A cross-cultural comparison of attitudes towards business ethics

Jakub Procházka, Michal Jirásek

A cross-cultural comparison of attitudes towards business ethics

Jakub Procházka* and Michal Jirásek

Department of Corporate Economy,
Faculty of Economics and Administration,
Masaryk University,
Lipová 41a, Brno 602 00, Czech Republic
Email: jak.prochazka@mail.muni.cz
Email: mijirasek@mail.muni.cz
*Corresponding author

Abstract: This study focuses on the cross-cultural differences in attitudes towards business ethics. It contains a systematic review of published studies that have used the attitudes towards business ethics questionnaire (ATBEQ) for measuring students' attitudes. Since business students represent future business leaders, they are an important focus of study in terms of ethical attitudes. Moreover, this subject is worth exploring cross-culturally, because of the growing interconnectedness of the business world. The study compares attitudes across ten samples from different countries and highlights the similarities and major differences. The study also draws attention to the recurring shortcomings of past research into ethical attitudes.

Biographical notes: Jakub Procházka is the Head of Department of Corporate Economy at Faculty of Economics and Administration, Masaryk University, Czech Republic. He received his Master's in Psychology and Finance and PhD in Social Psychology. His teaching and research focus on human resource management and organisational psychology, especially on leadership, motivation and attitudinal change. His list of publications includes papers in journals such as *Judgment and Decision Making*, *Journal of Behavioral and Experimental Economics*, *Acta Psychologica*, *Learning and Motivation* or *Plos One*. He has also more than ten years long experience as an independent HR consultant.

Michal Jirásek is an Assistant Professor at Department of Corporate Economy at Faculty of Economics and Administration, Masaryk University, Czech Republic. His teaching and research focus on behavioural strategy, especially on performance feedback and decision-making, innovation management and ethical issues in business decision-making. He published, for example, in *Journal of Strategy and Management*, *International Journal of Innovation Science*, *Quality Innovation Prosperity* or *Prague Economic Papers*. He also works as a consultant focused on applying behavioural sciences in organisations.

1   Introduction

Ethical dilemmas are unavoidable components of operational and strategic decision-making in modern organisations and ethical behaviour is a subject of interest for both business practice and academia (Treviño et al., 2006). Making decisions that benefit society, organisations or the individual decision maker is just one of the many facets of the ethical dilemmas faced by members of organisations, from the owners and managers to employees at the lowest level. The attitudes of these decision makers towards business ethics are crucial not just for themselves, their colleagues, and the organisation as a whole, but also for society, as they influence many important issues, such as employee well-being, the competitive environment, and government tax revenues.

For these and many other reasons, attitudes towards business ethics are a particular subject of interest for many researchers. University students are a particular target group of their research (see, e.g., Kara et al., 2016). Students are on the threshold of their careers. They will take their ethical attitudes into their first jobs and may retain some of them throughout their professional lives. Good knowledge of students' attitudes towards business ethics is an important prerequisite for the further development of these attitudes (Lowry, 2003). Knowledge of attitudes, their antecedents, and differences for specific subgroups may facilitate the formulation of successful business ethics courses at universities or efficient onboarding programs in organisations. For example, Sims (2002) and Lowry (2003) outline the nature and context of such business ethics courses. Indeed, follow up research shows that ethical exercises and training can influence students' ethical awareness and reasoning (Loe and Weeks, 2000; Medeiros et al., 2017; Ritter, 2006; Comegys et al., 2013).

Since the 1980s, there has been increasing interest in research into students' ethical attitudes. Although students' attitudes generally correspond to those held by the working population, certain differences do exist (e.g., Cohen et al., 2001; Sparks and Hunt, 1998; Wimalasiri et al., 1996). Moreover, students do not have homogeneous attitudes. For example, the meta-analysis of Borkowski and Urgas (1998) indicates the effects of gender and age. A major predictor of attitudes towards business ethics is the environment (e.g., cultural) in which students live and grow up. Studies generally confirm the existence of differences in attitudes towards business ethics across countries (e.g., Sims and Gegez, 2004; Phau and Kea, 2007), although it seems that the differences may be smaller between countries with related cultures (e.g., Lysonski and Gaidis, 1991). Unfortunately, previous empirical research has usually compared samples from only two or three cultures, which limits the ability to generalise such findings (Franke and Richey, 2010). Moreover, the research to date does not reflect the possible response bias that may influence the intercultural comparison of ethical attitudes. As Harzing (2006) points out, the answers to attitudinal items can be influenced by acquiescence bias and the tendency to provide extremely positive answers, and the presence of these biases is culturally determined. The respondents from more collectivistic and less power-distant countries tend to agree more strongly with various items, which may influence the differences observed in cross-cultural samples. This problem might also occur in research into attitudes towards business ethics. This study attempts to address the gap by comparing students across a larger number of countries and evaluating whether the response bias is relevant for research into attitudes towards business ethics. In this way, the research contributes to areas that are potentially affected by differences across cultures, for

example, the transferability of business ethics courses, such as those outlined by Sims (2002) and Lowry (2003).

Generally, there is no single accepted methodology for measuring attitudes towards business ethics. According to Lock and Seele (2015), questionnaires and case studies prevail. Questionnaires are the standardised way of obtaining data on ethical attitudes and some have been used repeatedly. Based on a review of the previous research, the most frequently used questionnaires are Forsyth's (1980) 20 item ethics position questionnaire (EPQ) (see, e.g., Bhattacharya et al., 2018), Reidenbach and Robin's (1990) multidimensional ethics scale (see, e.g., Leonard et al., 2017) and Singhapakdi et al.'s (1996) set of four model situations called the perceived role of ethics and social responsibility (PRESOR) (see, e.g., Simmons et al., 2013). However, it appears that Neumann and Reichel's (1987, in Preble and Reichel, 1988) attitudes towards business ethics questionnaire (ATBEQ) dominates the literature. For this reason, this study focuses on ATBEQ. The study contributes to the literature by discussing its reliability and validity and empirically classifies 55 studies that used ATBEQ or part of it in the period up to August 2017. Most of these studies were published in the last decade and usually worked with a student sample (see Table 2). Respondents from at least 31 countries have been given the questionnaire, with the USA, Turkey, and South Africa being the most frequently targeted countries. This review of the literature represents a valuable contribution to the considerably fragmented literature on attitudes towards business ethics.

The dozens of studies that have used ATBEQ for measuring students' attitudes towards business ethics offer a unique opportunity to compare students across countries and cultures. The goal of this paper is to carry out a multicultural comparison of students' attitudes through a secondary analysis of data gathered through ATBEQ and published in recent years. This paper contains a systematic review of past research and an analysis of ten samples from ten countries described in eight studies with available information on means and standard deviations of individual ATBEQ items (see Table 3), which were published between 2010–2015.

1.1 ATBEQ

The ATBEQ was introduced by Neumann and Reichel (1987, in Preble and Reichel, 1988) and first published by Preble and Reichel (1988) in a study examining the differences in attitudes towards business ethics between Israeli and US students. ATBEQ is derived from values clarification exercises (Stevens, 1979) that are based on attitudes towards the business philosophies of Social Darwinism, Machiavellianism, Objectivism, and Ethical Relativism (Preble and Reichel, 1988). Social Darwinism emphasises Adam Smith's invisible hand of the market, meaning that the strongest prevails and that economic subjects are self-interested and profit-maximising. Machiavellianism also promotes expediency over virtue, with any moral actions being those that are effective in helping accomplish a purpose. Objectivism emphasises rationality over emotions and avoids ethical judgments based on feelings. Ethical Relativism moves from previous individualistic philosophies to more group-conforming behaviour that values commonly accepted practice. Miesing and Preble (1985) provide more detail on these business philosophies.

Table 1   ATBEQ items, corresponding business philosophies, and identified factors

	ATBEQ items	Business philosophy§	(a)	(b)	(c)	(d)	(e)
							Factors
1	The only moral of business is making money.	Machiavellianism*	1	1		11	2
2	A person who is doing well in business does not have to worry about moral problem.	Machiavellianism*	1	1	2	11	
3	Every business person acts according to moral principles, whether he/she is aware of it or not.	Moral Objectivism*	7				7
4	Act according to the law, and you cannot go wrong morally.	Ethical Relativism**	1			3	1
5	Ethics in businesses basically an adjustment between expectations and the way people behave.	Ethical Relativism*	7				6
6	Business decisions involve a realistic economic attitude and not a moral philosophy.	Machiavellianism*	11		2	1	2
7	Moral values are irrelevant to the business world.	Machiavellianism*	1	1	2	1	2
8	The lack of public confidence in the ethics of business people is not justified.	Ethical Relativism*				5	8
9	'Business ethics' is a concept for public relations only.	Machiavellianism*	1			1	10
10	The business world today is not different from what it used to be in the past. There is nothing new under the sun.	Ethical Relativism*					9
11	Competitiveness and profitability are independent values (exist on their own).	Social Darwinism	9			9	10
12	Conditions of a free economy will serve best the needs of society. Limiting competition can only hurt society and actually violates basic natural laws.	Social Darwinism	5				3
13	As a consumer when making an auto insurance claim, I try to get as much as possible regardless of the extent of the damage.	Social Darwinism	2		1	2	3
14	While shopping at the supermarket, it is appropriate to switch price tags or packages.	Social Darwinism	2			2	1
15	As an employee, I take office supplies home; it doesn't hurt anyone.	Social Darwinism	2	1		2	5
16	I view sick days as vacation days that I deserve.	Social Darwinism	2		1	2	5
17	Employee wages should be determined according to the laws of supply and demand.	Social Darwinism	5	2		8	3
18	The main interest of shareholders is maximum return on their investment.	Social Darwinism	10	2	1	6	3
19	George X says of himself, "I work long, hard hours and do a good job, but it seems to me that other people are progressing faster. But I know my efforts will pay off in the end." Yes, George works hard, but he's not realistic.	Machiavellianism	8			7	4
20	For every decision in business the only question I ask is, 'Will it be profitable?' If yes – I will act accordingly; if not, it is irrelevant and a waste of time.	Machiavellianism		1		3	4
21	In my grocery store every week I raise the price of a certain product and mark it 'on sale'. There is nothing wrong with doing this.	Machiavellianism	5				
22	A business person can't afford to get hung up on ideals.	Machiavellianism					4
23	If you want a specific goal, you have got to take the necessary means to achieve it.	Machiavellianism	3	2		4	
24	The business world has its own rules.	Machiavellianism	3	2		4	4
25	A good business person is a successful business person.	Machiavellianism	4				8
26	I would rather have truth and personal responsibility than unconditional love and belongingness.	Moral Objectivism	6		3	6	1
27	True morality is first and foremost self-interested.	Moral Objectivism	6		3	3	1
28	Self-sacrifice is immoral.	Moral Objectivism	4			6	9
29	You can judge a person according to his/her work and his/her dedication.	Moral Objectivism	4			10	6
30	You should not consume more than you produce.	Moral Objectivism	10				7

Notes: §Based on Stevens (1979) in Bageac et al. (2011); *classification based on Bageac et al. (2011), here our own classification is used; **classified as 'legalism' in Bageac et al. (2011); (a)–(e) factors as presented in specific studies: (a) Bageac et al. (2011), (b) Etheredge (1999), (c) Bageac et al. (2011), (d) Price and van der Walt (2013), (e) Procházka et al. (2015).

Source: Preble and Reichel (1988), Bageac et al. (2011), own review

The questionnaire itself (Preble and Reichel, 1988) is composed of 30 items, which are listed in Table 1. Each item contains a statement and respondents are asked to indicate the extent of their agreement with the statement on a scale from 1 (strongly disagree) to 5 (strongly agree). Each statement is intended to relate to one of the above-mentioned business philosophies, although some have questioned whether ATBEQ achieves this aim (see Table 1).

1.2 The reliability and validity of ATBEQ

Although ATBEQ is widely used, there are certain reservations and unanswered questions with regard to its validity. The form of the questionnaire is only partly described in the secondary source of Preble and Reichel (1988). There is no analysis of whether the ATBEQ items cover all important aspects of the business philosophies as Neumann and Reichel (1987, in Preble and Reichel 1988) intended, or the subject of business ethics as a whole. Moreover, how the particular items were formulated and how they were originally pretested to be sufficiently clear and understandable to respondents is not known. Therefore, there is only limited information concerning the validity of the content of ATBEQ.

There is also only limited statistical data on ATBEQ's reliability and validity. The lack of information on the questionnaire's reliability is connected to the absence of accepted subscales connected to various dimensions of attitudes towards business ethics. Therefore, it is possible neither to assess the internal consistency of the non-existing subscales, nor the internal consistency of the whole multi-dimensional questionnaire. Moreover, it is not known whether any of the authors administered ATBEQ repeatedly in order to assess the test-retest reliability.

Comegys et al. (2013) assessed ATBEQ's construct validity in a study on Finnish, Chinese, and US student samples. The study showed that the mean scores of several individual items varied across various strata of students (according to e.g., age, year of study, or major). Therefore, it seems that the questionnaire can capture inter-individual differences in attitudes towards business ethics caused by factors that are antecedents of ethical attitudes according to the theory. However, as Procházka et al. (2015) stated, Comegys et al. (2013) carried out 240 partial analyses with no correction of significance level, so some significant difference may be false positives.

Regarding factor validity, Moore and Radloff (1996) and later Price and van der Walt (2013) conducted a principal component analysis on ATBEQ data from South African students. Both studies found 11 factors (based on eigenvalues > 1), but the factors contained mostly different sets of items. Both studies found only one common factor labeled 'self-serving interests'. Additionally, Procházka et al. (2015) used a principal component analysis and a confirmatory factor analysis on a sample of Czech business students. They found ten factors based on Eigenvalues (i.e., eigenvalues > 1) and five factors based on scree plot analysis (Cattell, 1966). Bageac et al. (2011) obtained somewhat similar results from samples of French and Romanian business students. Based on a combination of exploratory and confirmatory analysis, they found fewer factors than Procházka et al. (2015) and labelled them differently. However, three of their factors are similar to those described by Procházka et al. (2015). Etheredge (1999) used a principal component analysis and a confirmatory factor analysis on a Hong Kong sample and found that a two-factor model with only 9 out of 30 items fitted his data best. The first factor, labelled 'irrelevance of morality and ethics in business', contained five items and

reflected the business philosophy of Machiavellianism. The second factor, labelled 'objectivism', contained four items and reflected the business philosophy of Objectivism. However, the overlap of the factors that Etheredge (1999) found with the factors in the other above-mentioned studies was only marginal.

To conclude, most of the studies that have used ATBEQ did not contain a factor analysis, and those that did fail to agree either on the number of factors or on their content. These differences in the factor structure between various studies may be attributed to the various methodologies of the principal component analyses and/or factor analyses and the differences in the samples. Another possible explanation is that the questionnaire does not have a clear factor structure, as there is a large conceptual overlap between the philosophies. That is why the results obtained from ATBEQ are analysed on an item level and most researchers do not combine the items into the subscales corresponding to the philosophies. Another widespread practice is to merge all 30 items into one scale that is interpreted as a 'general ethical attitude' (see, e.g., Al-Shaikh et al., 2012; Fatoki and Marembo, 2012; Yildirim and Saygin, 2013; Vrdoljak Raguž and Matić, 2016). However, this practice is inappropriate, as all the factor analyses showed that the items do not load on a single factor. Moreover, Moore and Randloff (1996) pointed out that the aggregation of items would also require a reversed scoring scale for certain items.

Some information on the convergent or concurrent validity of ATBEQ can be derived from Etheredge's (1999) study, which compares data on business ethics obtained from two different questionnaires. Etheredge established a five item subscale of ATBEQ called 'irrelevance of morality and ethics in business'. This subscale correlates strongly with the 'subordination of ethics and social responsibility' subscale of the PRESOR questionnaire and weakly with the 'importance of ethics and social responsibility' subscale. Another four item ATBEQ subscale labelled 'objectivism' correlates weakly with the PRESOR subscale called 'subordination of ethics and social responsibility'. Both these ATBEQ subscales measure slightly different constructs than the PRESOR subscales. This, therefore, is evidence of rather convergent than concurrent validity. Measure correlations may also be overrated due to common-source variance.

Despite the lack of information on ATBEQ's reliability, validity, and unclear factor structure, the original questionnaire has remained in use and the research community has accumulated extensive knowledge based on various samples utilising it. The dozens of studies that have been conducted offer the unique opportunity to further analyse students' attitudes towards business ethics across countries and cultures. Such a comparison based on existing data is not possible with any other methodology measuring ethical attitudes. For this reason, the authors of this study considered it relevant and beneficial to conduct a comparative secondary analysis of data obtained using ATBEQ in previous research. On the other hand, in this and any other future studies using ATBEQ, it is important to take into account the lack of evidence on its reliability and validity. This should be reflected both in the search for further evidence on its reliability and validity and in the interpretation of the results.

2 Methodology

2.1 Selection of studies for secondary analyses

The research question for this study is: 'How do students' attitudes towards business ethics differ across countries?' The study focused only on studies that used ATBEQ, as this allowed for a comparison of their findings in greater detail. The choice of ATBEQ is motivated by the fact that the questionnaire is arguably the most widely used method in this area, which is also usually used with students (see Table 2). To answer the research question, it was necessary to identify the relevant studies that used ATBEQ. The following procedure was conducted in the search for these studies:

1   The procedure started with a systematic search for literature in which ATBEQ had been used in empirical research. This step was necessary to ensure that studies containing the relevant data were not excluded from further analysis. The search was conducted in the databases Web of Science, Scopus, and Google Scholar. Web of Science and Scopus cover the most important studies published in top journals and conference proceedings. Google Scholar has probably the largest coverage across peer-reviewed journals, proceedings, and dissertations. The search terms were 'ATBEQ' and 'attitudes towards business ethics questionnaire' in the name, abstract, and keywords of studies (in the case of Web of Science and Scopus), or the full text (in the case of Google Scholar). The search was completed by August 2017 and there were no restrictions with regard to the dates the studies were published. The search yielded eight and four studies (for the first and second search terms respectively) in Web of Science, nine and five studies in Scopus, and 119 and 54 studies in Google Scholar. All the studies found in Web of Science and Scopus also appeared in the output of the Google Scholar search.

2   Studies that did not use ATBEQ for data collection (e.g., where it was mentioned only in the literature review and a different method was used) were excluded. This decision was made based on the study's title, abstract, and methods section. In the case of Google Scholar, it was also necessary to eliminate numerous duplicated and incorrectly indexed studies, and multiple studies from the same data set (usually conference submissions rewritten as journal articles). After this step had been completed, 60 studies remained. See Table 2 for a list of the studies, their samples, and the main findings.

3   Studies that were published in presumably predatory journals and proceedings (those mentioned on Beall's list or showing a fake impact factor, fake editorial board members, etc.) were excluded. Although the data published in these studies may be interesting, there are doubts about their validity, because the manuscripts had not been subjected to a reliable peer-review process. As a result, five studies were excluded, which left 55 studies.

4   Only studies that focused on business students were included. As this study focuses on students, only the 35 studies that used samples of students were included in the further analyses. Of the 55 studies that used ATBEQ, six studies used a sample of employees, three studies a sample of managers, one study a sample of owners, and ten studies used mixed samples.

Table 2   Published research studies that used ATBEQ (from the earliest to the most recent)

Authors (year)	Countries	Sample size	Sample source	Main findings and contributions	Other notes
Knezevic et al. (2017)	Croatia	224	Students	Various clusters of similar ethical attitudes.	
Gözüm (2016)	Turkey	270	Employees	Differences based on gender; no differences based on education and income.	In Turkish (extended summary available in English)
Haloub et al. (2016)	Jordan; UK	114; 53	Employees, managers	Differences in views of business philosophies based on country, gender, religion, religious practice, title (managers/non-managers), and experience.	
Rodriguez (2016)	N/A	N/A	Students	Impact of experience on attitudes towards business ethics.	Dissertation, Capella University; only partially available
Tipton (2016)	N/A	255	Employees and managers (former MBA students)	Relationships existed between the ethical perspectives and business ethics education, managerial experience, gender, and age.	Dissertation, Capella University; only partially available
Voegel and Pearson (2016)	USA	268	Students	Linking attitudes (and other constructs) to ethical intention.	
Vrdoljak Raguž and Matić (2016)	Croatia	670	Students	Younger students were more ethically aware than older ones. Differences based on gender (more ethical attitudes among males).	
Echevarria-Cruz et al. (2015)	Romania	413	SME owners and managers	Description of results.	
Khan et al. (2015)	Pakistan; Saudi Arabia; UAE; Malaysia	158; 119; 152; 108	Students	Differences based on country and gender; no difference based on the study level.	
Nguyen (2015)	USA	267	Students	N/A	Only abstract available, probably the same sample as Nguyen and Pham (2015)
Nguyen and Pham (2015)	USA	267	Students	Higher ethical attitudes among students from the USA. Differences explained by national culture rather than corruption perception index.	Vietnam sample from Pham et al. (2015)
Pham et al. (2015)	Vietnam	282	Students	Some differences based on gender (7 items) and having taken an ethical course (4 items).	
Procházka et al. (2015)	Czech Republic	172	Students	Factor structure related to business ethics philosophies.	In Czech (abstract available in English)
Sahin and Kazoglu (2015)	Turkey	405	Students	Differences based on gender, level of education, previous education in the field, and whether respondents had worked in the tourism sector.	Altered wording of the questionnaire items
Neswiswi (2014)	South Africa	34	Employees	Age, race, gender, level of education, tenure, position, and place of work affect only a very limited number of items.	MBA thesis
Okpara (2014)	Nigeria	351	Managers	Association between cultural and ethical behaviour (differential effect of particular dimensions on different components of ethical behaviour).	
Payaud and Merunka (2014)	Senegal; Benin; Togo	N/A	Managers	N/A	Only abstract available
Rajasekar and Simpson (2014)	India; Oman	173; 205	Students	Differences based on country, in Oman differences based on gender (not found in India); not enough evidence to find differences when comparing countries using male-male or female-female data.	

Source: Search of the databases EBSCOhost and Google Scholar using the search terms 'ATBEQ' and 'attitudes towards business ethics questionnaire'

Table 2 Published research studies that used ATBEQ (from the earliest to the most recent) (continued)

Authors (year)	Countries	Sample size	Sample source	Main findings and contributions	Other notes
Comegys et al. (2013)	USA; Finland; China	780; 147; 196	Students	Differences between the countries and based on gender (except for the Chinese sample, men score more positive), age, class year, and opinion leadership. Not enough evidence for majors, GPA scores, and a number of religious/ethics courses taken.	
Goksoy and Alayoglu (2013)	Turkey	107	Employees	Linking perceptions of performance appraisal fairness to ethical decision making.	
Gulova et al. (2013)	Turkey	198	Students	Differences based on country (compared with French and Romanian samples); some differences based on gender (7 items).	
Jirotmontree (2013)	Thailand; Singapore	317; 281	Mixed	Attitude and subjective norms are important in the explanation of consumer decisions to buy and use counterfeit products. Some differences between countries despite the cultural closeness.	
Lumsden and Fatoki (2013)	South Africa	97	Students	No significant difference between business and non-business students.	Only five items were taken from ATBEQ
Price and van der Walt (2013)	South Africa	142	Employees and managers (former MBA students)	Change in attitudes based on time frame (explained by the proliferation of business legislature and regulation resulting from corporate failures and economic crisis).	
Pae-pae (2013)	Indonesia; Lesotho	229	Students	Differences based on countries, further linking various demographic variables to individual business ethics philosophies (effect of country and religion, no effect of gender).	Thesis.
Quan-Chai (2013)	South Africa	144	Students	ATBEQ as a basis for developing a questionnaire on attitude towards the ethicality of competitor bluffing (ATECB).	Dissertation, University of Pretoria
Shields et al. (2013)	USA; Japan	89; 147	Students	Differences based on country; no difference based on gender.	
Yildirim and Saygin (2013)	Turkey	81	SME owners and managers	Rather a description of the sample.	
Al-Shaikh et al. (2012)	Mixed	371	Students	Differences based on gender and education level, no effect of short-term ethical training. Differences when compared to other countries.	76% Kuwait, 8% Jordan, 4% Egypt, the rest other nationalities
Cengiz et al. (2012)	Turkey	401	Managers, employees	Limited impact of gender, some differences based on age and working experience; otherwise limited evidence on other demographic factors (education, firm type, marital status).	Some missing values on demographics
Fatoki and Chiliya (2012)	Mixed	119	SME owners	No difference between South African and immigrant SME owners concerning ethical (and CSR) attitudes.	49% South African SME owners, 51% immigrant SME owners
Fatoki and Marembo (2012)	Mixed	89	Students	Differences based on class year; no significant differences based on gender and nationality.	49% South African, 51% international students
Gholipour et al. (2012)	Iran	320	Students	Relativism and Machiavellianism measured by ATBEQ have a significant and negative impact on CSR.	ATBEQ as a starting point for their own questionnaire

Table 2   Published research studies that used ATBEQ (from the earliest to the most recent) (continued)

Authors (year)	Countries	Sample size	Sample source	Main findings and contributions	Other notes
Price (2012)	South Africa	143	Students	ATBEQ as a basis for developing a questionnaire on attitude towards ethicality of competitor bluffing (ATECB).	Dissertation, University of Pretoria
Yazici and Siniksaran (2012)	Turkey	615	Students, employees	Differences in attitudes between groups of workers and students. Differences based on working life experience.	
Yıldırım and Uğuz (2012)	Turkey	806	Students	N/A	In Turkish (abstract available in English)
Yücel and Çiftci (2012)	Turkey	317	Employees	Differences based on age, marital status, and educational level; no significant difference based on income level, gender, and experience (length of employment).	
Bageac et al. (2011)	France; Romania	102; 118	Students	Differences based on country and gender; no difference based on religiosity.	
Erturhan and Filizöz (2011)	Turkey	150	Employees	Differences based on various demographic factors (only limited evidence).	In Turkish (abstract available in English)
Nejati et al. (2011)	Iran; Malaysia	120; 100	Students	Differences between countries (explained by Hofstede's cultural dimensions).	
Sims and Wimmer (2011)	Austria	171	Students	Machiavellianism tied to the Collectivism dimension of Hofstede.	
Sujit (2011)	Mixed	111	Employees	Small differences across groups of expatriates, which are explained by the homogenising power of the culture of the host country.	Subjects were expatriates working in the UAE (three groups: from India, the Philippines, and the Arab world)
Lau (2010)	Hong Kong	707	Students	Ethics education improves students' ethical awareness and moral reasoning (13 items). Readiness (= willingness and a vested interest in learning something) as a significant moderating factor.	
Lung and Chai (2010)	Malaysia	269	Students, employees	Differences based on intrapersonal religiosity and education type. No differences based on gender and interpersonal religiosity.	
Nurmakhamatuly (2010)	Kazakhstan; Turkey	115; 136	Managers	More ethical attitudes among managers from Turkey.	In Turkish (abstract available in English)
Cox et al. (2009)	USA	57	Students	Impact of a teaching intervention on ethical attitudes (negative from the normative viewpoint).	
Phau and Kea (2007)	Australia; Hong Kong; Singapore	119; 101; 123	Students	Differences between the countries in respondents' attitudes. Differences based on gender (males showing higher ethical attitudes). Differences in self-perception of ethical attitudes based on religiosity.	
Jung and Yoon (2006)	South Korea	409	Students	Some differences based on gender (6 items, female lower scores), level of study (5 items), and age (6 items). Similarities with Israeli sample, differences with samples from the USA, Australia, and Turkey.	In Korean (abstract and tables available in English); 7-point scale

Source: Search of the databases EBSCOhost and Google Scholar using the search terms 'ATBEQ' and 'attitudes towards business ethics questionnaire'

Table 2 Published research studies that used ATBEQ (from the earliest to the most recent) (continued)

Authors (year)	Countries	Sample size	Sample source	Main findings and contributions	Other notes
Sims (2006)	Jamaica and its vicinity	139	Students	Differences between Jamaica and compared countries.	
Sims and Gegez (2004)	Turkey	125	Students	Differences between the countries in respondents' attitudes (differences explained by Hofstede's cultural dimension and corruption perceptions index).	
Etheredge (1999)	Hong Kong	233	Students, employees	Two factors developed from ATBEQ.	Mainly focus on PRESOR instrument
Jung (1998)	South Korea	N/A	Students	Differences based on country; some differences depending on major; students closer in attitudes to blue-collar (than white-collar) workers.	In Korean (abstract available in English)
Moore and Radloff (1996)	South Africa	379	Students	Suggests refining ATBEQ questionnaire to become valid and reliable.	50% rule of thumb for differences (at least 15 out of 30 items to be different)
Small (1992)	Mixed	272	Students	Findings based on comparison with part of the sample (112 undergraduates). Different attitudes from those reported by Preble and Reichel (1988), although some of them with little meaning.	52% of respondents born in Australia, 28% in southeast Asia
Preble and Reichel (1988)	USA; Israel	129; 150	Students	Despite differences, attitudes quite homogeneous in both samples.	
Articles published in presumably predatory journals and proceedings					
Er and Sandybayev (2015)	Northern Cyprus	127	Employees and managers	Relationship between organisational culture and attitudes towards business ethics.	Fake impact factor and other predatory-related details
Phatshwane et al. (2014)	Botswana	195	Students	Some differences based on gender, respondents believed that ethics can and should be taught by the university and that was related to religion. Some similarities with the South African sample (Moore and Radloff, 1996) and partially with the Turkey sample (Sims and Gegez, 2004).	Beall's list
ElZein (2013)	Lebanon	N/A	Adolescents	Relationship between intrapersonal religiosity and attitudes towards business ethics. Effect of party belongingness, no effect of gender.	Beall's list
Rizvi et al. (2012)	Pakistan	102	Students	Some differences based on gender.	Beall's list
Choe et al. (2011)	Malaysia	249	Mixed	Influence of money ethics on the attitude towards business ethics.	Beall's list

Source: Search of the databases EBSCOhost and Google Scholar using the search terms 'ATBEQ' and 'attitudes towards business ethics questionnaire'

Table 3   List of studies used for the analyses (from the earliest to the most recent)

Name	Authors (year)	Journal/conference	Country	Sample description	Sample size	Sample collection	Notes
A step forward: ethics education matters!	Lau (2010)	*Journal of Business Ethics*	Hong Kong	Undergraduate business students – divided into two groups	707	The first group completed the questionnaire before taking the ethics course, the other after taking it.	Mean and standard deviations not published. Pooled mean and standard deviations (of both groups) used for further analysis. Sample size differs slightly for individual items, the lowest value is reported.
Attitudes towards business ethics: a cross-cultural comparison of students in Iran and Malaysia	Nejati et al. (2010)	*International Journal of Business Governance and Ethics*	Iran	Undergraduate and graduate business students	120	Collected during classes or a meeting in a library.	At least one-year work experience required to be part of the sample.
			Malaysia	Post-graduate business students	100	Collected during classes or a meeting in a library.	At least one-year work experience required to be part of the sample.
Management students' attitudes toward business ethics: a comparison between France and Romania	Bageac et al. (2011)	*Journal of Business Ethics*	France	Business students	102	Double translated into French. Pre-testing. Self-administered during breaks between class hours.	
			Romania	Business students	118	Double translated into Romanian. Pre-testing. Self-administered during breaks between class hours.	Female participants represent a considerably larger part of respondents (78%).
Business students attitudes towards business ethics: evidence from Kuwait	Al-Shaikh et al. (2012)	*International Journal of Education Research*	Kuwait	Business students at various stages of study	371	Collected during class hours.	Students' country of origin (those representing over 1% of the sample): 75.7% Kuwait, 8.4% Jordan, 4.3% Egypt, 3.2% Syria, 3.2% Palestine, 2.2% Lebanon.
Attitudes towards business ethics: an empirical study on Turkish senior business students	Gulova et al. (2013)	*International Proceedings of Economics Development and Research*	Turkey	Senior business students	198	Translated questionnaire.	
Business students and ethics: a cross-cultural study between the US and Vietnam	Nguyen and Pham (2015)	*SAM Advanced Management Journal*	USA	Business students at various stages of study	267	Collected both online and offline.	
Business students' attitudes toward business ethics: an empirical investigation in Vietnam	Pham et al. (2015)	*Journal of Asia Business Studies*	Vietnam	Business students at various stages of study	282	Collected both online and offline. Questionnaire translated into Vietnamese and back.	
Translation and adaptation of the attitudes towards business ethics questionnaire (ATBEQ) into Czech language	Procházka et al. (2015)	*Aktuálne problémy podnikovej sféry 2015*	Czech Republic	Graduate business students	172	Questionnaire translated into Czech and back. Pre-testing. Collected during class hours.	

Source: Review of selected studies

5   Older studies were excluded. Only studies published in or after 2010 were included for further analyses. The reason for working only with recent studies was the possible shift in attitudes within countries over a longer time (Price and van der Walt, 2013). Moreover, the global economic crisis that began in 2007 might have influenced students' attitudes toward business ethics. To avoid this influence, the research only considered studies that had been published at least three years later. This resulted in 28 studies being considered for further analyses.

6   Only studies that provided sufficient data were included. In order to be able to compare samples, only seven studies could be included, as they were the only ones that used the complete set of 30 items, the same response scale (i.e., the original five-point Likert scale), and provided information about the means and standard deviations of individual items. In addition to the studies that already provided these statistics, the authors of studies based on samples corresponding to the research's selection criteria were asked via e-mail whether they were willing to provide these data. By means of this process, we obtained data from Lau (2010). This resulted in eight studies being included for further analysis, which are listed in Table 3.

2.2   Samples

All the samples used for further analysis were based on data collected from business students. The mean sample size was 244 respondents, but the size varied considerably across the studies, ranging from 100 in the case of the Malaysian study by Nejati et al. (2011) to 707 in the study of Vietnamese students by Lau (2010). Similarly, there were differences in the level of detail of the descriptive statistics of the samples and most of the studies were relatively informationally poor in terms of the data collection process. In three samples [two from Nejati et al. (2011) and one from Al-Shaikh et al. (2012)], there was no information on the language of the questionnaire, i.e., whether it was translated or in the original English version. All the studies used the whole 30-item ATBEQ with responses on a five-point Likert scale. Table 3 provides further detail on all the studies.

2.3   Statistical analyses

The research compared the samples at the level of individual items. It would have been preferable to compare dimensions, but, as previously mentioned, there are no reliable factors of ATBEQ that are common for different countries. Moreover, since the initial studies (Preble and Reichel, 1988; Small, 1992; Moore and Radloff, 1996, etc.), the majority of researchers have followed the tradition of comparing answers to particular items rather than the summary scores for the complete scale.

    For the analyses, it was only possible to obtain the means and standard deviations for individual items (those used for further analyses are reported in Table 4 and correspond to the values from the individual studies), not complete datasets. Therefore, the research opted to analyse the data using two-sample t-tests of equal means, for which the available data are sufficient. The response scale of ATBEQ is a five-point Likert scale. Therefore, the answer to a single question can be considered an ordinal variable which may lead to the violation of the t-test assumption of normal distributions. Nevertheless, previous comparisons of attitudes towards business ethics in two or three countries also used t-tests to compare answers to individual questions (e.g., Price and van der Walt, 2013;

Pham et al., 2015; for others see Table 2). Furthermore, the t-test is robust to all but large deviations from its assumptions (e.g., Heeren and D'Agostino, 1987). As shown by De Winter and Dodou (2010), the t-test on data from five-point Likert items performs comparably to its non-parametric alternative (i.e., the Mann Whitney Wilcoxon test). Using the t-test allows for a comparison of the data from all the selected studies, even though a complete dataset of individual answers is not available.

The item responses from each sample were compared to the answers from all the other samples ('rest of the world sample'). In the analysis, the item mean from a given sample was compared with the pooled item mean from the rest of the samples. This pooled mean was weighted by sample size and it is important to note that it was different for every individual analysis and different from the overall pooled mean reported for individual items in Table 4. This is because it was necessary to establish a specific rest-of-the-world sample and a specific pooled mean for each comparison because the data for the t-test have to be sampled independently from the two populations compared. A pooled standard deviation is calculated for each pooled mean according to this equation:

$$\bar{s} = \sqrt{\frac{\sum_{i=1}^{I} (n_i - 1) * s_i^2 + n_i * (\bar{x}_i - \bar{x})^2}{n-1}}$$

As 300 t-tests were conducted on the same data set, it was important to correct common significance thresholds. For example, using a 5% level of significance in multiple testing would result in approximately 15 hypotheses being false positives. Therefore, to interpret the results, the research used the conservative Bonferroni corrected significance level of $\alpha = 0.000167$ (i.e., $\alpha = 0.05/300$ individual analyses). Nevertheless, it is interesting to highlight the differences that are significant at a less strict significance level of $\alpha = 0.001$. The reason for considering this latter level is the fact that the Bonferroni correction greatly increases the risk of false-negative results. However, results with a p-value between 0.000167 and 0.001 may not be considered statistically significant and should be supported by further research. Therefore, all p-values were rounded to four decimal places so that the readers can draw their conclusions as to the significance of the results.

The item means were further used in clustering the samples. The choice of clustering the samples was motivated by the intention to interpret the differences in attitudes towards business ethics more comprehensively. For clustering, IBM SPSS 24 TwoStep Cluster Analysis was used. A TwoStep Cluster Analysis first conducts the pre-clustering of dense regions, followed by hierarchical clustering of these regions (Chiu et al., 2001). This method is generally preferred to common clustering techniques of hierarchical clustering (Gelbard et al. 2007) and k-means (Chiu et al., 2001).

To observe the possible effect of a culturally determined response bias, the total score of ATBEQ in various samples was compared with the levels of national cultures according to Hofstede's cultural dimensions (Hofstede et al., 2010). The comparison was only done graphically, as samples from ten countries were not enough for a statistical test with sufficient test power.

Table 4 Input data from previous surveys

| | | Hong Kong | Iran | Malaysia | France | Romania | Kuwait | Turkey | USA | Vietnam | Czech Republic | Overall |
		Lau (2010)	Nejati et al. (2010)	Nejati et al. (2010)	Bageac et al. (2011)	Bageac et al. (2011)	AlShaikh et al. (2012)	Gulova et al. (2013)	Nguyen and Pham (2015)	Pham et al. (2015)	Procházka et al. (2015)	
1	Mean	2.00	2.49	3.12	2.90	3.53	2.44	2.08	1.84	2.28	2.61	2.31
	SD	0.91	1.07	1.32	1.23	0.96	1.17	1.12	1.11	1.07	1.15	1.15
2	Mean	1.69	2.18	2.01	1.75	3.42	2.16	2.16	2.48	2.09	1.66	2.05
	SD	0.70	1.10	0.82	0.82	1.16	1.08	1.18	0.92	0.84	0.78	1.00
3	Mean	2.67	2.80	3.12	3.33	2.95	3.15	3.22	2.75	2.87	2.49	2.87
	SD	0.93	1.18	0.95	1.08	1.07	1.00	1.12	1.28	0.99	1.10	1.07
4	Mean	2.37	3.33	3.03	2.25	1.78	3.22	2.91	2.55	2.76	1.87	2.61
	SD	0.96	1.20	1.07	0.94	0.42	1.10	1.04	1.25	1.02	0.87	1.11
5	Mean	3.20	3.98	3.57	3.24	2.32	3.56	3.53	3.01	3.46	2.94	3.29
	SD	0.72	0.85	0.82	0.88	0.78	0.81	0.94	1.15	0.98	0.90	0.93
6	Mean	2.74	3.53	2.91	3.07	3.82	3.00	3.37	2.39	3.07	3.10	2.97
	SD	0.96	0.99	1.05	1.07	0.88	1.00	1.04	1.14	1.10	1.09	1.08
7	Mean	1.83	2.73	2.21	2.17	2.52	2.30	1.76	1.64	2.17	1.87	2.03
	SD	0.84	1.38	0.87	0.99	0.99	1.10	0.97	1.00	1.13	0.89	1.04
8	Mean	2.89	3.54	3.01	3.23	2.90	2.99	2.91	2.43	3.01	2.63	2.90
	SD	0.72	1.19	0.73	0.98	0.97	0.90	1.13	1.14	1.08	0.86	0.97
9	Mean	2.13	2.47	2.48	2.55	1.58	2.16	2.08	1.76	2.50	2.51	2.18
	SD	0.75	1.05	0.82	0.94	0.81	0.92	0.91	0.98	1.03	0.97	0.93
10	Mean	2.25	2.08	2.46	2.55	2.25	2.19	2.05	1.94	2.11	2.40	2.20
	SD	0.81	0.87	1.02	1.17	1.15	1.12	0.99	1.13	1.09	1.23	1.03
11	Mean	2.55	2.59	3.11	2.87	2.03	2.91	2.87	2.62	2.56	2.39	2.64
	SD	0.93	0.98	1.05	1.13	0.67	1.01	1.29	1.23	1.04	1.10	1.07
12	Mean	3.19	3.38	3.46	3.17	3.72	3.29	3.51	3.08	3.30	3.78	3.32
	SD	0.92	1.05	0.89	1.10	1.04	0.90	1.09	1.22	1.08	0.99	1.03
13	Mean	3.17	2.10	3.54	2.83	2.58	2.89	3.00	2.33	2.71	3.35	2.90
	SD	1.00	1.16	1.02	1.00	1.16	1.00	1.43	1.30	1.10	1.20	1.17
14	Mean	2.16	1.33	2.44	1.68	1.36	2.17	2.32	1.45	2.17	1.67	1.97
	SD	0.99	0.76	1.23	0.97	0.70	1.18	1.11	1.00	1.07	1.08	1.09
15	Mean	2.22	1.48	2.29	2.81	2.16	2.11	1.92	1.62	2.07	2.46	2.10
	SD	0.87	0.94	0.98	1.21	1.16	1.13	1.05	0.92	0.98	1.08	1.04

Source: Data from individual studies

Table 4   Input data from previous surveys (continued)

		Hong Kong Lau (2010)	Iran Nejati et al. (2010)	Malaysia Nejati et al. (2010)	France Bageac et al. (2011)	Romania Bageac et al. (2011)	Kuwait AlShaikh et al. (2012)	Turkey Gulova et al. (2013)	USA Nguyen and Pham (2015)	Vietnam Pham et al. (2015)	Czech Republic Procházka et al. (2015)	Overall
16	Mean	2.59	3.34	2.61	1.59	2.73	2.66	2.51	2.09	2.98	2.55	2.59
	SD	1.00	1.44	1.12	0.80	1.15	1.25	1.16	1.21	1.19	1.16	1.19
17	Mean	3.17	3.34	3.41	2.54	3.14	3.15	3.01	2.34	3.21	3.21	3.06
	SD	0.94	1.23	1.03	1.07	1.06	1.03	1.11	1.10	1.15	1.12	1.09
18	Mean	3.66	3.83	3.95	4.03	4.26	3.67	3.84	3.68	3.67	4.24	3.78
	SD	0.92	0.99	0.78	0.94	0.66	1.00	1.00	1.25	1.06	0.87	1.00
19	Mean	2.87	3.31	3.35	3.07	3.26	2.95	2.92	2.55	3.13	3.22	2.97
	SD	0.87	1.07	0.93	1.00	1.02	1.03	1.21	1.12	1.13	1.08	1.05
20	Mean	2.57	2.23	3.37	3.06	3.52	3.08	2.72	2.27	3.34	3.21	2.84
	SD	0.95	1.07	1.03	1.20	1.08	1.15	1.16	1.19	1.09	1.16	1.15
21	Mean	2.48	1.46	2.25	1.57	1.80	2.15	1.92	1.71	2.63	2.03	2.16
	SD	0.97	0.62	0.91	0.85	0.99	1.14	0.99	1.04	1.15	1.14	1.08
22	Mean	2.80	2.92	2.90	2.32	2.68	2.79	1.86	2.34	2.20	2.78	2.58
	SD	0.74	1.28	0.84	1.00	0.97	0.90	0.81	1.19	1.00	1.11	0.99
23	Mean	3.52	4.24	4.08	3.91	3.87	3.90	2.48	3.68	2.74	2.23	3.42
	SD	0.89	0.76	0.87	0.96	0.97	1.03	1.25	1.31	1.19	1.07	1.20
24	Mean	3.70	4.02	3.88	3.61	3.89	3.76	4.06	3.08	3.89	3.29	3.69
	SD	0.82	0.76	0.95	0.96	0.95	1.02	0.84	1.31	0.94	1.03	1.00
25	Mean	2.91	3.31	3.60	3.22	4.01	3.50	3.40	3.06	2.93	3.61	3.22
	SD	0.95	1.35	1.06	1.14	0.92	1.12	1.18	1.23	1.07	1.04	1.13
26	Mean	3.22	2.06	3.33	2.54	3.00	3.50	3.70	3.14	3.39	3.65	3.25
	SD	0.89	0.75	1.06	1.03	1.21	0.96	1.03	1.18	1.02	0.98	1.06
27	Mean	3.13	3.59	3.66	2.59	2.69	3.42	2.43	3.09	2.16	1.92	2.92
	SD	0.87	1.20	0.89	0.92	1.11	0.98	1.17	1.21	0.90	0.90	1.12
28	Mean	2.37	1.68	2.65	2.65	2.59	2.84	2.62	2.16	2.93	2.29	2.50
	SD	0.79	0.61	1.00	0.99	1.02	0.96	1.14	1.06	1.07	0.95	0.99
29	Mean	3.44	3.31	3.61	3.18	3.53	3.45	3.19	3.41	3.25	2.88	3.35
	SD	0.87	1.13	0.95	1.04	0.96	1.08	1.18	1.21	1.01	1.14	1.05
30	Mean	2.86	3.71	3.37	3.22	3.42	3.54	3.36	3.76	3.75	3.26	3.34
	SD	0.94	0.94	1.13	1.07	1.16	1.05	1.23	1.16	1.16	1.27	1.14

Source: Data from individual studies

Table 5 Testing the differences between particular samples

		Hong Kong Lau (2010)	Iran Nejati et al. (2010)	Malaysia Nejati et al. (2010)	France Bageac et al. (2011)	Romania Bageac et al. (2011)	Kuwait AlShaikh et al. (2012)	Turkey Gulova et al. (2013)	USA Nguyen and Pham (2015)	Vietnam Pham et al. (2015)	Czech Republic Procházka et al. (2015)
1	t-value	−9.9534	1.8356	6.2660	4.9261	13.9728	2.2514	−3.0664	−7.3542	−0.5701	3.4963
	p-value	0.0000	0.0686	0.0000	0.0000	0.0000	0.0248	0.0024	0.0000	0.5690	0.0006
	Cohen's d	−0.4169	0.1659	0.6835	0.5152	1.2206	0.1279	−0.2247	−0.4722	−0.0349	0.2768
2	t-value	−14.3374	1.3048	−0.5281	−3.7718	13.2356	2.1042	1.3505	8.0041	0.7675	−6.6967
	p-value	0.0000	0.1943	0.5985	0.0003	0.0000	0.0359	0.1782	0.0000	0.4432	0.0000
	Cohen's d	−0.5830	0.1278	−0.0487	−0.3453	1.3617	0.1226	0.1076	0.5018	0.0450	−0.4697
3	t-value	−6.8571	−0.6799	2.6603	4.3864	0.8212	5.7646	4.5922	−1.6692	−0.0194	−4.7236
	p-value	0.0000	0.4978	0.0090	0.0000	0.4130	0.0000	0.0000	0.0961	0.9845	0.0000
	Cohen's d	−0.2944	−0.0665	0.2559	0.4462	0.0775	0.3165	0.3480	−0.1165	−0.0012	−0.3789
4	t-value	−7.8005	6.7562	3.9895	−3.9921	−19.3590	11.6005	4.1909	−0.8579	2.5828	−11.3429
	p-value	0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0000	0.3916	0.0102	0.0000
	Cohen's d	−0.3341	0.6579	0.4003	−0.3653	−1.0324	0.6573	0.3015	−0.0585	0.1571	−0.7999
5	t-value	−3.7568	9.1352	3.5173	−0.5361	−13.6675	6.8945	3.8170	−4.2563	3.2032	−5.2157
	p-value	0.0002	0.0000	0.0006	0.5929	0.0000	0.0000	0.0002	0.0000	0.0015	0.0000
	Cohen's d	−0.1560	0.8235	0.3372	−0.0528	−1.1957	0.3676	0.2846	−0.3010	0.2072	−0.4069
6	t-value	−7.4455	6.3406	−0.5706	0.9760	10.6478	0.6443	5.6474	−8.8693	1.6439	1.6393
	p-value	0.0000	0.0000	0.5695	0.3312	0.0000	0.5197	0.0000	0.0000	0.1011	0.1027
	Cohen's d	−0.3215	0.5707	−0.00575	0.0983	0.9121	0.0352	0.4125	−0.5925	0.1051	0.1302
7	t-value	−6.7949	5.8014	2.1442	1.5009	5.5478	5.2732	−3.9960	−6.6356	2.2975	−2.3476
	p-value	0.0000	0.0000	0.0342	0.1362	0.0000	0.0000	0.0001	0.0000	0.0222	0.0198
	Cohen's d	−0.2864	0.6136	0.2000	0.1483	0.5129	0.3050	−0.2873	−0.4252	0.1510	−0.1723
8	t-value	−0.8530	6.0654	1.4672	3.4404	−0.0392	1.9846	0.0865	−7.3088	1.7869	−4.2825
	p-value	0.3938	0.0000	0.1451	0.0008	0.9688	0.0477	0.9311	0.0000	0.0748	0.0000
	Cohen's d	−0.0351	0.6230	0.1288	0.3502	−0.0037	0.1085	0.0069	−0.5101	0.1184	−0.3202
9	t-value	−2.1759	3.0922	3.6807	4.0344	−8.2208	−0.5121	−1.6510	−7.5390	5.5529	4.6058
	p-value	0.0297	0.0024	0.0004	0.0001	0.0000	0.6088	0.1001	0.0000	0.0000	0.0000
	Cohen's d	−0.0913	0.3054	0.3522	0.4098	−0.7258	−0.0287	−0.1209	−0.5008	0.3679	0.3712
10	t-value	1.5391	−1.5126	2.6184	3.1165	0.5026	−0.1582	−2.1918	−4.0019	−1.4624	2.2559
	p-value	0.1240	0.1327	0.0101	0.0023	0.6161	0.8743	0.0294	0.0001	0.1445	0.0252
	Cohen's d	0.0641	−0.1300	0.2662	0.3341	0.0498	−0.0092	−0.1595	−0.2702	−0.0947	0.1926

Source: Authors

Table 5   Testing the differences between particular samples (continued)

		Hong Kong Lau (2010)	Iran Nejati et al. (2010)	Malaysia Nejati et al. (2010)	France Bageac et al. (2011)	Romania Bageac et al. (2011)	Kuwait AlShaikh et al. (2012)	Turkey Gulova et al. (2013)	USA Nguyen and Pham (2015)	Vietnam Pham et al. (2015)	Czech Republic Procházka et al. (2015)
11	t-value	-3.3277	-0.5726	4.5670	2.1035	-9.7772	5.5374	2.6531	-0.2878	-1.3690	-3.1016
	p-value	0.0009	0.5679	0.0000	0.0377	0.0000	0.0000	0.0086	0.7737	0.1719	0.0022
	Cohen's d	-0.1429	-0.0514	0.4638	0.2187	-0.7166	0.3059	0.2133	-0.0198	-0.0859	-0.2491
12	t-value	-4.6658	0.6643	1.6181	-1.3919	4.3079	-0.6332	2.5992	-3.4509	-0.2991	6.3336
	p-value	0.0000	0.5076	0.1085	0.1668	0.0000	0.5269	0.0100	0.0006	0.7651	0.0000
	Cohen's d	-0.2019	0.0628	0.1536	-0.1453	0.4094	-0.0338	0.1979	-0.2401	-0.0193	0.4938
13	t-value	7.6640	-7.7618	6.3518	-0.7308	-3.0839	-0.2309	1.0272	-7.6889	-3.0854	5.0961
	p-value	0.0000	0.0000	0.0000	0.4664	0.0025	0.8175	0.3055	0.0000	0.0022	0.0000
	Cohen's d	0.3273	-0.7268	0.6062	-0.0681	-0.2897	-0.0122	0.0828	-0.5243	-0.1899	0.4082
14	t-value	5.4344	-9.2856	3.8821	-3.1161	-9.4486	3.5118	4.5767	-9.0201	3.2589	-3.8349
	p-value	0.0000	0.0000	0.0002	0.0023	0.0000	0.0005	0.0000	0.0000	0.0012	0.0002
	Cohen's d	0.2367	-0.7192	0.4193	-0.2974	-0.7014	0.2046	0.3427	-0.5651	0.2047	-0.3023
15	t-value	3.6357	-7.3716	1.9753	6.0918	0.5794	0.1888	-2.5186	-8.9093	-0.5414	4.5497
	p-value	0.0003	0.0000	0.0508	0.0000	0.5633	0.8503	0.0125	0.0000	0.5886	0.0000
	Cohen's d	0.1544	-0.6600	0.1961	0.6624	0.0575	0.0110	-0.1878	-0.5497	-0.0334	0.3670
16	t-value	-0.0044	5.9416	0.2271	-12.5237	1.4014	1.2658	-0.9474	-7.1129	5.9288	-0.4100
	p-value	0.9965	0.0000	0.8208	0.0000	0.1635	0.2062	0.3444	0.0000	0.0000	0.6823
	Cohen's d	-0.0002	0.6069	0.0225	-1.0271	0.1302	0.0728	-0.0695	-0.4666	0.3768	-0.0321
17	t-value	3.1232	2.5676	3.4567	-5.0152	0.8344	1.7990	-0.6683	-11.3760	2.3413	1.8199
	p-value	0.0018	0.0114	0.0008	0.0000	0.4056	0.0726	0.5046	0.0000	0.0198	0.0703
	Cohen's d	0.1336	0.2537	0.3433	-0.5035	0.0776	0.0990	-0.0499	-0.7483	0.1515	0.1456
18	t-value	-4.5510	0.5193	2.1412	2.6903	7.7800	-2.3903	0.8189	-1.4761	-1.9355	7.0469
	p-value	0.0000	0.6045	0.0344	0.0082	0.0000	0.0172	0.4137	0.1410	0.0537	0.0000
	Cohen's d	-0.1985	0.0484	0.1919	0.2642	0.5868	-0.1349	0.0607	-0.1048	-0.1258	0.5229
19	t-value	-3.8716	3.5353	4.1090	0.9914	3.1216	-0.4801	-0.6590	-6.6249	2.4858	3.1099
	p-value	0.0001	0.0006	0.0001	0.3236	0.0022	0.6314	0.5106	0.0000	0.0134	0.0022
	Cohen's d	-0.1643	0.3347	0.3959	0.0981	0.2912	-0.0269	-0.0520	-0.4434	0.1629	0.2497
20	t-value	-8.7092	-6.4106	5.1989	1.8700	6.9600	4.3132	-1.5559	-8.3678	8.0743	4.3082
	p-value	0.0000	0.0000	0.0000	0.0642	0.0000	0.0000	0.1211	0.0000	0.0000	0.0000
	Cohen's d	-0.3685	-0.5803	0.5025	0.1927	0.6385	0.2432	-0.1156	-0.5535	0.5016	0.3421

Source: Authors

Table 5   Testing the differences between particular samples (continued)

		Hong Kong	Iran	Malaysia	France	Romania	Kuwait	Turkey	USA	Vietnam	Czech Republic
		Lau (2010)	Nejati et al. (2010)	Nejati et al. (2010)	Bageac et al. (2011)	Bageac et al. (2011)	AlShaikh et al. (2012)	Gulova et al. (2013)	Nguyen and Pham (2015)	Pham et al. (2015)	Procházka et al. (2015)
21	t-value	9.9518	−11.9980	1.0545	−7.0128	−3.9768	−0.0965	−3.4594	−7.3921	7.4571	−1.5000
	p-value	0.0000	0.0000	0.2940	0.0000	0.0001	0.9231	0.0006	0.0000	0.0000	0.1352
	Cohen's d	0.4323	−0.8259	0.0986	−0.6275	−0.3599	−0.0056	−0.2464	−0.4731	0.4866	−0.1216
22	t-value	7.7708	2.9793	3.8082	−2.7261	1.0994	4.6975	−12.8755	−3.6358	−6.8615	2.4193
	p-value	0.0000	0.0035	0.0002	0.0075	0.2736	0.0000	0.0000	0.0003	0.0000	0.0165
	Cohen's d	0.3207	0.3106	0.3571	−0.2767	0.1025	0.2545	−0.8739	−0.2538	−0.4377	0.2010
23	t-value	2.6795	11.6955	7.6053	5.2039	5.0990	9.4797	−11.1038	3.4652	−10.2451	−15.0362
	p-value	0.0074	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0000	0.0000
	Cohen's d	0.1104	0.8576	0.6558	0.4698	0.4324	0.5042	−0.8485	0.2339	−0.6515	−1.1465
24	t-value	−0.0176	4.7468	2.0060	−0.8902	2.3035	1.3800	6.3045	−8.3219	3.7167	−5.3369
	p-value	0.9860	0.0000	0.0473	0.3753	0.0228	0.1682	0.0000	0.0000	0.0002	0.0000
	Cohen's d	−0.0007	0.3857	0.2000	−0.0883	0.2123	0.0785	0.4312	−0.6058	0.2293	−0.4292
25	t-value	−9.6561	0.7350	3.6282	−0.0216	9.4220	5.1843	2.2187	−2.3028	−4.8557	5.0388
	p-value	0.0000	0.4637	0.0004	0.9828	0.0000	0.0000	0.0275	0.0219	0.0000	0.0000
	Cohen's d	−0.4138	0.0744	0.3597	−0.0022	0.8059	0.2921	0.1679	−0.1552	−0.3007	0.3841
26	t-value	−1.2519	−17.4559	0.7608	−7.1178	−2.3247	5.3298	6.3887	−1.6501	2.4279	5.5067
	p-value	0.2108	0.0000	0.4485	0.0000	0.0217	0.0000	0.0000	0.0999	0.0157	0.0000
	Cohen's d	−0.0533	−1.3857	0.0778	−0.7144	−0.2332	0.2892	0.4697	−0.1121	0.1512	0.4212
27	t-value	6.7200	6.3344	8.4381	−3.6198	−2.2673	10.5172	−6.1269	2.5111	−14.5985	−14.8034
	p-value	0.0000	0.0000	0.0000	0.0004	0.0250	0.0000	0.0000	0.0125	0.0000	0.0000
	Cohen's d	0.2805	0.6154	0.7691	−0.3316	−0.2134	0.5652	−0.4654	0.1687	−0.8474	−1.0678
28	t-value	−4.8898	−14.4770	1.5583	1.5896	1.0117	7.4288	1.5952	−5.5389	7.3180	−2.9601
	p-value	0.0000	0.0000	0.1221	0.1148	0.3136	0.0000	0.1121	0.0000	0.0000	0.0034
	Cohen's d	−0.2048	−1.0429	0.1595	0.1604	0.0966	0.4143	0.1255	−0.3707	0.4794	−0.2293
29	t-value	2.8446	−0.4148	2.7656	−1.7016	2.0601	1.9176	−2.0295	0.8503	−1.7934	−5.6640
	p-value	0.0045	0.6790	0.0067	0.0916	0.0414	0.0557	0.0436	0.3958	0.0737	0.0000
	Cohen's d	0.1209	−0.0402	0.2692	−0.1716	0.1863	0.1095	−0.1586	0.0586	−0.1116	−0.4667
30	t-value	−15.1040	4.3692	0.2696	−1.1555	0.7672	3.9239	0.2383	6.2842	6.3231	−0.8653
	p-value	0.0000	0.0000	0.7880	0.2504	0.4444	0.0001	0.8119	0.0000	0.0000	0.3879
	Cohen's d	−0.6447	0.3719	0.0275	−0.1135	0.0731	0.2143	0.0183	0.4128	0.4056	−0.0719

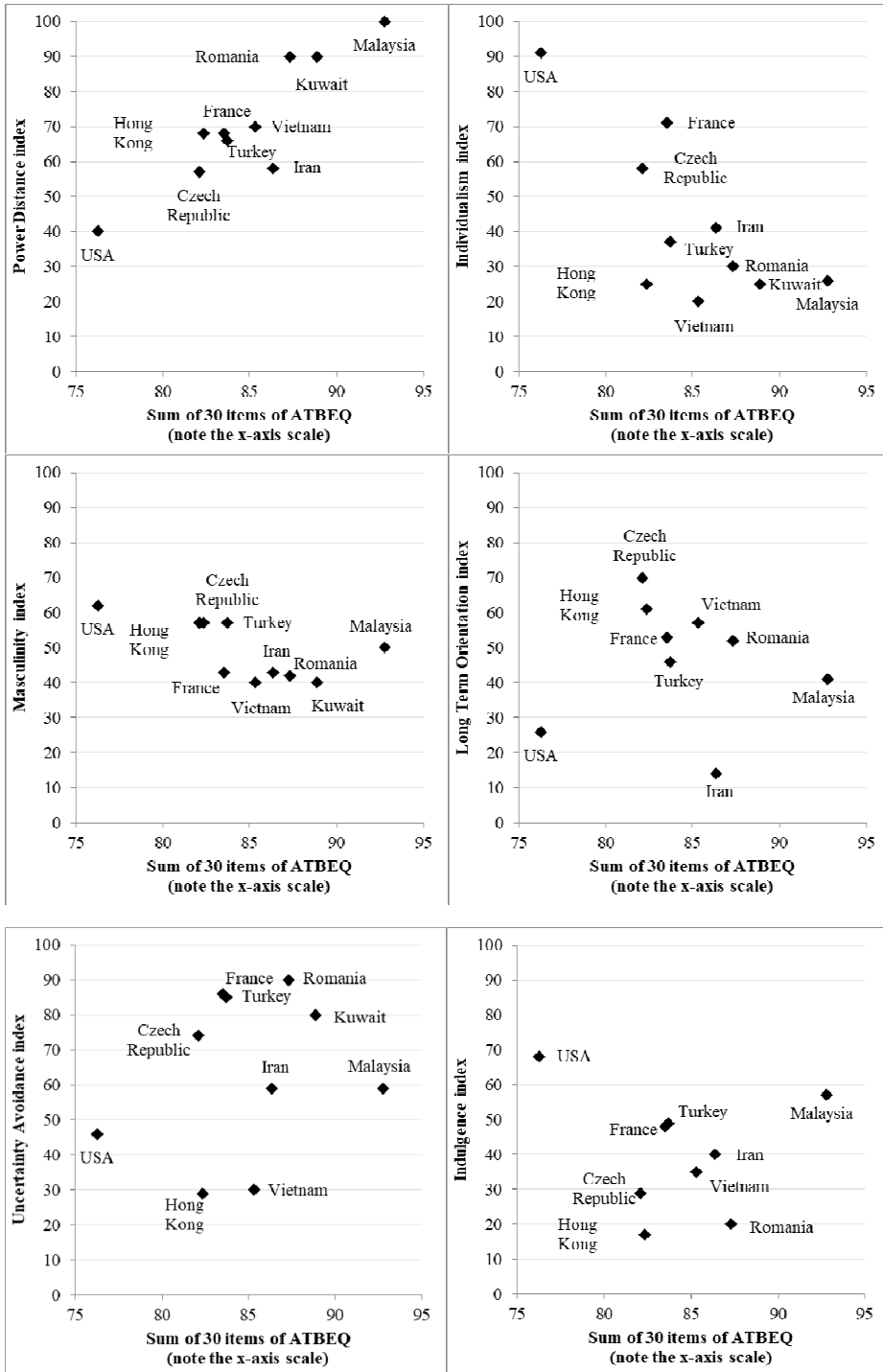*Source:*   Authors

3   Results

The complete results of the analyses are shown in Table 5. When comparing samples at $\alpha = 0.000167$, responses to items 4, 20, and 23 are significantly different from the pooled mean in 80% of samples. On the other hand, item 17 differs in only 20% of cases, while items 10 and 29 differ only in 10%, i.e., one case. Using $\alpha = 0.001$, item 23 shows significant differences in 90% of samples, followed by items 4, 5, 14, 20, and 27 in 80%. Conversely, the means of items 17 and 18 show significant differences in 30% cases, while items 10 and 29 differ in only 10%. When looking at the frequency of the strong effects of Cohen's d [in this case, medium and large effects, i.e., with the absolute value of Cohen's d ≥ 0.5; Cohen (1988)], item 23 has a strong effect in 60% of cases, while items 27 and 20 have strong effects in 50%. In contrast, items 3, 10, 12, 19, and 29 do not have any strong effects. The possible reasons for the frequent and less frequent differences are discussed below.

When comparing samples at $\alpha = 0.000167$, the US (Nguyen and Pham, 2015) and Hong Kong (Lau, 2010) samples differ most from the rest of the world sample, with more than 60% of items being significantly different. The US respondents tend to differ from the other samples in almost all of the items. In contrast, the Malaysia sample (Nejati et al., 2011) differs in only 27% of the items, while samples from Vietnam (Pham et al., 2015); Turkey (Gulova et al., 2013), and France (Bageac et al., 2010) differ in 33% of the items. When testing at $\alpha = 0.0001$, the USA and Hong Kong samples are still the most distinctive, with more than 70% of the items significantly different from the other samples, while samples from Turkey and Vietnam differ in 40% or less of the items. The frequency of the strong effect of Cohen's d ($d \geq |0.5|$) is the highest in the case of Iran (Nejati et al., 2011) in 50% of the items, followed by Romania (Bageac et al., 2010) in 40% and the US (Nguyen and Pham, 2015) in 33%. On the other hand, Turkey (Gulova et al., 2013) and Hong Kong (Lau, 2010) only show a strong effect in 7% of the items.

3.1   Supplementary analysis: cultural patterns

When interpreting the significant differences and their strengths and directions, it is possible to observe a pattern that students from certain countries have an overall tendency to agree more with most of the statements, while those from other countries are more neutral or tend to disagree (see Figure 1). This fact cannot be interpreted as evidence of the existence of generally stronger or weaker attitudes towards business ethics in particular countries, because it is not possible to summarise all of the ATBEQ's items in one score. Stronger agreement with all of the items does not indicate a stronger or weaker general ethical attitude. Instead, the observed pattern testifies to the cultural biases that particular samples tend towards (see Harzing, 2006; Nejati et al., 2011; Nguyen and Pham, 2015; Sims, 2006). The tendency to agree with the items (i.e., the sum of all 30 answers) can be explained by cultural differences, such as by differences in the dimensions of national cultures according to Hofstede et al. (2010; note that Kuwait is not assessed in Hofstede et al. (2010); an assessment of its culture was obtained from the Hofstede Centre website (2017)]. As can be seen in Figure 1, respondents in samples from cultures with lower power distance and higher individualism seemed to report stronger agreement with items through the questionnaire, regardless of the content of the particular items.

**Figure 1**   Scatter plots of sum item responses against the cultural dimension score

3.2   Cluster analysis

To interpret the differences between the samples from various countries more comprehensively, the samples were clustered according to patterns of agreeing and not agreeing with individual items. The automated identification of the number of clusters by a TwoStep Clustering Analysis indicated the preference of only one cluster. However, it is more interesting to observe how the samples merge step-by-step. Therefore, eight separate analyses with a preset number of clusters between two and nine were conducted (note that when the number of clusters is set to ten, the clusters correspond to the ten individual samples). The clusters identified by each step of the method are summarised in the dendrogram in Figure 2. In order to check the robustness of the clustering results, the cases were reordered. This did not affect the outcomes.

Figure 2   Dendrogram produced by a series of two-step clustering analyses
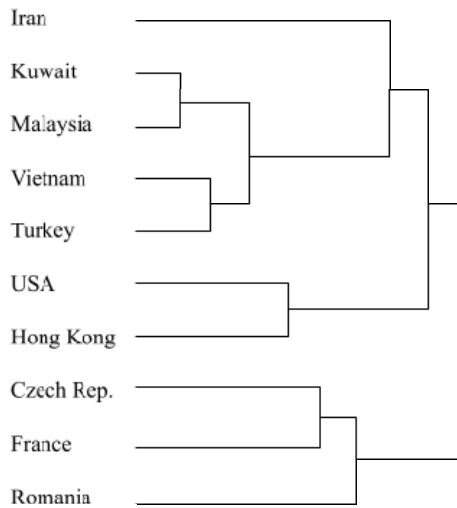
Source: Calculation by authors using SPSS modeller

4   Discussion

This study contributes to understanding cross-cultural differences in the ethical attitudes of future business leaders, as it identifies the major similarities and dissimilarities across ten samples from three continents. By means of secondary analyses, the study shows that the main differences in attitudes towards business ethics might be explained by cultural and geographical proximity. The most interesting findings are discussed and interpreted below.

4.1   Differences across the samples: the possible influence of response bias

Students from Malaysia, Vietnam, Turkey, and France provided the most 'average' answers, which means that their answers did not differ significantly from the rest-of-the-world answers in 20 out of 30 ATBEQ items. On the other hand, students

from the USA and Hong Kong differed most from the rest of the world, whose answers to more than 60% of items were significantly higher or lower than the pooled mean. Students from both of those samples tended to disagree with items through the questionnaire more strongly than students from the other countries. As previously mentioned, the items in the questionnaire relate to various topics and do not load on a single factor. Therefore, the differences between the samples cannot be interpreted as evidence of a generally stronger or weaker ethical attitude in the particular samples. Instead, they may be a consequence of response bias that causes more extreme answers in certain samples. As shown in the supplementary analysis, this bias may be culturally determined, because students in various samples provided stronger or weaker agreement with ATBEQ items according to the level of individualism and power distance in their home country. The greatest tendency to agree with items all through the questionnaire was found in student samples from collectivistic countries with a high power distance (i.e., Malaysia, Kuwait, and Romania). However, students from individualistic countries with a low power distance (i.e., the USA and the Czech Republic) tended to disagree, when compared to the other samples. This is in accordance with previous research by Harzing (2006), who showed that individualism and power distance related to acquiescence bias and to the tendency to give more positive answers. Similar to this finding, her (Harzing, 2006) respondents from less individualistic countries with a lower power distance agreed more strongly with the attitudinal items all through the questionnaire. However, there was only a small number of countries in this analysis, the sampling procedure varied across the countries, and the analysis was only descriptive, with graphical output. Therefore, the findings cannot be considered convincing evidence of cultural influence on the tendency to agree with items relating to attitudes towards business ethics. Further exploration of such cultural influence would be worthy of future research.

Nevertheless, the cultural influence should be considered when interpreting the results of this paper's analyses and past studies on attitudes towards business ethics. For example, Bhattacharya et al. (2018) found recently that Indian business students surprisingly scored higher than German students on the individualistic values subscale of the Ethical Positioning Questionnaire, even though Germany is a much more individualistic country than India. This is one of many results which might have been influenced by acquiescence bias because India is a collectivistic country with a high power distance and Germany is the opposite. It cannot be stated simply that students from one country have stronger ethical attitudes towards business ethics when they are compared only on the basis of the total scores of self-descriptive questionnaires.

4.2   *Similarity across the samples: clusters*

Cluster analysis indicates the countries (country samples) that have responded to individual ATBEQ items in a similar way. Concerning the results summarised in Figure 1, the clusters are based on geographical proximity and a shared religious tradition. Three historically Christian European countries (the Czech Republic, France, and Romania) are grouped into a distinguishable cluster. However, they only group in the latter stages, which indicates that they are not that close to each other relative to the closeness inside other clusters. This corresponds to the fact that France is a Catholic

Western European country, while the Czech Republic is a more secular Central European country and Romania is an Orthodox Eastern European country. The large Asia-America cluster can be divided into two parts, the first containing two countries with an Anglophonic tradition (i.e., the USA and Hong Kong) and the second consisting of Muslim countries and Vietnam. The Iranian sample differs from other Muslim samples (which corresponds to the findings of Nejati et al. 2011), due perhaps to the dominance of the Shia branch of the Muslim religion. On the other hand, Kuwait and Malaysia, where the Sunni branch of Islam is predominant, are close to each other and two other countries with a more secular tradition imposed by their government (i.e., Vietnam and Turkey).

4.3   *Cross-cultural differences and similarities in attitudes towards business ethics*

This study was exploratory, as were the previous comparative studies using ATBEQ, and therefore it did not test the theoretically based hypotheses concerning cross-cultural differences. Instead, it looked for differences in the answers of students from ten countries to the 30 ATBEQ items. Therefore, the differences identified in this study do not constitute support for well-grounded assumptions, but rather represent a starting point for reflection on differences in the attitudes towards business ethics across the world and for future research. A number of interesting details and differences are highlighted below. For some of them, meaningful explanations were found that are not necessarily just the result of chance or response bias. Another difference can be found in the tables in the Results chapter. The researchers encourage readers to consider them when formulating hypotheses for future research on cross-cultural differences in attitudes towards business ethics.

Across all of the countries, students agreed the most with items 18 ('The main interest of shareholders is maximum return on their investment.') and 24 ('The business world has its own rules.'). These items had the highest pooled mean and mean value in all the samples, which exceeded a value of 3 on the five-point response scale. This implies that many students view the business environment with a certain degree of skepticism, as a place where profit takes priority over ethics. However, this does not mean that they agree with the situation. One of the two items, which provoked the strongest disagreement across the samples was item 7, which states 'moral values are irrelevant in the business world'. Although students from all of the countries tended to agree with items 18 and 24, there were notable differences between the individual samples. The students from the European cluster, particularly from the two post-communist European countries (i.e., the Czech Republic and Romania), agreed with item 18 the most. This may relate to a persisting mistrust of the morality of private enterprise that was established during more than 40 years of communism. Another reason may relate to legislation. For example, in Czech law, entrepreneurship is defined as 'an activity carried out to acquire profit' (Law no. 89/2012 Coll.). As this is the definition that Czech students are taught, it is understandable that they would agree with a statement that has the same meaning.

The greatest disagreement across the samples can be found in responses to item 14 ('While shopping at the supermarket, it is appropriate to switch price tags or packages.'), which was the only item to have a pooled mean lower than 2, and whose mean answer for all the samples was lower than 2.5. This item describes a specific unethical act. The

students across all national samples also tended to disagree with the other two items that describe specific unethical acts (i.e., items 15 and 21). This disagreement was strongest for students from the US and Iran. The authors of this study did not find any reasons why disagreement with these specific unethical acts was strongest in those countries.

The item with the greatest differences in answers across the countries was item 4 ('Act according to the law, and you can't go wrong morally.'). These differences might be connected to the different legislatures in the individual countries, with different concepts of the law and with different historical experiences with the law. The strongest agreement with this item can be observed for the Muslim countries (Iran, Kuwait, Malaysia, and Turkey), where the law is derived from religion. Conversely, the least agreement with this item was found in the samples from the post-communist countries (the Czech Republic and Romania), where there had been recent experience with legislatures controlled by an unelected and secular ruling party.

The smallest differences between samples were found for items 17 ('Employee wages should be determined according to the laws of supply and demand.'), 10 ('The business world today is not different from what it used to be in the past. There is nothing new under the sun.'), and 29 ('You can judge a person according to his/her work and his/her dedication.'). Only Czech students answered item 29 differently and only US students answered item 10 differently when compared to the rest of the world. In comparison to the other samples, Czech and U.S. students had a stronger tendency to disagree with all items through the questionnaire. Therefore, their significantly higher disagreement with items 29 and 10 respectively may have been due to response bias. In general, the minor differences in answers to items 10 and 29 across the samples may be explained by the vagueness of these items.

4.4 *Contributions and limitations of the study and future research recommendations*

This study compares recent research on attitudes towards business ethics amongst business students from ten different countries across the world. As far as the authors are aware, this is the largest study of its kind. Such an extensive comparison was possible thanks to a secondary analysis of studies that used the widely used questionnaire ATBEQ. ATBEQ is associated with both the strengths and limitations of this study. On the one hand, ATBEQ allowed for a comparison of a number of different countries. However, on the other, there are reasons to doubt the quality of ATBEQ. Since the beginning, ATBEQ has generally been criticised for certain weaknesses (Moore and Radloff, 1996), many of which were mentioned in the theoretical overview of this paper. Two such shortcomings are ATBEQ's unclear factor structure and the lack of evidence concerning its content and construct validity. Using ATBEQ with the existing evidence on its validity constrains research on students' attitudes towards business ethics. Therefore, a worthy focus of future research would be to provide more evidence on the quality of ATBEQ or to develop a new instrument.

In order to deal with the unclear factor structure of ATBEQ, this study analysed the data at the level of items. This approach raises the question of whether an item-level analysis of items with five-point scales allows for the use of t-tests. Nevertheless, this has

been a common approach in past studies (e.g., Baggaley and Hull, 1983; Allen and Seaman, 2007; Maurer and Pierce, 1998; Vickers, 1999) and it also has support in the statistical literature as t-tests are robust to such violations (Heeren and D'Agostino, 1987).

Ten samples were included in the analyses based on an extensive systematic review. The use of multiple databases and the combination of multiple search procedures should have ensured that all the relevant recent studies comparing student attitudes towards business ethics using ATBEQ were included. The search even led to the discovery of some studies that have not been published in English. Even so, it is still possible that some studies were omitted because of their unavailability in the main databases or due to their language.

Although the systematic review and secondary analysis of the published data provided this study with a large sample of countries for comparison, this approach also has several limitations. The comparison does not include countries from all the regions of the world. More specifically, countries from Latin America, Africa, and Australian-Oceania regions were not included because we were unable to find any recent data on students from these regions. However, the ten samples from countries across Europe, Asia, and North America still provided rich material for cross-cultural comparisons. Nevertheless, the authors of this paper encourage researchers with access to African, Latin American, and Australian samples to replicate previous studies and publish their findings.

This study is also limited by the differences in the sampling procedures across the individual studies. Although all the studies compare business students, they might differ in the way they chose business schools and how they addressed and selected the students. Some of the significant results may only be the consequence of, for example, the different quality of business schools (e.g., students from elite institutions may report more ethical attitudes than students from lower-level institutions), the different age groups of students that prevail in the samples (e.g., older students might have been positively influenced by courses on business ethics), the different subpopulations that are addressed by the questionnaire (e.g., students recruited from ethics courses may show more ethical attitudes than students of microeconomics courses), or the different incentives that were provided for completing the questionnaire (e.g., in samples of volunteers there might be more ethical attitudes than in paid samples, because of self-selection bias). Most of the studies provided only limited or no information on the sampling procedure. It is therefore difficult to judge whether and to what extent the results of the paper's analyses are biased by different procedures. However, the cluster analysis in this study groups the samples closely along the lines of their geographical and cultural proximity. This may indicate that the answers to ATBEQ items are more a reflection of cultural differences than the sampling issues.

The results may be also biased by differences in the translations of ATBEQ into various languages (see, e.g., Beaton et al., 2000). Many of the studies did not provide information on the language of their survey or any specific information about the adaptation process and the content validity of their language version of ATBEQ (e.g., Nejati et al., 2011; Pham et al., 2015; Vrdoljak Raguž and Matić, 2016). The widespread practice of not providing information regarding the sampling procedure and the

translation of the questionnaires is regrettable, as it has limited the scope of this and similar research. Thus, researchers should be encouraged to provide more detail in the Method section of future studies to allow for the critical evaluation and review of their results.

As with previous research on students' attitudes towards business ethics (e.g., Nejati et al., 2011; Phau and Kea, 2007; Pham et al., 2015; Sims and Gegez, 2004), this study looked for differences between samples without stating specific theoretically grounded hypotheses. The study interprets the results of 300 individual t-tests conducted on a single data set, so false-positive results would have been likely. To avoid this problem, the Bonferroni corrected $\alpha = 0.000167$ level of significance was used. This does not prevent a false positive result, but it greatly reduces the chance of its occurrence. The Bonferroni correction can be considered one of the strengths of this research. Earlier studies used uncorrected levels of significance, even though they conducted dozens of theoretically unsubstantiated analyses of the same data set. Despite using the Bonferroni correction, the study is exploratory in nature and cannot provide strong evidence on existing cross-cultural differences and therefore only points to potential directions for future research.

5 Conclusions

By analysing data from previous research using ATBEQ, this study demonstrates the existence of cross-cultural differences in attitudes towards business ethics among business students, i.e., future business leaders. The study includes ten samples and provides a comprehensive picture of the ethical attitudes of students from Europe, Asia, and North America. The differences that were identified can inspire further research and can serve in the establishment of ethics courses at universities and adaptation programs for graduates in companies.

This study also highlights four methodological problems of previous research on attitudes towards business ethics. The first is the unclear factor, content, and construct validity of ATBEQ. The second is the presence of response bias, which is culturally determined and causes variance in respondents' answers to the questionnaire that is unconnected to their real attitudes. The third problem is connected to insufficient information in the methodology sections of previous studies; especially the lack of information on translation and sampling procedures. The final problem is the lack of hypotheses on specific differences in attitudes and the widespread practice of 'data fishing' in dozens of analyses without the correction of the significance level. These problems need to be taken into account when interpreting the results of these studies. In terms of future research, it is worth considering the development of a new or substantially revised questionnaire that would be subject to in-depth and openly published pre-testing and validation. Without it, future research is likely to be highly constrained in its potential contribution to the field of business ethics. Another recommendation is that researchers monitor for response bias in any future cross-cultural comparison studies. Finally, the authors of this study encourage researchers who intend to compare attitudes towards business ethics to provide more information on their methods and samples and to formulate hypotheses based on theory.

References

Allen, E. and Seaman, C.A. (2007) 'Likert scales and data analyses', *Quality Progress*, Vol. 40, No. 7, pp.64–65.

Al-Shaikh, F., Elian, M. and Tahat, L. (2012) 'Business students attitudes towards business ethics: evidence from Kuwait', *International Journal of Education Research*, Vol. 8, No. 1, pp.59–76.

Bageac, D., Furrer, O. and Reynaud, E. (2011) 'Management students' attitudes toward business ethics: a comparison between France and Romania', *Journal of Business Ethics*, Vol. 98, No. 3, pp.391–406.

Baggaley, A. and Hull, A. (1983) 'The effect of nonlinear transformations on a Likert scale', *Evaluation & the Health Professions*, Vol. 6, No. 4, pp.483–491.

Beaton, D.E., Bombardier, C., Guillemin, F. and Ferraz, M.B. (2000) 'Guidelines for the process of cross-cultural adaptation of self-report measures', *Spine*, Vol. 25, No. 24, pp.3186–3191.

Bhattacharya, S., Neelam, N. and Murthy, V. (2018) 'Ethical value positioning of management students of India and Germany', *Journal of Academic Ethics*, Vol. 16, No. 3, pp.257–274.

Borkowski, S.C. and Ugras, Y.J. (1998) 'Business students and ethics: a meta-analysis', *Journal of Business Ethics*, Vol. 17, No. 11, pp.1117–1127.

Cattell, R.B. (1966) 'The scree test for the number of factors', *Multivariate Behavioral Research*, Vol. 1, No. 2, pp.245–276.

Cengiz, E., Ferman, M. and Akyuz, I. (2012) 'Business ethics: exploring the differences about perceptions of business ethics among selected Turkish financial specialists', *Journal of Marketing Development and Competitiveness*, Vol. 6, No. 4, pp.1–11.

Chiu, T., Fang, D., Chen, J., Wang, Y. and Jeris, C. (2001) 'A robust and scalable clustering algorithm for mixed type attributes in large database environment', in *Proceedings of the Seventh ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, New York, NY, USA, pp.263–268.

Choe, K.L., Lau, T.C. and Tan, L.P. (2011) 'Success, rich, motivator and importance: establishing the contributory factors of money ethics towards business ethics', *European Journal of Economics, Finance and Administrative Sciences*, Vol. 37, No. 9, pp.90–98.

Cohen, J. (1988) *Statistical Power Analysis for the Behavioral Sciences*, Routledge, New York.

Cohen, J.R., Pant, L.W. and Sharp, D.J. (2001) 'An examination of differences in ethical decision-making between Canadian business students and accounting professionals', *Journal of Business Ethics*, Vol. 30, No. 4, pp.319–336.

Comegys, C., Vaisanen, J., Lupton, R.A. and Rawlinson, D.R. (2013) 'Attitudes toward business ethics and degree of opinion leadership of future managers in the United States, Finland, and China', *Journal of International Education Research*, Vol. 9, No. 1, pp.7–20.

Compare Countries [online] https://www.hofstede-insights.com/product/compare-countries/ (accessed 23 August 2017).

Cox, P.L., Friedman, B.A. and Edwards, A.L. (2009) 'Enron: the smartest guys in the room – using the Enron film to examine student attitudes towards business ethics', *Journal of Behavioral & Applied Management*, Vol. 10, No. 2, pp.263–290.

De Winter, J.C. and Dodou, D. (2010) 'Five-point Likert items: t test versus Mann-Whitney-Wilcoxon', *Practical Assessment, Research & Evaluation*, Vol. 15, No. 11, pp.1–12.

Echevarria-Cruz, S., Vaduva, S., Fotea, I. and Neagoie, D. (2015) 'Business ethics and corporate social responsibility attitudes among SME leaders in Romania', in *Proceedings of the International Management Conference*, Bucharest, Romania, pp.830–839.

ElZein, H.L. (2013) 'Attitude towards business ethics after the Arab spring: influence of religiosity, gender and political affiliation', *American Academic & Scholarly Research Journal*, Vol. 5, No. 3, pp.90–105.

Er, A. and Sandybayev, A. (2015) 'An empirical investigation on perception of business ethics and organizational culture. A case of organization in Northern Cyprus', *International Journal of Information Research and Review*, Vol. 2, No. 3, pp.556–561.

Erturhan, H. and Filizöz, B. (2011) 'Business ethics and research on banking sector', *Business Ethics and Research on Banking Sector*, Vol. 12, No. 2, pp.139–157.

Etheredge, J.M. (1999) 'The perceived role of ethics and social responsibility: an alternative scale structure', *Journal of Business Ethics*, Vol. 18, No. 1, pp.51–64.

Fatoki, O. and Chiliya, W. (2012) 'An investigation into the attitudes toward business ethics and corporate social responsibility by local and immigrant SME owners in South Africa', *Journal of Social Sciences*, Vol. 32, No. 1, pp.13–21.

Fatoki, O. and Marembo, M. (2012) 'An investigation into the attitudes toward business ethics by university students in South Africa', *African Journal of Business Management*, Vol. 6, No. 18, pp.5865–5871.

Forsyth, D.R. (1980) 'A taxonomy of ethical ideologies', *Journal of Personality and Social Psychology*, Vol. 39, No. 1, pp.175–184.

Franke, G.R. and Richey Jr., R.G. (2010) 'Improving generalizations from multi-country comparisons in international business research', *Journal of International Business Studies*, Vol. 41, No. 8, pp.1275–1293.

Gelbard, R., Goldman, O. and Spiegler, I. (2007) 'Investigating diversity of clustering methods: an empirical comparison', *Data & Knowledge Engineering*, Vol. 63, No. 1, pp.155–166.

Gholipour, T.H., Nayeri, M.D. and Mehdi, S.M.M. (2012) 'Investigation of attitudes about corporate social responsibility: business students in Iran', *African Journal of Business Management*, Vol. 6, No. 14, pp.5105–5113.

Goksoy, A. and Alayoglu, N. (2013) 'The impact of perception of performance appraisal and distributive justice fairness on employees' ethical decision making in paternalist organizational culture', *Performance Improvement Quarterly*, Vol. 26, No. 1, pp.57–79.

Gözüm, A.G. (2016) 'Banka çalışanlarının demografik özelliklerine göre iş ahlakı tutumlarının incelenmesi – analyzing business ethics attitudes of bank employees in terms of demographical qualifications', *Journal of Business Research-Turk*, Vol. 8, No. 2, pp.293–293.

Gulova, A., Eryilmaz, I. and Ispirli, D. (2013) 'Attitudes towards business ethics: an empirical study on Turkish senior business students', *International Proceedings of Economics Development and Research*, Vol. 65, pp.42–47.

Haloub, R., Samawi, J.N., Refai, D. and Beddewela, E. (2016) 'Attitudes toward business ethics in different contexts: a cross-cultural comparison between professionals in Jordan and UK', Presented at *19th International Symposium on Ethics*, Business and Society, Barcelona, Spain.

Harzing, A.W. (2006) 'Response styles in cross-national survey research: a 26-country study', *International Journal of Cross Cultural Management*, Vol. 6, No. 2, pp.243–266.

Heeren, T. and D'Agostino, R. (1987) 'Robustness of the two independent samples t-test when applied to ordinal scaled data', *Statistics in Medicine*, Vol. 6, No. 1, pp.79–90.

Hofstede, G., Hofstede, G.J. and Minkov, M. (2010) *Cultures and Organizations: Software of the Mind*, McGraw Hill Professional, New York.

Jirotmontree, A. (2013) 'Business ethics and counterfeit purchase intention: a comparative study on Thais and Singaporeans', *Journal of International Consumer Marketing*, Vol. 25, No. 4, pp.281–288.

Jung, C.Y. (1998) 'Attitudes toward business ethics held by Korean students', *Korean Management Review*, Vol. 27, No. 3, pp.611–630.

Jung, H.S. and Yoon, H.H. (2006) 'Attitudes towards business ethics by ATBEQ of the students majoring in culinary and foodservice management', *Korean Journal of Food and Cookery Science*, Vol. 22, No. 6, pp.756–767.

Kara, A., Rojas-Méndez, J.I. and Turan, M. (2016) 'Ethical evaluations of business students in an emerging market: effects of ethical sensitivity, cultural values, personality, and religiosity', *Journal of Academic Ethics*, Vol. 14, No. 4, pp.297–325.

Khan, K., Gul, A. and Salam, Z.A. (2015) 'University students' Islamic work ethics and their attitude towards business ethics: evidence from Asia', *Journal of Islamic Business and Management*, Vol. 5, No. 1, pp.1–21.

Knezevic, B., Kurnoga, N. and Simurina, N. (2017) 'Multivariate analysis of attitudes on financial and other aspects of business ethics of future managers', *Croatian Operational Research Review*, Vol. 8, No. 1, pp.97–109.

Lau, C.L. (2010) 'A step forward: ethics education matters!', *Journal of Business Ethics*, Vol. 92, No. 4, pp.565–584.

Law No. 89/2012 Coll. § 420, The Civil Code (Občanský zákoník), Czech Republic.

Leonard, L.N., Riemenschneider, C.K. and Manly, T.S. (2017) 'Ethical behavioral intention in an academic setting: models and predictors', *Journal of Academic Ethics*, Vol. 15, No. 2, pp.141–166.

Lock, I. and Seele, P. (2015) 'Quantitative content analysis as a method for business ethics research', *Business Ethics: A European Review*, Vol. 24, No. S1, pp.24–40.

Loe, T.W. and Weeks, W.A. (2000) 'An experiment investigation of efforts to improve sales students' moral reasoning', *Journal of Personal Selling & Sales Management*, Vol. 20, No. 4, pp.243–251.

Lowry, D. (2003) 'An investigation of student moral awareness and associated factors in two cohorts of an undergraduate business degree in a British university: Implications for business ethics curriculum design', *Journal of Business Ethics*, Vol. 48, No. 1, pp.7–19.

Lumsden, J. and Fatoki, O. (2013) 'An investigation into the attitudes of business and non-business university students toward business ethics in South Africa', *Anthropologist*, Vol. 15, No. 3, pp.249–253.

Lung, C.K. and Chai, L.T. (2010) 'Attitude towards business ethics: examining the influence of religiosity, gender and education levels', *International Journal of Marketing Studies*, Vol. 2, No. 1, pp.225–232.

Lysonski, S. and Gaidis, W. (1991) 'A cross-cultural comparison of the ethics of business students', *Journal of Business Ethics*, Vol. 10, No. 2, pp.141–150.

Maurer, J. and Pierce, H.R. (1998) 'A comparison of Likert scale and traditional measures of self-efficacy', *Journal of Applied Psychology*, Vol. 83, No. 2, pp.324–329.

Medeiros, K.E., Watts, L.L., Mulhearn, T.J., Steele, L.M., Mumford, M.D. and Connelly, S. (2017) 'What is working, what is not, and what we need to know: a meta-analytic review of business ethics instruction', *Journal of Academic Ethics*, Vol. 15, No. 3, pp.245–275.

Miesing, P. and Preble, J.F. (1985) 'A comparison of five business philosophies', *Journal of Business Ethics*, Vol. 4, No. 6, pp.465–476.

Moore, R.S. and Radloff, S.E. (1996) 'Attitudes towards business ethics held by South African students', *Journal of Business Ethics*, Vol. 15, No. 8, pp.863–869.

Nejati, M., Amran, A. and Md. Shahbudin, A.S. (2011) 'Attitudes towards business ethics: a cross-cultural comparison of students in Iran and Malaysia', *International Journal of Business Governance and Ethics*, Vol. 6, No. 1, pp.68–82.

Neswiswi, H. (2014) *Employee Attitude towards Business Ethics in the Motor Industry*, Doctoral dissertation, University of Pretoria, South Africa.

Neumann, Y. and Reichel, A. (1987) *The Development of Attitudes Toward Business Ethics Questionnaire (ATBEQ): Concepts, Dimensions, and Relations to Work Values*, Ben Gurion University of Negev, Negev, Israel.

Nguyen, L.D. (2015) 'Would taking ethics course and having business law training make a difference in the attitudes towards business ethics? An examination of business students in the U.S.', in *Baasana International Conference Proceedings*, City University of New York, New York.

Nguyen, L.D. and Pham, L.N.T. (2015) 'Business students and ethics: a crosscultural study between the U.S. & Vietnam', *SAM Advanced Management Journal*, Vol. 80, No. 4, pp.31–44.

Nurmakhamatuly, A. (2010) 'Kazak ve Türk yöneticilerin iş etiğine ilişkin tutum ve davranışları – Attitudes and behaviors towards business ethics of Kazakh and Turkish managers', *Turkish Journal of Business Ethics*, Vol. 3, No. 5, pp.69–96.

Okpara, J.O. (2014) 'The effects of national culture on managers' attitudes toward business ethics: Implications for organizational change', *Journal of Accounting & Organizational Change*, Vol. 10, No. 2, pp.174–189.

Pae-pae, M.C. (2013) *Student's Attitudes Toward Business Ethics: A Comparison between Indonesia and Lesotho*, Doctoral dissertation, Yogyakarta, Indonesia: Atma Jaya University.

Payaud, M.A. and Merunka, D. (2014) 'L'attitude par rapport à l'ethique dans les affaires dans les secteurs formel et informel de l'economie: une investigation empirique dans trois pays Africains', in *2ème Conférence Africaine de Management*, HAL, Cotonou.

Pham, L.N.T., Nguyen, L.D. and Favia, M.J. (2015) 'Business students' attitudes toward business ethics: an empirical investigation in Vietnam', *Journal of Asia Business Studies*, Vol. 9, No. 3, pp.289–305.

Phatshwane, P.M.D., Mapharing, M. and Basuhi, E.J. (2014) 'Attitudes towards business ethics held by accountancy and finance students in the University of Botswana', *International Journal of Business and Management*, Vol. 9, No. 2, pp.17–28.

Phau, I. and Kea, G. (2007) 'Attitudes of university students toward business ethics: a cross-national investigation of Australia, Singapore and Hong Kong', *Journal of Business Ethics*, Vol. 72, No. 1, pp.61–75.

Preble, J.F. and Reichel, A. (1988) 'Attitudes towards business ethics of future managers in the US and Israel', *Journal of Business Ethics*, Vol. 7, No. 12, pp.941–949.

Price, G. (2012) *The Reward Contingency of Ethical Attitudes of Business Stakeholders under Conditions of Moral Ambiguity*, Doctoral dissertation, University of Pretoria, South Africa.

Price, G. and van der Walt, A. (2013) 'Changes in attitudes towards business ethics held by former South African business management students', *Journal of Business Ethics*, Vol. 113, pp.429–440.

Procházka, J., Kulhavý, V. and Jirásek, M. (2015) 'Translation and adaptation of the attitudes towards business ethics questionnaire (ATBEQ) into Czech language', in *Proceedings of Aktuálne problémy podnikovej sféry 2015*, Ekonóm, Bratislava, Slovakia, pp.544–557.

Quan-Chai, R. (2013) *The Effect of Cognitive Moral Development on Ethical Attitudes, in the Presence of Reward Consequences, Under Conditions of Moral Ambiguity*, Doctoral dissertation, Pretoria, South Africa: University of Pretoria, South Africa.

Rajasekar, J. and Simpson, M. (2014) 'Attitudes toward business ethics: a gender-based comparison of business students in Oman and India', *Journal of Leadership, Accountability and Ethics*, Vol. 11, No. 2, pp.99–114.

Reidenbach, R.E. and Robin, D.P. (1990) 'Toward the development of a multidimensional scale for improving evaluations of business ethics', *Journal of Business Ethics*, Vol. 9, No. 8, pp.639–653.

Ritter, B.A. (2006) 'Can business ethics be trained? A study of the ethical decision-making process in business students', *Journal of Business Ethics*, Vol. 68, No. 2, pp.153–164.

Rizvi, S., Tanveer, M.A., Saleem, U. and Latif, M. (2012) 'Business students' attitude towards business ethics in Pakistan', *European Scientific Journal*, Vol. 8, No. 25, pp.178–188.

Rodriguez, C. (2016) *A Quantitative Examination of the Relationship of Work Experience to Attitudes of Business Ethics in Graduate Students*, Doctoral dissertation, Capella University Minneapolis, Minnesota, USA.

Sahin, B. and Kazoglu, I.H. (2015) 'A study on business ethics and perceptions of wage earners in tourism', *Journal of Tourism and Hospitality*, Vol. 4, No. 2, pp.1–8.

Shields, R., Comegys, C., Lupton, R. and Takei, H. (2013) 'Undergraduate attitudes toward business ethics: a cross-cultural comparison', *Journal of Studies in Education*, Vol. 3, No. 4, pp.72–80.

Simmons, R.S., Shafer, W.E. and Snell, R.S. (2013) 'Effects of a business ethics elective on Hong Kong undergraduates' attitudes toward corporate ethics and social responsibility', *Business & Society*, Vol. 52, No. 4, pp.558–591.

Sims, R.L. (2006) 'Comparing ethical attitudes across cultures', *Cross Cultural Management: An International Journal*, Vol. 13, No. 2, pp.101–113.

Sims, R.L. and Gegez, A.E. (2004) 'Attitudes towards business ethics: a five nation comparative study', *Journal of Business Ethics*, Vol. 50, No. 3, pp.253–265.

Sims, R.L. and Wimmer, D. (2011) 'Attitudes towards business ethics: a study of Austrian student views', in *Academy of Business Disciplines Annual Conference*, Fort Myers Beach, USA.

Sims, R.R. (2002) 'Business ethics teaching for effective learning', *Teaching Business Ethics*, Vol. 6, No. 4, pp.393–410.

Singhapakdi, A., Vitell, S.J. and Kraft, K.L. (1996) 'Moral intensity and ethical decision-making of marketing professionals', *Journal of Business Research*, Vol. 36, No. 3, pp.245–255.

Small, M.W. (1992) 'Attitudes towards business ethics held by western Australian students: a comparative study', *Journal of Business Ethics*, Vol. 11, No. 10, pp.745–752.

Sparks, J.R. and Hunt, S.D. (1998) 'Marketing researcher ethical sensitivity: conceptualization, measurement, and exploratory investigation', *The Journal of Marketing*, Vol. 62, No. 2, pp.92–109.

Stevens, E. (1979) *Business Ethics*, Paulist Press, New York.

Sujit, K.S. (2011) 'Comparing ethical attitudes of expatriates working in UAE', *Middle East Journal of Business*, Vol. 6, No. 1, pp.10–23.

Tipton, A.M. (2016) *Ethical Perspectives of MBA Graduates, Ethics Education, and Managerial Experience: A Hierarchical Multiple Regression Analysis*, Doctoral dissertation, Capella University Minneapolis, Minnesota, USA.

Treviño, L.K., Weaver, G.R. and Reynolds, S.J. (2006) 'Behavioral ethics in organizations: a review', *Journal of Management*, Vol. 32, No. 6, pp.951–990.

Vickers, A. (1999) 'Comparison of an ordinal and a continuous outcome measure of muscle soreness', *International Journal of Technology Assessment in Health Care*, Vol. 15, No. 4, pp.709–716.

Voegel, J.A. and Pearson, J. (2016) 'Religiosity and ethical ideologies as they pertain to business ethics: through the lens of the theory of planned behavior', *Journal of Leadership, Accountability and Ethics*, Vol. 13, No. 1, pp.30–48.

Vrdoljak Raguž, I. and Matić, M. (2016) 'Business students' attitudes towards business ethics: Evidence from Croatian universities', *Management: Journal of Contemporary Management Issues*, Vol. 21, No. S1, pp.189–205.

Wimalasiri, J.S., Pavri, F. and Jalil, A.A. (1996) 'An empirical study of moral reasoning among managers in Singapore', *Journal of Business Ethics*, Vol. 15, No. 12, pp.1331–1341.

Yazici, S. and Siniksaran, E. (2012) 'Çalışma yaşamı fark yaratır: öğrencilerin ve çalışanların iş ahlakına karşı tutumlarının karşılaştırılması – working life matters: on the comparison of the attitudes of students and employees towards business ethics', *Journal of Faculty of Political Science*, Vol. 46, No. 1, pp.61–74.

Yildirim, M.H. and Saygin, M. (2013) 'Business ethics and measuring ethical perceptions of the owners and managers: evidence from business in Aksaray organized industrial zone', *International Journal of Business and Management Studies*, Vol. 5, No. 1, pp.284–295.

Yıldırım, M.H. and Uğuz, Ş. (2012) 'İş etiği ve üniversite öğrencilerinin etik algılarını ölçmeye yönelik bir araştırma', *Organizasyon ve Yönetim Bilimleri Dergisi*, Vol. 4, No. 1, pp.177–187.

Yücel, R. and Çiftci, G.E. (2012) 'Employees' perceptions towards ethical business attitudes and conduct', *Turkish Journal of Business Ethics*, Vol. 5, No. 9, pp.151–161.