Multivariate analysis of attitudes on financial and other aspects of business ethics of future managers

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Abstract. Business ethics is a set of rules by which individuals and institutions behave and conduct business in a responsible manner. It involves appropriate constraints on the pursuit of self-interest and profits, particularly when actions affect other stakeholders. Research on financial and other aspects of business ethics includes an examination of personal attitudes which give insight into ways in which people tend to behave as employees, managers, taxpayers and consumers. In this research, the standard ATBEQ questionnaire was extended with five variables covering corporate social responsibility and applied to a sample of business administration students in Croatia. The aim of the research was to identify groups of future managers based on an evaluation of their attitudes on business ethics and corporate social responsibility. The analysis was divided into two parts. In the first part, factor analysis was performed on 35 variables (attitudes) relating to business ethics and corporate social responsibility. Six factors were extracted and factor scores were calculated. In the second part, hierarchical and non-hierarchical cluster analyses were conducted. Factor scores were used as input data for the cluster analysis. Firstly, the hierarchical cluster analysis was run on the calculated factor scores. According to the dendrogram, a three-cluster solution was chosen. The non-hierarchical cluster analysis was then used to improve the results of the hierarchical cluster solution. Finally, these clusters (groups) of future managers were characterised according to their attitudes on financial and other aspects of business ethics and corporate social responsibility.

1. Introduction

The main objective of this paper is to explore the attitudes of future mangers' towards financial and others aspects of business ethics. To that end, a broad opinion survey was conducted among university students enrolled in business

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administration programmes. This approach was used by Kirchler (1999) and general ethical behaviour approach of various actors in the market starting from business people, customers towards future managers, was done by Preble and Reichel (1988), Small (1992), Sims and Gegez (2004). Current Croatian literature offers analysis of the attitudes of tax experts regarding the social aspects of tax policies, primarily the vertical equity of taxation [2] or general corporate social responsibility [22, 29]. However, there is a scarcity of studies that apply widely accepted metrics to measure business ethics attitudes of future managers. For this research, secondary resources were scrutinized to assess which metrics and scales are used in the field of business ethics and corporate social responsibility. Based on the findings, a survey methodology was adapted and applied to a sample of future managers i.e. students at Faculty of Economics and Business Zagreb, Croatia. Then, multivariate analysis methods were used. Factor analysis was conducted to achieve data summarization and data reduction of the initial set of items. Extracted factors were used in cluster analysis aimed at identifying homogeneous groups of prospective managers.

2. Business ethics and corporate social responsibility − overview of the literature

2.1. Definitions and position of business ethics and corporate social responsibility in business economy literature

According to Raiborn and Payne (1990), ethics can be defined as a system of value principles or practices by which an individual or organization determines what is right or wrong. Velasquez (1999) emphasizes that ethics is concerned with normative judgements involved in moral decisions as to what is good or bad. In addition, Freeman and Gilbert (1988) and Carroll (1991) add that ethics determines whether a person will act or behaviour in a fair manner.

Business ethics refers to ethical business principles, morally right decisions and actions while taking into consideration their effect on others.

Topics, such as ethics, eradicating poverty and responsibility of the business community towards different stakeholders were addressed by Benedikt Kotruljevic (or Benedetto Cotrugly) in ancient Dubrovnik in 15th century [14]. In recent times (beginning in the 20th century) business ethics has become a popular research topic in business and management literature. Preble and Reichel (1988) explain that there are two directions in researching business ethics, conceptual and empirical. Conceptual research aims to explain theoretically and clarify terminology, observe relationships and introduce guidelines for decision-making processes. On the other hand, empirical studies aim to test ethical behaviour of various actors in the market starting from business people, customers

and future managers (i.e. university students enrolled in business administration programmes).

Joyner and Payne (2002) claim that the term corporate social responsibility (CSR) in management literature more often emphasizes how a business entity (i.e. company, firm, corporation or private craftsman) undertakes economic, legal, ethical and discretionary activities that are adapted to a society's values and expectations. They [12] also state that CSR and ethics are interrelated and interdependent concepts.

One of the most cited approaches in business ethics and CSR is Carroll's model of a company's social performance. Carroll (1979) claims that there are four dimensions of social performance: (1) the economic dimension – producing goods and services to sell and achieve profit; (2) the legal dimension – adhering to laws and regulations; (3) the ethical dimension –meeting society's expectations in terms of proper and righteous behaviour; and (4) the discretionary dimension – undertaking activities on a voluntary and philanthropic basis in order to improvement society.

The CSR approach includes getting a company to focus on its stakeholders and society. There are numerous approaches in define a company's stakeholders. For instance, Freeman (1984) defines them as any group or individual who can influence or who is influenced by a company achieving its goals. Moir (2001) distinguish two groups of stakeholders: (1) primary stakeholders and (2) secondary stakeholders. Primary stakeholders are those who have a direct interest in a company's performance and business actions. Examples of primary stakeholders are owners, and shareholders, managers, employees, customers, and suppliers. Secondary stakeholders can influence, both positively and negatively, actions of an organization. They support a company's activities in order to achieve positive effects of business actions or hinder such actions so as to prevent negative consequences. Examples of secondary stakeholders are government agencies, regulation agencies, trade unions, labour unions, political groups, social groups, and the media.

In Croatia, some studies on business ethics and CSR [22, 26, 29] do exist. Nevertheless, this broad research area requires further efforts.

2.2. Methodologies in researching business ethics and corporate social responsibility

A widely-used methodology is opinion surveys on various aspects of business ethics. There are numerous studies worldwide on business ethics and established methodologies used to measure individual's attitudes towards business ethics and corporate social responsibility. PRESOR (The Perceived Role of Ethics and Social Responsibility), EPQ (The Ethics Position Questionnaire) and ATBEQ (The

Attitudes towards Business Ethics Questionnaire) are just some of these methods. The characteristics of the mentioned methodologies are given in Table 1.

Characteristics	PRESOR	EPQ	ATBEQ
Full Name of Methodology	The Perceived Role of Ethics and Social Responsibility	The Ethics Position Questionnaire	The Attitudes Towards Business Ethics Questionnaire
Definition/Scope	Measures how an individual perceives the role of ethics and social responsibility in achieving organizational effectiveness	An instrument designed to assess individual differences in relativism and idealism	An instrument oriented towards attitudes on selection of business ethics situations
Structure of the Questionnaire	13 items, three dimensions: (1) social responsibility and profitability; (2) long-term gains; and (3) short-term gains	20 items, two scales: (1) idealism, (2) relativism	30 statements on business ethics, 5 point Likert scale
Oldest/Original Paper	Singhapakdi et al. (1996)	Forsyth (1980)	Preble and Reichel (1988)

Source: own presentation according to [5, 6, 18, 20]

Table 1: *Characteristics of the methodologies applied in business ethics research studies*

All these mentioned methodologies are applied to various groups of examinees and critically discussed in various studies as well as improved over time. However, in comparison to the other two methodologies, as a research instrument ATBEQ is applied on samples of business administration students as future managers in a relatively large number of countries, on various continents. We will outline only a couple of these.

For instance, Preble and Reichel (1988) developed ATBEQ and applied it to a sample of a group of management students from the USA and Israel. They performed a comparative analysis between those two groups of students and concluded that there are only a few statistically significant differences. Small (1992) applied ATBEQ on 4 student groups from 3 Western Australian

educational institutions and a group of managers from the Australian Institute of Management (AIM), many of whom would not have been university graduates.

Kum-Lung, C. and Teck-Chai, L. (2010) applied ATBEQ on a sample of students and working adults in Malaysia and concluded that intrapersonal religiosity was a significant determinant in business ethics attitudes. They also concluded that there was no significant difference between genders, but a difference did exist for different educational levels.

Lau (2010) used ATBEQ and a set of ethical vignettes to compare students that underwent ethical training with other students. Examinees that had undergone training stated that a business ethics course should be part of the business studies curriculum.

Bageac et al. (2011) used ATBEQ on a sample of management students in France and Romania, and using depth analysis isolated five philosophical categories of future managers classified by attitudes towards ethical behaviour, specifically (1) Machiavellianism, (2) social Darwinism, (3) ethical relativism, (4) legalism and (5) moral objectivism.

A similar approach, based on ATBEQ, was applied on a sample of undergraduate students in the USA and Japan by Shields et al. (2013) who grouped Japanese and American students into five categories as suggested by Bageac et al. (2011) and drew conclusions on differences amongst them.

Price and van der Walt (2013) applied ATBEQ to South African students and made a longitudinal comparison of change over 16 years. They found out that contemporary students express stronger opinions than students in their past research. In newer research, "result based philosophies" dominate simple "ego based philosophies".

Moreover, Fatoki and Chillya (2012) applied ATBEQ to examine the attitudes of managers in SMEs in South Africa and found that a hypothesis depicting a difference between local and immigrant owners could not be proven statistically. They also observed that SME owners have strong positive attitudes towards the importance of CSR, both in improving local communities and the long-term performance of companies.

Gulova et al. (2013) conducted research on senior students in Turkey. They tested the gender perspective of business ethics and concluded that there is no significant difference between male and female students. They also performed a comparison of previous data presented in Sims and Gegez (2004). The analysis showed that business ethics preferences changed in positive direction for Machiavellianism questions and negatively for questions related to moral objectivism or Social Darwinism.

As is evident, ATBEQ is a commonly accepted research instrument in social and management science. In literature, it is mainly applied to samples of future managers i.e. management or business administration students. When applied,

data analysis can be performed in different directions from testing national, cultural or gender differences, to longitudinal comparisons within a certain population. Therefore, we have found ATBEQ a suitable instrument for achieve the goals in our primary research and decided to apply it to students at the Faculty of Economics and Business Zagreb, Croatia. To the best of our knowledge, this methodology has not been sufficiently applied in Croatia or the Western Balkans countries.

3. Dataset and methodology

3.1. Sample and questionnaire description

Based on what has been said, ATBEQ is justifiably a benchmark methodology for research. Therefore, we will adhere to the ATBEQ methodology which has a long history with opinion surveys in the noted fields. Given that ATBEQ was developed in 1980s, we further innovated the questionnaire by adding five additional questions (variables) on corporate social responsibility attitudes, given that in Croatia this aspect has not been sufficiently researched and explained in previous research. According to previously ATBEQ-based studies, we used a multivariate analysis to explore personal values regarding business ethics and corporate social responsibility issues and views, as well as and beliefs on ones behaviour influences choices in various business situations.

The online questionnaire contained different types of questions: one choice question, multiple choice questions and Likert scale ranking questions. The online questionnaire was distributed through a social networking platform – official Facebook groups relating to courses and Google Classroom to students from various years and programmes at the Faculty of Economics and Business Zagreb, Croatia. Those students were selected as prospective future managers based on findings from previous studies [such as 1, 11, 18, 23].

The sample consisted of 224 respondents. In all, 77.7% were female and 22.3% were male students. The gender structure of the sample conformed to the student population at the various faculties of business administration and economics in Croatia. All respondents were students enrolled in various programmes covering the mentioned fields, with 38.8% in bachelor programmes, 22.8% enrolled into master's programmes, 37.9% enrolled into associate degree programmes, and only a couple from postgraduate studies. Almost 69.6% of the students work full-time or part-time, whereas 30.4% studied full-time and were not employed.

3.2. The dataset and research methodology

The initial dataset consists of 35 items: 30 items from the ATBEQ questionnaire and 5 items on corporate social responsibility. All the items were measured on a

five-point Likert-type scale, anchored at 1 (strongly disagree) and 5 (strongly agree). The adequacy of multi-item scales was assessed by evaluating their reliability. Scale reliabilities were assessed by means of Cronbach's alpha coefficients. All values of Cronbach's alpha coefficients were higher than 0.7, indicating an acceptable level of reliability.

The data on 35 items (variables) were analysed using multivariate analysis methods. First, factor analysis was performed. Initial factor analysis was conducted on 35 variables relating to business ethics and corporate social responsibility. Ultimately, 16 variables with loadings less than 0.5 on all factors were excluded from further analysis. The final factor analysis was performed on 19 variables and six factors were extracted. Factor scores were calculated for these six factors and used further in the cluster analysis. Hierarchical and non-hierarchical cluster analyses were conducted. The hierarchical cluster analysis was used to choose a cluster solution and subsequently the non-hierarchical cluster analysis was used to improve the results of the chosen cluster solution. Finally, these clusters were described in line with attitudes on business ethics and corporate social responsibility.

4. Discussion on results

The first step in our analysis was to determine factors concerning business ethics and corporate social responsibility. For this purpose, the factor analysis of 19 variables was used. Firstly, the appropriateness of factor analysis had to be evaluated by examining the correlations and measures of sampling adequacy (MSA values). A review of the correlation matrix provided the appropriateness of the factor analysis. Furthermore, all MSA values, overall (0.75) and individually point to the appropriateness of the factor analysis. All of this leads to the conclusion that the data are appropriate for applying factor analysis and the next phase is possible, i.e. to the extraction of the factors.

The Kaiser criterion was used for factor extraction. Based on this criterion, all factors with eigenvalues are greater than one are extracted. Accordingly, six factors were extracted. However, the initial factor matrix was difficult to interpret and the factors were rotated. Varimax rotation was used and resulted in a matrix easier to interpret. These factors explain 60.03% of the total variance. Appointed factors as well as the associated variables and factor loadings are given in Table 2. As can be seen, all factor loadings are greater than 0.5.

Factors and variables (items)	Factor loadings
Corporate Social Responsibility	
You should not consume more than you produce.	0.54
I fully understand the concepts of "social responsibility" and "sustainability".	0.75
Companies have an ethical responsibility to all stakeholders.	0.67
In the long run companies that are committed to sustainability and corporate social responsibility will be more profitable than others.	0.77
Contemporary society requires that companies promote better social conditions and solve social problems such as hunger, disease and environmental pollution.	0.69
I would like to work for a company that has adopted sustainability and corporate social responsibility as a business concept.	0.78
Non-financial benefits	
While shopping at the supermarket, it is appropriate to switch price tags or packages.	0.64
As an employee, I take office supplies home; it doesn't hurt anyone.	0.82
I view sick days as vacation days that I deserve.	0.77
Source of Morality	
A person who is doing well in business does not have to worry about moral problems.	0.61
Every business person acts according to moral principles, whether he/she is aware of it or not.	0.68
Act according to the law, and you can't go wrong morally.	0.83
Self-interest	
True morality is first and foremost self-interest.	0.79
Self-sacrifice is immoral.	0.70
Financial Benefits	
As a consumer, when making a car insurance claim, I try to get as much as possible regardless of the extent of the damage.	0.70
The main interest of shareholders is maximum return on their investment.	0.67
For every decision in business, the only question I ask is, "Will it be profitable?"	0.62
Free Market Economy	
Conditions of a free economy will serve best the needs of society. Limiting competition can only hurt society and actually violates basic natural laws.	0.78
Employee wages should be determined according to the laws of supply and demand.	0.78

Table 2: *Factors, variables (items) and factor loadings*

Factor scores were calculated for these six factors. These extracted factors and associated factor scores were used as input variables in cluster analysis in order to identify homogeneous groups of future managers. Figure 1 gives the hierarchical and non-hierarchical cluster analysis results, respectively the dendrogram and plot of means for each cluster.
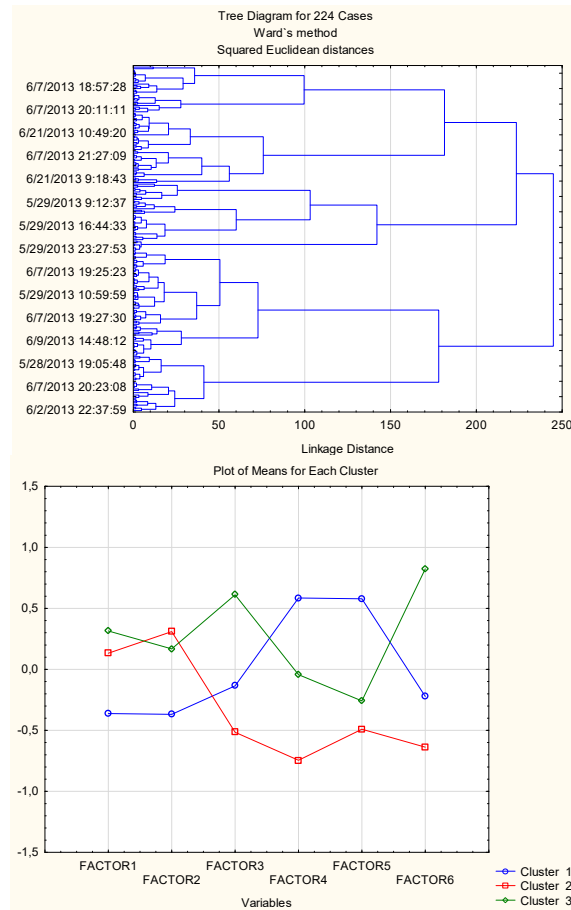

Figure 1: *Dendrogram and plot of means for each cluster*

First, a hierarchical cluster analysis was performed. Ward's method with squared Euclidean distances was used. According to the dendrogram given in Figure 1, it was possible to choose different solutions. Due to its best interpretative characteristics, the three-cluster solution was chosen. Finally, the non-hierarchical cluster analysis was used. The K-means method was carried out for the three-cluster solution. Based on the plot of means shown in Figure 1, clusters of

prospective managers were described according to the structure of factors related to business ethics and corporate social responsibility. Table 3 shows the characteristics of each cluster considering the structure of factors.

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
	CSR	Non-Financial Benefits	Morality Source	Self-Interest	Financial Benefits	Free Market
What is more ethical?	*It is better to have it above the average.*	*It is better to have it below the average.*	*It is better to have it below the average. (In that case they think that it is necessary to put more efforts/ resources into morality).*	*It is better to have it below the average. (In that case the motive for moral behaviour is not selfish-ness).*	*It is better to have it below the average.*	*It is better to have it below the average. (In that case they agree that regulation is necessary, i.e. that free market cannot solve problems in society).*
Cluster 1 Driven by financial self-Interest	Below the average	Below the average	A little bit below the average	Above the average (Highest)	Above the average (Highest)	A little bit below the average
Cluster 2 Mainly ethical	A little bit above the average	A little bit above the average (Highest)	Below the average (lowest)	Below the average (lowest)	Below the average (lowest)	Below the average (lowest)
Cluster 3 Free market suppo-rters	Above the average (Highest)	A little bit above the average	Above the average (Highest)	Around average	A little bit below the average	Above the average (Highest)

Table 3. *Characteristics of each cluster*

Future managers from Cluster 1 (*driven by financial self-interest*) are oriented towards financial gain and self-interest. They do not understand and do not believe in CSR, and they also do not have confidence in the free market as does Cluster 3. Cluster 2 (*mainly ethical*) consists of prospective managers who understand CSR, do not believe in the power of the free market, selfishness is not a motive to act ethically, are not tolerant towards the financial benefits, but are somewhat tolerant towards non-financial benefits. In Cluster 3 (*free market supporters*) prospective managers understand CSR, but they are confident in the free market and are convinced that business ethics have to be supported in resources (investments). They are indifferent to personal financial and non-financial benefits.

5. Conclusion

In this research, we used factor analysis to achieve data summarization and data reduction of the initial set of items in order to use them in further analysis, i.e. cluster analysis. Factor analysis was performed and six factors were extracted: *corporate social responsibility, non-financial benefits, source of morality, self-interest, financial benefits* and *free market economy*. The extracted factors and associated factor loadings were used as input variables in further cluster analysis in order to identify homogeneous groups of prospective managers that have similar structures of factors related to business ethics and corporate social responsibility. Hierarchical and non-hierarchical cluster analyses were conducted and a three-cluster solution was chosen: the first cluster consists of respondents "*driven by financial self-interest*", respondents of the second cluster are "*mainly ethical*" and respondents from the third cluster are "*free market supporters*". Future research should cover both corporate social responsibility and consumer ethics. This would include the behavioral differences of individuals in respective clusters. The research was limited to university students at one institution only, and the research should be extended to other schools and other countries. In this way, the future managers would be included in a better way and the results would be more robust.

Acknowledgement

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