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To measure what is ethically important in the decision-making process for auditors as managers

The development of a multidimensional instrument

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Abstract

The article develops a multidimensional scale that measures to what extent different moral philosophical dimensions influence auditors' decision-making in their managerial role. An additional aim was to explore if auditors perceive differences in the ethical decision-making process as managers and as auditors. The scale was developed based on eight ethical dimensions from *a priori* theory. The scale was converted into a web-based questionnaire and sent to Swedish authorised auditors. Exploratory factor analysis (EFA) was used to test the scale, since it is a suitable method for scale development and early stages of research. The EFA indicates a five-dimensional scale; however, the eight-dimensional scale is to some extent supported, since two of the five dimensions, both connected to duties, are multidimensional in themselves. Hence, the study implies that the concept of duty is a wider concept in the auditing context than in moral philosophical theory, which could be explained by the nature of the profession and that auditors do not perceive a difference between the managerial and auditing role. However, since the study is limited to the Swedish auditing context, the scale needs to be tested in other geographical and cultural contexts. Other implications and suggestions for further research are also presented.

Key words: Measuring ethical decision-making, moral philosophy, scale development, auditors, duty

Abbreviations

DIT	Defining Issues Test
EFA	Exploratory Factor Analysis
EPQ	Ethics Position Questionnaire
IEASB	International Ethics Standards Board for Accountants
IFAC	International Federation of Accountants
MEP	Managerial Ethical Profile
MES	Multidimensional Ethics Scale
MJT	Managerial Judgement Test
PA	Parallel Analysis
PCA	Principal Components Analysis

Introduction

Decision-making affects all business activities. In the decision-making process skills, knowledge, intuition and judgement all play a part; however, they play different parts, depending on the context in which the decision is made (McKenzie *et al.*, 2011). Both collective and individual decisions affect the outcomes of an organisation. Therefore, the decision-making process of managers has received attention. Managers are believed to specially influence organisational outcomes, through the strategic choices that they make, regarding both external and internal organisational matters (Smith & Umans, 2013). Strategic choices specifically regard matters that revolve around the organisation's ability to succeed in a competitive environment whilst maintaining legitimacy and credibility (Child, 1997). However, even small decisions made within organisations can later show to have great effects (Hambrick & Finkelstein, 1987). In our fast-changing global world, managers are faced with increased uncertainty and ambiguity (McKenzie *et al.*, 2011), including ethically charges issues (Lovisky *et al.*, 2007). The recent corporate scandals and the financial crises with major impacts on multiple stakeholders (e.g. Low *et al.*, 2008; Sikka, 2009), has put managerial decision-making in the spot-light yet again, where concerns are raised regarding ethical aspects of managerial decision-making.

Ethical behaviour has been suggested as a tool to restore trust and confidence in the capital markets (Barlaup *et al.*, 2009). The question is if all ethical behaviour could restore trust. There is an ongoing debate between moral philosophers about what constitutes right and wrong, good and bad and which moral and ethical principle to follow¹. In contrast, business ethics researchers agree on that managerial ethical decision-making is guided by all major moral philosophical schools simultaneously, which indicates that people intuitively use a broad span of moral aspects in their day-to-day decision-making (e.g. Casali, 2007; Vásques-Parraga, 2009; Casali, 2011; Kung & Huang, 2013). However, classical and neo-classical economic theories are based on the notion of the economic man, where ethical behaviour more or less constitutes the pursuit of one's own interests (Ingebrigtsen & Jakobsen, 2009). Since we humans act on different moral grounds depending on which social role or profession one acts in

¹ Ethics and morality have been treated as two different concepts; however, there is no consensus in the distinction between the two. In this article, there is no need to distinguish the two concepts, since all major moral philosophies are included in the theoretical frame and the distinction between ethics and morality is to a large extent created by moral philosophers, due to the need to prove their points (Harper, 2009).

(Gibson, 2003; Casali, 2007; Radtke, 2008; Harper, 2009), the question whether ethical behaviour would restore trust in the capital markets is highly dependent on if the capital markets accept the moral aspects managers tend to use in their decision-making process.

Auditors have received attention when it comes to ethical decision-making in regards to clients and public interest (e.g. Ruland & Lindblom, 1992; Thorne, 2000; Low *et al.*, 2008; Kung & Huang, 2013). Auditors have been argued to be frontline soldiers protecting the capital markets, however, the notion is criticised whenever corporate scandals are revealed (e.g. Humphrey & Moizer, 1990). There is a simplified dichotomous view on ethical dilemmas in auditing, as for example balancing public and private interests (Tudor, 2013), being a gatekeeper versus a client advocate (Anderson-Gough *et al.*, 2000; Öhman *et al.*, 2012) and the conflict between professional rules and the public interest (Ruland & Lindblom, 1992; Radtke, 2008). The simplified view stems from the lack of attention to the managerial role of auditors.

Auditors are not just auditors, but also managers (Broberg, 2013). The commercialisation of auditing firms (Broberg *et al.*, 2013) and the increased focus on billable hours (Alvehus & Spicer, 2012; Svanberg & Öhman, 2013) has increased the importance of the managerial role of auditors. The hierarchical division of labour in auditing firms in different teams for different clients (e.g. Otley & Pierce, 1996a; Kosmala & Herrbach, 2006) leads to auditors sharing the position as manager, either at middle management level, as non-signing auditors, or at top management level, as partners and signing auditors (Carrington & Catasús, 2007; Broberg, 2013). Managers deal with the attainment, retainment and allocation of resources and the structure of the organisation (Hambrick & Finkelstein, 1987). Managers also provide guidance and leadership to those they manage (Otley & Pierce, 1995). Examples of managerial duties of auditors are reviewing team members' work, giving feedback and guidance to colleagues, planning, budgeting, structuring teams (Broberg, 2013) as well as marketing activities (Broberg *et al.*, 2013). The managerial duties of auditors can lead to different ethical dilemmas, in comparison to the dilemmas faced in the auditing role. Thus, studying auditors' managerial ethical decision-making could provide a more nuanced picture of the ethical dilemmas faced by the profession.

Auditing is perceived to be a profession by the profession itself (IESBA, 2013) and by several researchers (e.g. Hooks, 1991; Anderson-Gough *et al.*, 2000; Forsberg & Westerdahl, 2007; Alvehus & Spicer, 2012). Since the managerial role is embedded in

the work of an auditor (Broberg, 2013), being a professional in an auditing firm includes being a professional manager. A professional feature is the adherence to ethical codes of conduct (Brierley & Cowton, 2000). For managers in professional firms ethics is of importance, since they can influence the ethical decision-making further down in the hierarchy (Loviscky *et al.*, 2007). Thus, the codes of ethics for professional auditors ought to apply both to the managerial role and the auditing role. The codes dictate a responsibility to act in the public interest as well as other duties and virtues to uphold (IESBA, 2013). Auditors shall maximise the benefits of an action for society as a whole (IFAC, 2012), which is in line with the moral theory of utilitarianism; whereas duties are connected to the moral theory of deontology and virtues connected to virtue ethics and ethics of care (Preuss, 1998; Casali, 2011). For Swedish auditors, it is also required to maintain sound finances (FAR, 2014), which is in line with ethical egoism (Casali, 2011). Hence, the content of the professional ethical codes of auditors, especially in Sweden, suggests that professional managerial ethical judgements require ethical reasoning from all schools of moral philosophy.

As stated before, managers affect organisational outcomes. Auditors as managers thus, affect the organisations profit, costs and allocation of resources, which indirectly affects the quality of audits. Profiling has received much attention in behavioural science, since the ability to predict behaviour by classifying people would facilitate life in society, including the business side of life (Casali, 2008). By profiling auditors' ethical preferences as managers, it could perhaps lead to a better understanding of certain outcomes in auditing firms, such as audit quality.

Several tools have been used in previous research to measure ethical decision-making. However, the majority of the instruments used are not based on moral theories or do not recognise the non-mutual exclusiveness of moral theories in practical ethical reasoning (Casali, 2011), making the instruments imprecise tools for capturing the complexity of managerial ethical decision-making. Hence, the aim of this article is to develop and test a multidimensional instrument to measure the influence of different moral philosophical dimensions in auditors' managerial decision-making process. Since there are theoretical indications that the managerial role of auditors is highly intertwined with the auditing role of auditors, an additional aim is to explore if auditors perceive differences in the two roles concerning ethical aspects in the decision-making process.

Measuring ethical decision-making

There are several tools and variation of tools previously used to measure ethical decision-making. Six of them are now presented shortly. The Defining Issues Test (DIT) and Managerial Judgement Test (MJT) are two common tools (Casali, 2011). Both the DIT and MJT are scenario-based tests that measure cognitive moral development in slightly different ways, rather than moral philosophical inclinations, where categories are treated as mutually exclusive (e.g. Lind, 1999; Thorne, 2000; Loviscky *et al.*, 2007).

The Ethics Position Questionnaire (EPQ) is a two-dimensional test measuring idealism and relativism, where relativism indicates to which extent one adheres to universal moral principles, whereas idealism indicates the extent one believes harm to others can be avoided at all times (Davis *et al.*, 2001; Casali, 2011). Several studies have used the EPQ to create four ethical profiles based on the combination of high or low scores in the two dimensions (Davis *et al.*, 2001).

The Managerial Value Profile (MVP) and the Multidimensional Ethics Scale (MES) share one common trait; they are based on moral theories. The MVP is based on three ethical frameworks; utilitarianism, individual rights and social justice (Sashkin, 2002; Zgheib, 2005). However, the MVP is based on mutually exclusive categories and forced choice, which is not the case in the MES (Casali, 2011). The MES is a scenario-based test which incorporates five ethical frameworks; deontology, utilitarianism, relativism, egoism and justice (McMahon & Harvey, 2007), making it a more precise tool than the other four instruments. However, none of the measurements above include virtue ethics and moral theories are treated as one-dimensional concepts, which lead Casali (2011) to develop a multidimensional scale.

Casali (2011)'s Managerial Ethical Profile (MEP) scale combines two dimensions of each of the four major schools of moral philosophy, namely ethical egoism, utilitarianism, virtue ethics and deontology, to try to capture a more realistic view of moral reasoning in managerial decision-making. The managerial decision-making of auditors seems to require ethical reasoning from all major schools of moral philosophy simultaneously. Thus, an instrument to measure the influence of ethical aspects in auditors' managerial decision-making requires the inclusion of all major moral theories to capture the ethical complexity in the decision-making process. Therefore, the

instrument developed in this article will be partly based on the moral philosophical dimensions developed by Casali (2011).

The moral philosophical foundation of managerial decision-making

There is a need to present the underlying moral philosophical theories and their different dimensions through which the managerial decision-making context can be viewed. Therefore, ethical egoism, utilitarianism, virtue ethics and deontology² will be introduced individually in this section, including a conceptualisation of the two dimensions of each moral philosophical school in the auditing context as well as the operationalisation of each dimension.

Ethical egoism

The moral school of ethical egoism states that it is morally right to act out of self-interest, i.e. to maximise personal outcomes (Gomberg, 1994), which is divided into the dimensions of economic and reputational egoism (Casali, 2011). Managers' actions can be based on self-interest, even if they act for the interests of the organisation, since professionalism and managerialism includes a strong commitment to the employing organisation, making the organisation an extension of the individual (Hamilton, 2013).

Economic egoism

Research has shown that auditing firms have a business focus as other firms (Broberg, Umans, Skog, & Theodorsson, 2014), which affects the auditors' managerial decision-making. The increased focus on billable hours (Alvehus & Spicer, 2012) suggests a willingness to maximise profits and optimise the use of resources. Therefore, managers that base their decisions on enhancing profits and reducing costs apply economic egoism as an ethical base (Casali, 2011). Also, in auditing firms the signing auditor is often a partner, i.e. an owner (Carrington, 2010a). This could imply personal economic interests. Even if an auditor is not an owner, s/he could have personal economic interests in the firm. In the Big-Four firms³ there is a culture described as "up or out", meaning that auditing firms have a self-purging system that filters out employees who are not interested in, or suitable for, advancement in the firm (Kornberger *et al.*, 2011; Curtis & Payne, 2008). This suggests that all auditors have some ambitions to become partner, since they otherwise would have been filtered out (Mueller, *et al.*, 2011). Thus,

² Keep in mind that all ethical schools are considered as equally ethical, meaning that no school is more or less ethical.

³ The Big Four auditing firms are PwC, KPMG, EY and Deloitte.

in the auditing context, one can assume that economic egoism includes placing importance on protecting one's own economic interests in the decision-making process.

Hence, auditors as managers applying economic egoism as an ethical foundation for decision-making would place importance on the following:

- Providing the highest economic profit for the bureau
- Minimising costs for the bureau
- Optimising the use of the resources in the bureau
- Protecting their economic interests within the bureau

Reputational egoism

Managers focusing on protecting organisational reputation apply reputational egoism as the ethical foundation for their decisions (Casali, 2011). For managers in professional firms, reputation is particularly crucial. As stated before, auditing is considered to be a profession. However, it is not relevant whether or not auditing actually is a profession; it is of significance that auditing is perceived as a profession (cf. Broberg, 2013). Professions are believed to have powerful roles in society, since they are assumed to possess specific and monopolised knowledge essential for society. This information and power asymmetry creates a need for professional ethics. Professional ethics forms the basis of trust between the profession and society from which the legitimacy of the profession stems (Brien, 1998). Hence, trust is strongly connected to reputation, indicating a non-conflict between ethical egoism and corporate social responsibility (Debeljak & Krkač, 2008; Casali, 2011).

However, the auditing profession has been criticised for not having specific or monopolised knowledge, thus, lacking a fundamental professional trait (Carrington, 2010b). Therefore, it is argued that the professional characteristics of auditors are rather connected to professional appearance and conduct (Anderson-Grough *et al.*, 2002; Cooper & Robson, 2006). Even if there are two different views on the uniqueness of auditors' knowledgebase and what the profession's characteristics are, the gist is that both trust and professional appearance or conduct are connected to reputation. Hence, upholding reputation is of essence in the auditing context (Broberg, 2013). Therefore, managers that apply reputational egoism place importance not only on protecting the bureau's reputation, but also the profession's reputation in their decision-making process, since the trust in the profession is based on the trust in each individual member (FAR, 2014).

Reputational egoism has another dimension as well in the auditing context. The combination of the commercialisation of auditing firms (e.g. Alvehus & Spicer, 2012; Broberg, 2013) and the “up or out” culture (Kornberger *et al.*, 2011) puts pressures on auditors to be perceived as good managers, i.e. to manage tasks on time and on budget, to be able to climb the corporate ladder (Otley & Pierce, 1996b). Therefore, managers need to be in line with the organisational mission and attain budgets (Casali, 2011) to ensure a good managerial reputation. Advancement in auditing firms also require being noticed by the partners (Mueller, *et al.*, 2011), thus, managers seeking a good managerial reputation place importance on making sure that the owners of the firm are satisfied with one’s work.

Hence, auditors as managers applying reputational egoism as an ethical foundation for decision-making would place importance on the following:

- Protecting the reputation of the bureau
- Being in line with the bureau’s mission
- Attaining their budgets
- Protecting the profession’s reputation
- Making sure the owners (i.e. the partners of the bureau) are satisfied

Utilitarianism

Whilst ethical egoism only focuses on personal outcomes, utilitarianism determines the morality of an action based on the consequences for the larger community. Moral acts are those that maximises utility for the greatest number of individuals. A distinction is made between act and rule utilitarianism, where the difference is that act utilitarianism focuses on determining the consequences in each individual action to achieve maximum good for as many stakeholders as possible, whereas rule utilitarianism focuses on following rules that are meant to benefit the majority (Preuss, 1998; Barlaup *et al.*, 2009; Casali, 2011). Thus, managers that examine each particular situation to determine the best course of action use an act utilitarian approach; whereas managers that follow organisational rules that benefit stakeholders apply rule utilitarianism in their decision-making process.

Act utilitarianism

The ethical codes for professional auditors state: “[a] distinguishing mark of the accountancy profession is its acceptance of the responsibility to act in the public interest” (IESBA, 2013, p. 11), where the assessment of the public interest should be

done through a cost/benefit analysis for society as a whole (IFAC, 2012). Since auditing firms, as well as their client firms, span from small to medium sized firms to global networks, the concept of public interest differs in practical terms from case to case (IFAC, 2012). In practical terms, to act in the public interest is to add value to society. Thus, auditors that apply act utilitarianism in their decision-making process would place importance on creating added value for the local/wider community and/or the public interest, depending on the context in which the managerial decision is made.

Hence, auditors as managers applying act utilitarianism as an ethical foundation for decision-making would place importance on the following:

- Creating added value for the local community
- Creating added value for the wider community
- Creating added value for the public interest

Rule utilitarianism

The ethical codes for professional auditors also have other rules, besides acting in the public interest, that are created to generate the greatest benefit for all stakeholders, such as not harming clients or third parties (IESBA, 2013; FAR, 2014). Harming clients or third parties could have detrimental effects on both the firms and society as a whole, destroying value rather than adding value. Thus, auditors as managers applying rule utilitarianism in their decision-making process would place importance on following these organisational rules as well as all organisational rules created to add value for stakeholders. The auditing profession also has a multitude of other rules and regulations to follow, including the corporate laws in each country that the firms are active. The fundamental notion regarding laws is that they are made to collectively protect individuals, companies, democracy and civil rights, thus, being rules that a rule utilitarian should follow. Therefore, rule utilitarian managers place importance on obeying the law⁴.

Hence, auditors as managers applying rule utilitarianism as an ethical foundation for decision-making would place importance on the following:

⁴ There is a theoretical difficulty categorising the obedience to law into a moral philosophical school, since it could be argued to be a rule deontological act as well. Whether obeying law is a rule utilitarian or rule deontological act lies in the criteria used in the formulation of rules, i.e. if laws are created to generate the greatest overall benefit for society or created to protect individual rights regardless of the consequences (Buha, 2010). The pre-study for this article indicated that obedience to law is a rule utilitarian act, therefore, I argue that the laws in the auditing context are seen as created to maximise utility for society.

- Not harming the clients
- Not harming third parties
- Respecting the bureau's rules and regulations that have been created to add value for all stakeholders
- Obeying the law, since it is created to benefit society as a whole

Virtue ethics

In contrast to ethical egoism and utilitarianism, virtue ethics has a more internal focus, since a virtue is a state or disposition of a person (Mintz, 2006). The central issue in virtue ethics revolves around the question of who we want to be (Kupperman, 2009) and considers both intentions and outcomes when determining the morality of an action, thus, linking morality with self-interest (Preuss, 1998). The dimensions of virtue ethics are virtue of self, which are virtues promoting personal well-being, as for example courage, humility and generosity (de Bruin, 2013), and virtue of others, concerning primarily the ethics of care (Halwani, 2003). Virtue of others focuses on relationships, making respect and empathy for others key factors (Reiter, 1996; Preuss, 1998).

Virtue of self

Managers that apply virtue of self as a moral philosophical base in their decision-making process would place importance on upholding the virtues they consider to be virtues to uphold. Thus, managers would place importance on being in line with their core personal values and being in line with the person they want to be (Casali, 2011). However, in the auditing context, there are two virtues that are particularly relevant, namely integrity and trustworthiness (Preuss, 1998), which are virtues emphasised by the profession itself (Mintz, 2006; IESBA, 2013; FAR, 2014). Therefore, self-virtuous managers would ensure that decisions are made with integrity and that trustworthiness is maintained.

Hence, auditors as managers applying virtue of self as an ethical foundation for decision-making would place importance on the following:

- Being most in line with their core personal values
- Being most in line with the person they want to be
- Ensuring that a decision is made with integrity
- Ensuring that trustworthiness is maintained

Virtue of others

Ethics of care is paramount in the auditing profession, which is clearly stated in the ethical codes of professional auditors, since the codes focus on acting in the public interest and due care (IESBA, 2013; FAR, 2014). Thus, when managers apply virtue of others in their decision-making process, importance is placed on respecting the dignity of those affected by the decision and acting transparently (Casali, 2011). The concept of a caring organisation places employees in a central position, since they exhibit the caring behaviour within the organisation (Preuss, 1998). Thus, a caring organisation requires empathic and respectful employees. Giving feedback and guidance to colleagues is a managerial task performed by auditors (Broberg, 2013). Thus, for auditors as managers applying virtue of others, empathising with colleagues is an important factor in the decision-making process.

Since independence is a virtue emphasised by the profession (IESBA, 2013; FAR, 2014), it ought to manifest itself in the auditors' managerial role. It has been suggested that ethics of care could place the concept of auditor independence in a different light (Preuss, 1998), through seeing independence as "understanding others' situations and points of view and determining what can be done to maintain appropriate relationships between the self and others" (Reiter, 1996, p. 48). Since appropriate behaviour for a professional is to behave professionally (Carr, 1999), an independent manager would focus on understanding others' situations and points of view when deciding between decision alternatives to maintain professional relationships.

Hence, auditors as managers applying virtue of others as an ethical foundation for decision-making would place importance on the following:

- Respecting those affected by the decision
- To empathise with employees
- Acting transparently in the decision-making process
- Taking other people's views into consideration to maintain professional relationships

Deontology

Deontology is a non-consequentialist moral theory with a focus on duties. Deontology is divided up into act and rule deontology. Rule deontology is based on Kantian duty and focuses on the compliance of universal duties and principles (Preuss, 1998; Barlaup *et al.*, 2009), such as the Golden rule (Casali, 2007) or to "act only on that maxim whereby

you can at the same time will that it should become a universal law” (Norman, 1983, p. 102). Duties stem from our human capacities of autonomy and reason; where to act out of duty is to follow one’s free will, not orders, commands or the need to obey a maxim (Yrjö Collin, n.d.). Act deontology, on the other hand, does not demand the rigorous compliance of moral principles to deem an action as morally right. Moral actions are those where one uses one’s conscience or intuition to determine the right actions or the right duties to adhere to in the situation at hand (Barlaup *et al.*, 2009; Casali, 2011). Duties can be seen as constraints in the pursuit of own ends; hence, the concept of duty is not incompatible with the concept of the economic man (White, 2004).

Duties do not only exist in our personal lives, but also in our professional lives. The choice to enter a profession is made out of free will. Even if one might be coerced into a profession by well-meaning parents or teachers, it is an active choice to stay within the profession. Professions can adhere to a morality of their own (Forsberg & Westerdahl, 2007) and if the maxims which the profession wills to become universal laws are in severe conflict with one’s individual maxims, one will leave the profession (Moizer, 1995). Thus, the duties of the profession are duties the individual freely has laid upon her/himself.

Act deontology

A manager that applies act deontology intuitively determines which duties to adhere to in the particular situation (Barlaup, *et al.*, 2009), therefore, s/he must place importance on giving the opportunity to all affected parties to have input into the decision-making process, to determine what is right in the unique situation (Casali, 2011). Importance is also placed on treating others as you want others to treat you as well as treating people as ends not means, since these are “golden rules” (Casali, 2007) focused on the determination of the right duties to adhere to in the context where the decision is made (Barlaup, *et al.*, 2009). Ensuring that the professional duties in the particular situation are fulfilled is specifically relevant in the auditing context, since the context in which the managerial decision is made varies from case to case. For example, in the decision on how to structure an auditing team and what resources to allocate to the team, the duties to adhere to might vary depending on the client being audited.

Hence, auditors as managers applying act deontology as an ethical foundation for decision-making would place importance on the following:

- Giving all affected parties the opportunity to be heard

- Treating others as they want others to treat them
- Treat people as ends not means
- Ensuring that the professional duties in the particular situation are fulfilled

Rule deontology

Professionalism has been described as a secular calling, thus, being professional is to perceive a duty (Freidson, 2001), suggesting that professionals adhere strictly to professional rules. The ethical codes of the profession can be seen as the manifestation of the professional duties and should thus, at all times be followed⁵. For auditors, confidentiality and due care are of crucial importance according to the ethical codes (IESBA, 2013). Therefore, a manager applying rule deontology in their decision-making process would place importance on following the ethical codes and ensuring that confidentiality and due care are maintained at all times by maintaining a fair process (Casali, 2011).

Hence, auditors as managers applying rule deontology as an ethical foundation for decision-making would place importance on the following:

- Ensuring that confidentiality is maintained at all times
- Maintaining a fair process at all times
- Ensuring that due care is maintained at all times
- Ensuring that the Ethical Codes of the profession are maintained at all times

Method

A qualitative pre-study was conducted where seven respondents of both sexes and different ages were interviewed to explore the moral reasoning in their daily work. Three of the respondents were accountants in small accountancy firms, one was an auditor assistant in a Big Four firm and three were managers from different sectors, namely wholesale, industrial manufacturing and agriculture. The pre-study indicated that different moral philosophies affect moral reasoning simultaneously, which is in line with previous research. Other indications were that ethical dilemmas are solved by teleological reasoning, meaning that decisions seem to be based on a balanced evaluation of the consequences of an action, that the sense of what duties to uphold

⁵ As stated in note 3, the classification of following rules/laws in a moral philosophical school is dependent on the criteria used in formulating the rules. The professional ethical codes of auditors differ from laws, since they are created by the profession itself, which should indicate that the codes are made to protect the professions interest, rather than generating the greatest overall societal benefits.

seem to be a reflection of the perceived maxims of the profession and/or the employing organisation and that duty seems to be a wider concept in practise than in theory.

A literature review on moral philosophy, ethics, business ethics, accounting research and instruments used to measure ethical decision-making was conducted, to be able to construct the scale and its items. Scale items are partly based on Casali (2011)'s original scale items, where theoretically and contextually appropriate; however, new scale items in all eight dimensions have been developed. These items are constructed based on the literature review and the pre-study and have been validated by two academic colleagues in relevant fields.

Auditors, being members of a profession, can be assumed to have a strong professional identity, which could result in low variance in their answers. Thus, the scale is expanded compared to Casali (2011)'s five-point scale. The scale items are measured on a seven-point scale, with no reverse-coded statements, where the scale ranges from 'not important at all' (=1) to 'extremely important' (=7). The scale items were turned into a web-based questionnaire.

There are theoretical and empirical data suggesting an eight factor scale for measuring ethical reasoning in decision-making. However, the eight factor scale has not been previously tested in the auditing context. Thus, exploratory factor analysis (EFA) will be used to test the scale, since it is a method suitable for early stage research (Pallant, 2010) and scale development (Hayton, *et al.*, 2004). Since the two dimensions of each moral theory are based on the same moral grounds and moral theories in some cases share traits, EPA will reveal if other underlying structures than the theorised eight factor model exist (Fabrigar & Wegener, 2011). The sample size is suitable for EPA, since it exceeds the recommended value of 150 (Pallant, 2010) with a ratio of number of cases per variable above 5:1, in line with common recommendations (de Winter, *et al.*, 2009). The EPA methods used will be the principal components analysis (PCA) as well as maximum likelihood factor analysis.

The reliability of the scale developed will also be tested by determining the Cronbach's alpha coefficients. The additional aim to explore if auditors perceive differences in the two roles concerning the influence of ethical aspects in the decision-making process will be based on a qualitative analysis of the written comments to the question whether or not the respondents had answered the questionnaire differently in their role as auditors.

Research sample

The questionnaire was distributed to Swedish authorised auditors. *Revisorsnämnden*, i.e. the Supervisory Board of Public Accountants in Sweden, had 3 137 authorised auditors registered at the fifth of March 2014. A total of 3 066 email addresses were obtained, from the Supervisory Board of Public Accountants' register or the company websites if email addresses were publicly accessible. The questionnaire was sent with the web survey tool Survey Monkey, from which 264 respondents had previously declined receiving surveys and therefore, could not be reached. Thus, 2802 respondents received the questionnaire. 180 usable surveys were received, giving a response rate of 6.42 %. 95 respondents work at one of the Big Four firms, whereas 19 respondents work at one of the middle sized firms⁶ and 66 respondents at a small firm. Of the respondents, 35 % were female and 48.3 % were partners. The mean age was 45.28 years with a standard deviation of 10.459. The mean number of years in the profession was 19.23 with a standard deviation of 10.181 and the mean office size was 157.46 employees with a standard deviation of 334.373.

Results

Initially the scale's eight theorised components' internal consistency was tested by examining the Cronbach's alpha coefficients. All components show a relatively high internal consistency, all above the acceptable level of .7 (Pallant, 2010), except economic egoism. Economic egoism also has a relatively low inter-item correlation mean of .294 with values ranging from -.006 to .454. The item *eco.ego3* has a corrected item-total correlation value below .3, which suggests that the item measures something else than the scale as a whole (Pallant, 2010).

The 32 items (see appendix A and B) were subjected to PCA using SPSS version 22. The results show that the sample was appropriate for factor analysis, since the correlation matrix showed a relatively large number of correlations above .3, the Bartlett's test of sphericity was significant at $p < .000$ and the Kaiser-Meyer-Olkin index was .852, well over the minimum value of .6 (Pallant, 2010).

The PCA revealed eight eigenvalues exceeding 1, indicating eight components according to the Kaiser's criterion explaining 29.8 %, 9.3 %, 7.2 %, 5.9 %, 5.5 %, 3.9 %, 3.3 % and 3.2 % of the variance respectively. For the pattern and structure matrixes and communalities for the eight component solution, see appendix C. The Kaiser's criterion

⁶ Middle sized firms are BDO, Mazar SET and Baker Tilly.

is however, an inaccurate method for factor extraction and has a tendency to exaggerate the number of factors (Hayton, *et al.*, 2004). The Catell's scree test indicates a five-component solution, but is also a method that tends to overfactor (Hayton, *et al.*, 2004). Therefore, parallel analysis (PA) was used, since it is the method shown to be most accurate in determining the number of factors and is conducted by comparing the size of the eigenvalues retrieved in the study with those from a randomly generated data sample (Pallant, 2010). The random data set must have the same number of observations and variables as the real data (Hayton, *et al.*, 2004). The eigenvalues in the random data set was retrieved from the statistical program developed by Marley Watkins called Monte Carlo PCA for Parallel analysis (Pallant, 2010). The PA confirmed a five-component solution, as seen in table 1, which explains a total of 57.7 % of the variance.

Table 1: Parallel analysis to determine number of factors extracted*

Eigenvalue	Criterion value from PA	Actual eigenvalue from PCA	Decision
1	1.8809	9.520	Accept
2	1.7525	2.971	Accept
3	1.6639	2.297	Accept
4	1.5890	1.887	Accept
5	1.5133	1.774	Accept
6	1.4507	1.260	Reject

*The random eigenvalues are based on 32 variables. 180 respondents and 100 replications

Direct oblimin rotation was used to interpret the results of the five-component solution. Varimax rotation of the factors was not an option, since factors one and five correlated strongly, i.e. over .3 (Pallant, 2010). Direct oblimin rotation of the number of factors selected by the Scree test has been shown to be the most efficient way to reach a simple structure (Kline, 1994). By using the highest loading items on each component the components were identified (see appendix D). None of the items had low communality (see appendix E), thus, were none of the items perceived to not fit well with other items at this stage (Pallant, 2010). The components were identified as act deontology, economic egoism, act utilitarianism, virtue of self and rule deontology, which will be discussed further in the scale development section.

When examining the double loadings in the five-component solution, all except two loaded to a higher extent in one of the components, thus, simplifying the determination of which component the item belonged to. The double loadings and the classifications of which component the items belongs to are also theoretically sound, which will be further explained in the scale development section. As seen in appendix F, the items

rep.ego2 and rep.ego3 load relatively equally on two components. Rep.ego2, formulated as being in line with the bureau's mission, loaded on the components identified as act utilitarianism and rule deontology. Being in line with the bureau's mission can be seen either as being a professional auditor's duty or as guidelines that ensure that the best possible outcome for all is achieved, which explains the double-loading. Rep.ego3, formulated as attaining budgets, loaded on the components identified as economic egoism and act utilitarianism. Reputational egoism belongs to the moral school of ethical egoism, as economic egoism does. However, the attainment of budgets can be seen as an action which is performed to maximise benefits for all, since budgets are tools to ensure the best results of scarce resources. Hence, there are no strong theoretical arguments for placing the items in one of the two components. Thus, the items are removed.

A maximum likelihood factor analysis was performed on the remaining 30 items⁷, since it is a good check to use a second method of rotation to ensure that the solution provided is not accidental (Kline, 1994). The maximum likelihood factor analysis with five components extracted explained a total of 58.5 % of the variance, with the components contributing with 29.8 %, 9.1 %, 7.5 %, 6.3 % and 5.8 % respectively. The test resulted in one or more communalities greater than 1, suggesting that the results should be interpreted with caution. Both the PCA and the maximum likelihood factor analysis performed on the remaining 30 items provide the same items in each component as seen in appendix G. The PCA with five extracted components explained a total of 58.4 % of the variation, with the components contributing with 30.2 %, 9.1 %, 7.3 %, 6.1 % and 5.6 % respectively⁸. Since differences in the solutions provided by different factor analysis methods usually are small (Costello & Osborne, 2005) and maximum likelihood factor analysis and PCA provide similar results when communalities are high (Kline, 1994), it suggests that the components extracted from the PCA are suitable for further analysis.

The five extracted components' internal reliability was tested. The results show a high level of internal reliability as seen in table 2. However, the act and rule deontology components include a larger number of items, which could explain the high Cronbach's

⁷ A parallel analysis based on 30 items, 180 respondents and 100 replications revealed a five component structure as well.

⁸ The sums add up to 58.3 %. The discrepancy depends on the rounding of the individual percentages to one decimal.

alpha coefficients (Barmark, 2009). Therefore, PCA was conducted on the components act deontology and rule deontology.

Table 2: Cronbach's alpha coefficients for the five extracted components

Reliability Statistics			
	Cronbach's Alpha	Cronbach's Alpha Standardized Items	N of Items
Act deontology	.860	.862	9
Economic egoism	.719	.723	4
Act utilitarianism	.904	.903	3
Virtue of self	.793	.795	4
Rule deontology	.866	.870	10

The results show that both components were appropriate for further factor analysis, since the correlation matrixes showed a large number of correlations above .3, the Bartlett's tests of sphericity was significant at $p < .000$ and the Kaiser-Meyer-Olkin indexes were both over .8 (Pallant, 2010). Both PCAs revealed two eigenvalues exceeding 1, however, PA indicated only one component. Considering the relatively large number of items in act and rule deontology, that represent different types of moral reasoning, a two component solution is appropriate. In the act deontology PCA, the two components explained 48.3 % and 11.1 % respectively and in the rule deontology PCA 46.6 % and 11.6 % respectively.

The two components in act deontology have a strong correlation of $-.566$ (Pallant, 2010), compared to the components in rule deontology that has a correlation of $.003$. When direct oblimin rotation was used to analyse the results, all items in act deontology load strongly on one of the components, except rule.deon3 formulated as ensuring that due care is maintained at all times, which loads equally on both components as seen in appendix H. The first component is identified as professional act deontology and the second component as virtue of others, which will be explained in the scale development section. Rule.deon3 was deemed as a virtue of others item⁹.

All the items in rule deontology load strongly on the first component, but the items rule.util2, rule.util1, rule.deon4 and rule.deon1 also load quite strongly on the second component, as seen in appendix I, indicating a duality in the items themselves. Since there is a lack of correlation between the components in rule deontology, the rotation method was changed into Varimax to see if clearer loadings could be achieved. As seen in appendix J, the Varimax rotation provides clearer loadings. All double-loading items

⁹ Since the item includes the word care, the wording itself indicates the item as a virtue of others item.

were deemed to belong to the component on which it loaded the highest, except the item eco.ego3 formulated as optimising the use of the resources in the bureau. Since eco.ego3 did not load strongly on either component, i.e. over .6 (Kline, 1994), loaded equally on both components and had a corrected item-total correlation value indicating that the item measured something else than the scale as a whole (Pallant, 2010), it was removed. The first component in rule deontology was identified as managerial duties and the second component as professional duties, which will be explained in the scale development section.

The internal reliability of the subcomponents in act and rule deontology was tested, and the results are seen in table 3.

Table 3: Cronbach's alpha coefficients for act and rule deontology subcomponents

Reliability Statistics			
	Cronbach's Alpha	Cronbach's Alpha Standardized Items	N of Items
Professional act deontology	.764	.764	4
Virtue of others	.815	.815	5
Managerial duties	.837	.840	5
Professional duties	.774	.786	4

After the factor analysis of act and rule deontology components, a PCA was conducted on the remaining 29 items¹⁰. The five component solution explains a total of 59.6 % of the variance, which is slightly higher than in the previous tests. The solution is highly similar to the PCA conducted on 30 items, however, one new double-loading occurs as seen if appendix G and K are compared. A maximum likelihood factor analysis was performed with 29 items, which also gave highly similar results; the only significant difference was an additional double-loading item, namely rule.util4 labelled as obeying the law, since it is created to benefit society¹¹.

Regarding the question whether the respondents had answered the questionnaire differently if they had answered as auditors, the majority stated that there would have been no difference as seen in table 4.

¹⁰ A parallel analysis based on 29 items, 180 respondents and 100 replications revealed a five component structure as well.

¹¹ The item loads on both act and rule deontology. The double-loading is connected to the problem of classifying the obedience of rules and laws as being rule utilitarian or rule deontological.

Table 4: The respondents' perception of differences between the managerial and auditing role

Answered differently if answered as an auditor		
	Frequency	Percent
No	168	93,3
Yes	9	5,0
Total	177	98,3
Missing	3	1,7
Total	180	100,0

75 respondents commented on whether or not they would have answered differently as auditors, of which 68 respondents answered no. Based on the comments, it is clear that the roles are intertwined and inseparable. For example it was described as “The roles are strongly connected in our profession”, “The auditing role governs everything that you do” and “Do not see the difference”. Some respondents explained that the answers are strongly connected to them as people, for example “Reflects my values regardless of role”, “I am my person both as an auditor and a manager”, “The questions are fundamental for me as a person, auditor and manager” and “Fundamental moral that is not affected by a role”. The respondents in small firms that were sole owners seemed to feel more strongly that the roles are one and the same.

The respondents that would have answered differently motivated their answers by stating “Laws and standards regulate our actions”, “Laws and FARs ethical rules prevent us for example to take into account if clients or third parties are harmed by the publication of the audit report” and “The external auditing role is regulated. The internal managerial role regards decisions that are totally different” and “Two different things to act as a manager and to act as an authorised auditor. To make money is the goal, but one wants to be proud over the profession one has chosen”. One of the respondents provided a simple and probably honest motivation, since s/he stated “Would have had another focus then”.

The nine respondents that had answered differently were equally spread in the different sized firms and both sexes were included in this group. The mean age was 6.69 years lower in this group and a t-test indicated a two-tailed statistical significance of $p < .061$ if equal variance is assumed¹². However, considering the low number of respondents that would have answered differently as auditors, it should be interpreted with caution.

¹² If equal variations are not assumed the significance is $p < .040$.

Scale development

Since the scale items group themselves differently than *a priori* theory suggested, the developed scale needs to be motivated. Hence, the arguments for identifying the five components as act deontology, economic egoism, act utilitarianism, virtue of self and rule deontology are presented below as well as an explanation for the double-loadings in the five component solution.

Component one, as seen in table 5, includes all four items in the original act deontology scale. Three of these items loaded highly, i.e. over .6 (Kline, 1994), strongly indicating the component as act deontology and thus, labelled as such.

Table 5 Scale items for act deontology

Component 1 Act deontology	
Subcomponent Professional act deontology	
act.deon4	Ensuring that the professional duties in the particular situation are fulfilled
rule.deon2	Maintaining a fair process at all times
virtue.other3	Acting transparently in the decision-making process
act.deon1	Giving all affected parties the opportunity to be heard
Subcomponent Virtue of others	
virtue.other2	To empathise with colleagues
act.deon2	Treating others as I want others to treat me
act.deon3	Treating people as ends not means
virtue.other4	Taking other people's views into consideration to maintain professional relationships
rule.deon3	Ensuring that due care is maintained at all times

The two rule deontological items strengthen the classification of component one as deontology. Both act and rule deontology revolves around the adherence to duties, where the difference between the two is how one determines what duties to adhere to. Act deontologists rely on intuition and one's conscience, whereas rule deontologists rely on rules (Barlaup, *et al.*, 2009; Casali, 2011). To maintain a fair process and due care at all times in the auditing context includes determining the right duties to follow in the particular situation. Auditing firms have different resources as well as clients of different sizes in different industries. Thus, auditors as managers and as auditors have to deal with a myriad of external and internal organisational matters. Hence, to follow the rules of maintaining a fair process and due care stated in the ethical codes of professional auditors (IESBA, 2013), is to consider the particular situation in which the decision is made, making these rule deontological items act deontology in practise. This also explains the double-loading of the item rule.deon3 formulated as ensuring that due

care is maintained at all times, as seen in the PCA pattern matrix in appendix K. To be able to maintain a fair process and due care, it is of essence to understand the situation and the people involved to ensure that the right thing is done in the unique situation (Casali, 2011). Thus, ethics of care is strongly connected to act deontology in the auditing context¹³, explaining why three virtue of other items load on the act deontology component.

The subcomponents in act deontology, seen in table 5, further highlight the connection between ethics of care and act deontology. The first subcomponent was determined to be professional act deontology, since all items are closely connected to auditors' professional duties. The second subcomponent was determined to be virtue of others, since the two act deontology items are closely connected to empathy.

Component two, as seen in table 6, is clearly connected to the moral school of ethical egoism and mainly to the economic egoism dimension.

Table 6: Scale items for Economic egoism

Component 2 Economic egoism	
eco.ego4	Protecting my economic interests within the bureau
rep.ego5	Making sure the owners (i.e. the partners of the bureau) are satisfied
eco.ego1	Providing the highest economic profit for the bureau
eco.ego2	Minimising costs for the bureau

Considering the large number of respondents being partners, the item rep.ego5, formulated as making sure that the partners are satisfied, might not be connected to maintaining a good managerial reputation, but rather to protecting one's own economic interests. A t-test shows a two-tailed significance of $p < .001$, where partners had a higher mean than non-partners on this question. However, both groups had relatively high means of 4.59 and 5.18 respectively. Considering that keeping partners satisfied by being a good manager is the key for advancement (Otley & Pierce, 1996b), where advancement in most cases is strongly connected to a pay raise, protecting one's managerial reputation seems to be strongly connected to personal economic interests in the auditing field. Thus, the component is labelled economic egoism. As seen in the PCA pattern matrix in appendix K, the rule utilitarian item protecting clients has a small loading on component two, indicating some correlation between the protection of

¹³ Casali (2011) also found a correlation between act deontology and ethics of care in the health care sector. However, the correlation seems to be stronger in the auditing context, since the two dimensions form a strong act deontological component.

clients and the bureau’s economic interests. It is quite self-evident that keeping clients unharmed and happy falls within the bureau’s economic interests.

Component three, as seen in table 7, is a distinct act utilitarian component, with strong loadings well above the .6 limit (Kline, 1994).

Table 7: Scale items for Act utilitarianism

Component 3 Act utilitarianism	
act.util2	Creating added value for the wider community (region)
act.util1	Creating added value for the local community (immediate area)
act.util3	Creating added value for the public interest (society as a whole)

As seen in the PCA pattern matrix in appendix K, the item rep.ego4 formulated as protecting the reputation of the profession loads slightly on act utilitarianism. The theoretical explanation for the correlation between the profession’s reputation and act utilitarianism lies within the nature of the profession. Auditors are seen as safety nets for investors and capital markets, where the external audits are meant to provide a sense of trust in the fairness of financial reports (Sikka, 2009); hence, the function of the audit is principally based on society’s trust in the profession (Brien, 1998). If the reputation of the profession is harmed, the function of the audit is impaired, harming not only the profession, but society as a whole through the weakened trust between the participants in the financial markets (Barlaup, *et al.*, 2009; Broberg, 2013). Hence, protecting the reputation of the profession is to some extent an act utilitarian action.

Component four, as seen in table 8, is a distinct virtue of self component. The two dimensions of virtue ethics are fairly intertwined, since virtue ethics regards who we want to be as people (Kupperman, 2009). Since managers applying virtue of self as an ethical basis for decision-making place importance on upholding the virtues they consider to be virtues to uphold (Casali, 2011), these might as well be virtues connected to respecting others. Hence, the component is labelled as virtue of self.

Table 8: Scale items for Virtue of self

Component 4 Virtue of self	
virtue.self1	Being most in line with my core personal values
virtue.self2	Being most in line with the person I want to be
virtue.self3	Ensuring that a decision is made with integrity
virtue.other1	Respecting those affected by the decision

The item virtue.self3 formulated as ensuring a decision is made with integrity also loads on the rule deontology component. The theoretical explanation behind the double-loading is that the virtue of integrity is highly incorporated in the profession’s ethical rules (IESBA, 2013; FAR, 2014), and can thus, be deemed as a professional duty. This is one of two items which double-loads in the maximum likelihood factor analysis. However, since item virtue.self3 loads the highest on the virtue of self component in both tests, it is deemed as a virtue of self item.

Component five was identified as rule deontology even though the highest loading items were rule utilitarian (see appendix K), due to the presence of rule deontological items as seen in table 8¹⁴.

Table 9: Scale items for Rule deontology

Component 5 Rule deontology	
Subcomponent Managerial duties	
rule.util2	Not harming third parties
rule.util1	Not harming the clients
rep.ego1	Protecting the bureau’s reputation
rule.util3	Respecting the bureau’s rules and regulations that have been created to add value for all stakeholders
rep.ego4	Protecting the reputation of the profession
Subcomponent Professional duties	
rule.deon1	Ensuring that confidentiality is maintained at all times
rule.deon4	Ensuring that the Ethical Codes of the profession are maintained at all times
rule.util4	Obeying the law, since it is created to benefit society as a whole
virtue.self4	Ensuring that trustworthiness is maintained

As previously stated, professions can adhere to a morality of their own (Forsberg & Westerdahl, 2007), meaning that the profession itself chooses which maxims to follow, thus, defining the professional duties. The ethical codes of professional auditors are rules formulated by the profession itself (IESBA, 2013). These rules, either derived from a deontological or utilitarian perspective, are to be followed regardless of the situation, since they are evaluated for the profession as a whole (Moizer, 1995). The ethical codes of professional auditors can thus, be seen as the manifestation of the maxims the profession upholds. Hence, it does not matter how the rules in the codes are derived, since the profession as a whole perceives the rules as duties to uphold (Broberg, 2013). The rule utilitarian items, except rule.util3, are items stemming from the rules in the ethical codes of professional auditors, which explains them loading on the rule deontology component. The virtue.self4 item, maintaining trustworthiness, also

¹⁴ The component was also determined as rule deontology, since the rule utilitarian items revolve around rules. As previously stated, there is a theoretical difficulty to distinguish rules and laws as either rule utilitarian and rule deontological. It is dependent on the criteria used in the formulation of rules or laws.

stems from the ethical codes (IESBA, 2013; FAR, 2014) as well as the rep.ego4 item, protecting the profession's reputation (FAR, 2014), indicating that they are perceived as rules to uphold, which explains the loadings in the rule deontology component¹⁵. However, virtue.self4 also loaded on the virtue of self component, which is explained by trustworthiness being a virtue that is emphasised by the profession. The stronger loading on rule deontology, suggest that trustworthiness is rather perceived as a professional duty than a virtue. Hence, the item is included in the rule deontology component.

There is a unique dimension in the rule deontology component, explained by the auditing context. To protect the reputation of the bureau and to follow the bureau's rules and regulations seem to be perceived as duties, indicating that auditors perceive duties connected to the bureau. These duties can be seen as more "pure" managerial duties. The presence of both managerial and professional duties creates the subcomponents in rule deontology, as seen in table 9. The first subcomponent was determined to be managerial duties, since to follow the bureau's rules that are made to add value for all stakeholders and making sure clients and third parties are not harmed are ways to protect the bureau's reputation. The second subcomponent was deemed as professional duties, since the items are more connected to auditing duties. However, to protect the bureau's reputation is connected to the protection of the profession's reputation. By protecting the bureau's reputation, one does not only protect the bureau's economic and organisational interests, but also the society as a whole by ensuring that the trust between the participants in the financial markets is maintained (Barlaup, *et al.*, 2009; Broberg, 2013). Hence, the managerial role and the auditing role are not only intertwined as suggested by previous research, which is also supported by the comments provided by the respondents, but the managerial duties in auditing firms are also strongly connected to the auditing duties, which explains why the two subcomponents group together.

Discussion and conclusion

It must be remembered that the results in this paper are only based on a small sample of Swedish authorised auditors. The scale developed in this paper is a methodological contribution for ethical research in the auditing field; however, the scale needs to be

¹⁵ Interestingly enough, Casali (2011) also found a correlation between reputational egoism and rule utilitarianism in his study in the health care sector.

tested on larger samples of auditors from a wider span of countries and cultures, since culture affects one's view on morality (Vásques-Parraga, 2009).

The results implicate that there are five moral philosophical dimensions used in the decision-making process in the auditing context as well as multidimensionality in the moral philosophical schools. However, the results suggest that there is no pure two-dimensionality as suggested by Casali (2011) in the auditing context. Ethical egoism, utilitarianism and virtue ethics seem to be more one-dimensional moral concepts in this specific context strongly connected to one of the two dimensions in each moral philosophical school. Ethical egoism consists only of economic egoism, since reputational egoism is rather connected to the duties of the auditing profession. Likewise, virtue of others is connected to duties, making virtue ethics only based on the dimension virtue of self. The same applies for utilitarianism, which only consists of act utilitarianism, since rule utilitarianism is connected to duties as well. Hence, act and rule deontology are multidimensional concepts in the auditing context. The eight moral philosophical dimensions suggested by Casali (2011) are to some extent supported, since reputational egoism and rule utilitarianism are present in the dimensions of rule deontology, whereas virtue of others is a dimension of act deontology in the auditing context.

This study implies that the concept of duty in moral philosophy needs to be revised to be useful in organisational studies. Auditors seem to perceive duty as a wider concept consisting of more than just the moral school of deontology. Thus, duty for auditors needs to be explored by qualitative means to deepen the understanding of the concept. To determine whether or not the auditing context creates the wider concept of duty or if duty is more generally perceived as a wider concept by non-moral philosophers, as indicated by the pre-study, duty needs to be explored in other context as well. The contexts and the social roles in which the decisions are made affect the moral grounds used as a basis in the decision-making process (e.g. Gibson, 2003; Harper, 2009); hence, different professions could perceive the concept of duty differently. Thus, to explore ethical decision-making in other context by the use of the eight dimensions of moral philosophy would help to shed light on the concept of duty, which in turn could facilitate the development of behavioural theories by including duty as a factor influencing economic and organisational behaviour (Yrjö Collin, n.d.).

The empirical implication of the study is that auditors have a combined role in all bureaus regardless of size. The auditors perceive the roles to be intertwined and the managerial role is strongly influenced by the auditing role, hence, the ethical codes of professional auditors are perceived to apply to both roles. The results gave a slight indication that the ethical foundations applied in the decision-making process were strongly connected to personal values. Thus, it would be interesting to explore if the profession attracts individuals with specific ethical profiles and if the auditors' ethical profile affects audit quality.

The developed scale could be used in ethical training programs or as a recruitment tool, since it visualises individuals' ethical "preferences", which facilitates self-awareness and personal development as well as the recruitment of employees that share the organisation's values (Casali, 2011). A more important practical implication is that the scale could assist the development of the ethical codes of the profession. Since auditing is a profession with a dual role with seemingly extensive moral aspects to take into account, the developed scale can be used to detect moral discrepancies in the auditing and managerial role or in the professional roles and one's own individual private morality, i.e. highlighting role morality (Gibson, 2003). By visualising role morality on a larger scale in the auditing profession, it would facilitate the evaluation and development of the professions ethical codes, which in turn could help to create an enhanced trust in the profession and the capital markets.

The results indicate that auditors, both as managers and as auditors, perceive managerial duties toward their bureau and the profession. The question does remain whether or not the managerial duties perceived in the auditing role are a result of the increased competition in and commercialisation of the profession or if auditors always have had a dual role with intertwined duties, which is a question beyond the scope of this study. The results indicate that younger auditors perceive differences in the ethical decision-making process in the managerial role and the auditing role as well as the roles being separate, which could suggest a generational change in the auditing profession, perhaps as a result of the commercialisation process. However, it should be interpreted with caution due to the small sample in this study and should thus, be researched further.

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Appendix A: MEP Questionnaire

1. Background questions

Sex	Female or Male
Age	Open
Number of years in the profession	Open
Number of employees in your office (approximately)	Open
Active as an auditor	Yes or No
Partner	Yes or No

2. When fulfilling your managerial role in your bureau, for example when you check-up on other employees work, plan or follow up budgets, please indicate the importance of the following in your decision-making process:

Explanation of the scale 1= not important at all 7= Extremely important

Economic egoism

Providing the highest economic profit for the bureau

Minimising costs for the bureau

Optimising the use of the resources in the bureau

Protecting my economic interests within the bureau*

Reputational egoism

Protecting the bureau's reputation

Being in line with the bureau's mission

Attaining budgets

Protecting the reputation of the profession*

Making sure the owners (i.e. the partners of the bureau) are satisfied*

Act utilitarianism

Creating added value for the local community (immediate area)

Creating added value for the wider community (region)

Creating added value for the public interest* (society as a whole)

Rule utilitarianism

Not harming the clients

Not harming third parties*

Respecting the bureau's rules and regulations that have been created to add value for all stakeholders

Obedying the law, since it is created to benefit society as a whole

Virtue of self

Being most in line with my core personal values

Being most in line with the person I want to be

Ensuring that a decision is made with integrity*

Ensuring that trustworthiness is maintained*

Virtue of others

Respecting those affected by the decision

To empathise with colleagues*

Acting transparently in the decision-making process

Taking other people's views into consideration to maintain professional relationships*

Act deontology

Giving all affected parties the opportunity to be heard

Treating others as I want others to treat me

Treating people as ends not means

Ensuring that the professional duties in the particular situation are fulfilled*

Rule deontology

Ensuring that confidentiality is maintained at all times

Maintaining a fair process at all times

Ensuring that due care is maintained at all times

Ensuring that the Ethical Codes of the profession are maintained at all times*

3. Concluding questions

Would you have answered differently if you had answered the questions in your auditing role? Yes or no
Why or why not? Open

Questions marked with * are scale items developed in this article.

Appendix B: MEP Questionnaire in Swedish

1. Bakgrundsfrågor

Kön	Kvinna eller Man
Ålder	Öppen
Antal år i revisorsyrket	Öppen
Antal anställda på ditt kontor (svara ungefärligt)	Öppen
Är du aktiv som revisor?	Ja eller Nej
Partner	Ja eller Nej

2. Vänligen välj det alternativ som bäst visar vilken betydelse följande faktorer har när du fattar beslut i din ledarroll på din byrå, till exempel när du kontrollerar andra anställdas arbete, planerar eller följer upp budgetar:

Förklaring av skalan 1= inte viktigt alls 7= Oerhört viktigt

Economic egoism

- Att uppnå högsta möjliga ekonomiska resultat för byrån
- Att minimera kostnader för byrån
- Att optimera användandet av byråns resurser
- Att skydda mina ekonomiska intressen inom byrån

Reputational egoism

- Att skydda byråns rykte
- Att följa byråns affärsidé
- Att uppnå budgetar
- Att skydda professionens rykte
- Att se till att ägarna (d.v.s. byråns partners) är nöjda

Act utilitarianism

- Att skapa mervärde för närområdet
- Att skapa mervärde för regionen
- Att skapa mervärde för samhället i stort

Rule utilitarianism

- Att inte skada klienter
- Att inte skada tredje man
- Att respektera byråns regelverk som syftar till att skapa mervärde för alla intressenter
- Att följa lagstiftningen, eftersom den skapats för att gynna samhället i stort

Virtue of self

- Att beslutet är i linje med mina personliga kärnvärderingar
- Att beslutet är i linje med hur jag vill vara som person
- Att beslutet fattas med integritet
- Att trovärdighet upprätthålls

Virtue of others

- Att de som påverkas av beslutet respekteras
- Att ha empati för kollegor
- Att agera transparent i beslutsprocessen
- Att ta hänsyn till andra människors perspektiv för att bibehålla professionella relationer

Act deontology

- Att alla berörda parter ges möjlighet att bli hörda
- Att behandla andra som jag själv vill bli behandlad
- Att människor ses som värdefulla i sig själva, det vill säga inte ses som verktyg för att uppnå mål
- Att mina professionella plikter i varje enskild situation fullföljs

Rule deontology

- Att tystnadsplikt alltid upprätthålls
- Att ett rättvist förfaringsätt alltid upprätthålls
- Att omsorgsfullt yrkesutövande alltid upprätthålls
- Att professionens etiska koder alltid upprätthålls

3. Avslutande frågor

Hade du svarat annorlunda om du hade svarat utifrån din roll som revisor?	Ja eller Nej
Varför/Varför inte?	Öppen

Appendix C: Pattern and structure matrix and communalities of the eight component solution with all original scale items

Pattern Matrix^a

	Component							
	1	2	3	4	5	6	7	8
rule.util2	.883	-.077	.033	.072	.075	.009	.030	-.072
rule.util1	.787	.190	-.007	-.126	-.005	-.008	.078	-.105
rep.ego1	.599	.167	-.012	.084	-.122	.124	-.056	.220
rep.ego4	.522	.009	-.340	.123	-.069	.016	-.095	.119
rule.util3	.509	-.040	-.202	.007	-.020	.151	-.292	.161
eco.ego4	.130	.828	.143	.181	.124	-.091	.062	-.191
rep.ego5	.124	.679	-.016	.012	-.110	.066	-.093	-.018
eco.ego1	.085	.651	-.096	-.114	.020	-.070	.130	.430
eco.ego2	-.004	.503	.039	.124	.201	-.040	-.094	.334
rep.ego3	-.067	.425	-.397	-.156	-.135	.202	-.171	.041
act.util2	-.078	-.041	-.983	.057	.121	-.080	.064	-.026
act.util1	-.047	.042	-.934	.128	.064	-.068	.081	-.019
act.util3	.190	-.186	-.798	-.032	.002	.025	.015	-.030
rep.ego2	.284	.241	-.378	-.017	-.127	.190	-.234	.069
virtue.self1	.004	.064	-.051	.829	.054	.101	-.056	-.015
virtue.self2	-.004	.158	-.165	.812	.050	.077	-.075	-.029
rule.deon2	-.094	-.087	-.092	.132	.775	.140	.116	.059
act.deon1	.005	.064	-.107	.014	.686	-.075	-.212	-.124
act.deon4	.123	.265	-.041	-.052	.637	.102	-.062	.001
rule.deon3	.184	-.151	-.012	.088	.511	.042	-.082	.387
virtue.other3	-.112	.130	-.122	-.310	.446	.314	-.433	-.282
virtue.self4	.160	.030	.013	.221	.080	.718	.065	-.073
rule.deon1	-.018	-.005	-.054	-.027	.095	.668	-.028	.215
virtue.self3	.053	-.095	.062	.431	-.010	.606	-.061	-.016
rule.util4	.289	-.028	.024	-.289	.247	.487	-.046	.193
rule.deon4	.170	-.179	-.091	.039	.158	.387	-.131	.331
virtue.other1	.116	-.037	.000	.317	.010	.376	-.348	-.150
virtue.other2	-.102	.092	.008	.125	-.125	.056	-.852	.064
virtue.other4	.128	.035	.069	-.020	.199	.025	-.684	-.171
act.deon3	.104	-.289	-.006	.053	.256	-.158	-.610	.301
act.deon2	.149	-.125	-.073	.233	.254	-.204	-.434	.299
eco.ego3	.023	.135	-.054	-.108	-.051	.292	-.053	.575

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 20 iterations.

Structure Matrix

	Component							
	1	2	3	4	5	6	7	8
rule.util2	.861	.087	-.172	.203	.217	.292	-.219	.136
rule.util1	.760	.340	-.173	-.038	.068	.220	-.098	.081
rep.ego1	.735	.321	-.243	.177	.070	.380	-.274	.389
rule.util3	.712	.139	-.447	.170	.266	.472	-.535	.384
rep.ego4	.671	.169	-.512	.231	.152	.312	-.331	.319
eco.ego4	.217	.801	.049	.152	.068	.012	-.031	-.134
rep.ego5	.289	.721	-.141	.017	-.049	.192	-.166	.070
eco.ego1	.273	.693	-.225	-.142	.019	.059	-.002	.481
eco.ego2	.232	.515	-.137	.151	.276	.138	-.268	.399
rep.ego3	.191	.505	-.487	-.115	.001	.325	-.271	.163
act.util2	.134	.040	-.947	.106	.239	.105	-.164	.132
act.util1	.171	.123	-.910	.165	.184	.119	-.148	.135
act.util3	.340	-.053	-.817	.053	.164	.225	-.199	.152
rep.ego2	.541	.391	-.560	.092	.115	.449	-.435	.271
virtue.self1	.202	.056	-.154	.861	.219	.249	-.285	.045
virtue.self2	.231	.161	-.272	.847	.230	.259	-.322	.056
rule.deon2	.096	-.103	-.212	.234	.786	.259	-.247	.156
act.deon1	.166	.067	-.242	.146	.755	.143	-.461	.017
act.deon4	.341	.302	-.242	.073	.697	.320	-.389	.165
rule.deon3	.387	-.086	-.231	.221	.652	.283	-.407	.513
virtue.self4	.412	.119	-.180	.328	.243	.783	-.267	.070
rule.deon1	.288	.086	-.252	.080	.268	.727	-.315	.332
virtue.self3	.292	-.036	-.105	.523	.191	.669	-.324	.081
rule.util4	.499	.103	-.215	-.141	.392	.629	-.337	.360
rule.deon4	.431	-.062	-.314	.177	.382	.568	-.426	.475
virtue.other1	.335	.036	-.178	.448	.262	.542	-.536	-.007
virtue.other2	.165	.151	-.184	.262	.213	.303	-.837	.176
virtue.other4	.296	.099	-.129	.154	.447	.289	-.756	-.010
act.deon3	.278	-.218	-.206	.218	.528	.142	-.720	.420
virtue.other3	.128	.177	-.278	-.141	.588	.465	-.606	-.107
act.deon2	.336	-.064	-.264	.364	.492	.108	-.603	.420
eco.ego3	.288	.226	-.241	-.057	.099	.401	-.229	.641

Extraction Method: Principal Component Analysis. .

Rotation Method: Oblimin with Kaiser Normalization

Communalities

	Initial	Extraction
eco.ego1	1.000	.715
eco.ego2	1.000	.480
eco.ego3	1.000	.548
eco.ego4	1.000	.756
rep.ego1	1.000	.652
rep.ego2	1.000	.649
rep.ego3	1.000	.532
rep.ego4	1.000	.618
rep.ego5	1.000	.561
act.util1	1.000	.858
act.util2	1.000	.932
act.util3	1.000	.723
rule.util1	1.000	.651
rule.util2	1.000	.766
rule.util3	1.000	.732
rule.util4	1.000	.664
virtue.self1	1.000	.779
virtue.self2	1.000	.811
virtue.self3	1.000	.660
virtue.self4	1.000	.698
virtue.other1	1.000	.574
virtue.other2	1.000	.742
virtue.other3	1.000	.787
virtue.other4	1.000	.644
act.deon1	1.000	.636
act.deon2	1.000	.653
act.deon3	1.000	.783
act.deon4	1.000	.629
rule.deon1	1.000	.597
rule.deon2	1.000	.676
rule.deon3	1.000	.684
rule.deon4	1.000	.613

Extraction Method: Principal Component Analysis.

Appendix D: Pattern and structure matrix of the five component solution with all original scale items

Pattern Matrix^a

	Component				
	1	2	3	4	5
act.deon1	.760	.072	-.090	.023	.177
virtue.other3	.755	.131	-.023	-.133	.008
act.deon3	.672	-.246	-.036	.045	-.156
rule.deon2	.659	-.141	-.091	.070	.079
act.deon4	.636	.259	-.023	-.047	-.091
virtue.other4	.632	.097	.109	.146	-.067
rule.deon3	.556	-.161	-.054	.003	-.310
act.deon2	.525	-.088	-.121	.188	-.116
virtue.other2	.509	.137	.038	.263	-.038
eco.ego4	.014	.849	.149	.198	.136
rep.ego5	-.036	.702	.004	.063	-.124
eco.ego1	-.013	.642	-.127	-.251	-.214
eco.ego2	.293	.492	.012	.033	-.074
rep.ego3	.060	.425	-.348	-.091	-.136
act.util2	.081	-.043	-.971	.020	.135
act.util1	.009	.042	-.927	.094	.108
act.util3	-.017	-.161	-.786	-.002	-.191
virtue.self1	.039	.052	-.085	.851	.073
virtue.self2	.052	.150	-.193	.835	.100
virtue.self3	.057	-.131	.089	.577	-.367
virtue.other1	.238	-.023	.037	.502	-.242
rule.util2	-.081	.016	.000	.168	-.692
rep.ego1	-.109	.221	-.042	.131	-.689
rule.util4	.323	-.039	.058	-.207	-.668
rule.util3	.165	.021	-.208	.102	-.633
rule.util1	-.164	.279	-.019	-.036	-.608
rule.deon4	.302	-.197	-.091	.071	-.549
rule.deon1	.215	-.063	-.010	.061	-.515
eco.ego3	.110	.100	-.068	-.171	-.512
rep.ego4	-.046	.070	-.365	.167	-.510
virtue.self4	.059	-.008	.063	.390	-.507
rep.ego2	.056	.281	-.355	.083	-.427

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 20 iterations.

Structure Matrix

	Component				
	1	2	3	4	5
act.deon3	.737	-.175	-.213	.264	-.362
act.deon1	.728	.080	-.238	.203	-.141
virtue.other3	.727	.165	-.208	.079	-.268
virtue.other4	.674	.130	-.089	.327	-.318
act.deon4	.673	.311	-.231	.157	-.372
rule.deon3	.673	-.059	-.251	.228	-.488
rule.deon2	.666	-.115	-.218	.240	-.166
act.deon2	.643	-.018	-.286	.369	-.359
virtue.other2	.593	.169	-.140	.412	-.300
eco.ego4	.024	.804	.052	.174	-.062
rep.ego5	.057	.728	-.118	.095	-.279
eco.ego1	.055	.700	-.240	-.181	-.329
eco.ego2	.348	.521	-.145	.139	-.291
rep.ego3	.188	.501	-.445	-.001	-.324
act.util2	.272	.057	-.951	.107	-.151
act.util1	.223	.141	-.915	.165	-.176
act.util3	.234	-.017	-.813	.110	-.361
virtue.self1	.271	.065	-.165	.855	-.166
virtue.self2	.300	.172	-.281	.849	-.191
virtue.self3	.320	-.047	-.063	.663	-.463
virtue.other1	.453	.047	-.133	.618	-.425
rule.util3	.472	.197	-.431	.311	-.775
rep.ego1	.195	.377	-.244	.264	-.740
rule.util4	.489	.112	-.175	.026	-.713
rule.util2	.214	.168	-.185	.301	-.704
rule.deon4	.531	-.049	-.294	.282	-.654
rep.ego4	.275	.231	-.517	.306	-.645
rep.ego2	.331	.426	-.528	.234	-.623
rule.util1	.061	.407	-.176	.062	-.608
virtue.self4	.333	.106	-.125	.514	-.596
rule.deon1	.416	.064	-.199	.236	-.595
eco.ego3	.267	.224	-.229	-.017	-.553

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix E: Communalities of the five component solution with all original scale items

Communalities		
	Initial	Extraction
eco.ego1	1.000	.595
eco.ego2	1.000	.382
eco.ego3	1.000	.353
eco.ego4	1.000	.717
rep.ego1	1.000	.617
rep.ego2	1.000	.611
rep.ego3	1.000	.423
rep.ego4	1.000	.573
rep.ego5	1.000	.549
act.util1	1.000	.853
act.util2	1.000	.925
act.util3	1.000	.706
rule.util1	1.000	.474
rule.util2	1.000	.522
rule.util3	1.000	.694
rule.util4	1.000	.615
virtue.self1	1.000	.744
virtue.self2	1.000	.786
virtue.self3	1.000	.571
virtue.self4	1.000	.513
virtue.other1	1.000	.515
virtue.other2	1.000	.440
virtue.other3	1.000	.563
virtue.other4	1.000	.498
act.deon1	1.000	.560
act.deon2	1.000	.484
act.deon3	1.000	.614
act.deon4	1.000	.540
rule.deon1	1.000	.408
rule.deon2	1.000	.478
rule.deon3	1.000	.549
rule.deon4	1.000	.575

Extraction Method: Principal Component Analysis.

Appendix F: Factor loadings in the five-component solution

Pattern Matrix

	Component				
	1	2	3	4	5
act.deon1	.760				
virtue.other3	.755				
act.deon3	.672				
rule.deon2	.659				
act.deon4	.636				
virtue.other4	.632				
rule.deon3	.556				-.310
act.deon2	.525				
virtue.other2	.509				
eco.ego4		.849			
rep.ego5		.702			
eco.ego1		.642			
eco.ego2		.492			
rep.ego3		.425	-.348		
act.util2			-.971		
act.util1			-.927		
act.util3			-.786		
virtue.self1				.851	
virtue.self2				.835	
virtue.self3				.577	-.367
virtue.other1				.502	
rule.util2					-.692
rep.ego1					-.689
rule.util4	.323				-.668
rule.util3					-.633
rule.util1					-.608
rule.deon4	.302				-.549
rule.deon1					-.515
eco.ego3					-.512
rep.ego4			-.365		-.510
virtue.self4				.390	-.507
rep.ego2			-.355		-.427

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.*

* Rotation converged in 20 iterations.

Loadings over .6 are highlighted in bold font.

Appendix G: Comparison between PCA and maximum likelihood factor analysis results performed on 30 items

Pattern Matrix^a

Maximum Likelihood	Factor				
	1	2	3	4	5
act.util2	1.003				
act.util1	.917				
act.util3	.706				
rule.util3		.694			
rep.ego1		.690			
rule.util2		.666			
rule.util4		.607			
rep.ego4		.585			
rule.util1		.546			
rule.deon4		.513			
eco.ego3		.441			
virtue.self4		.423			
rule.deon1		.416			
virtue.self2			-.903		
virtue.self1			-.891		
virtue.self3		.341	-.379		
virtue.other1			-.305		
eco.ego4				.833	
rep.ego5				.618	
eco.ego1				.569	
eco.ego2				.348	
virtue.other3					.720
act.deon1					.717
act.deon3					.605
rule.deon2					.596
act.deon4					.592
virtue.other4					.584
rule.deon3					.496
act.deon2					.468
virtue.other2					.449

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Pattern Matrix^a

PCA	Component				
	1	2	3	4	5
act.deon1	.762				
virtue.other3	.759				
act.deon3	.671				
rule.deon2	.649				
act.deon4	.639				
virtue.other4	.631				
rule.deon3	.551				-.305
act.deon2	.520				
virtue.other2	.508				
eco.ego4		.855			
rep.ego5		.704			
eco.ego1		.661			
eco.ego2		.495			
act.util2			.962		
act.util1			.924		
act.util3			.785		
virtue.self1				.851	
virtue.self2				.836	
virtue.self3				.592	-.360
virtue.other1				.512	
rule.util4	.311				-.680
rule.util2					-.676
rep.ego1					-.674
rule.util3					-.634
rule.util1		.305			-.607
rule.deon4					-.554
rule.deon1					-.526
eco.ego3					-.517
rep.ego4			.368		-.509
virtue.self4				.410	-.506

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 15 iterations.

Appendix H: PCA for the act deontology component

Pattern Matrix^a

	Component	
	1	2
act.deon4	.793	
rule.deon2	.782	
virtue.other3	.746	
act.deon1	.726	
virtue.other2		-.830
act.deon2		-.801
act.deon3		-.790
virtue.other4		-.649
rule.deon3	.407	-.411

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.
 a. Rotation converged in 9 iterations.

Structure Matrix

	Component	
	1	2
act.deon4	.779	-.425
act.deon1	.768	-.485
virtue.other3	.758	-.444
rule.deon2	.754	-.393
act.deon3	.529	-.836
act.deon2	.457	-.803
virtue.other2	.342	-.758
virtue.other4	.506	-.727
rule.deon3	.639	-.641

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.

Communalities

	Initial	Extraction
act.deon1	1.000	.593
virtue.other3	1.000	.575
act.deon3	1.000	.704
rule.deon2	1.000	.570
act.deon4	1.000	.607
virtue.other4	1.000	.542
rule.deon3	1.000	.523
act.deon2	1.000	.645
virtue.other2	1.000	.585

Extraction Method: Principal Component Analysis.

Appendix I: PCA for the rule deontology component

Pattern Matrix^a

	Component	
	1	2
rule.util3	.822	
rep.ego1	.751	
rule.util4	.719	
rep.ego4	.714	
rule.util2	.696	-.440
rule.deon4	.694	.413
rule.deon1	.642	.533
virtue.self4	.630	
rule.util1	.586	-.524
eco.ego3	.526	

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.
 a. Rotation converged in 2 iterations.

Structure Matrix

	Component	
	1	2
rule.util3	.822	
rep.ego1	.751	
rule.util4	.720	
rep.ego4	.714	
rule.util2	.695	-.439
rule.deon4	.695	.415
rule.deon1	.643	.534
virtue.self4	.630	
rule.util1	.585	-.522
eco.ego3	.526	

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.

Communalities

	Initial	Extraction
rule.util4	1.000	.585
rule.util2	1.000	.677
rep.ego1	1.000	.620
rule.util3	1.000	.688
rule.util1	1.000	.616
rule.deon4	1.000	.653
rule.deon1	1.000	.698
eco.ego3	1.000	.278
rep.ego4	1.000	.546
virtue.self4	1.000	.463

Extraction Method: Principal Component Analysis.

Appendix J: Varimax rotation of rule deontology component with and without item eco.ego3

Component Matrix^a

	Component	
	1	2
rule.util3	.822	
rep.ego1	.753	
rule.util4	.717	
rep.ego4	.715	
rule.util2	.699	-.435
rule.deon4	.691	.419
rule.deon1	.639	.538
virtue.self4	.628	
rule.util1	.589	-.519
eco.ego3	.526	

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix^a

	Component	
	1	2
rule.util2	.803	
rule.util1	.784	
rep.ego1	.698	.364
rule.util3	.662	.500
rep.ego4	.640	.369
rule.deon1		.832
rule.deon4		.784
rule.util4	.325	.692
virtue.self4		.627
eco.ego3	.349	.395

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Component Matrix^a

	Component	
	1	2
rule.util3	.819	
rep.ego1	.749	
rep.ego4	.727	
rule.util4	.714	
rule.util2	.709	-.429
rule.deon4	.701	.425
rule.deon1	.640	.541
virtue.self4	.636	
rule.util1	.594	-.516

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix^a

	Component	
	1	2
rule.util2	.808	
rule.util1	.786	
rep.ego1	.699	.354
rule.util3	.664	.492
rep.ego4	.648	.375
rule.deon1		.834
rule.deon4		.793
rule.util4	.330	.687
virtue.self4		.634

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Appendix K: Pattern and structure matrix and communalities of the final five component solution

Pattern Matrix^a

	Component				
	1	2	3	4	5
virtue.other3	.764				
act.deon1	.759				
act.deon3	.676				
rule.deon2	.647				
act.deon4	.643				
virtue.other4	.628				
rule.deon3	.560				-.305
act.deon2	.519				
virtue.other2	.502				
eco.ego4		.850			
rep.ego5		.708			
eco.ego1		.674			
eco.ego2		.501			
act.util2			.960		
act.util1			.921		
act.util3			.785		
virtue.self1				-.862	
virtue.self2				-.851	
virtue.self3				-.600	-.349
virtue.other1				-.517	
rule.util2					-.701
rule.util4	.334				-.672
rep.ego1					-.669
rule.util3					-.627
rule.util1		.318			-.622
rule.deon4	.302				-.567
rep.ego4			.367		-.533
rule.deon1					-.520
virtue.self4				-.396	-.509

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Structure Matrix

	Component				
	1	2	3	4	5
act.deon3	.738				-.345
act.deon1	.729				
virtue.other3	.728				
act.deon4	.676	.311			-.369
virtue.other4	.675			-.336	-.329
rule.deon3	.674				-.488
rule.deon2	.662				
act.deon2	.642			-.386	-.355
virtue.other2	.592			-.440	
eco.ego4		.826			
rep.ego5		.731			
eco.ego1		.712			
eco.ego2	.349	.523			
act.util2			.956		
act.util1			.922		
act.util3			.819		-.364
virtue.self2				-.859	
virtue.self1				-.857	
virtue.self3	.312			-.683	-.469
virtue.other1	.449			-.637	-.428
rule.util3	.474		.416	-.328	-.770
rep.ego1		.391			-.727
rule.util2					-.723
rule.util4	.490				-.717
rule.deon4	.530				-.671
rep.ego4			.501	-.304	-.654
rule.util1		.428			-.618
virtue.self4	.329			-.531	-.607
rule.deon1	.414				-.599

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

Communalities

	Initial	Extraction
eco.ego1	1.000	.606
eco.ego2	1.000	.389
eco.ego4	1.000	.732
rep.ego1	1.000	.613
rep.ego4	1.000	.585
rep.ego5	1.000	.553
act.util1	1.000	.864
act.util2	1.000	.928
act.util3	1.000	.721
rule.util1	1.000	.515
rule.util2	1.000	.542
rule.util3	1.000	.698
rule.util4	1.000	.625
virtue.self1	1.000	.745
virtue.self2	1.000	.791
virtue.self3	1.000	.587
virtue.self4	1.000	.526
virtue.other1	1.000	.522
virtue.other2	1.000	.441
virtue.other3	1.000	.552
virtue.other4	1.000	.499
act.deon1	1.000	.565
act.deon2	1.000	.485
act.deon3	1.000	.608
act.deon4	1.000	.553
rule.deon1	1.000	.415
rule.deon2	1.000	.472
rule.deon3	1.000	.548
rule.deon4	1.000	.593

Extraction Method: Principal Component Analysis.