An adapted measure of ethical climate in organisations- a Southern African study

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ABSTRACT

A study was conducted to analyse the ethical climate typology of the Ethical Climate Questionnaire empirically, in order to develop a unique South African typology. This typology was tested for the equivalence of the construct between the private and public sector. A three ethical climate type solution was found (in contrast with the initial nine, and later five type typology). The results suggest that the construct is equivalent for both the private and public sectors. The findings could therefore be used as a foundation for future studies, as well as for ethical climate measurement within the South African context.

INTRODUCTION

The world has recently been hit by a plethora of corporate scandals and recurring ethical transgressions on the part of their leaders and employees. The Ethics Institute (2016), for instance, report that pressure to compromise ethical standards in organisations has increased due to unrealistic targets and pressure from management. Recent examples include the international case of Volkswagen and allegations of fraud and corruption and unethical management at the Passenger Rail Agency of South Africa (PRASA) and the South African Broadcasting Corporation (SABC).

Occurrences like this have led to organisations (and all stakeholders) placing a high premium on the ethical behaviour of leaders and employees. The shared perceptions of this behaviour, related to what is considered as ethically correct behaviour within that specific context (organisation), is collectively referred to as the ethical climate of the organisation. Ethical climate (and subsequently the Ethical Climate Questionnaire

[ECQ]), as conceptualised and developed by Victor and Cullen (1987, 1988) consists of a nine ethical climate type typology, and is regarded as the dominant framework in organisational studies considering ethical climate (Mayer, Kuenzi & Greenbaum, 2009). Mayer *et al.* (2009) attempted to discern the ethical climate of an organisation by statistically analysing variables along two dimensions, namely the ethical criteria leading to normative decision making and the locus of analysis for decision making. The ECQ has been studied by various scholars, with the recent studies mainly conducted in the USA, Japan, Singapore and China (Shafer, 2015) and Australia (Shacklock, Manning & Hort, 2011).

There are, however, some concerns about the ECQ. The critique relates, amongst others, to the definition underpinning the ECQ. Mayer *et al.* (2009:200) indicated that it is not clear from the definition whether the determination of what is "correct behaviour" only resides within a specific organisation or whether it must coincide with general societal norms. It is further postulated that ethical climate is a type of organisational climate that is made up of the shared perception of, amongst others, policies, procedures, rewards and support, but Victor and Cullen's (1987) definition does not include it directly. They added these aspects to their extended definition (Victor & Cullen, 1988), but the instrument was not adjusted to make provision for it. A further critique raised by Arnaud (2010) concerns the two dimensions – ethical criteria and locus of analysis – and specifically whether these represent two distinct and independent aspects of ethical climate. She went further to question the comprehensiveness of the model (instrument) to capture the true breadth of the ethical climate construct. This is however a purely empirical study to determine the typology of ethical climate within the South African context, without questioning the philosophical assumptions and theories underpinning this instrument.

Although ethical climate is a well-researched construct and instrument, no African, and specifically no South African, studies on this topic could be found. The use of the ECQ would then be based on the structure (typology) established in other countries, negating the impact of the unique South African context. This is especially important, as Shacklock *et al.* (2011) indicate that diversity in patterns of ethical climate dimensions across studies with different populations is expected, mainly because of the differences in organisations or sectors, and from this article's perspective, even more so across countries. Previous research in various settings has resulted in nine, six, five, four and three climate type typologies, indicating the variability in the conceptualisation of ethical climate.

In order to measure ethical climate in South African organisations effectively, a context-specific typology should be developed, as one cannot merely haphazardly choose a specific typology without testing it empirically. It is then postulated that a situational approach be adopted for the accurate measurement of ethical climate, instead of the universal approach (based on the notion that there is only one correct way of doing things) which is mainly based on studies from abroad.

The purpose and contribution of the research on which this article is based was therefore fourfold. Firstly, the aim was to provide a conceptual understanding of the construct 'ethical climate' and ethical climate measurement through a literature study. Secondly,

the paper seeks to develop a South African-specific typology of ethical climate by means of exploratory factor analysis and other related statistical techniques. The third aim was to test the equivalence of the factor structure (typology) across sectors, i.e. public sector and private sector, in order to establish its utility within the total South African context. Lastly, recommendations were made regarding the measurement of ethical climate in South Africa, and for future research.

THE CONSTRUCT 'ETHICAL CLIMATE'

Ethical climate is a multidimensional concept that has been studied and defined by various scholars mainly in studies related to the management of ethics in organisations. Ethical climate was initially defined by Schneider (1975:474) as "a stable, psychologically meaningful, shared perception employees hold concerning ethical procedures and policies existing in their organisation". In the same way Wu and Tsai (2012) as well as Parboteeah and Kapp (2008) defined ethical climate as the prevailing perceptions of typical organisational practices and procedures that have ethical content.

Ethical climate has been defined in a similar way by Mayer, Kuenzi, and Greenbaum (2010), Deshpande, Joseph and Shu (2011), Huang, You and Tsai (2012) and Hwang and Park (2014). Their definitions also include the central aspect of shared perceptions of employees, but also how ethical issues are generally (and should be) addressed within an organisational context and what is considered to be ethically correct behaviour. Martin and Cullen (2006) add the dimension of moral consequences of organisational practices, procedures and policies. They are also of the opinion that an ethical climate arises when members believe that certain forms of ethical reasoning or behaviour are the expected standards or norms for decision making within a specific organisation. Ethical climate therefore influences both the decision making and subsequent behaviour in response to ethical dilemmas.

Schwepker and Hartline (2005) define ethical climate in a similar way, but they add shared organisational ethical values to their definition. They regard ethical climate as a type of cultural control which results from an accumulation of organisational rituals, stories, and norms of interaction. They are also of the opinion that ethical climate is largely determined by the normative values and behaviour patterns that exist among employees throughout the organisation. When a climate is created where ethical values and behaviours are fostered, supported and shared, more ethical behaviour occurs. Their view is congruent with the definition of ethical climate of Rasmussen, Malloy and Agarwal (2003). Guerci, Radaelli, Siletti, Cirella and Shani (2015) add the aspect of reinforcement of ethical behaviour, specifically the way that an organisation supports and rewards ethical behaviour, which might be considered as an organisational practice on its own that also needs to be subjected to ethical scrutiny.

DeConinck (2011:618) contends that ethical climate relates to "the perceptions of rightness or wrongness present in the organization's work environment and establishes the norms for acceptable and unacceptable behaviour within the company", which is basically a simple summary of all the definitions listed before.

This empirical research conducted in this study was based on the ECQ developed by Victor and Cullen (1987, 1988) who are considered to be the pioneers of ethical climate theory (Mayer *et al.*, 2009). They approached it from a moral philosophy, moral psychology and sociological perspective (Parboteeah *et al.*, 2010). For the purpose of this article it is suggested that their definition be used as the overall definition of ethical climate. Their definition largely captures the essence of the definitions and opinions of the various scholars mentioned before (Mayer *et al.*, 2010; DeConinck, 2011; Deshpande *et al.*, 2011; Guerci, *et al.*, 2015; Huang *et al.*, 2012; Hwang & Park 2014), as it focuses on the mutual aspects of firstly "shared perceptions and norms", secondly in terms of what is considered to be "ethically correct behaviour" and lastly the handling of ethical issues in an organisation in general (Victor & Cullen, 1987:51–52). They extended their definition to define ethical climate as "the prevailing perceptions of typical organisational practices and procedures that have ethical content" (Victor & Cullen, 1988:101).

MEASUREMENT OF ETHICAL CLIMATE (ECQ)

There are various instruments to measure ethical climate which is considered to be an important aspect in the management of ethics in organisations. Ethical climate in this study was measured using the ECQ, which is based on Victor and Cullen's (1987, 1988) theoretical typology of ethical climate that consisted of two dimensions. This is considered to be the most widely used instrument to measure ethical climate (Peterson, 2002; Mayer *et al.*, 2009). Arnaud (2010) indicated that the ECQ is used in 75% of all empirical studies related to ethical climate.

Victor and Cullen (1987, 1988) pointed out that the first dimension is related to the ethical criteria used for decision-making purposes. The second dimension relates to the locus of analysis as a referent in ethical decisions. They based the first dimension on three moral philosophies, namely egoism (concern for self-interests), benevolence (concern for greatest utility of greatest number of people), and principle (concern for following rules and principles). The second dimension is based on sociology referent theory. They defined locus of analysis as individual, local (corresponds to organisation) and cosmopolitan (corresponds to society), and developed a nine theoretical ethical climate type typology by combining these two dimensions.

The ECQ is thus multidimensional in terms of the nine hypothesised ethical climate typologies (from now on referred to as ethical climate types) (Cullen, Victor & Bronson, 1993). The items of the ECQ composing the instrument were written to capture the nine ethical climate types. The ECQ did not "focus on whether the respondent believed he or she did not behave ethically nor did it emphasize whether the respondent saw the ethical climate as good or bad" (Victor & Cullen, 1987:58).

Table 1 below represents the cross-tabulation of the two dimensions resulting in the nine hypothesised ethical climate types with the respective ECQ item numbers in brackets.

TABLE 1: ETHICAL CLIMATE TYPES (ADAPTED FROM VICTOR & CULLEN, 1987:56)

ETHICAL CRITERIA	LEVEL OF ANALYSIS		
	Individual	**Local**	**Cosmopolitan**
Egoistic	1. Self-interest (16;17;18)	2. Company interest (19;20;21)	Efficiency (6;7;22)
Utilitarian/ Benevolence	Friendship (3;4)	Team play (1;2)	Social responsibility (5)
Principle/ Deontology	Personal morality (23;24;25;26)	Rules and procedures (12;13;14;15)	The law or professional codes (9;10;11)

The ethical criteria (which are based on Kohlberg's theory of moral development) include egoism, benevolence or utilitarianism, and principle or deontology, whereas the individual, local or cosmopolitan levels are part of the locus of analysis. Egoism is the desire to maximise one's own interest. Benevolence relates to the desire of not only maximising one's own interest but also that of others, meaning that it maximises joint interest. Principle is the desire to do the absolute right thing regardless of the outcomes of the actions, meaning deontology is not interested in whose interests are affected by doing the right thing (Yener, Yaldiran & Ergun, 2012).

The locus of analysis refers to the main referent group that identifies "the source of moral reasoning used for applying ethical criteria to organisational decisions and/or the limits on what would be considered in ethical analysis of organisational decisions" (Victor & Cullen, 1988:105). The individual and local loci of analysis identify the sources of ethical reasoning within the individual and the organisation respectively, with the cosmopolitan focusing on ethical aspects that resides outside the organisation.

The intersect section of the two dimensions forms a 3 x 3 matrix comprising nine types of ethical climates, namely self-interest, company profit, efficiency, friendship, team interest, social responsibility, personal morality, rules and standard operating procedures, and laws and professional codes (Yener *et al.*, 2012).

The development and refinement of the instrument went through various iterations. In the continuation of the development process, Victor and Cullen (1987) conducted an empirical study on the ECQ resulting in the identification of six ethical climate types (from the original 3 x 3 matrix with nine types). Following this, and using a different sample on the ECQ, Victor and Cullen (1988) identified a new configuration of five climate types which they named caring, law and code, rules, instrumental and independence respectively. A brief description of the five climates is presented below, with examples of the typical items associated with each type:

- **Ethical climate type 1**: *Caring* relates to the degree to which the environment may be characterised by employees who are genuinely interested in the well-being of

each other ("*What is best for everyone in the organisation is the major consideration here*").

- **Ethical climate type 2**: *Law and code* relates to the degree to which employees adhere stringently to their professional code of practice and government laws ("*People are expected to comply with the law and professional standards over and above other considerations*").
- **Ethical climate type 3**: *Rules* relates to the degree to which employees stringently follow the rules and mandates of their organisation or business unit ("*It is very important to follow the organisation's rules and procedures here*").
- **Ethical climate type 4**: *Instrumental* relates to the degree to which employees look out for their own self-interest ("*In this organisation, people protect their own interests above all else*").
- **Ethical climate type 5**: *Independence* refers to the degree to which employees would be expected to be guided by their personal moral beliefs ("*In this organisation, people are expected to follow their own personal and moral beliefs*").

These five ethical climate types of the ECQ have become the norm in ethical climate research and appear regularly in a variety of empirical studies (Martin & Cullen, 2006; Yener *et al.*'s, 2012). Having said this, it must be noted that Shacklock *et al.* (2011) claim that the diversity in patterns of ethical climate types across different populations and studies is not unexpected and should be analysed contextually. They argue that the pattern (and unique composition) of relevant climate types will vary between organisations in different industries and between different types of organisations within an industry.

Subsequently, the 26-item version of the ECQ was used in this study. The reason for selecting the shortened version of the ECQ (26 items instead of the 36-item format) was based on Fritzsche's (2000) assertion that the 26-item format yielded more factors (ethical climate types) that are interpretable without losing the essence of the factors from the larger scale used by Victor and Cullen (1988).

The ECQ was presented on six-point Likert scale, ranging from 0 (*completely false*) to 5 (*completely true*). The rationale for each item of the ECQ was that it would determine how accurately each of the items described the general work climate of the participants.

The maximum score for ECQ (all 26 items) is 130 and the minimum score is 0. In terms of the total score (out of 130), a high score and low score indicate high levels of ethical climate and low levels of ethical climate respectively. The same is true for the five ethical climate types, where a high score indicates the relative predominance of that ethical climate type, compared to the others.

Victor and Cullen (1988) reported that there is evidence of acceptable reliability of the instrument. With the exception of low relaibilty of the independence scale whose alpha was 0.65, the measures have satisfactory reliabilties ranging from 0.73 to 0.81 which is above the generally acceptable norm of 0.70 (Tabachnick & Fidel, 2007).

Correlations between the scales (five ethical climate types) ranged between .00 and 0.47 (Victor & Cullen, 1988). This is an indication of a moderate degree of independence between the scales (which is to some extent a condition for a typology), with the exception of the relationship between the professionalism climate scale and the other scales. The remaining scales displayed reasonably low levels of intercorrleation with *r*'s from 0.37 to .00.

Victor and Cullen (1988) found evidence of convergent validity in the parameter estimates and t-values of the ECQ. The parameter estimates were high in value and the t-values were statistically significant (greater than 2.0), meeting the criteria for convergent validity.

RESEARCH DESIGN

Research approach

This study employed a typical empirical paradigm using a cross-sectional design and quantitative analysis. Surveys were used as the data-generation technique. Leedy and Ormrod (2014) highlighted the fact that a cross-sectional design involves sampling and comparing people from several different demographic groups. This approach enables the researcher to collect the required data at the same time.

The study reported in this article formed part of a larger ethics research focus area, consisting of the primary researcher (the author) and 21 students completing their research reports for the degree Master's in Business Leadership (MBL) at the Unisa Graduate School of Business Leadership (SBL) in 2015. Ethical clearance for the total research focus area was granted by the SBL's research ethics committee on 13 March 2015 (reference number: 2015_SBL_001_CA).

Research participants

The population (*N*) consisted of employees of 21 organisations in South Africa, with 60 employees per organisation selected randomly by the participating students.

The characteristics of the participants in terms of the three relevant demographic variables, namely sector, race and gender, are reported in Table 2.

TABLE 2: CHARACTERISTICS OF THE SAMPLE (*N* = 1 260)

Category		*n*	Per cent	Cumulative Percentage
Sector	Private	1 020	81.0	81.0
	Public	240	19.0	100.0
Race	African	603	50.2	50.2
	Coloured	96	8.0	58.2
	White	374	31.1	89.3
	Indian	129	10.7	100.0
Gender	Male	704	58.1	58.1
	Female	507	41.9	100.0

The total sample consisted of 1 260 participants, with 81% (1 020) from the private sector and 19% (240) from the public sector. The private sector comprises of the ICT industry (28% of the participants), the retail (21% of the participants) and the mining, manufacturing and petroleum industries with 14% of the participants respectively. The public sector, on the other hand, comprises of participants from local government, a national central bank as well as a revenue service.

In terms of race, the majority of the participants were African (50.2%) followed by white (31.1%), Indian (10.7%) and coloured (8.0%). The representation of the gender groups was slightly higher for the male group with 58.1% compared to that of 41.9% for the female group.

The average age of the participants was 37.26 years, and the average tenure in the specific organisation was 7.24 years

Statistical analysis

The statistical analysis was conducted with the use of Statistical Package for the Social Sciences (SPSS), version 23. To determine the most appropriate factor structure of the ECQ, exploratory factor analysis was conducted (technically reference is made to factors, which is standard terminology within the factor analysis domain, but should be read as ethical climate types throughout the methodology and results section of this article). Factor analysis is often used in scale or test development and evaluation. Factor analysis is a technique intended to reduce the number of variables to a smaller subset of variables based on variability in the patterns of correlations (Pallant 2013). The decision regarding the number of factors to be retained was based on the Kaiser criterion (eigenvalue of 1 or more), together with the scree plot (with specific reference to the shape of the curve) and lastly the Monte Carlo PCA for parallel analysis. An orthogonal rotation, and specifically Varimax rotation, was conducted because of the inherent nature of a typology, where it is assumed that the factors (in this case the ethical climate types) are distinct and independent factors. Varimax attempts to maximise the dispersion of loadings within factors. Therefore, it intends to load a smaller number of variables highly onto each factor resulting in more interpretable clusters of factors (Tabachnick & Fidell, 2007).

A very important criterion when deciding on the use of factor analysis is the number of participants as well as the ratio between items and participants (Hair, Black, Babin & Anderson 2010). The general opinion of Meyers, Gamst and Guarino (2013) is that the number of participants should not be fewer than 200. Hair *et al.* (2010) regard five items per respondent as the lower limit. Both Hair *et al.* (2010) and Meyers *et al.* (2013) indicate that the decision on the cut-off value of the factor loading should also be based on sample size, with minimum loading of 0.4 to 0.5 in a study with around 200 participants.

Cronbach's alpha coefficients were used to determine the validity and reliability of the constructs measured in the ECQ. Cronbach's alpha determines the internal consistency of a test or scale and is articulated as a number between 0 and 1 with adequate measuring values of Cronbach's alpha ranging from 0.70 to 0.95 (Tabachnick & Fidel, 2007).

In order to determine the utility of the ECQ within the South African context, and specifically in terms of its structural equivalence between the private as well as public sector, target (Procrustean) rotation was used to determine the construct equivalence of the ECQ. After the target rotation had been carried out, the factorial agreement was estimated using Tucker's coefficient of agreement (Tucker's *phi*). Values higher than 0.95 are seen as evidence of factorial similarity, whereas values lower than 0.85 are taken to point to non-negligible incongruities (Van de Vijver & Leung, 1997).

RESULTS

An exploratory factor analysis of the 26 items of the ECQ was performed on the data of 1 260 participants. Prior to running the analysis with IBM SPSS, the data were screened by examining descriptive statistics on each item, inter-item correlations, and possible univariate and multivariate assumption violations. From the initial assessment, all variables were found to be interval-like, variable pairs appeared to be bivariate, were normally distributed, and all cases were independent of one another.

The relatively large sample size (1 260) contributed to an acceptable variable-to-case ratio (48:1). The Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of sphericity were performed to determine the suitability for factor analysis. The results are reported in Table 3.

TABLE 3: KAISER-MEYER-OLKIN MEASURE OF SAMPLING ADEQUACY AND BARTLETT'S TEST OF SPHERICITY

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.91
Bartlett's Test of Sphericity	Approx. Chi-square	16 930.91
	Df	325
	Sig.	<.001

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.90, indicating that the present data were suitable to conduct an exploratory factor analysis. Similarly, Bartlett's

test of sphericity was significant at $p < .001$, indicating sufficient correlation between the variables to proceed with the analysis.

The K1 rule was used in conjunction with the scree plot to determine the number of factors. The Kaiser's criterion focusing on eigenvalues larger than one was performed and is reported in Table 4.

TABLE 4: EIGENVALUES LARGER THAN ONE AND EXPLANATION OF VARIANCE

Component	Initial Eigen values			Extraction sums of squared loadings			Rotation sums of squared loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.23	31.67	31.67	8.23	31.67	31.67	7.14
2	3.60	13.86	45.53	3.60	13.86	45.53	6.38
3	2.21	8.49	54.02	2.21	8.49	54.02	3.25
4	1.14	5.46	55.16	1.42	5.46	59.48	2.86
5	1.01	3.89	59.05	1.01	3.89	63.37	1.92

Five factors reported eigenvalues larger than one, with the first factor explaining 31.67% of the variance in the construct ethical climate, followed by 13.86%, 8.49%, 5.46% and 3.89% of factors two to five respectively. The total variance explained by the five factors is 59.05%.

Cattell's scree test, which is focused on retaining the factors before the break (elbow rule), was performed and the results are reported in Figure 1.

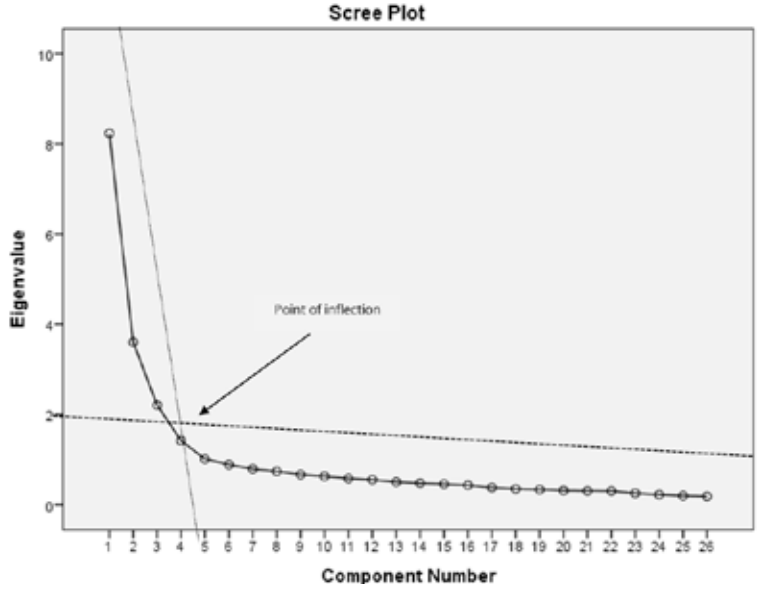

Fig. 1: Cattell's scree plot

It is evident that the elbow flattens off after the 4th factor. The Monte Carlo parallel analysis simulation technique was utilised to determine the number of factors that account for more variance than the components derived from random data. The eigenvalues obtained from the actual data are compared to the eigenvalues obtained from the random data. If the actual eigenvalues from the principal component analysis from the actual data are greater than the eigenvalues from the random data, the factor is retained. The results are reported in Table 5.

TABLE 5: RESULTS OF THE MONTE CARLO PARALLEL ANALYSIS

Component number	Actual eigenvalues from PCA	Criterion value from parallel analysis	Decision
1	8.24	1.27	accept
2	3.60	1.23	accept
3	2.21	1.20	accept
4	1.14	1.18	reject
5	1.01	1.15	reject

The results of the Monte Carlo parallel analysis yielded a three-factor model. The three factors accounted for 54% of the total variance (see Table 4). The results of the correlational analysis (Pearson correlation) are reported in Table 6.

TABLE 6: CORRELATIONS BETWEEN EXTRACTED FACTORS

		F^1	F^2	F^3
F^1	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	1 239		
F^2	Pearson Correlation	0.13	1	
	Sig. (2-tailed)	<.001		
	N	1 218	1 236	
F^3	Pearson Correlation	-.02	0.31	1
	Sig. (2-tailed)	0.39	<.001	
	N	1 227	1 228	1 247

The correlations between the pairs of factors were below 0.4 (between -0.02 and 0.31, with an average correlation of 0.15.), which is a condition for a typology. The factors (ethical climate types) are thus not strongly related. This further suggests the appropriateness of an orthogonal rotation; thus, Varimax rotation was used. The structure coefficients from the Varimax rotation (with the distinct factors or ethical climate types) are presented in Table 7.

TABLE 7: FACTOR LOADINGS (VARIMAX ROTATION) AND THE DESCRIPTIVE STATISTICS OF THE ITEMS

Factor 1: Institutionalised ethics/ethical work environment				
Q #	**Description**	**Mean**	**SD**	**Factor loading**
ECQ[1]	*What is best for everyone in the organisation is the major consideration here.*	2.96	1.34	0.66
ECQ[2]	*The most important concern is the good of all the people in the organisation as a whole.*	3.11	1.32	0.69
ECQ[3]	*Our major concern is always what is best for the other person.*	2.82	1.29	0.64
ECQ[4]	*In this organisation, people look out for each other's good.*	2.74	1.27	0.65
ECQ[5]	*In this organisation, it is expected that you will always do what is right for the customers and public.*	4.06	1.04	0.69
ECQ[6]	*The most efficient way is always the right way in this organisation.*	3.26	1.37	0.69
ECQ[7]	*In this organisation, each person is expected above all to work efficiently*	3.83	1.19	0.74
ECQ[8]	*People are expected to comply with the law and professional standards over and above other considerations.*	4.14	.98	0.76
ECQ[9]	*In this organisation, the law or ethical code of their profession is the major consideration.*	3.88	1.11	0.78
ECQ[10]	*In this organisation, people are expected to strictly follow legal or professional standards.*	4.11	1.03	0.77
ECQ[11]	*In this organisation, the first consideration is whether a decision violates any law.*	3.90	1.14	0.68
ECQ[12]	*It is very important to follow the organisation's rules and procedures here.*	4.17	1.02	0.77
ECQ[13]	*Everyone is expected to stick by organisation rules and procedures.*	4.15	1.03	0.74
ECQ[14]	*Successful people in this organisation go by the book.*	3.20	1.33	0.67
ECQ[15]	*People in this organisation strictly obey the organisation policies.*	3.34	1.21	0.73

Factor 2: Instrumental				
Q #	**Description**	**Mean**	**SD**	**Factor loading**
ECQ[16]	*In this organisation, people protect their own interests above all else.*	1.80	1.32	0.67
ECQ[17]	*In this organisation, people are mostly out for themselves.*	2.06	1.38	0.70
ECQ[18]	*There is no room for one's own personal morals or ethics in this organisation.*	2.51	1.32	0.63
ECQ[19]	*People are expected to do anything to further the organisation's interests, regardless of the consequences.*	2.85	1.46	0.61
ECQ[20]	*People here are concerned with the organisation's interests – to the exclusion of all else.*	2.29	1.28	0.48
ECQ[21]	*Work is considered substandard only when it hurts the organisation's interests.*	2.41	1.37	0.62
ECQ[22]	*The major responsibility of people in this organisation is to control costs.*	1.86	1.39	0.46

Factor 3: Personal morality				
Q #	**Description**	**Mean**	**SD**	**Factor loading**
ECQ[23]	*In this organisation, people are expected to follow their own personal and moral beliefs.*	2.62	1.34	0.66
ECQ[24]	*Each person in this organisation decides for themselves what is right and wrong.*	2.93	1.42	0.80
ECQ[25]	*The most important concern in this organisation is each person's own sense of right and wrong.*	2.87	1.37	0.79
ECQ[26]	*In this organisation, people are guided by their own personal ethics.*	2.82	1.41	0.75

The results of the factor analysis with regard to the ECQ are summarised in Table 7. A factor loading cut-off point of 0.5 for inclusion in the interpretation of a factor was used. All 26 items loaded on the three factors. F^1: *Institutionalised ethics (ethical work environment)* has 15 items, F^2: *Instrumental* had 7 items, followed by F^3: *Personal morality* with 4 items. The communalities of the three factors, although not reported in Table 7, are in most cases relatively high (> 0.3).

The only item that fell outside the original 3 x 3 matrix typology is item 22, "*The major responsibility of people in this organisation is to control costs*", which was originally listed under *Efficiency* by Victor and Cullen (1988). The results of the exploratory factor analysis, however, allocated it under *Company profit*, and on face value, it belongs under the new factor, *Instrumental*.

The descriptive statistics as well as the internal consistency of each of the factors (ethical climate types) as assessed by coefficient alpha is shown in Table 8.

TABLE 8: DESCRIPTIVE STATISTICS, CRONBACH'S ALPHA COEFFICIENT OF THE THREE FACTORS OF THE ECQ

	Range	Minimum	Maximum	Mean	SD	Skewness	Kurtosis	α
F^1	4.93	0.07	5.00	3.58	0.85	-0.93	1.20	0.93
F^2	5.00	0.00	5.00	2.26	0.85	0.22	0.20	0.74
F^3	2.86	0.00	2.86	1.60	0.65	-0.11	-0.33	0.84

With: **F^1** = *Institutionalised ethics* (ethical work environment), **F^2** = *Instrumental* and **F^3** = *Personal morality*

The descriptive statistics in Table 8 show that the outstanding factor is F1 (*Institutionalised ethics/ethical work environment*), which is deduced from the high weighted mean score (3.58) with the lowest being that of *Personal morality* (1.60). The skewness and kurtosis values of the factors do not exceed the critical values of 2.00 and 7.00 respectively (West, Finch & Curran 1995), which is an indication that the data is normally distributed. F1 and F3 (*Instrumental* and *Personal morality*) reported a negative value on the skewness scale, with the skewness values ranging between -0.93 and 0.22, which is an indication that the distribution has relatively few small values and tails off to the left. The Cronbach's alpha coefficients of the factors are acceptable if the guideline of a > 0.70 (Nunnally &

Bernstein 1994) is applied. It would thus appear that the factors possess acceptable levels of internal consistency.

To examine how groups differ on each of the particular ethical climate types, *post hoc* comparisons (Scheffé test) were conducted. To summarise the pattern of relationships from the myriad of *post hoc* comparisons, Table 9 was produced using the following rules: If one of the three newly developed ethical climate types displayed a mean score significantly higher than the other two climate types on one of the five original ethical climate types, as defined by Victor and Cullen (1988), then a value of 'High' for that ethical climate type was assigned. Similarly, if a newly developed ethical climate type displayed a mean score significantly lower than the other two ethical climate types, then it was assigned a value of 'Low' for that ethical climate type.

TABLE 9: PATTERN OF MEANS SCORES REPORTED BY THE THREE NEW ETHICAL CLIMATE TYPES ON VICTOR AND CULLEN'S (1988) ORIGINAL ETHICAL CLIMATE TYPES

Climate type (cluster)		Caring	Law & codes	Rules	Instrumental	Independence
		High	**High**	**High**	**Low**	--
F^1	**Mean**	3.44	4.19	3.89	2.17	2.73
	SD	0.82	0.69	0.76	0.80	1.09
		Low	--	--	**High**	--
F^2	**Mean**	2.12	2.91	2.80	3.09	3.04
	SD	1.16	1.30	1.31	0.86	1.28
		Low		**Low**	**Low**	**High**
F^3	**Mean**	1.38	2.57	2.20	1.48	4.10
	SD	0.73	1.37	1.22	0.49	0.89

With: **F^1** = *Institutionalised ethics* (ethical work environment), **F^2** = *Instrumental* and **F^3** = *Personal morality*

From Table 9 it is clear that the largest ethical climate type in terms of its composition across the five original climates as defined by Victor and Cullen (1988) is F^1 = *Institutionalised ethics* (ethical work environment). This ethical climate type may be typified simply as being high on Caring (M = 3.44; SD = 0.82), Law and Codes (M = 4.19; SD = 0.69) and Rules (M = 3.89; SD = 0.76), but low on Instrumental (M = 2.17; SD = .80). On the other hand, F^2 = *Instrumental* may be described as being high on the original Instrumental dimension (M = 3.90; SD = 0.86) and low on Caring (M = 1.38; SD = 0.73). F^3 = *Personal morality* measured high on Independence (M = 4.10; SD = 0.89) but low on Caring (M = 1.38; SD = 0.73), Rules (M = 2.20; SD = 1.22) and Instrumental (M = 1.48; SD = 0.49).

The last step in the analysis was intended to determine the construct equivalence of the newly developed ethical climate types, by comparing the private sector with the public sector. The factor loadings of the private sector and public sector groups were rotated to one target group. After target rotation had been carried out, the factorial agreement was estimated using Tucker's coefficient of agreement (Tucker's *phi*). The Tucker's *phi* coefficients for the two sector groups are reported in Table 10.

TABLE 10: CONSTRUCT EQUIVALENCE OF THE 3 FACTOR SOLUTION (TYPOLOGY) OF THE ECQ (*N* = 1 260)

Sector	*n*	Percentage	Tucker's *phi* F^1	Tucker's phi F^2	Tucker's *phi* F^3
Private sector	1 020	81%	1.00	1.00	1.00
Public sector	240	19%	1.00	0.99	1.00

With: **F^1** = *Institutionalised ethics* (ethical work environment), **F^2** = *Instrumental* and **F^3** = *Personal morality*

Inspection of Table 10 confirms that the Tucker's *phi* coefficients for F^1 = *Institutionalised ethics (ethical work environment)* and F^3 = *Personal morality* (both with $p(X^iY^i)$ = 1.00 and $p(X^iY^{ii})$ = 1.00) and F^2 = *Instrumental* ($p(X^iY^i)$ = 1.00 and $p(X^iY^{ii})$ = 0.99) were reported for both the private sector and public sector, suggesting acceptable structural or construct equivalence (factorial loadings of pooled group = X^i, private sector = Y^i and public sector = Y^{ii}). It therefore supports the notion that the three factors are equivalent across the sectors because the factor loadings of the items on the latent factors are invariant across the two groups.

DISCUSSION OF RESULTS

In this study, the ethical climate scale (ECQ) based on the literature and previous studies by Victor and Cullen (1987, 1988) was validated and adapted to the South African context.

Three factors (ethical climate types) with satisfactory psychometric properties were extracted, namely *Institutionalised ethics* (ethical work environment), *Instrumental* and *Personal morality*. The three ethical climate types are related to the two dimensions used by Victor and Cullen (1987, 1988) in the initial development of the ECQ, namely ethical criteria (used for decision-making purposes) and the locus of analysis (serves as a referent in ethical decisions). The results are reported in Table 11.

TABLE 11: THE 3 FACTOR TYPOLOGY AND THE CORRESPONDING ITEMS THAT LOADED ON THE RESPECTIVE FACTORS

ETHICAL THEORY	LOCUS OF ANALYSIS		
	Individual	**Local**	**Cosmopolitan**
Egoism	INTRUMENTAL Self-interest (16;17;18) Company profit (19;20;21; **22 [EC]**)		Efficiency (6;7)
Benevolence	Friendship (3;4) Team interest (1;2)		Social responsibility (5)
Principle	Personal morality (23;24;25;26)	Company rules (12;13;14;15)	Laws and professional codes (9;10;11)

The largest ethical climate type, named *Institutionalised ethics (ethical work environment)*, is a composite ethical climate type across all three ethical criteria (egoism, benevolence and principle) as well as the three loci of analysis (individual, local and cosmopolitan). This supports the notion of Arnaud (2010) that there is possibly not a clear distinction between the two dimensions (locus of analysis and ethical criteria) as initially intended by Victor and Cullen (1987, 1988). It comprises *Friendship* (individual locus of analysis) and *Team Interest* (local locus of analysis) with egoism as ethical criterion, and *Company Rules* and *Laws and Professional Codes* (local and cosmopolitan loci of analysis respectively) with *Principle* as the ethical criterion. All three of the cosmopolitan locus of analysis dimensions, *Efficiency*, *Social Responsibility* and *Laws and Professional Codes*, which reside under the egoism, benevolence and principle ethical criteria respectively, are factored into this composite dimension. The description and definitions of the ethical climate types within this new typology are as follows:

- **Ethical climate type 1**, called *Institutionalised ethics (ethical work environment)* climate type, is defined as *a working environment with clearly defined and institutionalised ethics, where employees and management are genuinely interested in the well-being of each other as well as that of all stakeholders and customers, where all organisational (and individual) behaviour adhere stringently to their professional codes of practice and governance through disciplined and consistent following of the rules and mandates of the organisation in order to be efficient.*
- **Ethical climate type 2**, called *Instrumental,* relates to the degree to which employees focus on their self-interest and rests on the egoism ethical criterion, across the loci of analysis of individual and local. Because the ethical criterion is solely egoism, this ethical climate type relates to the maximisation of self-interest (for individuals) economic interest (for the organisation), with the decision maker seeking alternatives with consequences that most satisfy his/her or the organisational needs (Parboteeah & Cullen, 2003). Since the loci of analysis are jointly individual and local it is regarded as a combined ethical climate type between self-interest and company profit for private organisations and organisational interest for the public sector. This ethical climate type can therefore be defined as *the joint maximisation of organisational interest (including company profit for private sector organisations) and subsequently the interest of employees of the organisation.*
- Ethical climate type 3 is called *Personal morality,* and it refers to the degree to which employees would be expected to be guided by their personal moral beliefs in making decisions. This ethical climate type is similar to the original Independence type of Victor and Cullen (1988) and is located on the initial 3 x 3 matrix on the principle ethical criterion and individual locus of analysis. The personal ethical beliefs and standards, to which this ethical climate type refers, are limited to principles and deontological considerations about ethical issues. The definition of this ethical climate type is *the perceived degree of discretion (and independent ethical reasoning) that a decision maker has to apply to his or her personal ethical beliefs and morality within the organisational context. Employees are expected to follow their own personal*

and moral beliefs, to decide for themselves what is right and wrong, guided by their own personal ethics.

The results of this study confirm the construct (structural) equivalence of the ECQ for both the private and public sector in South Africa. It can therefore be deduced that the same constructs of ethical climate were measured in the two groups (Van de Vijver & Leung, 1997). No evidence was found for uniform or non-uniform bias of the items of the ECQ for sector groups.

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

The purpose and rationale for this study emanated from Mayer *et al.*'s. (2009:207) notion that "the scientific study of business ethics and ethics specifically, must meet high standards of conceptual and methodological rigour to help make sure it emerges as a mainstream management topic". In order to contribute to the existing body of knowledge (which has been identified as lacking in the South African and African context), this empirical study, involving 1 260 participants across 21 companies in South Africa, sought to (i) provide a conceptual understanding of the construct 'ethical climate', and ethical climate measurement, (ii) develop a South African specific typology of ethical climate and (iii) test the equivalence of the newly developed factor structure (typology) between the public sector and private sector. The Ethical Climate Questionnaire (ECQ) (the 26-item version) was used.

Many definitions of ethical climate were analysed, but because the ECQ is based on the definition and conceptualisation of ethical climate by Victor and Cullen (1987, 1988), it was acknowledged that ethical climate is defined in terms of shared perceptions of what ethically correct behaviour is and how ethical issues (including typical organisational practices and procedures that have ethical content) are handled in the organisation.

The results of the exploratory factor analysis yielded a three ethical climate type typology, with the three types being *Institutionalised ethics (ethical work environment)*, *Instrumental* and *Personal morality*. The initial nine ethical climate type typology (Victor & Cullen, 1987) which was followed by the five type typology (Victor & Cullen, 1988) were used as a point of reference to structure, name and define the newly developed types. The definitions of the three types were formulated and are included in the discussion section of the article. All three of the ethical climate types reported acceptable psychometric properties. A further significant finding of this study is that structural (construct) equivalence exists if this newly developed ethical climate typology is compared between the private and public sector.

Recurrent limitations, as postulated by scholars conducting previous studies, should be highlighted. Firstly, there is no system to distinguish systematically between the sources, for instance, to compare top management's responses with those of their employees (Mayer *et al.*, 2009). Secondly, it is acknowledged that the ethical climate framework was designed to capture formal, normative systems; however, a deeper understanding

of ethical climate will emerge from analysing informal systems through triangulation as well (Webber, 2007). Lastly, the ECQ is based on self-reporting that may lead to method bias which might still be a reality, even with the assurance provided to participants during the briefing regarding anonymity as well as confidentiality. Social desirability and subsequent response bias will always remain a concern and a limitation in studies like this (Fritzsche, 2000).

The results of this study should be further analysed with the possible addition of the effect of membership of specific demographic groups, the determination of the consequences of the ethical climate types on organisational and individual behaviour, and the determination of possible antecedents to ethical climate. Construct validity could also be analysed, by comparing the ECQ, and specifically this newly developed typology, with other ethical climate instruments. The ECQ opens up possibilities for ethical climate research in Africa to establish a continental typology of ethical climate.

In conclusion, this study could serve as a reference for the state of the perceived ethical climates in South African organisations, from both the private and the public sector. This is seen as the major contribution of the study. Based on the results obtained in this study, it seems as if the ECQ is a suitable instrument for measuring ethical climates within the South African context. It might even be considered to be administered on a frequent basis and the scientific and diagnostic feedback be provided to, for instance, the ethics committees of organisations. The importance of the measurement and management of ethical climate is accentuated by Victor and Cullen (1987:67) who argue that "even the phenomenon of corporate crime may be viewed as a function of the ethical climate in the firm".

REFERENCES

Arnaud, A. 2010. Conceptualizing and measuring ethical work climate. Development and validation of the Ethical Climate Index. Business and Society, 49(2): 345-358.DOI: https://doi.org/10.1177/0007650310362865

Cullen, J., Victor, J.B. and Bronson, J.W. 1993. The Ethical Climate Questionnaire: An Assessment of its Development and Validity. Psychological Reports, 73(2): 667-674.DOI: https://doi.org/10.2466/pr0.1993.73.2.667

DeConinck, J.B. 2011. The effects of ethical climate on organizational identification, supervisory trust, and turnover among salespeople. Journal of Business Research, 64: 617–624.DOI: https://doi.org/10.1016/j.jbusres.2010.06.014

Deshpande, S.P., Joseph, J. and Shu, X. 2011. Ethical Climate and Managerial Success in China. Journal of Business Ethics, 527-534.DOI: https://doi.org/10.1007/s10551-010-0666-z

Ethics Institute of South Africa (EthicsSA). (2016). The South African Business Survey 2016. ISBN 978-0-620-71200-2.

Fritzsche, D.J. 2000. Ethical climates and the ethical dimension of decision making. Journal of Business Management, 24: 125-140.

Guerci, M., Radaelli, G., Siletti, E., Cirella, S., & Shani, A.B.R. 2015. The impact of human resource management practices and corporate sustainability on organizational ethical climates: an employee perspective. Journal of Business Ethics, 126: 325–342.DOI: https://doi.org/10.1007/s10551-013-1946-1

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. 2010 Multivariate data analysis. a global perspective. 7th Edition. Boston: MA. Pearson.

Huang, C., You, C. and Tsai, M. 2012. A multidimensional analysis of ethical climate, job satisfaction, organizational commitment, and organizational citizenship behaviours. Nursing Ethics, 19(4): 513–529. DOI: https://doi.org/10.1177/0969733011433923

Hwang, J. and Park, H. 2014. Nurses' perception of ethical climate, medical error experience and intent-to-leave. Nursing Ethics, 21(1): 28-42.DOI: https://doi.org/10.1177/0969733013486797

Leedy, P.D. and Ormrod, J.E. 2014. Practical research, planning and design (10th ed). New Jersey, NJ: Pearson Education Inc.

Martin, K.D., & Cullen, J.B. 2006. Continuities and extensions of ethical climate theory: a meta-analytic review. Journal of Business Ethics, 69(2): 175-194.DOI: https://doi.org/10.1007/s10551-006-9084-7

Mayer, D.M, Kuenzi, M., and Greenbaum, R.L. 2009. Making ethical climate a mainstream management topic: A review, critique, and prescription for the empirical research on ethical climate. In D. De Cremer (Ed.), Psychological perspectives on ethical behavior and decision making: 181-213. Greenwich, CT: Information Age Publishing.

Mayer, D.M., Kuenzi, M., and Greenbaum, R.L. 2010. Examining the link between ethical leadership and employee misconduct: the mediating role of ethical climate. Journal of Business Ethics, 95: 7–16.DOI: https://doi.org/10.1007/s10551-011-0794-0

Meyers, L.S., Gamst, G. and Guarino, A.J. 2013. Applied multivariate research. Design and interpretation. 2nd Edition. Thousand Oaks, CA: Sage.

Nunnally, J.C. & Bernstein, I.H. 1994. Psychometric theory. 3rd Edition. NY: McGraw-Hill.

Pallant, J. 2013. SPSS survival manual: a step by step guide to data analysis using IBM SPSS. 5th Edition. NY: McGraw-Hill.

Parboteeah, K.P. and Cullen, J.B. 2003. Ethical climates and spirituality: an exploratory examination of theoretical links. In Giacalone, R.A. & Jurkiewicz, C.L. (eds). Handbook of workplace spirituality and organisational performance, Armonk: M.E. Sharpe: 191-204.

Parboteeah, K.P. and Kapp, E 2008. Ethical climates and safety-enhancing behaviors: An empirical test. Journal of Business Ethics, 80(3): 515-529.DOI: https://doi.org/10.1007/s10551-007-9452-y

Parboteeah, K.P., Chen, H.C., Lin, Y., Chen, I., Lee, A.Y. and Chung, A. 2010. Establishing organisational ethical climates: How do managerial practices work? Journal of Business Ethics, 97: 591-611.DOI: https://doi.org/10.1007/s10551-010-0527-9

Peterson, D.K. 2002. The relationship between unethical behavior and the dimensions of the ethical climate questionnaire. Journal of Business Ethics, 41(4): 313-326.DOI: https://doi.org/10.1023/A:1021243117958

Rasmussen, K., Malloy, D. and Agarwal, J. 2003. The ethical climate of government and non-profit organizations: implications for public-private partnerships. Public Management Review, 5(1): 83-97.DOI: https://doi.org/10.1080/1461667022000028825

Schneider, B. 1975. Organizational climate: an essay. Personnel Psychology, 28: 447-479.DOI: https://doi.org/10.1111/j.1744-6570.1975.tb01386.x

Schwepker, C. and Hartline, M. 2005. Managing the Ethical Climate of Customer-Contact Service Employees. Journal of Service Research, 7(4): 377-397.DOI: https://doi.org/10.1177/1094670504273966

Shacklock, A., Manning, M. and Hort, L. 2011. Dimensions and Types of Ethical Climate within Public Sector Human Resource Management. Journal of New Business Ideas & Trends, 9(1): 51-66.

Shafer, W.E. 2015. Ethical climate, social responsibility and earnings management. Journal of Business Ethics, 126: 43-60.DOI: https://doi.org/10.1007/s10551-013-1989-3

Tabachnick, B.G. and Fidell, L.S. 2007. Using multivariate statistics. 5th Edition. Boston: Pearson.

Van de Vijver, F. and Leung, K. 1997. Methods and data analysis for cross-cultural research. Thousand Oaks, CA: SAGE.

Victor, B. and Cullen, J.B. 1987. A theory and measure of ethical climate in organizations. Research in Corporate Social Performance and Policy, 9: 51-71.

Victor, J.B. and Cullen, J. 1988. The Organizational Bases of Ethical Work Climates. Administrative Science Quarterly 33: 101-125.DOI: https://doi.org/10.2307/2392857

Webber, S. 2007. Ethical climate typology and questionnaire: A discussion of instrument modifications. The Journal of Academic Librarianship, 33(5), 567-580.DOI: https://doi.org/10.1016/j.acalib.2007.05.003

West, S.G., Finch, J.F. and Curran, P.J. 1995. Structural equation models with non-normal variables: problems and remedies, in Structural equation modelling: concepts, issues, and applications, edited by R.H. Hoyle. Thousand Oaks: Sage: 159–176.

Wu, Y. and Tsai, P.J. 2012. Multi-dimensional relationships between paternalistic leadership and perceptions of organizational ethical climates. Psychological Reports: Human Resources & Marketing, 111(2): 509-527.DOI: https://doi.org/10.2466/01.17.PR0.111.5.509-527

Yener, M., Yaldiran, M. and Ergun, S. 2012. The Effect of Ethical Climate on Work Engagement. Procedia – Social and Behavioural Sciences, 58: 724-73.DOI: https://doi.org/10.1016/j.sbspro.2012.09.1050