	-.004	.012	-.359	-.293	.775	.011	95.181

a Dependent Variable: Ethics Systems

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions										
				(Constant)	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
1	1	9.695	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.524	4.301	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	3	.376	5.081	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	4	.267	6.023	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	5	.097	9.990	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
	6	.025	19.762	.00	.00	.00	.00	.00	.03	.00	.01	.01	.05	.03
	7	.011	29.676	.00	.01	.00	.01	.01	.06	.00	.01	.18	.02	.00
	8	.003	59.920	.00	.03	.00	.01	.02	.01	.21	.48	.26	.21	.00
	9	.001	90.092	.01	.11	.20	.00	.41	.54	.02	.02	.14	.16	.29
	10	.001	111.261	.01	.21	.74	.00	.08	.33	.32	.31	.36	.55	.12
	11	.000	214.659	.98	.64	.05	.97	.48	.01	.45	.17	.03	.00	.55

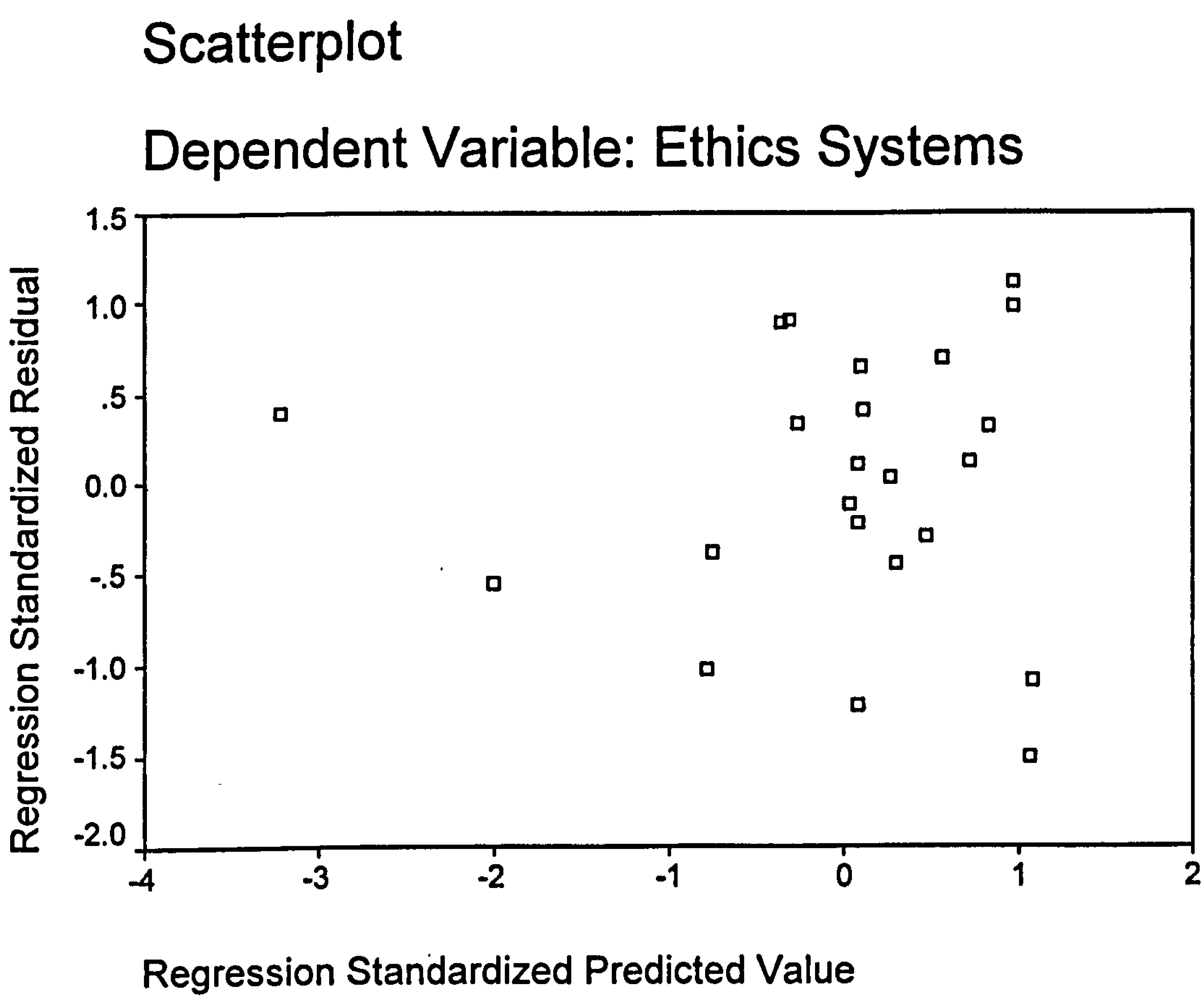
a Dependent Variable: Ethics Systems

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.6914	75.9807	57.9048	16.83775	23
Residual	-16.5716	12.1417	.0000	8.13740	23
Std. Predicted Value	-3.220	1.074	.000	1.000	23
Std. Residual	-1.504	1.102	.000	.739	23

a Dependent Variable: Ethics Systems

Charts



Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x9 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) .
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Descriptive Statistics

	Mean	Std. Deviation	N
Ethics Systems	57.9048	18.70099	23
PDI	43.0435	17.53044	23
UAV	59.0000	27.33629	23
IND	65.1739	19.66458	23
MASC	48.9130	23.80014	23
PDI_UAV	2699.3913	2064.93094	23
PDI_IND	2623.8696	1058.06523	23
PDI_MAS	2112.6957	1283.72251	23
UAV_IND	3799.4348	1664.82027	23
UAV_MAS	2970.0870	2045.86661	23
IND_MAS	3187.4783	1878.11431	23

Correlations

		Ethics Systems	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Ethics Systems	1.000	-.505	.152	.651	-.077	-.054	.236	-.396	.360	.096	.269
	PDI	-.505	1.000	.349	-.550	.018	.675	.461	.692	.131	.155	-.245
	UAV	.152	.349	1.000	-.089	.135	.901	.448	.253	.792	.681	.087
	IND	.651	-.550	-.089	1.000	-.001	-.225	.457	-.340	.450	-.032	.540
	MASC	-.077	.018	.135	-.001	1.000	.024	.048	.687	.171	.763	.822
	PDI_UAV	-.054	.675	.901	-.225	.024	1.000	.593	.434	.667	.524	-.066
	PDI_IND	.236	.461	.448	.457	.048	.593	1.000	.368	.753	.274	.314
	PDI_MAS	-.396	.692	.253	-.340	.687	.434	.368	1.000	.163	.624	.383
	UAV_IND	.360	.131	.792	.450	.171	.667	.753	.163	1.000	.593	.397
	UAV_MAS	.096	.155	.681	-.032	.763	.524	.274	.624	.593	1.000	.587
	IND_MAS	.269	-.245	.087	.540	.822	-.066	.314	.383	.397	.587	1.000
Sig. (1-tailed)	Ethics Systems	.	.007	.244	.000	.364	.404	.139	.031	.046	.332	.107
	PDI	.007	.	.051	.003	.467	.000	.013	.000	.276	.240	.130
	UAV	.244	.051	.	.343	.269	.000	.016	.122	.000	.000	.347
	IND	.000	.003	.343	.	.498	.151	.014	.056	.016	.442	.004
	MASC	.364	.467	.269	.498	.	.457	.415	.000	.217	.000	.000
	PDI_UAV	.404	.000	.000	.151	.457	.	.001	.019	.000	.005	.383
	PDI_IND	.139	.013	.016	.014	.415	.001	.	.042	.000	.103	.072
	PDI_MAS	.031	.000	.122	.056	.000	.019	.042	.	.228	.001	.036
	UAV_IND	.046	.276	.000	.016	.217	.000	.000	.228	.	.001	.030
	UAV_MAS	.332	.240	.000	.442	.000	.005	.103	.001	.001	.	.002
	IND_MAS	.107	.130	.347	.004	.000	.383	.072	.036	.030	.002	.
N	Ethics Systems	23	23	23	23	23	23	23	23	23	23	23
	PDI	23	23	23	23	23	23	23	23	23	23	23
	UAV	23	23	23	23	23	23	23	23	23	23	23
	IND	23	23	23	23	23	23	23	23	23	23	23
	MASC	23	23	23	23	23	23	23	23	23	23	23
	PDI_UAV	23	23	23	23	23	23	23	23	23	23	23
	PDI_IND	23	23	23	23	23	23	23	23	23	23	23
	PDI_MAS	23	23	23	23	23	23	23	23	23	23	23
	UAV_IND	23	23	23	23	23	23	23	23	23	23	23
	UAV_MAS	23	23	23	23	23	23	23	23	23	23	23
	IND_MAS	23	23	23	23	23	23	23	23	23	23	23

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	IND	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Ethics Systems

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.651(a)	.424	.397	14.52368

a Predictors: (Constant), IND
b Dependent Variable: Ethics Systems

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3264.311	1	3264.311	15.475	.001(a)
	Residual	4429.681	21	210.937		
	Total	7693.992	22			

a Predictors: (Constant), IND
b Dependent Variable: Ethics Systems

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	17.533	10.700		1.639	.116		
	IND	.619	.157	.651	3.934	.001	1.000	1.000

a Dependent Variable: Ethics Systems

Excluded Variables(b)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	-.211(a)	-1.066	.299	-.232	.697	1.434	.697
	UAV	.212(a)	1.295	.210	.278	.992	1.008	.992
	MASC	-.076(a)	-.450	.657	-.100	1.000	1.000	1.000
	PDI_UAV	.098(a)	.565	.578	.125	.949	1.053	.949
	PDI_IND	-.077(a)	-.407	.688	-.091	.791	1.264	.791
	PDI_MAS	-.197(a)	-1.126	.274	-.244	.884	1.131	.884
	UAV_IND	.084(a)	.446	.660	.099	.798	1.254	.798
	UAV_MAS	.117(a)	.698	.493	.154	.999	1.001	.999
	IND_MAS	-.117(a)	-.585	.565	-.130	.708	1.412	.708

a Predictors in the Model: (Constant), IND
b Dependent Variable: Ethics Systems

Collinearity Diagnostics(a)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	IND
1	1	1.959	1.000	.02	.02
	2	.041	6.922	.98	.98

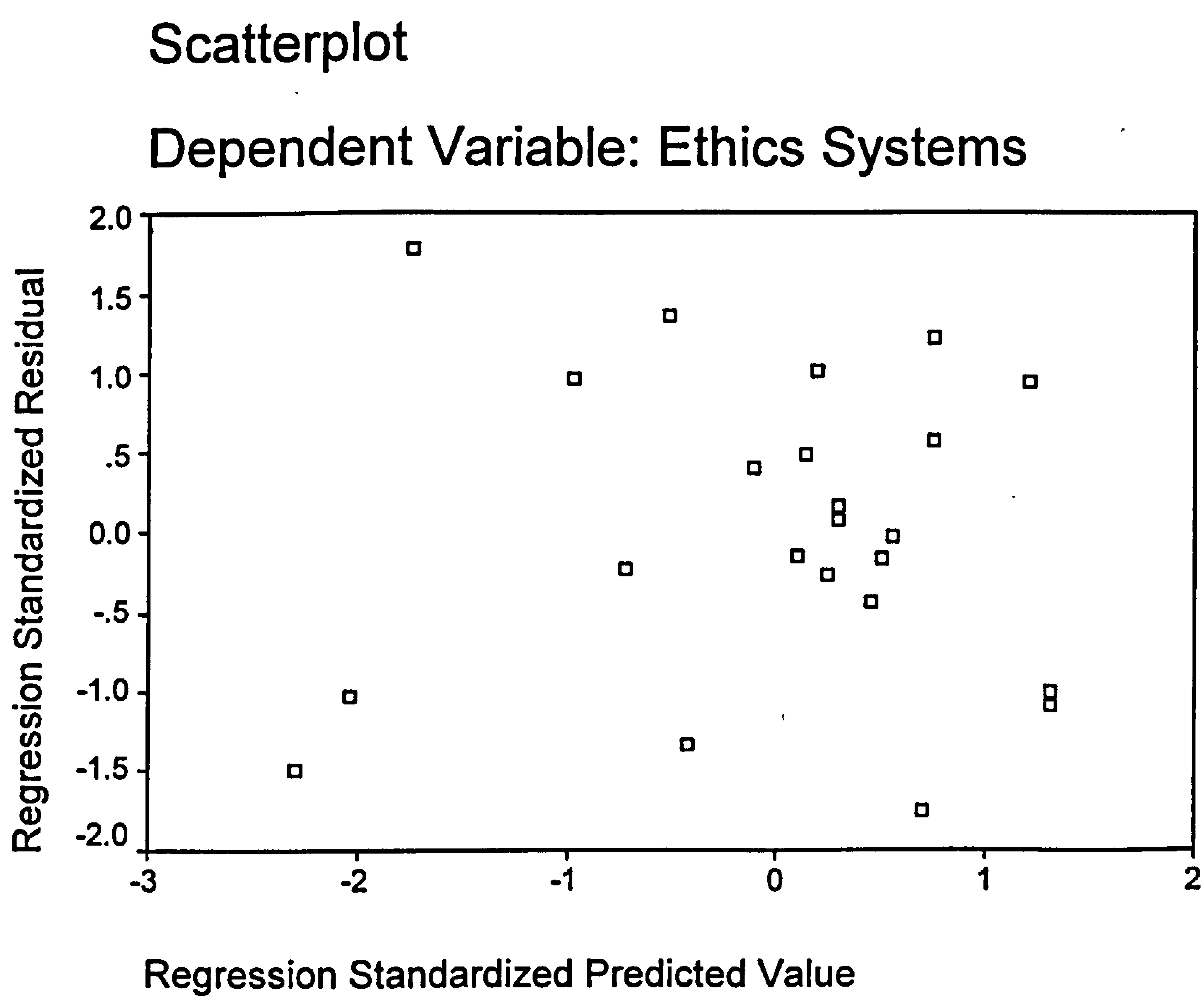
a Dependent Variable: Ethics Systems

Residuals Statistics(a)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	29.9222	73.9025	57.9048	12.18104	23
Residual	-25.5692	25.7639	.0000	14.18975	23
Std. Predicted Value	-2.297	1.313	.000	1.000	23
Std. Residual	-1.761	1.774	.000	.977	23

a Dependent Variable: Ethics Systems

Charts



Regression

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /REGWGT=res_9 /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT x9 /METHOD=STEPWISE x10 x11 x12 x13 x15 x16 x17 x18 x19 x20 /SCATTERPLOT=(*ZRESID ,*ZPRED) /CASEWISE PLOT(ZRESID) OUTLIERS(3) /SAVE RESID .
Resources	Elapsed Time	0:00:00.12
	Memory Required	5292 bytes
	Additional Memory Required for Residual Plots	168 bytes
Variables Created or Modified	RES_10	Residual

Warnings

No plots are produced for Weighted Least Squares regression. You can SAVE the appropriate variables and use other procedures (e.g., EXAMINE and PLOT) to produce the requested plots. To plot weighted versions of the residuals and predicted values, use COMPUTE before plotting: COMPUTE RESID = SQRT(REGWGTvar) * RESID COMPUTE PRED = SQRT(REGWGTvar) * PRED.

Descriptive Statistics(a)

	Mean	Std. Deviation	N
Ethics Systems	71.6529	33.74869	11
PDI	39.2256	60.22473	11
UAV	67.6525	86.05399	11
IND	60.9564	70.00221	11
MASC	45.9607	109.95924	11
PDI_UAV	2901.9158	7835.76095	11
PDI_IND	2227.7477	3042.62308	11
PDI_MAS	1687.6953	5070.06139	11
UAV_IND	3684.4244	1877.58047	11
UAV_MAS	3202.7795	9111.91155	11
IND_MAS	2752.1106	7080.48699	11

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Correlations(a)

		Ethics Systems	PDI	UAV	IND	MASC	PDI_UAV	PDI_IND	PDI_MAS	UAV_IND	UAV_MAS	IND_MAS
Pearson Correlation	Ethics Systems	1.000	-.445	-.785	.850	-.212	-.660	.396	-.427	.038	-.531	.164
	PDI	-.445	1.000	.628	-.508	-.228	.922	.449	.468	-.094	.032	-.370
	UAV	-.785	.628	1.000	-.956	.129	.876	-.350	.384	.062	.494	-.268
	IND	.850	-.508	-.956	1.000	-.084	-.793	.531	-.257	.143	-.442	.320
	MASC	-.212	-.228	.129	-.084	1.000	-.098	-.254	.695	.278	.889	.888
	PDI_UAV	-.660	.922	.876	-.793	-.098	1.000	.086	.449	-.081	.237	-.375
	PDI_IND	.396	.449	-.350	.531	-.254	.086	1.000	.252	.179	-.348	-.004
	PDI_MAS	-.427	.468	.384	-.257	.695	.449	.252	1.000	.250	.774	.525
	UAV_IND	.038	-.094	.062	.143	.278	-.081	.179	.250	1.000	.360	.175
	UAV_MAS	-.531	.032	.494	-.442	.889	.237	-.348	.774	.360	1.000	.585
	IND_MAS	.164	-.370	-.268	.320	.888	-.375	-.004	.525	.175	.585	1.000
Sig. (1-tailed)	Ethics Systems	.	.085	.002	.000	.266	.014	.114	.095	.456	.046	.315
	PDI	.085	.	.019	.055	.250	.000	.083	.073	.392	.463	.131
	UAV	.002	.019	.	.000	.352	.000	.146	.122	.428	.061	.213
	IND	.000	.055	.000	.	.403	.002	.046	.222	.337	.087	.169
	MASC	.266	.250	.352	.403	.	.388	.225	.009	.203	.000	.000
	PDI_UAV	.014	.000	.000	.002	.388	.	.401	.083	.406	.242	.128
	PDI_IND	.114	.083	.146	.046	.225	.401	.	.227	.299	.147	.495
	PDI_MAS	.095	.073	.122	.222	.009	.083	.227	.	.230	.003	.049
	UAV_IND	.456	.392	.428	.337	.203	.406	.299	.230	.	.139	.303
	UAV_MAS	.046	.463	.061	.087	.000	.242	.147	.003	.139	.	.029
	IND_MAS	.315	.131	.213	.169	.000	.128	.495	.049	.303	.029	.
N	Ethics Systems	11	11	11	11	11	11	11	11	11	11	11
	PDI	11	11	11	11	11	11	11	11	11	11	11
	UAV	11	11	11	11	11	11	11	11	11	11	11
	IND	11	11	11	11	11	11	11	11	11	11	11
	MASC	11	11	11	11	11	11	11	11	11	11	11
	PDI_UAV	11	11	11	11	11	11	11	11	11	11	11
	PDI_IND	11	11	11	11	11	11	11	11	11	11	11
	PDI_MAS	11	11	11	11	11	11	11	11	11	11	11
	UAV_IND	11	11	11	11	11	11	11	11	11	11	11
	UAV_MAS	11	11	11	11	11	11	11	11	11	11	11
	IND_MAS	11	11	11	11	11	11	11	11	11	11	11

a Weighted Least Squares Regression - Weighted by Unstandardized Residual

Variables Entered/Removed(a,b)

Model	Variables Entered	Variables Removed	Method
1	IND	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: Ethics Systems
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Model Summary(b,c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.850(a)	.723	.692	18.71839

a Predictors: (Constant), IND
b Dependent Variable: Ethics Systems
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

ANOVA(b,c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8236.338	1	8236.338	23.507	.001(a)
	Residual	3153.404	9	350.378		
	Total	11389.743	10			

a Predictors: (Constant), IND
b Dependent Variable: Ethics Systems
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Coefficients(a,b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	46.662	5.407		8.629	.000		
	IND	.410	.085	.850	4.848	.001	1.000	1.000

a Dependent Variable: Ethics Systems
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Excluded Variables(b,c)

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	PDI	-.018(a)	-.085	.934	-.030	.742	1.347	.742
	UAV	.332(a)	.532	.609	.185	.086	11.660	.086
	MASC	-.141(a)	-.785	.455	-.267	.993	1.007	.993
	PDI_UAV	.038(a)	.126	.903	.045	.372	2.691	.372
	PDI_IND	-.077(a)	-.356	.731	-.125	.718	1.393	.718
	PDI_MAS	-.223(a)	-1.272	.239	-.410	.934	1.071	.934
	UAV_IND	-.086(a)	-.462	.656	-.161	.979	1.021	.979
	UAV_MAS	-.193(a)	-.985	.354	-.329	.805	1.243	.805
	IND_MAS	-.120(a)	-.628	.547	-.217	.898	1.114	.898

a Predictors in the Model: (Constant), IND
b Dependent Variable: Ethics Systems
c Weighted Least Squares Regression - Weighted by Unstandardized Residual

Collinearity Diagnostics(a,b)

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	IND
1	1	1.953	1.000	.02	.02
	2	.047	6.460	.98	.98

a Dependent Variable: Ethics Systems
b Weighted Least Squares Regression - Weighted by Unstandardized Residual

Residuals Statistics(b,c)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	59.3716	83.1501	73.6089	6.78401	11
Residual	-13.0705	5.5397	-3.4452	6.63884	11
Std. Predicted Value(a)	.	.	.	.	0
Std. Residual(a)	.	.	.	.	0

a Not computed for Weighted Least Squares regression.
b Dependent Variable: Ethics Systems
c Weighted Least Squares Regression - Weighted by Unstandardized Residual