

Validity of the corporate ethical virtue (CEV) model in a South African context: A case study

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Abstract

South Africa is not only plagued by corruption, but also by a lack of ethics in corporate South Africa (Soko, 2017; Van Zyl, 2017). Ethics is reflected in the culture of an organisation, and corporate ethical culture should be measured. However, in the South African context, there is no reliable and validated measure of ethical culture. The purpose of this study was to empirically measure the validity and reliability of the corporate ethical virtue (CEV) model in a case study in South Africa through a quantitative research design. The CEV model (Kaptein, 2008, 2009) was identified, and subjected to reliability and validity tests within a South African insurance company. The instrument's reliability was confirmed through Cronbach alpha coefficients. The article concludes that the CEV model has some application value within the context it was tested. Due to its limitations, this study makes a modest contribution, but can serve as a first step towards the use and development of measurement instruments for ethical culture in South African organisations.

1. Introduction

Von Eck's (2016) statement "Ethics is on the decline", is evident across the globe (Kaptein, 2015; Smit & Bierman, 2017). South Africa, specifically, is characterised by unethical behaviour, in both the public and private sectors. In the business environment, organisations are continuously being confronted by a lack of ethical norms (Van Zyl, 2012; Angermund & Plant, 2017). Unethical behaviour is behaviour that is morally inappropriate, or behaviour that is not morally honoured (Fatoki, 2012).

Corruption is one of the top challenges in South Africa, and there is ample evidence of eroding ethics amongst corporate leaders in South Africa (Pietersen & Maree, 2016; Van Wyk & Badenhorst-Weiss, 2017). Some of the reasons for the increase in unethical behaviour in the business environment are, for example, excessive workload, fear of retrenchment, stagnation of the economy, uncertainty about the future, and weaknesses in the regulatory environment with respect to certain (ethical) business practices (Van Zyl, 2012).

Recurring corporate ethical scandals over several decades have led to the emergence of various moral-based, or principle-based, initiatives – across the globe. Such initiatives include corporate sustainability initiatives, corporate governance, corporate citizenship, corporate social responsibility and business ethics. All these initiatives are aimed at the long-term sustainability of organisations, emphasising sound management practices in the pursuit of profits, fairness towards people (broader society) and respect for the environment. Business ethics, in particular, is receiving increasing attention as organisations are being urged and pressured by stakeholders, through legislation and supervision, to allocate time and resources to improve and ensure ethical practices (Timonen & Luoma-Aho, 2010; Majluf & Navarrete, 2011; Smit & Bierman, 2017).

As a result of such pressures to be more ethical, organisations have taken steps to manage ethical conduct through initiatives such as a code of ethics, ethics training, and ethics hotlines or whistleblowing lines (Jalil, Azam & Rahman, 2010). In addition, there has been an increased focus on developing and maintaining a corporate ethical culture, since such a culture promotes ethical behaviour, effective governance and the attainment of organisational goals (Huhtala, Feldt, Hyvonen & Mauno, 2013; Angermund & Plant, 2017).

In South Africa, the context of this study, ethics in the business setting is promoted amongst large corporations through South Africa's Code on Corporate Governance, stipulated in the King IV Report. Adherence to the King IV is a listing requirement for the Johannesburg Stock Exchange (JSE) (Pierce & Kennedy-Good, 2009). Given the listing requirement, ethical conduct, ethical leadership, responsibility, and transparency should be priorities for listed companies (Deloitte, 2016; KPMG, 2016). In addition, the King IV requires listed corporations to cultivate an ethical culture.

Ethics SA conducted surveys in 2010, 2013 and 2016 amongst JSE-listed South African companies (with the majority being financial institutions). The aim of these surveys was to ascertain the state of ethics in South African JSE-listed companies. The findings indicated that the participating companies were serious about the management of ethics. However, the studies done by Ethics SA recommended that organisations should pay more attention to the ethical culture prevalent in their organisation. They recommended that the participating companies' (the respondents') ethical culture needed strengthening (Punt, Groenewald & Geerts, 2010; Groenewald & Geerts, 2013; Groenewald, 2016). In 2012, Van Zyl (2012) mentioned that ethical culture is hardly cultivated in South African organisations. This remark coincides with the findings of the three Ethics SA surveys, which is alarming considering the importance ethical culture plays in promoting ethical behaviour in the workplace.

Corporate ethical culture is considered a substantial factor in ethical decision-making (Fraedrich, Ferrell & Ferrell, 2013). It describes “how things are done” or “how things really work” in the workplace to solve internal and external managerial problems (Llopis, Reyes Gonzalez & Gasco, 2007; Ethics Resource Centre, 2010; Meinert, 2014). In addition, it affects how employees think in situations where ethics is concerned in relation to behaviours and decisions (Treviño & Nelson, 2011), and it fosters positive behaviour in the workplace (Appelbaum, Vigneault, Walker & Shapiro, 2009; Ethics Resource Centre, 2012). Ethical decision-making can also serve as a guideline on how to behave or make decisions ethically (Majluf & Navarrete, 2011; Treviño & Nelson, 2011). Research in this important topic (corporate ethical culture) has been proven to play an important role in promoting, encouraging and influencing ethical behaviour in the workplace.

According to Smurthwaite (2011), as the first step in strengthening an ethical culture, an organisation ought to measure the ethical culture prevalent in their organisation. However, the author highlights that research in the field of business ethics seems to have placed a limited focus on the topic of *ethical culture*. Furthermore, the 115 articles on business ethics that were published from 1995 to 2010 in South Africa focused on corporate social responsibility (CSR) (15%), economic justice (11%), corporate governance (11%), ethics (9%), and business ethics theories and teaching (8%) (Smurthwaite, 2011). Despite the maturity of the field of business ethics in South Africa (Rossouw, 2011), only a handful of tools have been developed and/or tested to measure ethical culture within a South African context. Therefore, there is a gap in the literature pertaining to the development and availability of appropriate tools to measure ethical culture that have been specifically developed for the South African context.

This article aims to address this gap, by testing the reliability and validity of a developed tool to measure the ethical culture in one large company in South Africa.

2. The problem and aim of the study

The discussion above highlights the need to improve ethics in corporate South Africa. One means of achieving this is to measure ethical culture, identify the areas for improvement and to address those areas of concern. However, the researchers of this study, after a thorough search, could not find any developed and tested tools to measure corporate ethical culture in a South African context. The conclusion was made that such a tool has not been developed in the country and that a tool developed elsewhere could be tested and validated for use in South African organisations.

The research objective is therefore to measure the corporate ethical virtue (CEV) model's validity and reliability in a large South African company.

The following sections provide for a literature review on corporate ethical culture, advancements in this field concerning measurement tools, and a review of the empirical findings. Lastly, this article suggests a modified CEV model to measure ethical culture within the participating company in South Africa.

3. Literature review

In the following section, corporate ethical culture, and the construct's development from a one-dimensional to a multidimensional construct are reviewed.

3.1 Corporate ethical culture

According to Schein (1984:3), an organisational culture is “the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with problems of external adaptations and internal integration”. Ethical culture is an element of organisational culture (Baker, Hunt & Andrews, 2006; Eisenbeiss, Van Knippenberg & Fahrbach, 2014). According to Kaptein (2011), the ethical culture of an organisation is defined by those elements and aspects of the organisational context that encourage ethical behaviour or that reduce unethical behaviour. Organisational context elements include, for example, an ethics programme and ethics training (Kaptein, 2015). Huhtala *et al.* (2013) stipulated that ethical culture has both formal and informal components, aimed at promoting ethical behaviour. The formal components include tangible aspects, such as leadership and reward systems, while the informal components include intangible elements, such as rituals and implicit behavioural norms (Ardichvili *et al.*, 2009).

An ethical culture supports moral principles and ethical behaviour (Eisenbeiss *et al.*, 2014). It is a culture that is perceived to be the best way to prevent corporate scandals and unethical behaviour (Ethics Resource Centre, 2012). Numerous researchers and research institutions have highlighted the fact that developing and maintaining an ethical culture ought to be a priority in organisations to assist with their ethical orientation (Ethics Resource Centre, 2010; Belak, 2013; Huhtala *et al.*, 2013; Riivari & Lämsä, 2014). Considering the role ethical culture plays in ethical decision-making, research on corporate ethical culture has been proven to play an important role in promoting, encouraging and influencing ethical behaviour in the workplace.

Treviño, Butterfield and McCabe (1998) were the first authors to test and develop the concept of ethical culture, and subsequently made calls for further development and refinement. Since 1998, a few studies have attempted to interrogate ethical culture as a construct. The following section elaborates on some of these studies.

3.2 The development of ethical culture as a construct

Authors such as Treviño *et al.* (1998) worked on, developed and tested constructs to measure ethical culture, however, they recommended that this underdeveloped construct be further developed. Following the work of prominent authors in the field (for example, Treviño *et al.*, 1998; Kaptein, 2008, 2009; Ardichvili & Jondle, 2009; Jondle, Ardichvili & Mitchell, 2014), the conclusion was reached that to better understand ethical culture and then to measure it, the concept should be evaluated based on the elements or subconcepts. These aforementioned authors have unravelled, or dissected corporate ethical culture into validated dimensions and characteristics that can assist in the measurement thereof within an organisation. Kaptein (2008) and Ardichvili and

Jondle (2009) identified the need to further develop instruments to measure the ethical culture in organisations. They took the one-dimensional concept of Treviño *et al.* (1998) and developed it into a multidimensional concept, containing virtues/characteristics of a corporate ethical culture.

Based on the work of Treviño *et al.* (1998), Kaptein (2008, 2009) confirmed that corporate ethical culture consists of multiple dimensions. Kaptein's work on ethical culture is based on Solomon's (in Kaptein, 2008) virtue-based theory of business ethics. This theory states that a strong ethical culture has certain values, and further, that individual employees and organisations should possess the characteristics (or virtues) that enable them to excel morally. However, the "virtuousness" of an organisation is defined by its ability to encourage staff members to behave ethically and to prevent unethical behaviour (Collier, 1995; Kaptein, 2008; McLeod, Payne & Evert, 2016).

Consequently, a generic set of corporate ethical virtues that should be embedded in an organisation's ethical culture was identified, developed and tested (amongst Dutch organisations). These virtues are listed in Table 1, left column.

In 2013, DeBode, Armenakis, Feild and Walker (2013) further built on Kaptein's (2008) corporate ethical virtue (CEV) model by developing and testing a shorter version of the CEV model within the United States (US). Their findings support this shorter version, referred to as the "CEVMS-SF". The shorter version encompasses the same virtues as in the original model, however, the questionnaire is shorter (reduced from 58 items to 31 items).

Ardichvili and Jondle (2009) and Jondle *et al.* (2014) also contributed to the development of the construct, "ethical culture". They identified dimensions or characteristics (of five clusters) of an ethical culture (Ardichvili & Jondle, 2009) and subsequently developed the ethical business culture (CEBC) survey (Jondle *et al.*, 2014). These characteristics are also listed in Table 1, right column.

Table 1: Comparison between the virtues and characteristics of an ethical culture

Virtues of ethical culture: CEV model	Characteristics of ethical culture: CEBC survey
<ul style="list-style-type: none"> • Clarity, which refers to the normative (or ethical) expectations regarding the appropriate or inappropriate conduct of employees. • Congruency, which states that when management's behaviour is consistent with the normative expectations of the organisation, then behaviour from employees to comply with these expectations is reinforced. • Feasibility, which refers to the extent to which an organisation can create an environment or conditions that enable employees to comply with the normative expectations. • Supportability, which refers to the extent to which an organisation creates a work environment where employees experience trust and respect, and the extent to which employees identify and endorse organisational values, norms and standards. • Transparency, which refers to the degree to which an employee's conduct and its consequences are noticeable, or visible to others, such as colleagues and supervisors. • Discussability, which refers to the opportunities employees have to communicate (raise and discuss) ethical matters, issues and dilemmas that can arise in the workplace. • Sanctionability, which refers to the likelihood of punishment for behaving unethically and the rewarding of ethical behaviour. 	<ul style="list-style-type: none"> • Mission- and value driven, which refers to the integration of ethical values in the broader organisation (institutionalised) and in relationships. • Stakeholder balance, meaning that stakeholder concerns (including society) are constantly taken into account, as well as dealing with them on a consistent ethical and value-orientated basis. • Leadership effectiveness, which means that ethics starts at top management, is demanded from all levels of the organisation, and management demonstrates personal ethics and "walks the talk". • Process integrity, which refers to fairness in people, processes and product-related matters. There is also continuous ethics training, and communications and values are enforced daily. • Long-term perspectives, which involves having a long-term focus regarding the achievement of goals and the creation of shareholder value. It also involves connecting people, profits and plant, and placing a focus on sustainability.

Source: Compiled from Kaptein (2008, 2009), Ardichvili and Jondle (2009) and Jondle et al. (2014)

There are strong similarities and stark differences between the CEV model and CEBC survey. As shown in Table 1, both require ethical conduct to be clearly communicated and modelled; management behaviour needs to be consistent with the ethical standards expected (since ethics starts at the top); and an enabling environment should be created for employees to communicate ethics (through training or communications). The differences include the foci on stakeholders, process integrity and long-term perspectives, which are not directly evident in the CEV model. Similarly, the virtues of supportability, transparency, discussability and sanctionability are not directly evident in the CEBC survey. In conclusion, it seems that the CEV model focuses on measuring the inherent characteristics of ethical practices, while the CEBC focuses on measuring the broad management areas or categories in ethical culture.

This article used the developed CEV model, as it was the only validated measuring tool during the empirical phase of this study. Authors Huhtala, Feldt, Lämsä, Mauno and Kinnunen (2011), tested the validity of the CEV model in the context of a Finnish national labour union. The confirmatory factor analysis (CFA), within the study's limitations, supported the CEV model and its ability to evaluate ethical culture. In addition, authors

such as Kangas, Muotka, Huhtala, Mäkikangas and Feldt (2015) and Valentine, Fleischman and Godkin (2015), used the CEV model to investigate the associations of the ethicality of organisational culture and sickness absence. These authors also investigated the perceived ethical culture amongst sales professionals and its relationship to communication (of the code of ethics), job satisfaction and workplace bullying. These studies were conducted within the Finish public sector, and amongst selling professionals in the US, respectively Huhtala *et al.* (2011) statistically confirmed (through CFA) the eight unidimensional constructs of the CEV model. The two studies done by Kaptein (2008) and Huhtala *et al.* (2011) had similar findings. The similar findings could be due to the fact that both studies took place in Western, developed countries. Kaptein's (2008) study was conducted amongst Dutch respondents (with no indication of the region/country); while Huhtala *et al.*'s (2011) study was conducted amongst Finnish respondents (and in Finland).

This study was the first effort in South Africa to measure the ethical culture of a company using the CEV model. This article reports on the validity of the CEV model in terms of confirmatory and exploratory factor analysis (CFA and EFA). It also uses the Cronbach alpha coefficients to test for reliability in a South African context.

In the following sections, the methods of data collection analysis are presented. Thereafter, the results are reported and reflections on practical implications are presented, as well as the limitations of the study. The article concludes with recommendations for future research.

4. Research method and design

The authors of this study targeted the South African financial sector, as it is the strongest sector in South Africa (ranked 12th in the world) in terms of competitiveness (World Economic Forum, 2016). The majority of South African financial institutions are listed on the JSE (Johannesburg Stock Exchange, 2013). Therefore, they (ought to) have measures, policies and procedures in place to ensure ethical conduct. In addition to their listing requirements, there are strict rules applied by the Financial Intelligence Centre Act (FICA) of 2012 which ensures that they act responsibly and ethically.

4.1 Research design

To achieve the research objective, a quantitative design was implemented. The construct validity of the identified research instrument was firstly determined statistically through conducting CFA to determine if the data adequately fits Kaptein's model. In the case of inadequate fit, exploratory factor analysis (EFA) was subsequently conducted to determine the dimensionality of the constructs defined in Kaptein's model for the research data. Internal consistency (reliability) was determined statistically through the use of the Cronbach alpha coefficient on the final set of factors as identified in the EFA.

4.2 Sample and sampling techniques

The researchers approached a leading role player in the financial industry (according to The Economist Intelligence Unit, 2012). The company, an insurance company, agreed to participate in this study. The assumption is that such a JSE-listed institution must have an ethical orientation; hence, an ethical culture should be cultivated from the formal elements that have been implemented.

The scope of the study was further narrowed to include this insurance company's retail division in Gauteng (as per the request of the insurance company). Stratified random sampling was implemented to proportionally select managers and non-managers in the identified division. The sample size was 875, of which only 733 respondents were reached.

Although the survey was supported by the top management of the company the researchers had limited time to motivate non-responders to participate, for the researchers were given only a 30-day period to conduct research within the participating company, of which the period was extended by one week to obtain more responses. The survey was completed by 203 respondents (66 were managers and 137 were non-managers), and a total active response rate of 27.69% was obtained, which was disappointingly low for the researchers. However, a decision was made to go ahead with the validation of the model within the limitations of the low response rate.

4.3 Case study approach

The concept of ethics is complex, and differs from society to society (Van Wyk, 2014). Similarly, culture is an equally complex concept as, within a given culture, there may be a number of subcultures, each with their own distinguishing features as is the case in South Africa (Hellriegel, Slocum, Jackson, Louw, Staude, Amos, Klopper, Louw, Oosthuizen, Perks & Zindiye, 2012). In addition, organisational culture is seen as "the personality of an organisation" (Van Wyk, 2014). The researchers of this study agree with Pietersen and Maree (2016) in that when applying a questionnaire in a different context (and with a new population) different factors may emerge from the study. Given the complex nature and sensitivity centring on issues of ethics and culture, the researchers could not convince other companies to participate in the study. It was decided to test the CEV model in one company only, hence the use of the case study approach (Yin, 2014). While the insurance company requested that the study be done in their Gauteng retail division, the same company-wide policies and procedures and ethical values apply throughout the country.

4.4 Research instrument

The research instrument identified was the survey questionnaire in the CEV model. The constructs and items in the original questionnaire were specifically developed to measure the ethical culture of an organisation. Kaptein (2008) developed and tested the instrument and model through four studies, namely item generation, EFA, CFA

and the multivariate analysis of variance (Kaptein, 2008). The items per construct, as in the Kaptein instrument (based on the CEV model), which was used in this study, are summarised in Table 2 (items per construct are presented in Appendix 1).

Kaptein's (2008) questionnaire (adopted in this study) used a six-point Likert scale (1 indicating "strongly agree" and 6 indicating "strongly disagree"), however, the authors decided to add a seventh option, namely "I don't know". The seventh option made provisions for respondents who had no knowledge of what was being asked, and therefore were unable to express an opinion. Hence, a seven-point rating scale was used, incorporating the additional response option. Data was discarded if a participant withdrew or there were any incomplete questionnaires. Missing values in the analysis refer to the "don't know" responses in the data. Missing values were incorporated in the CFA using the estimate means and intercept method in AMOS.

Table 2: CEV model: Items per construct

Construct	Items
The virtue of clarity	Consists of ten items. The items relate to whether the organisation succeeded in making it clear as to how respondents should conduct themselves in relation to aspects such as colleagues, obtaining authorisations, working hours and financial assets, as well as clarity on expected behaviour, and clarity on the applicable values and norms.
The virtue of congruency	The virtue of congruency of supervisors consists of six items, and the virtue of congruency of management consists of four items. These items reflect the respondent's perception of the extent to which the board, senior management and supervisors set a good example in terms of ethics. Supervisors were considered to be the direct managers of the employee respondents, and managers were considered to be any managerial level higher than supervisors.
The virtue of feasibility	Consists of six items. These items reflect the extent to which non-managers are enabled to act ethically. The items measure the extent to which the respondents have sufficient time, the means and the information to act in an ethically responsible way, as well as the possibility of non-managers disregarding ethical standards when placed under pressure.
The virtue of supportability	Consists of six items. These items indicate the degree of trust and respect experienced by respondents in their working environment. In addition, these items indicate whether respondents identify with, and support organisational values, norms and rules.
The virtue of transparency	Consists of seven items. These items reflect the visibility of a respondent's actions to him/herself and his/her colleagues and managers. In addition, these items also reflect the visibility of a supervisor's conduct, and whether respondents receive adequate feedback on the criticism given on the behaviour of others.
The virtue of discussability	Consists of ten items. These items reflect the extent to which ethical issues can be discussed, the scope of communication (raise and discuss) ethical matters, issues and dilemmas, and unethical conduct of fellow colleagues and supervisors.
The virtue of sanctionability	Consists of nine items. These items indicate the extent to which unethical behaviour is punished and ethical behaviour is rewarded or recognised.

Source: Compiled from Kaptein (2008)

4.5 The validity and reliability of the CEV model in a South African context

CFA and EFA were conducted to determine construct validity. In addition, an internal consistency measurement, namely Cronbach alpha coefficients, was calculated to determine the instrument's reliability (Saunders *et al.*, 2012; Pietersen & Maree, 2016). In a CFA, the researcher specifies the pattern of indicator-factor relationships, the number, and the other parameters (for example, those influencing the independence of the factors). As a result, the pre-specified factor solution is evaluated on the basis of how well the model emulates the sample covariance matrix (Brown, 2006).

CFA is necessary when a questionnaire is used in a different context to that for which it was developed. A CFA determines whether the questionnaire's proposed factor structure fits the data (Pietersen & Maree, 2016). Applying a questionnaire in a different context also means there is a new population, and different factors may emerge. Consequently, if the CFA did not indicate an adequate fit, an EFA is conducted to determine possible new and meaningful factors (Pietersen & Maree, 2016).

The authors did not want to manipulate the result to get a better fit using modification indices, as it is a well-known fact that if such covariances are added, there should be a strong theoretical basis for it (Hooper, Coughlan & Mullen, 2008). Therefore, it was decided to conduct the EFA to understand the underlying factor structure of the data in this application, in a specific context of the CEV model.

CFA, as a type of structural equation modelling, specifically deals with measurement models and the relationships between indicators (observed measures) and factors (latent variables). The two primary types of factor analysis, based on the common factor model, are EFA and CFA, both of which aim to reproduce the observed relationships amongst a group of indicators with a small set of latent variables. Albeit similar, their fundamental differences lie in the number and nature of prior specifications and restrictions that apply to the measurement model. Mainly driven by data, the EFA has no specifications regarding the (initial) number of common factors, or the pattern of relationships (factor loadings), and an EFA is conducted as an exploratory or descriptive data technique, determining the appropriate number of common factors (Brown, 2006).

4.6 Data analysis methods

The data collected through completed web-based questionnaires were captured using the Statistical Package for Social Sciences (SPSS) AMOS v23. Newsom (2005) suggested a combination of relative fit indices, together with the Standardised Root Mean Square Residual (SRMR) or Root Mean Square Error of Approximation (RMSEA). In the CFA, the Goodness of Fit Indices, Bollen's Incremental Fit Index (IFI), Bentler's Comparative Fit Index (CFI), and the minimum discrepancy divided by the degree of freedom (CMIN/DF) (Thomson, MacInnis & Whan Park, 2005) were analysed to determine the constructs' validity, in conjunction with RMSEA.

Bollen's Incremental Fit Index (IFI) was computed using the model chi-square and null module chi square and DFs for the models. The Bentler's Comparative Fit Index (CFI) is a concentric parameter, aiming to reject the alternative hypotheses (testing the null hypothesis); while RMSEA is a concentric parameter and a function of chi-square, DF and N (Newsom, 2005).

For an adequate model fit, the RMSEA score must be lower or equal to 0.08 and the IFI and CFI scores must be higher or equal to 0.9 (Pietersen & Maree, 2016). For the CMIN/DF results, statistics must be lower or equal to 3 for it to be adequate (Thomson *et al.*, 2005).

Cronbach alpha coefficients were calculated for all the constructs. Values of 0.7 or more indicate that the combination of items (for each construct) measures the same construct (Saunders *et al.*, 2012).

5. Empirical findings and discussion

During the development stages of the CEV model, Kaptein (2008) obtained construct reliabilities ranging from 0.93 to 0.96. Further tests and results supported the convergent and discriminant validity of the instrument measuring ethical organisational culture.

The survey in the present study was completed by 203 respondents (66 were managers and 137 were non-managers). The "I don't know" frequency ranged mainly between 0 and 20 per item. Only one item had more than 43 "I don't know"s. The majority of the items (45 out of 56 or 80 per cent) thus had 10 per cent or less "I don't know"s". Table 3 provides descriptive information regarding the CEV model (indicating the mean, standard deviation and range) in the sample, followed by the results of the CFA conducted in the present study.

Table 3: Descriptive information per item

Clarity	CL1	CL2	CL3	CL4	CL5	CL6	CL7	CL8	CL9	CL10
Mean	5.33	5.07	5.13	5.15	5.34	4.92	5.40	5.15	4.50	5.33
Std deviation	0.786	0.938	0.863	0.932	0.747	0.990	0.807	0.900	1.203	0.843
Range	5	4	4	4	3	4	3	5	5	5
Congruency – Part A	COA1	COA2	COA3	COA4	COA5	COA6				
Mean	5.17	4.94	5.42	5.06	5.21	5.22				
Std deviation	1.229	1.253	1.063	1.200	1.027	1.167				
Range	5	5	5	5	5	5				
Congruency – Part B	COB1	COB2	COB3	COB4						
Mean	4.91	4.86	4.94	5.19						
Std deviation	1.158	1.207	1.139	1.143						
Range	5	5	5	5						

Feasibility	FE1	FE2	FE3	FE4	FE5	FE6				
Mean	4.77	4.74	3.80	4.15	4.20	4.90				
Std deviation	1.396	1.392	1.530	1.518	1.469	1.260				
Range	5	5	5	5	5	5				
Supportability	SU1	SU2	SU3	SU4	SU5	SU6				
Mean	4.63	4.52	4.58	4.41	4.66	4.72				
Std deviation	1.173	1.207	1.110	1.256	1.170	1.252				
Range	5	5	5	5	5	5				
Transparency	TR1	TR2	TR3	TR4	TR5	TR6	TR7			
Mean	4.82	4.61	4.66	4.19	4.52	4.55	4.85			
Std deviation	0.947	1.041	1.005	1.202	1.059	1.218	0.950			
Range	4	5	5	5	5	5	5			
Discussability	DI1	DI2	DI3	DI4	DI5	DI6	DI7	DI8	DI9	DI10
Mean	4.99	5.01	4.79	5.06	4.64	4.90	4.68	5.02	4.73	4.65
Std deviation	0.872	1.080	1.149	1.142	1.191	1.023	1.147	0.959	1.034	1.215
Range	5	5	5	5	5	5	5	5	5	5
Sanctionability	SA1	SA2	SA3	SA4	SA5	SA6	SA7	SA8	SA9	
Mean	4.92	5.15	4.19	4.83	4.74	4.18	4.92	4.72	4.71	
Std deviation	1.189	1.048	1.442	1.214	1.191	1.345	1.074	1.272	1.215	
Range	5	5	5	5	5	5	5	5	5	

The results of the CFA conducted in the present study are presented in Table 4.

Table 4: CFA results

Construct	RMSEA	IFI	CFI	CMIN/DF
Clarity	0.114	0.913	0.910	3.039
Congruency – Part A	0.175	0.957	0.957	5.800
Congruency – Part B	0.000	1.000	1.000	0.968
Feasibility	0.222	0.751	0.739	8.710
Supportability	0.031	0.998	0.998	1.152
Transparency	0.189	0.811	0.804	6.620
Discussability	0.141	0.917	0.916	4.121
Sanctionability	0.123	0.941	0.940	3.368

For an adequate fit, the RMSEA score must be lower or equal to 0.08, and the IFI and CFI scores higher or equal to 0.9. Adequate fit was only confirmed for one construct, namely the virtue of supportability. This RMSEA score of this construct was below the minimum of 0.08, and the IFI and CFI scores higher than 0.9, thus all values exhibit the required behaviour for adequate fit.

The remaining constructs did not show adequate fit. The RMSEA of these constructs was higher than the minimum of 0.08. Therefore, it necessitates EFA (presented in Table 5) to determine the underlying structure of the respective constructs.

Table 5: EFA results and Cronbach alpha values

Construct	KMO and Bartlett's Test		% of variance explained	Factor loadings			Cronbach alpha
	KMO	Sig.		Item	1	2	
Clarity	0.917	0.000	56.78%	CL1		0.993	Factor 1 <i>(personal level)</i>
				CL2		0.608	
				CL3	0.664		
				CL4	0.649		0.863
				CL5	0.735		
				CL6	0.813		
				CL7	0.667		
				CL8		0.638	Factor 2 <i>(relationship level)</i>
				CL9	0.368	0.401	
				CL10		0.718	
Congruency – Part A	0.921	0.000	79.50%	COA1	0.938		0.938
				COA2	0.850		
				COA3	0.864		
				COA4	0.831		
				COA5	0.914		
				COA6	0.946		
Congruency – Part B	0.855	0.000	84.94%	COB1	0.888		0.920
				COB2	0.978		
				COB3	0.928		
				COB4	0.889		
Feasibility			54.58%	FE1	0.888		Factor 1 <i>(conflict at individual level)</i>
				FE2	0.674		
				FE3		0.688	
				FE4		0.807	0.806
				FE5		0.597	
				FE6	0.732		
Supportability	0.929	0.000	74.30%	SU1	0.851		0.928
				SU2	0.894		
				SU3	0.892		
				SU4	0.845		
				SU5	0.878		
				SU6	0.808		

Construct	KMO and Bartlett's Test		% of variance explained	Factor loadings			Cronbach alpha
	KMO	Sig.		Item	1	2	
Transparency	0.787	0.000	55.02%	TR1		0.822	Factor 1 (namely the visibility of conduct towards others) 0.794 Factor 2 (management of visibility) 0.797
				TR2		0.666	
				TR3		0.756	
				TR4	0.436		
				TR5	0.890		
				TR6	0.809		
				TR7	0.444	0.301	
Discussability	0.901	0.000	59.50%	DI1	0.529		0.882
				DI2	0.778		
				DI3	0.918		
				DI4	0.857		
				DI5	0.841		
				DI6	0.814		
				DI7	0.860		
				DI8	0.577		
				DI9	0.812		
				DI10	0.622		
Sanctionability	0.933	0.000	66.77%	SA1	0.734		0.869
				SA2	0.847		
				SA3	0.764		
				SA4	0.891		
				SA5	0.809		
				SA6	0.705		
				SA7	0.845		
				SA8	0.848		
				SA9	0.837		

The Kaiser Meyer Olkin ranges were well above the 0.5 minimum for all constructs, and the Bartlett's test of sphericity shows statistical significance with all p values below 0.01. Therefore, it was appropriate to conduct an EFA for all the constructs. The EFA identified only one factor each for five constructs (congruency – part A; congruency – part B; supportability; discussability; sanctionability), indicating that they are unidimensional (one-dimensional) within the context applied in this study. Therefore, the findings (the five one-dimensional constructs) within the applied context, concurs with the findings of Kaptein (2008).

However, in contrast to the findings of Kaptein, the remaining three constructs were not unidimensional. The EFA identified two factors for three constructs (clarity, feasibility and transparency), indicating that they are multidimensional (two dimensional) within the context applied.

Reviewing the statements (see Appendix 1) and the factor loadings for the construct *Clarity*, two factors were identified and labelled, namely a personal dimension (the use of assets, finance, dealing with conflict of interest, and side-line activities) [Factor 1], and a relational dimension (obtaining authorisations, conduct towards external parties, and internal colleagues) [Factor 2]. Double loadings occurred for statement CL9. The factor loading for “*The organisation makes it sufficiently clear to me how I should deal with environmental issues in a responsible way*” (CL9) was higher in Factor 2 [relational dimension] (0.401), however, the researchers were of the opinion that the personal dimension [Factor 1] fits more meaningfully with this statement, and it was thus included in Factor 1.

Reviewing the statements and the factor loadings for the construct *Transparency*, two factors are evident, namely the visibility of conduct towards others (managers, other employees, or someone else will find out about a colleague’s/manager’s conduct) [Factor 1]; and the management of visibility (checks are done, there is awareness of ethics or ethical practices, types of incidents are known and feedback is given) [Factor 2]. Double loadings occurred for statement TR7. The loadings for “*Management is aware of the types of incidents and unethical conduct that occur in my immediate working environment*” (TR7) were higher in Factor 1 [visibility of conduct] (0.444), which fits meaningfully with this statement for the authors.

For the construct *Feasibility*, two factors were identified and labelled as conflict at an individual level (*conflict with my conscience* and *sacrifice personal norms and values*) [Factor 1], and conflict at an organisational level (insufficient time, information and resources to carry out tasks responsibly) [Factor 2].

To determine the reliability of the questionnaire in the company in the South African context, Cronbach alpha coefficients were calculated for all factors. The Cronbach alpha coefficients for the eight constructs ranged between 0.728 and 0.938, which was above the 0.7 threshold value (see Table 4). These coefficients indicated that the items measuring each construct (including the subdivisions for the virtues of clarity, feasibility and transparency), are consistent and (the items) measure the respective constructs. Table 6 indicates the differences between the findings in the current study and the findings of Kaptein (2008) and Huhtala *et al.* (2011).

Table 6: Summary of findings

Findings of studies done by Kaptein (2008) and Huhtala <i>et al.</i> (2011)	Findings of current study
<p>Unidimensional constructs were:</p> <p>Clarity Feasibility Supportability Transparency Discussability Sanctionability</p>	<p>Unidimensional constructs were:</p> <p>Supportability Discussability Sanctionability</p>
<p>Multidimensional constructs were:</p> <p>Congruency</p> <ul style="list-style-type: none"> • Congruency of managers • Congruency of supervisors 	<p>Multidimensional constructs were:</p> <p>Congruency</p> <ul style="list-style-type: none"> • Congruency of managers • Congruency of supervisors <p>Clarity</p> <ul style="list-style-type: none"> • Personal dimension • Relational dimension <p>Feasibility</p> <ul style="list-style-type: none"> • Conflict at individual level • Conflict at organisational level <p>Transparency</p> <ul style="list-style-type: none"> • Visibility of conduct towards others • Management of visibility

In the testing of the CEV model and the discussion of the findings above it became clear that the CEV model has, to an extent, applicability value in this company in South Africa, but that the model cannot be applied without some adaption. The construct supportability, discussability and sanctionability were found to be unidimensional, however, four constructs were identified as multidimensional. These constructs were congruency, clarity, feasibility and transparency. Differences in the findings of this study could possibly be attributed to the differences in contexts (developed vs developing countries), and differences in the studies’ (Kaptein’s and this study’s) populations. For example, South Africa is known to be a more diverse country, with many different cultures and languages, which is also reflected in companies in the country. Such differences in the findings of the present study substantiate the purpose of this study.

It was not the purpose of the study to report on the description or inferential statistics, however, the analysis of these activities indicated that the construct of the virtue of feasibility had to be reverse scored when descriptive and inferential statistical analyses were employed. A similar finding was made by DeBode *et al.* (2013).

6. Summary and implications

Organisations must ensure the ethical conduct of their employees for their long-term sustainability (Wiid, Cant, Van Niekerk, 2013; Borah, Hazarika, 2016). For organisations that are serious about doing the right thing, it is not just about managing ethics, but

more importantly, about creating and maintaining an ethical culture throughout the organisation. Developing and maintaining an ethical culture should also be important for JSE-listed financial institutions, since a listing requirement is the management of ethics in accordance with King IV.

This study determined the suitability of an instrument that measures ethical culture in a company in the South African context by means of a case study. A comprehensive online survey was conducted to obtain responses using Kaptein's (2008) CEV model questionnaire. Although the CFA only confirmed one construct that fits the model (virtue of supportability), the EFA results confirmed the underlying structure of all of the constructs. The Cronbach alpha coefficients for the eight constructs ranged between 0.728 and 0.938, which was above the acceptable 0.7 minimum value. Hence, within this context, it indicates that, for example, the items measuring the personal dimension within clarity, collectively measure this particular subclassification of the virtue of clarity.

Results from the CFA and EFA highlighted that five constructs are unidimensional, and agree with the virtues identified by Kaptein. However, three constructs (clarity, feasibility and transparency) were not unidimensional, and like the virtue of congruence, can be divided into two subdimensions (or two parts). These constructs could meaningfully be interpreted as such: clarity has two factors, namely the personal and relational level. Feasibility has two factors, namely conflict at an individual level and conflict at the organisational level. Transparency has two factors, namely the visibility of conduct towards others and the management of visibility.

The reasons for these differences could be due to the new context (or environment – the company, country, and industry, and the nature of the countries) and demographics of the sample that differ from study to study. In addition, South Africa has a very diverse population (Irwin, 2011), making the context different from that of the studies done by Kaptein (2008) and Huhtala *et al.* (2011).

Although not the focus of this study, the survey instrument (in the CEV model) gave an indication of the participating company's ethical culture (see Van Wyk & Badenhorst-Weiss, 2017). The participating company's ethical culture was "overwhelmingly positive". It was possible to determine areas of improvement (by means of description statistics, using mean and median values), as well as identifying significant differences in perceptions between managers and non-managers (by means of inferential statistics, using a two tailed t-test). Areas for improvement include, for example, attending to the workload of employees and rewarding staff for integrity. These findings could assist managers to pinpoint areas in their ethical culture that need strengthening (either through training, or review of policy or updating the ethical codes of conduct).

7. Limitations and recommendations for future research

The first limitation to this research study is that it is limited to one company. The case study method was followed due to a lack of willingness of companies to participate in a study investigating the sensitive matter of ethics. In addition, a low response rate was

obtained in the company that participated in the study. One of the reasons might be the workload of the targeted respondents and the comprehensive questionnaire that could have deterred the population from participating. In hindsight, perhaps it would have been better to use the more streamlined version of the CEV model, developed by DeBode *et al.* (2013) in the United States of America, referred to as 'CEVMS-FS'.

Another limitation is that the study was conducted in one part (region) of one large company. The findings can therefore not be generalised for the company as a whole, and are definitely not a reflection of the situation of the whole industry. A representative sample to test the validity of the CEV model would be to conduct surveys with larger samples across the insurance sector, the broader financial sector and in other industries.

Another limitation of this study is that biographical details were not obtained from the respondents. They only had to indicate if they were managers or non-managers. This made it impossible to determine relationships, correlations and make conclusions based in biographical detail. Additional research could determine if the biographical details of participants have an effect on the findings. In addition, other newly developed measurement tools (to measure the ethical culture) in the South African context can be identified, compared and tested.

Future research in the application of the CEV model can conduct multi-analyses to determine the reasons for subdivisions in the different underlying structures for managers and non-managers.

8. Conclusions

The purpose of this study was to measure the validity and reliability of the CEV model within a South African context, namely in one JSE-listed insurance company. The CEV model of Kaptein (2008), which has been used in other research studies, was selected for this study. This study demonstrated the efficacy of the CEV model in the context of this one insurance company listed on the JSE.

Although the contribution for this study is, due to its serious limitations, modest, it is a first attempt to measure ethical culture in South African organisations. Extending this study to other companies and collecting more data will increase the theoretical value of the study.

Within the context of the mentioned limitations the conclusion could be made that models developed in business studies cannot be universally applied without adapting them for specific or local circumstances. A practical contribution is that the findings of the study gave the participating insurance company a tool to measure their corporate ethics culture, something that was never done before. Through this adopted measurement tool, the insurance company can determine the status of their ethical culture, as well as identify possible areas for improvements. As indicated previously, this study made a modest contribution, but can serve as a first step towards the use and development of measurement instruments for ethical culture in South African organisations.

Ethical conduct should be ingrained in the culture of the organisation – and it should be measured. The study found that the CEV model's survey instrument is a suitable measurement to assess corporate ethical culture within a company in the South African context in which it was applied. However, it was found that the construct of the virtue of feasibility had to be reverse scored when descriptive and inferential statistical analyses were employed. A similar finding was made by DeBode *et al.* (2013). In addition, five dimensions were unidimensional (namely, they agree with the virtues identified by Kaptein). Three virtues were not unidimensional and have subdimensions, compared to the findings of Kaptein (2008) and Huhtala *et al.* (2011). These findings (the differences over context) also indicate that an existing and tested instrument cannot merely be universally applied in all organisations, industries and countries without determining its suitability in a particular context.

8.1 Ethical considerations

Participants had the opportunity to decline and/or withdraw their consent to participate in this research at any stage during the time the study was conducted. If a participant withdrew or there were any incomplete questionnaires, the data obtained from such cases was discarded.

The authors were as objective as possible in the analyses and reporting of the findings.

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Appendix 1: Statements measuring the eight individual constructs

1.	Virtue of clarity
1.1	The organisation makes it sufficiently clear to me how I should conduct myself appropriately towards others in the organisation.
1.2	The organisation makes it sufficiently clear to me how I should obtain proper authorisations.
1.3	The organisation makes it sufficiently clear to me how I should use organisational equipment responsibly.
1.4	The organisation makes it sufficiently clear to me how I should use my working hours responsibly.
1.5	The organisation makes it sufficiently clear to me how I should handle money and other financial assets of the organisation responsibly.
1.6	The organisation makes it sufficiently clear to me how I should deal with conflicts of interests and side-line activities responsibly.
1.7	The organisation makes it sufficiently clear to me how I should deal with confidential information responsibly.
1.8	The organisation makes it sufficiently clear to me how I should deal with external persons and organisations responsibly.
1.9	The organisation makes it sufficiently clear to me how I should deal with environmental issues in a responsible way.
1.10	In my immediate working environment, it is sufficiently clear how we are expected to conduct ourselves in a responsible way.
2.	Virtue of congruency (Part A) – Supervisors/line managers
2.1	My supervisor sets a good example in terms of ethical behaviour.
2.2	My supervisor communicates the importance of ethics and integrity clearly and convincingly.
2.3	My supervisor would never authorise unethical or illegal conduct to meet business goals.
2.4	My supervisor does as he/she says.
2.5	My supervisor fulfils his/her responsibilities.
2.6	My supervisor is honest and reliable.
3.	Virtue of congruency (Part B) – Manager/head of division/department
3.1	The conduct of the board and (senior) management reflects a shared set of norms and values.
3.2	The board and (senior) management set a good example in terms of ethical behaviour.
3.3	The board and (senior) management communicate the importance of ethics and integrity clearly and convincingly.
3.4	The board and (senior) management would never authorise unethical or illegal conduct to meet business goals.
4.	Virtue of feasibility (all items were reverse scored in accordance with Kaptein, 2008)
4.1	In my immediate working environment, I am sometimes asked to do things that conflict with my conscience.
4.2	In order to be successful in my organisation, I sometimes have to sacrifice my personal norms and values.
4.3	I have insufficient time at my disposal to carry out my tasks responsibly.
4.4	I have insufficient information at my disposal to carry out my tasks responsibly.
4.5	I have inadequate resources at my disposal to carry out my tasks responsibly.
4.6	In my job, I am sometimes put under pressure to break the rules.

5.	Virtue of supportability
5.1	In my immediate working environment, everyone is totally committed to the (stipulated) norms and values of the organisation.
5.2	In my immediate working environment, an atmosphere of mutual trust prevails.
5.3	In my immediate working environment, everyone has the best interests of the organisation at heart.
5.4	In my immediate working environment, a mutual relationship of trust prevails between non-managers and management.
5.5	In my immediate working environment, everyone takes the existing norms and standards seriously.
5.6	In my immediate working environment, everyone treats one another with respect.
6.	Virtue of transparency
6.1	If a colleague does something which is not permitted, my manager will find out about it.
6.2	If a colleague does something which is not permitted, I or another colleague will find out about it.
6.3	If my manager does something which is not permitted, someone in the organisation will find out about it.
6.4	If I criticise other people's behaviour, I will receive feedback on any action taken as a result of my criticism.
6.5	In my immediate working environment, there is adequate awareness of potential violations and incidents in the organisation.
6.6	In my immediate working environment, adequate checks are carried out to detect violations and unethical conduct.
6.7	Management is aware of the types of incidents and unethical conduct that occur in my immediate working environment.
7.	Virtue of discussability
7.1	In my immediate working environment, reports of unethical conduct are handled with caution.
7.2	In my immediate working environment, I have the opportunity to express my opinion.
7.3	In my immediate working environment, there is adequate scope to discuss unethical conduct.
7.4	In my immediate working environment, reports of unethical conduct are taken seriously.
7.5	In my immediate working environment, there is adequate scope to discuss personal moral dilemmas.
7.6	In my immediate working environment, there is adequate scope to report unethical conduct.
7.7	In my immediate working environment, there is ample opportunity for discussing moral dilemmas.
7.8	If someone is called to account for his/her conduct, it is done in a respectful manner.
7.9	In my immediate working environment, there is adequate scope to correct unethical conduct.
7.10	If reported unethical conduct in my immediate working environment does not receive adequate attention, there is sufficient opportunity to raise the matter elsewhere in the organisation.

8. Virtue of sanctionability	
8.1	In my immediate working environment, people are accountable for their actions.
8.2	In my immediate working environment, ethical conduct is valued highly.
8.3	In my immediate working environment, only people with integrity are considered for promotion.
8.4	If necessary, my manager will be disciplined if he/she behaves unethically.
8.5	The people that are successful in my immediate working environment stick to the norms and standards of the organisation.
8.6	In my immediate working environment, ethical conduct is rewarded.
8.7	In my immediate working environment, non-managers will be disciplined if they behave unethically.
8.8	If I report unethical conduct to management, I believe those involved would be disciplined fairly regardless of their position.
8.9	In my immediate working environment, non-managers who conduct themselves with integrity stand a greater chance of receiving a positive performance appraisal than non-managers who conduct themselves without integrity.