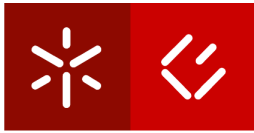




**Universidade de Aveiro** Departamento de Economia, Gestão, Engenharia Industrial e Turismo (DEGEIT)



**Universidade do Minho** Escola de Economia e Gestão (EEG)

Ano 2016

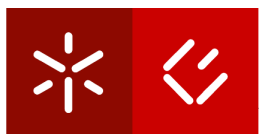
**ALBERTO JORGE  
DANIEL RESENDE  
COSTA**

**A COMPETÊNCIA MORAL DOS CONTABILISTAS  
CERTIFICADOS PORTUGUESES**

**THE MORAL COMPETENCE OF THE PORTUGUESE  
CERTIFIED ACCOUNTANTS**



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CERTIFIED ACCOUNTANTS**

Tese apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Doutor em Contabilidade, realizada sob a orientação científica da Professora Doutora Lúcia Maria Portela de Lima Rodrigues, Professora Associada com Agregação da Universidade do Minho (Escola de Economia e Gestão), do Professor Doutor Manuel Emílio Mota de Almeida Delgado Castelo Branco, Professor Auxiliar da Universidade do Porto (Faculdade de Economia) e do Professor Doutor José Arménio Belo da Silva Rego, Professor Catedrático Convidado da Católica Porto Business School (Universidade Católica Portuguesa).

À minha esposa e aos nossos filhos, com muito amor

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## agradecimentos

O filósofo, humanista e historiador inglês, *John of Salisbury* (Séc. XII), autor do tratado sobre lógica *The Metalogicon*, escrito em Latim, em 1159, afirmou<sup>1</sup>: “Bernard of Chartres used to compare us to (puny) dwarfs perched on the shoulders of giants. He pointed out that we see more and farther than our predecessors, not because we have keener vision or greater height, but because we are lifted up and borne aloft on their gigantic stature”.

Três desses gigantes são a Professora Lúcia Lima Rodrigues, o Professor Manuel Castelo Branco e o Professor Arménio Rego, que me permitiram ver mais além. A eles dirijo palavras de gratidão e de orgulho na sua orientação, recheada de conhecimento, sabedoria e amizade.

Os meus agradecimentos são devidos, também, a outras pessoas e entidades:

- a todos os Docentes do Programa Doutoral em Contabilidade, pelos conhecimentos semeados e pela cultura de exigência e rigor que sempre transmitiram;
- ao Professor Georg Lind (Professor de Psicologia no Departamento de Psicologia da Universidade de Konstanz (Constança), na Alemanha, pela autorização e disponibilização do suporte necessário à utilização e implementação do *Moral Competence Test* (MCT);
- à Professora Patrícia Bataglia (Professora Assistente Doutora do Programa de Pós-Graduação em Educação na Faculdade de Filosofia e Ciências da UNESP – Campus de Marília – Brasil), pelo apoio prestado no cálculo e interpretação do MCT;
- à Ordem dos Contabilistas Certificados, na figura do seu Bastonário, Sr. Domingues de Azevedo, pelo apoio prestado na administração presencial do questionário;
- à Dra. Carla Sousa (Serviços de Tecnologia da Informação e Comunicação da Universidade de Aveiro), pelo apoio prestado na elaboração do questionário disponibilizado online;
- a todos os especialistas e entidades contactados, dentro e fora do país, pela simpatia, pela solidariedade e pelo espírito de partilha;
- a todos os profissionais inquiridos, pela atenção e disponibilidade para fornecer os dados vitais ao desenvolvimento deste estudo;
- a todos os colegas e amigos, pela ajuda, incentivo pessoal e amizade sempre demonstradas, especialmente quando foi mais necessário;
- aos meus Pais, pelo amor, apoio e compreensão incondicionais.

A acabar, um agradecimento maior aos pilares que me sustentam, como pessoa e em tudo o que daí deriva: a minha esposa Rosa e os nossos filhos, Ana Sofia e Duarte. Sem a sua presença e estímulo constantes, os seus sorrisos, carinhos e compreensão, jamais teria conseguido chegar aqui. São a razão maior deste empreendimento e, em boa verdade, são as razões de tudo o que sou.

E a todos aqueles que tenho no coração, mas que involuntariamente não referi, sou-vos também imensamente grato.

---

<sup>1</sup> Citação, em inglês, retirada do livro “*The Metalogicon of John of Salisbury: A Twelfth-century Defense of the Verbal and Logical Arts of the Trivium*”, traduzido por Daniel D. McGarry (University of California Press, 1955, Pág. 167)

**palavras-chave**

Tomada de decisão ética; teste de competência moral; desenvolvimento moral; fatores individuais; contabilidade; contabilistas certificados

**resumo**

A competência de juízo moral foi definida como a capacidade para efetuar um julgamento moral e atuar em conformidade com esse julgamento.

Esta tese utiliza o Teste da Competência Moral (MCT) de Georg Lind, para avaliar a competência moral dos Contabilistas Certificados Portugueses que exercem, efetivamente, a profissão. Além disso, adapta, valida e implementa um novo dilema – dilema do Contabilista – delineado especialmente para a área contabilística e testa a relação entre a competência moral e um conjunto de fatores individuais.

Através de um questionário administrado presencialmente e através de uma plataforma online, recolhemos dados de 1 037 Contabilistas Certificados. O MCT alcançou uma média global de 13.91, tendo-se observado o fenómeno da “segmentação moral” entre o dilema do trabalhador e do médico. Contudo, o score do dilema do contabilista é muito próximo do dilema do médico, realçando a necessidade de se reavaliar as razões que poderão estar por detrás do referido fenómeno. Ao testar a relação entre competência moral e os fatores individuais, concluiu-se que, em média, as mulheres mostram competência moral mais elevada do que os homens, contabilistas mais jovens mostram competência moral mais elevada do que os mais velhos, contabilistas menos experientes apresentam maior competência moral do que contabilistas mais experientes e contabilistas que dizem ser uma pessoa de fé demonstram uma competência moral mais baixa do que os contabilistas que afirmaram o contrário. Não existe uma relação significativa entre a competência moral e o nível de escolaridade, o estado civil, a existência de filhos e o rendimento anual.

Este estudo é o primeiro a utilizar o MCT com contabilistas profissionais a exercer a atividade e a adaptar e validar a utilização de um novo dilema no domínio contabilístico. Também traz valor acrescentado à evidência empírica existente sobre os fatores que podem influenciar a tomada de decisão ética, fornecendo perspetivas relevantes para os organismos reguladores da profissão, especialmente em Portugal.

**keywords**

Ethical decision-making; moral competence test; moral judgment; moral development; individual factors; accounting; certified accountants

**abstract**

The moral judgment competence has been defined as the capacity to make a moral judgment and to act accordingly with that judgment.

This thesis uses Georg Lind's Moral Competence Test (MCT) to evaluate the moral competence of the Portuguese Certified Accountants that are in practice (active service). In addition, adapts, validates and implements a new dilemma – Accountant's dilemma – designed specifically for the accounting domain and tests the relation between moral competence and selected individual factors.

Through an online and face-to-face questionnaire, we have collected data from 1 037 Certified Accountants. The MCT scored a total of 13.91 and we have observed the phenomenon of “moral segmentation” between the Workers and the Doctors' dilemma. However, the Accountants' dilemma score is very close to the Doctors' dilemma score, which raises the need to re-evaluate the rationale behind the “moral segmentation” phenomenon. When testing for relations between moral competence and individual factors, our findings indicate that, on average, women show higher moral competence than man, younger accountants show higher moral competence than older accountants, less experienced accountants show higher moral competence than more experienced accountants, and accountants who said to be a person of faith show lower moral competence than accountants who claimed otherwise. There is no significant relationship between moral competence and education level, marital status, children status dependency and income.

This study is the first to use the MCT with professional accounting practitioners and to adapt and validate the use of a new dilemma in the accounting domain. It also adds to the available empirical evidence on factors affecting ethical decision-making, providing valuable insights to accounting professional regulatory bodies, especially in Portugal.

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## LIST OF ABBREVIATIONS

ACCA	Association of Chartered Certified Accountants
ACEGE	Associação Cristã de Empresários e Gestores
ACFE	Association of Certified Fraud Examiners
AICPA	American Institute of Certified Public Accountants
ANOVA	Analysis of variance
BC	Before Christ
CMD	Cognitive Moral Development
CPA	Certified Public Accountant
IASB	International Accounting Standards Board
IESBA	International Ethics Standards Board for Accountants
IFAC	International Federation of Accountants
JBE	Journal of Business Ethics
KMO	Kaiser-Meyer-Olkin
MACPA	Michigan Association of Certified Public Accountants
MANOVA	Multivariate analysis of variance
MCT	Moral Competence Test
MJT	Moral Judgment Test
OCC	Ordem dos Contabilistas Certificados
OECD	Organization for Economic Co-operation and Development
PCA	Principal component analysis
PCAOB	Public Company Accounting Oversight Board
PwC	PricewaterhouseCoopers
SCIE	Sistema de Contas Integradas das Empresas (Integrated Business Accounts System)
SCSRFQ	Santa Clara Strength of Religious Faith Questionnaire
SD	Standard deviation
SEC	United States Securities and Exchange Commission
SME	Small and medium enterprise
SNC	Sistema de Normalização Contabilística (Accounting Standardization System)
SPSS	Statistical Package for the Social Sciences
UNESP	Universidade Estadual Paulista “Júlio de Mesquita Filho”
USA	United States of America

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# INTRODUCTION

“Life is the sum of all your choices.”

Albert Camus (1913-1960)  
(French Nobel Prize winning author, journalist, and philosopher)

“The time is always right to do what is right.”

Martin Luther King, Jr. (1929-1968)  
(American pastor and leader in the African-American Civil Rights Movement. Nobel Peace Prize winner)

“It takes twenty years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently.”

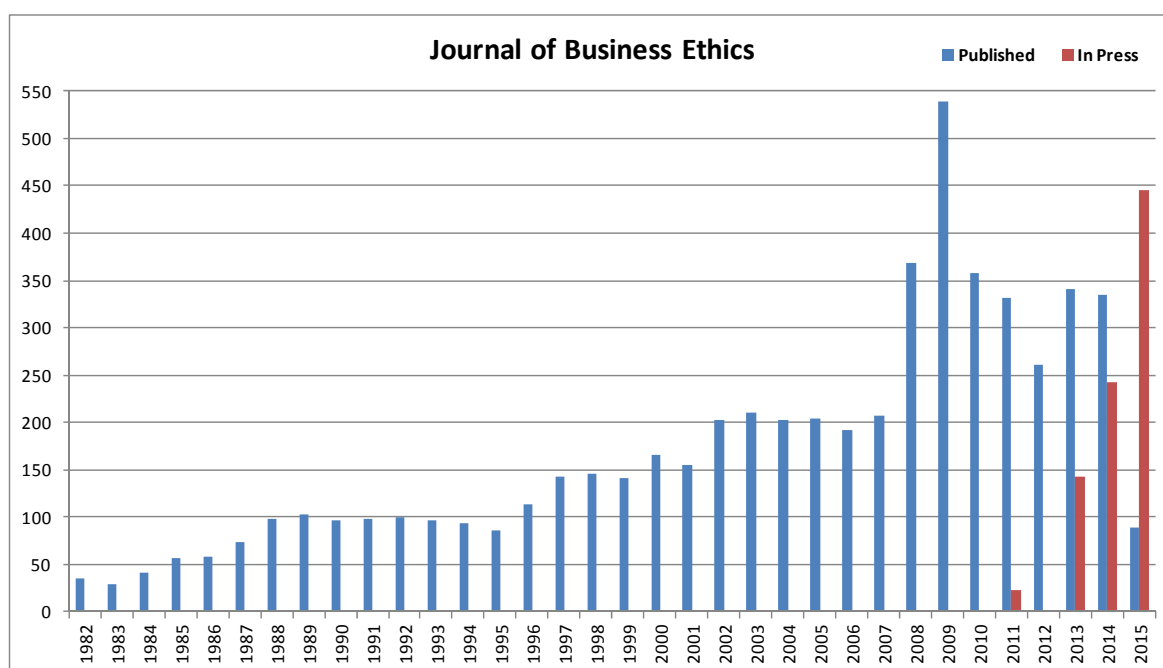
Warren Buffet (1930-)  
(American business magnate, investor and philanthropist)

## Context and motivation

Often we imagine a perfect world where ethics would not be necessary. It is from that standpoint, which echoes Lima (1997, p. 143) when, in the 1<sup>st</sup> Portuguese Congress on Business Ethics, says: “I would like to begin my presentation by saying that I would rather not be here. And I will explain. If the world was as perfect as we all want, this congress would be absolutely useless”.

But that is an unrealistic or at least non-human world. The human world is and will always be an imperfect world; thus, organizations and markets are, as well, imperfect, i.e. perfectly human. And that is why ethics is a necessity, required on human coexistence.

Recent years have witnessed a proliferation of articles and books, conferences and seminars on the subject of “business ethics”. Figure 1.1 illustrates (merely as an example) the increasing number of papers (*published* and *in press*) in the Journal of Business Ethics (JBE)<sup>2</sup>, from 1982 to the end of 2015.



**Figure 1.1. Papers (*published* and *in press*) in the Journal of Business Ethics**

Business ethics research has increased over the last decades (e.g. Lockett, Moon, & Visser 2006; Robertson, 2008; Robertson, Blevins, & Duffy, 2013) and researchers support

<sup>2</sup> The search was made using SCOPUS<sup>®</sup>, considering “Full Text” (articles, reviews and conference papers)

different approaches in different countries (e.g. De George, 1987; Tsalikis & Fritzsche, 1989; Werhane & Freeman, 1999; Epstein, 2002; Zhou, Nakano, & Luo, 2011; Bampton & Cowton, 2013; Tsalikis, Seaton, & Shepherd, 2014; Yin & Quazi, 2016).

In fact, ethics value is becoming increasingly recognized as an essential component for the understanding and evaluation of the economic, social and political reality. Can we consider that this dissemination is a sign that too many speak of ethics and that there is too much debate around ethics? Or claim that this is a sign that only a few cultivate and respect it? Is this abundance of information on ethical issues, a driver to think that ethics is not only fashionable as it is profitable? If so, will it not be worth investing this way?

Indeed, already in the eighteenth century, Adam Smith (1723-1790) was able to show, in his work “An Inquiry into the Nature and Causes of the Wealth of Nations” (1776), that profit could be accepted as a fair remuneration and that this portion of added value resulted in investment or consumption, which in turn was responsible for over-paying jobs. The profit, thus, operated a social function to improve the general welfare, through the generation of jobs and remuneration. And Friedman (2007) argued that:

There is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud. (p. 178)

Friedman made it clear that other responsibilities (to family, conscience, feelings of charity, church, clubs, city, country) are the social responsibilities of individuals, not business. But Friedman’s thesis has been profusely criticized (Wilcke, 2004; Jordi, 2010).

About this issue, Cortina (2004) asserts that ethics is perfectly compatible with profitability: it cannot be guaranteed that an ethical company is more profitable – nothing can – but clearly, an ethical company is better prepared to respond to future challenges and to last in time successfully. If a company operates with integrity, responsibility, transparency and respect, it lays the foundations of trust. And everyone recognizes that, without trust, businesses do not work as almost anything in life.



Moreira (1996), in this regard, states:

The reason for being ethical is not that ethics gives money back. Ethics can give money back and even prove to be very profitable, but in this case we would be dealing with a new issue which would consist in knowing what is meant by ‘profitable’. (p. 291)

In the Second National Congress of the *Associação Cristã de Empresários e Gestores* (ACEGE)<sup>3</sup>, Moreira (2004) reflects on the value of ethics and mentions:

Two approaches that are opposite but equally dangerous: one is the idea that ethics is a cost, a luxury we can (not) allow ourselves; another is the idea that ethics gives money back. Maybe ethics gives money back, but this cannot be the reason for a person to be ethical. What if tomorrow ethics does not give money back? The best thing to do is to realize that we live in a world where ethics counts and will count more and more. (pp. 67–68)

In our opinion, it is not clear-cut to assume that ethics walks alongside with profitability. However, we add another example to reinforce that “evidence shows being ethical pays off with better performance” (Ferrell, Fraedrich, & Ferrell, 2015, p. 19): the «World’s Most Ethical Companies» is a distinction that honours superior achievements in transparency, integrity, ethics and compliance and was created in 2007. The index «Methodology Advisory Panel» is comprised of leading attorneys and government officials, professors and organization leaders who care about ethical and honest business practices<sup>4</sup>. So far,

The companies in this index outperformed the other indexes of publicly companies (...) and the results provide strong evidence that corporate concern for ethical conduct is becoming a part of strategic planning toward obtaining the outcome of higher profitability. (Ferrell et al., 2015, p. 19)

Undeniably, ethics, regardless of fashion or profitability, should be seen as a necessity. And begins as a personal need: it should be what allows us to fulfil ourselves as persons, reaching our goals in all aspects of our lives, including the professional level. In a more ethical society, we would observe the development of each other, fulfilling objectives to

---

<sup>3</sup> ACEGE proposes, as mission, to “Inspire leaders to live Love and Truth in the economic and business world and to give witness to the Community.” (our translation). Its vision states that ACEGE is a “Community of Christian business leaders who seek, through their work, the promotion of the dignity of every person and the construction of the common good.” Retrieved February 01, 2016, from <http://www.acege.pt/a-nossa-missao/>

<sup>4</sup> Information retrieved in February 01, 2016 from <http://worldsmoethicalcompanies.ethisphere.com/>

achieve our purposes and helping others to fulfil theirs. The environment created in this way would lead to ethical spontaneous and easy-to-happen behaviour, thus promoting social good.

Therefore, we believe that the only way for companies (associations, entities,...) to be ethical is that the people within are also ethical, not only in their private individual behaviour (which must as well be ethical) but also in their professional life, business, social or any other in which they express actions in relation to others.

There are frequent complaints about ethical misconduct in society, politics, industry, economics, accounting and even in sports, cultural and religious backgrounds. The so-called “moral crisis” does not concern only to the business world; we also find it on political affairs, research, education, military life, and naturally also in private and family life. This dissemination resulted in the development of new curricula of university courses, new courses, implementation of various codes of conduct (codes of ethics) and the growing interest of scholars (Bernardi & Bean, 2007; Desplaces, Melchar, Beauvais, & Bosco, 2007; Bernardi & Zamojcin, 2013).

Unethical behaviour and misconduct may lead to the conclusion that society is doomed and that the vast majority of people follow little ethical or unethical ways. However, we are fully convinced that the stronger direction is another and that the vast majority follows other paths.

And, really, as Smith (2003) says:

Ethical values provide the foundation on which a civilized society exists. Without that foundation, civilization would collapse. On a personal level, everyone must answer the following question: What is my highest aspiration? The answer might be wealth, fame, knowledge, popularity, or integrity. Be on guard, if integrity is secondary to any of the alternatives, it will be sacrificed in situations in which a choice must be made. Such situations inevitably occur in every person’s life. Many people think of fame and fortune when they measure success. However, at some point in life, most people come to realize that inner peace and soul-deep satisfaction come not from fame and fortune, but living a life based on integrity and noble character. (p. 48)

The Holy Bible, in Proverbs 22:11 (*Biblia Sagrada*, 2006, p. 1022) says: “A good name is more desirable than great riches; to be esteemed is better than silver or gold.” To conclude, fame and fortune should not rule our behaviour and an honourable life is, we believe, more gratifying.

However, several statistics and reports continue to show that, both globally and in the particular case of Portugal, there is still much to do regarding the fight against unethical behaviour, individually and/or considering organizations and society as a whole. As examples of this, we can mention the PricewaterhouseCoopers (PwC)’s *Global Economic Crime Survey* (2016), the Association of Certified Fraud Examiners (ACFE) *Report to the Nations on Occupational Fraud and Abuse* (2016), the Transparency International *Corruption Perceptions Index* (2015), and the Organization for Economic Co-operation and Development (OECD) *Foreign Bribery Report* (2014).

One of the neediest fields with regard to the application of ethics is professional practice. The extreme individualism often associated with lack of personal ethics, has led some professionals to defend their own interests above the interests of the companies they work for, putting them at risk. The burden on companies unconcerned with ethics when faced with situations that, in just one day, destroy an image that took years to be earned, are quite heavy. And, in some cases, the consequences of unethical behaviour are not usually realized until much later than when the act is committed (Sims, 2000).

Accounting professionals have been historically considered as “individuals who practiced honest principles and performed an efficient and valuable service for their clients, contemporaries and the public” (Leitsch, 2006, p. 135). Nevertheless, as Jones (2011) clearly puts it:

As long as there has been accounting, therefore, there have been temptations for individuals creatively to use that information and to indulge in fraud. (...) It is obviously not possible to discuss all the past accounting scandals and the part that creative accounting and fraud have played in them. There are simply too many. (p. 115)

In Portugal, the accounting education historical background goes back to the XVIII century but the accounting practitioner’s profession only became regulated in 1995. Meanwhile, the auditing profession was regulated in 1972 (Rodrigues, Gomes, & Craig, 2003, 2004;

Rodrigues & Craig, 2004; Rodrigues, Craig, & Gomes, 2007; Faria, 2008; Caria & Rodrigues, 2014).

In Portugal, the accounting professional is called *Contabilista Certificado* (Certified Accountant) and has to be registered compulsorily in the *Ordem dos Contabilistas Certificados* (OCC) in order to bear the title and develop its activity legally. The OCC regulates, on an exclusive basis, the admission to the profession which, in December 31<sup>st</sup> 2014, had 71 825 registered professionals, of which 31 090 were in active service (practicing in the profession).<sup>5</sup>

In May 2015, the *Instituto Nacional de Estatística* (Statistics Portugal) revealed the main statistical findings regarding the structure and evolution of the Portuguese business sector for the year 2013, obtained from the Integrated Business Accounts System (SCIE). Within several interesting numbers, the «Enterprises in Portugal 2013» (2015 publication) reveals that there were 1 119 447 enterprises in Portugal, of which 21 955 were financial companies. Considering only the non-financial companies, in 2013, 99.9% of companies were small and medium enterprises (SMEs), and 96.2% were microenterprises.

One might argue that it may be a very large number of professionals for a country with so few inhabitants<sup>6</sup>.

In comparison, there are 20 042 certified accountants (*experts-comptables*)<sup>7</sup> in France for a total of 3 559 733 enterprises (of which 49 011 are non-financial)<sup>8</sup>. We also add that there are approximately 66 000 000 inhabitants in France<sup>9</sup>. And in Brazil, there are 531 330 certified accountants (*Contadores and Técnicos em Contabilidade*)<sup>10</sup> for a total of 18 445 598 enterprises<sup>11</sup>. The population is approximately 205 400 000 inhabitants<sup>12</sup>.

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<sup>5</sup> Information provided by the OCC

<sup>6</sup> According to the 2011 Census, Portugal has 10 562 178 inhabitants. Information retrieved February 01, 2016, from [http://censos.ine.pt/xportal/xmain?xpid=CENSOS&xpgid=censos2011\\_apresentacao](http://censos.ine.pt/xportal/xmain?xpid=CENSOS&xpgid=censos2011_apresentacao).

<sup>7</sup> According to the 2014 Moral Report (Rapport Moral), published by the Ordre des Experts-Comptables

<sup>8</sup> According to the publication “Les entreprises en France” (2015), published by the National Institute Of Statistics and Economic Studies (Institut national de la statistique et des études économiques)

<sup>9</sup> Information retrieved February 02, 2016, from <http://www.insee.fr/fr/>

<sup>10</sup> According to the Conselho Federal de Contabilidade. Information retrieved February 02, 2016, from <http://www3.cfc.org.br/spw/crcs/ConselhoRegionalAtivo.aspx>

<sup>11</sup> According to the Instituto Brasileiro de Planejamento e Tributação. Information retrieved February 02, 2016, from <http://www.empresometro.com.br/Site/Estatisticas>

<sup>12</sup> According to the Instituto Brasileiro de Geografia e Estatística. Information retrieved February 02, 2016 from <http://www.ibge.gov.br/home/>

Overall, in Portugal, there is an average of 36.01 enterprises for every certified accountant in active service; in Brazil, an average of 34.72 and in France an average of 177.61.

Given the context outlined above, we believe that the Portuguese scenario, with regard to the amount of accountants practicing in the profession, is sufficiently relevant and interesting to be the subject of research regarding ethical decision-making.

It is also important to emphasize certified accountants' importance in the context of the activities developed within companies. In a country marked by a close relationship between accounting and taxation, it is expected that this proximity may lead to situations where it is essential to have a strong ethical competence to reflect on what is right to do, to decide in that direction, and effectively act accordingly. We believe, therefore, that it is an area that deserves attention and analysis.

Accountancy and the accounting profession have undergone major changes over the years. In the last years there was a move from national to international standards aiming to increase the comparability, relevance and reliability of financial information.

Faced with this reality, accountants may tend to downgrade ethics to a minor level, not recognizing its vital importance in all aspects of their lives, and particularly on the professional level. Relegate ethics for a second or third plan would be disastrous: the foundations of a building, regardless the size must be solid; otherwise, the building might collapse because the weight of the structure could not bear the pressure force of gravity. In other words, ethics should be accountants' first and biggest concern, even before thinking about acquiring technical or scientific knowledge.

At the beginning of this millennium, the world was rocked by a series of accounting and financial scandals that hit the news all over the globe. Portugal was not excluded. Those scandals revealed a decline in moral reasoning and ethical standards of accountants. The bells rang in most regulatory institutions that began responding with new standards, new obligations and new controls. Undeniably, ethics, regardless of fashion or profitability, should be seen as a necessity, at all levels: personal, social, and professional. And accountants, in particular, must not only pursue scientific and technical knowledge, to

interpret and apply, in depth, the accounting regulations, but also, become highly engaged in the pursuit of ethical sensibility.

In searching for causes and reasons for those scandals, several studies have been conducted, trying to understand what motivates peoples' behaviour and which factors should be considered when ethical decision-making is involved. The business ethics literature has already produced hundreds of studies, all over the world, exploring a diversity of individual and organizational factors that may be involved in the ethical decision-process (Ford & Richardson, 1994; Loe, Ferrell, & Mansfield, 2000; O'Fallon & Butterfield, 2005; Craft, 2013; Lehnert, Park, & Singh, 2015).

The process of ethical decision-making requires the need to consider, as well, the fields of moral philosophy and theology that, regarding ethical theories, can work like a compass when facing ethical issues. These fields may be precious helpers when it comes to think more carefully and comprehensively about a given ethical issue, enhancing the possibility of not entering a path by mistake or accident.

Lawrence Kohlberg played an important part in this process to understand how people make moral decisions. Its Cognitive Moral Development Model (with its stages of moral development) laid the foundations so that others could build upon (Kohlberg & Hersch, 1977).

Several researchers have based their approaches in Kohlberg's ideas, improving them and applying them to different realities and subjects. That was the case of Ferrell & Gresham (1985), Rest (1986), Hunt & Vitell (1986), Treviño (1986), and Jones (1991). These authors developed ethical decision-making models that were considered by others as beacons for research in this subject area. However, those were cognitive (rational) models, which based their rationale on reason and logic, solving problems through careful reflection, trying to achieve rational ethical decisions.

Meanwhile, in recent years, there has been a stream of interest in the study of the human brain and its neural mechanisms (e.g., Casebeer & Churchland, 2003; Greene & Cohen, 2004; Lee & Chamberlain, 2007) and how they are related to decision-making, behaviour and emotions. This began being accepted not only as an important component in the

process of ethical decision-making but as an effective driver that often leads to right action. This new approach to ethical decision-making has already originated a considerable amount of research (e.g., Connelly, Helton-Fauth, & Mumford, 2004; Krishnakumar & Rymph, 2012; Agarwal & Chaudhary, 2013; Lee & Selart, 2014), pursuing to highlight and motivate reflection about the role of emotion in moral judgment, which is only one of the components of the rationalist models.

Following this path, Georg Lind presented his Dual-Aspect Theory (Lind, 1985a, 1985b, 1985c, 1998, 2008) stating that for a comprehensive description of moral behaviour both affective as well as cognitive properties must be considered. His theory, that also incorporates Kohlberg's ideas, led him to create an instrument to measure individuals' moral-judgment competence besides assessing their moral attitudes, which gave him the opportunity to figure out a way of measuring both aspects simultaneously: he developed the Moral Competence Test (MCT). The MCT was constructed to assess subjects' moral judgment competence which has been defined by Lawrence Kohlberg as the capacity to make decisions and judgments which are moral and to act in accordance with such judgments.

The MCT confronts individuals with two stories with highly demanding moral principles and asks them to rate the rightness or wrongness of the protagonist's decision, as well as six arguments supporting the decision that the protagonist in the story made, and six arguments arguing against his or her decision.

This thesis intends to study the Portuguese certified accountants' moral competence, using the original MCT instrument; in addition, we also intend to validate a new dilemma – Accountant's dilemma – in the Portuguese population of Certified Accountants that are in active service. The scores of moral competence will, afterwards, be considered to expand our understanding of individual factors that influence their moral competence.

**Purpose and research questions**

The accounting scandals that have dominated the news in the beginning of the millennium, spawned several reactions (of financial statements users in general, legislators and regulators) that led to the questioning of the role of the accounting profession. We witnessed major structural changes in the professional regulation and further changes will continue to appear. For that reason, we believe that is crucial to feed the ongoing process of understanding the factors that influence accountants' ethical decision-making.

Rationalist ethical decision-making models have painted the landscape for many years but, more and more, emotions are breaking new ground, giving space for alternative considerations – non-rationalist models or dual processing models – that try to reconcile cognition and emotion.

Aware and persuaded of the need to incorporate the “emotions” dimension and its impact on ethical decision-making, and inspired to respond to the research call drawn from the literature review, we have decided to proceed with a perspective that combines both the cognitive and the emotional dimension.

Moreover, the ethical decision-making literature has proven that research with professional accountants has been very scarce, and in the specific case of Portugal, little has been made regarding ethical decision-making (Carreira & Gonçalves, 2008; Marques & Azevedo-Pereira, 2009; Torre & Proença, 2011; Ferreira, Pinto, Santos, & Serra, 2013; Almeida, 2014; Pereira, 2014; Costa, Pinheiro, & Ribeiro, 2016).

The choice for this path has led us to consider the work of Georg Lind and to apply his Moral Competence Test to Portuguese Certified Accountants.

To our knowledge, this research may be the first, in the world, to apply the Moral Competence Test to accounting practitioners and, more particularly, to accounting professionals recognized to practice legally. We support our statement based on the literature review; furthermore, the author of the instrument, Georg Lind, keeps track of every study and every person authorized to perform the test; he assured us that he has no knowledge of any study using the MCT with accounting professionals.



Therefore, the main purpose of this study is to evaluate the moral competence of the Portuguese Certified Accountants and expand our understanding of the individual factors that influence their moral competence. Furthermore, we intend to validate a new dilemma – Accountant’s dilemma – in the Portuguese context.

Thus, given the research purpose outlined above, we draw up the following research question: which individual factors are related to the Portuguese Certified Accountants’ Moral Competence?

This research question can be addressed by considering the following specific research questions:

- What is the level (score) of moral competence of the Portuguese Certified Accountants?
- Is gender, age, level of education, marital status, children (with or without), years of experience, annual income or religion related to the moral competence of the Portuguese Certified Accountants?
- Will the validation and implementation of a new dilemma – Accountants’ dilemma – designed specifically for the accounting domain, reach a score similar to the other dilemmas (Workers’ dilemma and Doctors’ dilemma), enriching the analysis of moral competence?

Because it is indisputable the requirement to meet certain scientific criteria in the development of assessment tools, by the need to possess the properties required to any instrument (reliability, validity, and normative values), it became necessary to evaluate the psychometric properties of the assessment instruments.

Furthermore, we claim that this research integrates into the positivist theory (Watts & Zimmerman, 1978, 1986, 1990; Hopper & Powell, 1985; Chua, 1986): we are trying to measure a rather subjective issue (moral development, moral competence, ...) with an objective lens (Moral Competence Test). The object – reality (Portuguese Certified Accountants) – and the subjects that are observing – us, researchers – are independent of each other.

**Expected contributions**

We believe that this study contributes to ethical decision-making literature in several ways.

At a theoretical level, contributes with a review of the ethical decision-making literature, from 1978 to 2015, highlighting research tendencies and suggestions for further research. We also review the most important rationalist ethical decision-making models and draw attention to the growing importance of considering emotional elements rather than only cognitive elements. In this matter, we have realized that there has been little investigation in the accounting arena, regarding ethical decision-making.

The measurement of Portuguese Certified Accountants' Moral Competence is a novelty, in Portugal and in the overall ethical-decision making literature because the Moral Competence Test has never been tested with accounting professionals; in the accounting domain, it has only been tested with two groups (320 and 200) of accounting students from the Association of Chartered Certified Accountants (ACCA), located in Glasgow. In our case, the sample is composed of 1 037 Certified Accountants and we believe that we will add an important result to the empirical ethical decision-making literature.

Furthermore, we have adapted and validated a new dilemma – Accountants' dilemma – for future integration in the Moral Competence Test and believe that this could be a significant addition to the MCT literature. Our data reliability allows predicting a very positive impact on this matter.

Additionally, we will add to the available empirical evidence on factors affecting ethical decision-making: on this subject, the literature review shows mixed or non significant results on the impact of several individual factors on ethical decision-making (e.g., gender, age); we want to explore the relationship between moral competence and those individual factors, introducing factors poorly researched so far (e.g., marital status, children).

In the particular case of Portugal, we believe that our results will have a significant impact on the ethical decision-making literature, because little has been made regarding ethical decision-making and in particular, very little has been made with accounting practitioners – Certified Accountants.

We also expect to inspire future studies of ethical decision-making.

**Structure**

This study is organized in four main parts: introduction, literature review and hypotheses development, findings, and discussion and conclusions.

In the first part, we intend to demonstrate the motivation that prompted us to conduct this research, what we intended to investigate, the research method used, and how we believe to contribute to the literature.

In the second part, we try to demonstrate the need and importance of ethical behaviour and changes in the attitude of accounting professionals, revising the ethical decision-making literature, which has been heavily based on cognitive (rational) models, which based their rationale on reason and logic. However, due to the emerging consciousness that decisions may be driven from much more than cognition, we emphasize the growing literature on emotions and some neuroscientific inputs, significant elements of the ethical decision-making process. Hence, we give attention to the “Dual-Aspect Theory” and to the “Moral Competence Test”, which brings a refreshing input in an area where much has been done with several other instruments (e.g., Defining Issues Test, Multidimensional Ethics Scale). Finally, in this part, we will develop our hypotheses.

The third part is devoted to empirical contributions. In this part we reveal the findings of the survey applied (online and face-to-face) to the Portuguese Certified Accountants, in 2016. After indispensable sampling validation procedures, we measure their moral competence, using the Moral Competence Test and evaluate the relation of some individual factors with it, testing our hypotheses. Furthermore, we adapt and validate a new dilemma – Accountants’ dilemma – in order to measure the consistency of Portuguese Certified Accountants responses.

The final part – discussion and conclusions - provides an overview of all relevant findings (allowing us to discuss the main results), contributions and limitations of our research; we will also draw on future research paths.

**CHAPTER 1**

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**LITERATURE REVIEW AND  
HYPOTHESES DEVELOPMENT**

“In matters of principle stand like a rock; in matters of taste swim with the current.”

Thomas Jefferson (1743-1826)  
(3<sup>rd</sup> President of the United States of America – 1801-1809)

“To educate a person in mind and not in morals is to educate a menace to society.”

Theodore Roosevelt (1858-1919)  
(26<sup>th</sup> President of the United States of America – 1901-1909)

### 1.1. Ethical behaviour in accounting

As an information system, accounting is at the service of various stakeholders, preparing and communicating financial and non-financial information. The International Accounting Standards Board (IASB) Exposure Draft ED/2015/3 *Conceptual Framework for Financial Reporting* (2015) describes the basic concepts for the preparation and presentation of financial statements for external users and enunciates the objective of general purpose financial reporting:

The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity. Those decisions involve buying, selling or holding equity and debt instruments, and providing or settling loans and other forms of credit. (p. 22)

In Portugal, the *Sistema de Normalização Contabilística* (SNC - Accounting Standardization System) – in force from 1 January 2010 onward (Decree-Law n.º 158/2009, from July 13) and hugely inspired on the IASB model – states, in its *Estrutura Conceptual* (Conceptual Framework) that “the objective of financial statements is to provide financial information about the financial position, performance and changes in financial position of an entity, that is useful to a wide range of users in making economic decisions”. For this reason, the work of a recognized accounting professional – commonly called accountant – is crucial to support decision-making. When the decision-making process is not adequately managed, the consequences may be catastrophic, destroying jobs and weakening the entire economy.

The need to prepare financial statements requires the adoption of alternative procedures and criteria, yielding values that could well be other, perhaps more appropriate, if the criteria used varied. The conclusions, drawn from the financial information presented, may mislead the less informed and benefit who owns more information. We may think that the truth in accounting can be difficult to achieve but it is not as much. We have, nevertheless, to be careful with the accounting abuses in the interpretation of the rules (Ferreira, 2002).

However, cases are known in which accountants had some (lack of) intervention, causing that the objective of financial statements, stated earlier, was not, completely or partially, achieved. There are many examples of accounting and/or financial scandals, forming a sorrowfully almost endless list. This is not specific to a particular demographic region or a given moment in time. All over the world, news emerged that confirm the occurrence of these cases (see examples in Table 1.1).

**Table 1.1**  
**Corporate scandals around the world**

Entity	Country	Year	Activity Sector
Bank of Crete	Greece	1988	Banking
Polly Peck	England	1990	Textile industry
Texaco	USA	1996	Oil and gas
Zhengzhou Baiwen	China	2000	Department store
Urban Bank	Philippines	2000	Finance and Insurance
HIH Insurance	Australia	2001	Insurance
Swissair	Switzerland	2001	Airline
Enron	USA	2001	Energy
Vivendi	France	2002	Mass media
ComRoad AG	Germany	2002	Navigation technology
Tyco International	Switzerland	2002	Security
Adelphia Communications Corporation	USA	2002	Telecommunications
Bristol-Myers Squibb	USA	2002	Pharmaceuticals
Global Crossing Ltd.	USA	2002	Telecommunications
HealthSouth	USA	2002	Healthcare
WorldCom	USA	2002	Telecommunications
Baninter	Dominican Republic	2003	Banking
Royal Ahold	Netherlands	2003	Retailing
Skandia	Sweden	2003	Financial services
Enterasys Networks, Inc.	USA	2003	Computer networking
Freddie Mac	USA	2003	Mortgages
Banco do Estado do Paraná S.A.	Brazil	2004	Financial services
Parmalat	Italy	2004	Food processing
AIG (American International Group)	USA	2005	Insurance and Financial services
Fannie Mae	USA	2005	Financial services
Livedoor	Japan	2006	Internet service
Afinsa	Spain	2006	Collectibles
Northern Rock	England	2007	Banking
Samsung	South Korea	2007	Conglomerate
Clearstream Banking S.A.	Luxembourg	2008	Banking and Finance
Bear Stearns Companies Inc.	USA	2008	Investment services
Lehman Brothers	USA	2008	Financial services
Satyam Computer Services Limited	India	2009	Computer services
Gowex	Spain	2014	Telecommunications
Volkswagen	Germany	2015	Automotive
Toshiba	Japan	2015	Conglomerate

Noteworthy are also cases involving individual persons: Bernard Madoff, Robert Allen Stanford, Dennis Kozlowski, Byrraju Ramalinga Raju, Lee Bentley Farkas, Martha Stewart, Lance Armstrong, Annette Schavan, Jérôme Kerviel, Jordan Belfort, Asil Nadir, Amir Mansour Aria, Martin Shkreli, and the most recent scandal known as “Panama Papers” (2016), involving several entities and individuals.

Portugal is no exception and we draw attention to cases such as: “Operação Furação” (2005), APIMA – Associação Portuguesa das Indústrias de Mobiliário e Afins (2008), Clínica Dentária de Santo Ildefonso (2008), Banco Português de Negócios (2008), Banco Privado Português (2008), “Processo Freeport” (2008), Banco Comercial Português (2009), “Processo Face Oculta” (2009), “Operação Monte Branco” (2011), Grupo Conforlimpa (2013), and the more recent cases of Grupo Espírito Santo (2014), the alleged corruption linked to the “Golden Visa Programme” (launched by the Portuguese authorities in October 2012), “Operação Marquês” (in 2014, involving Portugal’s former socialist prime minister, José Socrates), “Operação Megahertz” (2015), “Operação Fazenda Branca” (2015), “Operação Aquiles” (2016), “Operação Tax Free”, “Operação Matrioskas” (2016) and “Operação Fundo Falso” (2016); from all of them stand out accusations and, increasingly, convictions<sup>13</sup>.

The Enron and WorldCom scandals also affected Arthur Andersen<sup>14</sup>, one of the most prestigious auditing firms in the world, which has lost the credibility and trust of its

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<sup>13</sup> As an example, in Portugal: the former CEO of Conforlimpa, Armando Cardoso, was convicted (April 2016) to ten years and ten months in prison for criminal association and qualified tax evasion exceeding 42 million euros; the dental hygienist and his wife, owners of the Clínica Dentária de Santo Ildefonso, were convicted (July 2013) by fraud and forgery crimes, to equal four years and six months suspended prison sentences and supportive pay compensation of € 53,083 to the SMAS (current municipal company Águas do Porto); the former CEO of APIMA, Rui Ramos, was sentenced (2011) to seven years in prison for aggravated fraud, forgery, defamation and offense (he was arrested in February 2014 to serve the sentence); in the process “Face Oculta”, all 34 defendants were convicted (September 2014), for hundreds of crimes of fraud, money laundering, corruption and influence peddling.

<sup>14</sup> Arthur Andersen LLP (Limited liability partnership) was founded in Chicago, in 1913, by Arthur E. Andersen (1885-1947) and Clarence M. DeLany (1887-1945) as Andersen, DeLany & Co. (both Andersen and DeLany were alumni of Price Waterhouse & Company). The firm changed its name to Arthur Andersen & Co. in 1918. The company grew from \$45,400 in billings in its first year to \$322,000 in 1920. Arthur E. Andersen was the first to begin recruiting the brightest accounting students to work for his firm and honesty and integrity rapidly became the trademarks of Arthur Andersen and his accounting firm: he built his business by putting reputation over profit (Moore & Crampton, 2000). In the last decades, as the firm grew, pressure to boost profits became intense and the delicate balancing between pleasing a client and looking out for the public investor became very unstable. Enron became a client in 1986, a very important one. Within the Enron corporate scandal (2001), Arthur Andersen shredded documents and covered up billions in losses at the energy firm and was found guilty of obstructing justice, putting an end to all its audit activities in 2002.

customers. It is important to heed that before these two scandals, there has been a body of empirical evidence concerning the declining of auditor independence and objectivity (O'Connell, 2001). Those scandals also revealed a decline in moral reasoning and ethical standards of public accountants (Esmond-Kiger, 2004; Dellaportas, 2006). In the United States of America (USA), Carson (2003, p. 389) claimed that those and other cases “have helped to fuel a massive loss of confidence in the integrity of American business and have contributed to a very sharp decline in the U.S. stock market”.

In an essay for *Businessweek*, Nussbaum (2002) wrote:

There are business scandals that are so vast and so penetrating that they profoundly shock our most deeply held beliefs about the honesty and integrity of our corporate culture. Enron Corp. is one of them. This financial disaster goes far beyond the failure of one big company. This is corruption on a massive scale. Tremendous harm has befallen innocent employees who have seen their retirement savings disappear as a few at the top cashed out. Terrible things have happened to the way business is conducted under the cloak of deregulation. Serious damage has been done to ethical codes of conduct held by once-trusted business professionals. (...) Investor confidence is crucial to the success of our economic system. (...) People increasingly feel the game is rigged. (...) Who can come to the rescue? The reputations of many of the professionals who were counted on to safeguard the economic system lie in tatters. (...) What's to be done? (...) The lesson from the Enron debacle should be to restore basic integrity to the bottom line, ethics to business professionals, and clout to overseers that even a deregulated economy need.

It is an undeniable fact that accountants failed to supply relevant and accurate information about «what happens» within those entities, violating rules and regulations, with deliberate intent to deceive, validating and reporting an image that provides no «true and fair view»<sup>15</sup> (Jones, 2011).

However, “accountants have a duty to protect the public interest, making sure public and private finances are properly managed. The public, in return, has an increasing expectation that members of the accounting profession possess high moral values and act with integrity” (Mohamed Saat, Porter, & Woodbine, 2012, pp. 215-216).

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<sup>15</sup> Several authors report difficulties with the interpretation and implementation of this expression, in different countries (Alexander, 1993; Feige, 1997; Blake, Amat, & Gowthorpe, 1998; Alexander & Eberhartinger, 2009)



Accountants and/or auditors are not the only one to blame: the companies' boards of directors also have responsibility (Imhoff, 2003).

Over recent years, many investors have lost money and, even worse, lost confidence in financial markets (Koestenbaum, Keys, & Weirich, 2005; Jackling, Cooper, Leung, & Dellaportas, 2007; Treviño & Nelson, 2014) and the accounting profession has received much unwanted negative attention (Molyneaux, 2004). These scandals led to a “call to arms” of the regulatory bodies of various governments. Regulatory bodies in accounting began working on the reports and about what must be required to organizations so that they are more transparent (a term much in vogue nowadays). New standards, new business practices and regulatory bodies, which were not even conceivable at the beginning of this century, were created. An example of such endeavour is the well-known Sarbanes-Oxley Act of 2002<sup>16</sup>, which created the Public Company Accounting Oversight Board (PCAOB)<sup>17</sup>. Similar efforts were made in other countries to reform accounting, auditing, and corporate governance in the aftermath of the 2001 and 2002 collapses (Low, Davey, & Hooper, 2008; Jones, 2011). As a result, the profession itself has placed ethics and ethical behaviour on a higher level of importance (O’Leary & Pangemanan, 2007). The importance of ethics in accounting and, just as important as it, the public perception of the prestige of accountants has been reinforced by a number of international corporate scandals and business failures (Carnegie & Napier, 2010).

Some authors, like Thomas (2002), argued that, a few, were typical institutional responses:

In a characteristic move, the SEC and the public accounting profession have been among the first to respond to the Enron crisis. Unfortunately, and sadly reminiscent of financial disasters in the 1970s and 1980s, this response will likely be viewed by investors, creditors, lawmakers and employees of Enron as «too little, too late».

Pitt (2004), a former chairman of the United States Securities and Exchange Commission was even more sceptic by arguing: “And, no matter how many laws and regulations are

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<sup>16</sup> The original text can be retrieved from <https://www.sec.gov/about/laws/soa2002.pdf> (Access in June 19, 2016)

<sup>17</sup> PCAOB “is a nonprofit corporation established by Congress to oversee the audits of public companies in order to protect investors and the public interest by promoting informative, accurate, and independent audit reports. The PCAOB also oversees the audits of brokers and dealers, including compliance reports filed pursuant to federal securities laws, to promote investor protection” (Retrieved June 19, 2016, from <http://pcaobus.org/about/pages/default.aspx>).

passed, there'll always be some who lie, cheat or steal on a grand scale, in the misguided belief that risks are outweighed by the potential gains”.

Referring to the necessity to reform accounting, auditing, and corporate governance in the wake of the 2001 and 2002 collapses of large companies, Amernic & Craig (2004) emphasize:

There have been many proposals to reform accounting, auditing, and corporate governance. These have included strong calls from diverse quarters for the business community to commit determinedly to new ethical and moral values, to develop better mechanisms for corporate governance, and to exercise better corporate responsibility. (p. 342)

At the same time, Smyth & Davis (2004) argue:

The widespread nature of the recently publicized scandals suggests that there has been a deterioration of ethical standards in the corporate workplace and raises the question of whether regulatory or legislative actions alone will be sufficient to ensure that the next generation of workers will demonstrate ethical decision making. (p. 64)

It has also been argued (Amernic & Craig, 2004, p. 343) that “one of the causes of the seemingly never-ending parade of accounting scandals and unexpected company collapses has been the inadequacy of university curricula in accounting and business education”.

Trying to identify and explore which factors seemingly influences and contributes to the perpetuation of accounting and corporate scandals (because of their impact on ethical behaviour), Low et al. (2008) focus on five factors, to conclude:

We live in a world that is dominated by money and legalistic cultures. Corporate values, behaviour and the vices of capitalism contribute to the persistence of scandals. The question is whether we can look to accounting and business education to make a difference. (p. 251)

We personally believe that we are not witnessing a deterioration of ethical behaviour in organizations; nonetheless, we admit that the conditions for the ethical degradation are today, perhaps most propitious, considering the prevalence of the “doctrine of competition” and the fierce competition prevailing in some markets, called by some authors (e.g. Sims & Brinkmann, 2003) as a reason for the understanding of some scandals.

Although the debacles around Enron, Arthur Andersen, WorldCom and others, have been considered an example of a business culture that has lost its way and some progress have been made to correct it, the financial crisis of 2008 was “truly devastating to public trust in business, government, finance, and the economy” (Treviño & Nelson, 2014, p. 28). But, as Carnegie & Napier (2010, p. 360) eloquently state, “Upholding the public’s trust is essential not only for preserving respectability but also for ensuring the survival of accounting’s status as a profession”. And, when trust is lost, we open the door for unethical business practices (White, 2009; Yandle, 2010).

In regard to accountants and accounting scandals, we can ask: how does this happen? Why do not accounting professionals perform their jobs in compliance with the standards, proceeding properly and responsibly, protecting the public interest? Is it incompetence, lack of character, lack of integrity, ingenuity or ignorance about how to act? Have they become confused or misled by the information supplied to them, originally wrong? Did the standards fail to address the complexity of «the business world»? Do these professionals need more scientific, social or ethics education?

These (and other) questions and the answer to them outweigh the mere technical aspects, the simple necessity of focusing on standards, principles or rules established by accounting. They force us to reflect on the purpose of accounting and what motivates and influences the behaviour of professional accountants.

Accounting professionals have ethical responsibilities towards themselves, their families, their profession and their clients as well as to the entity for which they work for. But their core responsibility is simple: to do, by duty, what is expected of them. The pure and simple exercise of the profession of accountant implies a duty of truth (Gill, 2009; Bayou, Reinstein, & Williams, 2011). However, sometimes doing what is expected of a professional of accounting can become complicated due to emerging conflicts in the professional sphere and between it and the personal sphere.

We trust accountants to build the knowledge on which financial decisions are based. The need to trust accountants derives from the complexity of modern business life. Therefore, we expect them to simplify, as much as possible, that complexity and to depict it, in numbers. However, accountants cannot do this without following accounting rules,

procedures, codes, principles and standards as well as various mechanisms of legislative, governmental and professional regulation (Llewellyn & Milne, 2007).

The main goal of accounting practice is “the transmission of clear, accurate, and trustworthy information to people who depend on such knowledge for their business decision making” (Stuart, Stuart, & Pedersen, 2014, p. 15). Consequently, stakeholders must place their trust in high quality financial information reports and professional accountants must be the ones with enough knowledge, experience and authority to produce and interpret those reports. So, trust is as unavoidable necessity in an accountant’s everyday job. Accountants are expected to tell the truth, “no matter what”. But, this demand, as necessary as essential is, in fact, a professional obligation and a moral duty (Moreira, 1999).

And *integrity* is an essential element of *trust*. MacIntyre (2007, p. 203) states: “(...) there is at least one virtue recognized by tradition which cannot be specified except with reference to the wholeness of a human life – the virtue of integrity or constancy”. And Mintz (1995, p. 257) corroborates: “Integrity is a fundamental trait of character that enables a CPA to withstand client and competitive pressures that might otherwise lead to the subordination of judgment”. Later, Mintz & Morris (2014) reinforce:

A person of integrity will act out of moral principle and not expediency. That person will do what is right, even if it means the loss of a job or client. In accounting, the public interest (i.e., investors and creditors) always must be placed ahead of one’s own self-interest or the interest of others, including a supervisor or client. Integrity means that a person acts on principle – a conviction that there is a right way to act when faced with an ethical dilemma” (p. 3).

However, the commitment to tell the truth has created a certain dislike for the accounting professional. “The stereotype of the dull and grey suited bore haunts the accounting profession” (Jeacle, 2008, p. 1296). Moreover, accountants have already been ridiculed and mocked, in the form of humorous caricature, by several comedians, like the Monty Python<sup>18</sup>, David Letterman<sup>19</sup> or Jerry Seinfeld<sup>20</sup>. This dislike has, as well, been pictured in

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<sup>18</sup> Please see: <https://www.youtube.com/watch?v=j5aN0VmvFn4&feature=related> and <https://www.youtube.com/watch?v=zYqqla3HTyY> (Access June, 02, 2016)

<sup>19</sup> Please see: <https://www.youtube.com/watch?v=1Ihn-TIFPAM> (Access June, 02, 2016)

<sup>20</sup> Please see: <https://www.youtube.com/watch?v=ekp9dmXM7Qs&feature=related> (Access June, 02, 2016)

several Hollywood films (Dimnik & Felton, 2006). However, as a powerful medium, some films and caricatures are also capable of highlighting moral problems, clarifying courses of action and helping us to understand the repercussions of the decisions we make (Teays, 2015).

Even so, or even because of it, the accountant must, not only, have knowledge of, interpret and apply, in depth, the accounting regulations, but also, have ethical sensibility. Stuart et al. (2014) clarify:

Competency, in accounting practice, we maintain, presupposes technical knowledge and skills, ethical awareness, and steadfast motivation for ethical behaviour. In short: for the working accountant, technical proficiency and ethical sensibility go hand in hand. The technical proficient accountant has gained the knowledge of accounting standards and learned the skills of accounting decision making. This knowledge includes the basic vocabulary and concepts of accounting, its fundamental principles and specific rules for recording financial information, and the decision procedures of accounting practice. The ethically sensible accountant makes use of several intellectual and moral capacities: (1) an ability to recognize moral problems and dilemmas in accounting situations, (2) insight to identify the key features of an ethical dilemma, (3) capacity to determine and choose among alternatives in resolving ethical dilemmas, and (4) motivation to act ethically; that is, “to do the right thing” as the fulfilment of one’s own responsibility. (pp. 9–10)

This perspective can be illustrated as seen in Table 1.2. The accountant’s competency has two dimensions: technical proficiency and ethical sensibility. A given accountant may be technically proficient or not and may or may not have ethical sensibility.

**Table 1.2**  
**Combining technical proficiency and ethical sensibility: four types of accountants**

		ETHICAL SENSIBILITY	
		-	+
TECHNICAL PROFICIENCY	-	The Destructive Accountant	The Good-hearted Accountant
	+	The Opportunistic Accountant	The Virtuous Accountant

Source: Stuart, Stuart & Pedersen (2014, p. 11)

The consideration of these two vectors requires a more careful consideration of the decision, involving an always difficult balance, a good equilibrium in the decision and also the willingness to carry it on, which requires the proper cultivation of ethical virtues.

Fuerman (2004) also stressed this same view, years before Stuart et al. (2014), emphasizing the need to do more relevant research in order “to make accountants more accountable”, responding to the crisis in accounting and auditing. He also highlighted the importance of teaching accounting and auditing, stating that “We must instil moral values in our students. Technical proficiency is not enough. A new, reformed generation of accountants and auditors, must emerge from our classrooms” (Fuerman, 2004, p. 912). On this sequence, Low et al. (2008) surveyed students to ascertain whether they believed education could influence ethical behaviour: their findings from the surveys could not conclusively indicate that students perceived ethics education to have a significant influence on their ethical behaviour; however, they believed that it was important to have ethics education in their syllabus.

With regard to accountants, it is a human being who we speak of; a free and responsible human being, nonetheless:

A human being who, being free, can do evil but also can, and should, do good; may be a liar, but also can, and should, be honest; can be selfish, but precisely because it is free, can, and should, use that responsible freedom to do things that work for the benefit of others; a human being who knows he can, but should not make exact calculations from false data” (Moreira, 1999, p. 63).

And in the words of Fernández (1995, p. 32):

Only a resolute commitment to ethics in corporate life and organizations can contribute to generate increasing levels of humanization in the socio-economic life. Only then individuals will grow in their humanity by establishing a richer and habitable environment.

We share the same opinion.

## 1.2. Ethical decision-making and accounting

Every day, people are called to make decisions. People make decisions at home, in their families, in their personal lives and they are also compelled to make decisions at work, performing their jobs, or within the context of an organizational work group. We find it impossible to describe exactly how decisions are made by one individual or work group.

Decisions may involve short-term or long-term goals, consistent or contradictory values, real or supposed facts, based on observations or in the reports of others and inferences about values and facts (Simon, 1959).

In his book, Kahneman<sup>21</sup> (2012, p. 20) explains that the way we think is driven by two systems: System 1 is fast, intuitive, and emotional and “operates automatically and quickly, with no effort and no sense of voluntary control”; System 2 is slower, more deliberative, and more logical and “allocates attention to the effortful mental activities that demand it, including complex computations” (Kahneman, 2012, p. 21).

Effectively, the process may be rather complex: Custers & Aarts (2010, p. 47) state that “the mental processes that make goal pursuit possible require consciousness. But (...) these processes can also operate without conscious awareness, and hence, human behaviour may originate in a kind of unconscious will”. The awareness of this may cause resistance and scepticism, partly because it may be difficult to understand its implications to consciousness and for what we believe what it is to be human (Gray, Gray, & Wegner, 2007).

The process of decision-making requires alternative analysis and the capability to anticipate the consequences of different alternatives. We call it a “process” because we empathize with the viewpoint of Garvin & Roberto (2001) whose research shows:

The difference between leaders who make good decisions and those who make bad ones is striking. The former recognize that all decisions are processes, and they explicitly design and manage them as such. The latter persevere in the fantasy that decisions are events they alone control. (p. 110)

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<sup>21</sup> Daniel Kahneman was awarded the 2002 Nobel Prize in Economic Sciences (shared with Vernon L. Smith). His empirical findings challenge the assumption of human rationality prevailing in modern economic theory.

In fact, these authors claim that most people get decision-making all wrong and they believe there is a way to find out earlier whether we are or we are not advancing properly, following a set of process traits that, although it cannot guarantee success, their combined presence improves the odds of making a good decision (Garvin & Roberto, 2001): consider multiple alternatives, continuously test your assumptions, specify goals up front and revisit them repeatedly during the decision-making process, dissent and debate and finally, perceive fairness.

We talk about ethical decision-making when we are faced with a problem that must be addressed using some sort of ethical component, i.e. the issue at hand requires an ethical component.

Cohen, Pant, & Sharp (2001, p. 321) define ethical decision-making as “decision-making in situations where ethical conflicts are present”. Carlson et al. (2002, pp. 16–17) assert that ethical decision-making “is the process by which individuals use their moral base to determine whether a certain issue is right or wrong”. Josephson (2014) argues:

Ethical decision making refers to a process of choosing (i.e. principled reasoning) which systematically considers and evaluates alternate courses of conduct in terms of the list of ethical principles. It does not proceed in the assumption that there is a single «right» answer to most problems. To the contrary, it recognizes that though some responses would be unethical, in most situations there are a number of ethical ways of dealing with a situation. (p. 85)

Finally and according to Tenbrunsel & Smith-Crowe (2008) ethical decision-making is ethical:

Not because the resulting decision is necessarily consistent with ethical principles or norms (...) but because moral considerations are present during the decision-making process. That is, the ethical relevance of the issue at hand has been recognized and this recognition prompts a consideration of moral implications, but it does not necessarily lead to ethical decisions. (p. 565)

However, it is important to observe that the term “ethical” is not often defined and, sometimes, it is disregarded (Ferrell & Gresham, 1985; Treviño, 1986; Hunt & Vitell,



1986; Dubinsky & Loken, 1989; Hunt & Vitell, 2006). Exemplifying, Ferrell & Gresham (1985) clearly establish:

Individuals have different perceptions of ethical situations and use different ethical frameworks to make decisions. Thus, no attempt is made here to judge what is ethical or unethical (the content of the behaviour). Our concern is with the *determinants* of decision-making behaviour which is ultimately defined as ethical/unethical by participants and observers. (p. 88)

Although Jones (1991, p. 367) shows some difficulty in defining the term ethical – “the definition is admittedly imprecise and relativistic” – he tried to fight this trend offering his contribution: “an *ethical* decision is defined as a decision that is both legal and morally acceptable to the larger community. Conversely, an *unethical* decision is either illegal or morally unacceptable to the larger community” (Jones, 1991, p. 367). However, he did not define what “community” means to him and we also find his definition rather hazardous because ethics is not following the law, because the law can deviate from what is ethical: the law may serve pressure groups, may be slow addressing new problems or may not succeed in designing or enforcing standards. We concur with Treviño & Nelson (2014, p. 21): “the domain of ethics include the law but extends well beyond it to include ethical standards and issues that the law does not address”.

Later, Trevino, Weaver, & Reynolds (2006), also tried to define what “ethical” or “unethical” mean but they didn’t do much more than enumerate examples of unethical behaviour:

Behavioural ethics refers to individual behaviour that is subject to or judged according to generally accepted moral norms of behaviour. Thus, research on behavioural ethics is primarily concerned with explaining individual behaviour that occurs in the context of larger social prescriptions. Within this body of work some researchers have focused specifically on unethical behaviours, such as lying, cheating, and stealing. Others have focused on ethical behaviour defined as those acts that reach some minimal moral standard and are therefore not unethical, such as honesty or obeying the law. Still others have focused on ethical behaviour defined as behaviours that exceed moral minimums such as charitable giving and whistle-blowing. Our definition accounts for all three areas of study. Furthermore, our definition allows for a liberal consideration of existing research, and thus our review considers a broader range of topics than recent reviews. (p. 952)

But, as Tenbrunsel & Smith-Crowe (2008, p. 550) eloquently assert, “The avoidance of providing a definition of ethical behaviour (and one with content), and the resulting lack of consensus when definitions are attempted to be provided is as understandable as it is unacceptable”. And they add:

If we don’t believe it is important to define what an ethical decision is, or don’t believe that it is our place to do so, then we are a field without meaning. If we do believe that such a definition is necessary, then we have no choice but to motivate an understanding of what the normative basis of those values should be and how “ethical” should be measured. Such an understanding is really a call for a bridge to be built between the normative and descriptive fields of business ethics. (p. 551)

In our case and due to the objective of our study – evaluate the moral competence<sup>22</sup> of accounting professionals – we will not resolve this issue in this thesis.

Accountants often find themselves implicated in situations, circumstances or conditions that entail some level of uncertainty. These situations call for decisions and they may bring about some moral issues that may even lead accountants into a dilemma creating, thus, a situation where accountants may be confused because they have to decide if a given action is right or wrong. Moreover, the confusion may harden accountants’ necessity to find good reasons that support one decision, conflicting with other good reasons that support another decision, bearing yet in mind that, eventually, accountants have to face (negative) consequences of their choices or decisions.

We have long known that ethical problems are inherent to the accounting profession (Ponemon, 1990) and that the interaction with different stakeholders may lead to potential conflicts of interest (Keller, Smith, & Smith, 2007).

Nonetheless, decision-making is the core function of being an accountant because accounting is all about making decisions. And, no matter how big or small those decisions are, ethics plays a role. As we have already said, accountants must be technically proficient

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<sup>22</sup> We will define this concept ahead

and ethically sensible since ethical behaviour is vital to the status and credibility of the accountancy<sup>23</sup> profession (Chan & Leung, 2006). Thus:

Making good ethical decisions are just as important to business success as mastering management, marketing, finance, and accounting decisions. (...) Ethical behaviour requires understanding and identifying issues, areas of risk, and approaches to making choices in an organizational environment” (Ferrell et al., 2015, p. 3).

In the field of accounting, decisions (ethical or unethical) may benefit or harm stakeholders and this is why accounting regulators must continuously struggle to discuss the implementation of accounting standards, principles and rules that reduce or eliminate any potential temptation to hide, distort, falsify or manipulate financial information. But, we must never forget that regulatory agencies rely on information and statements provided by professionals in the accounting and auditing domain.

According to Stuart, Stuart, & Pedersen (2014, p. 38), accountants “have a number of *resources* for their ethics decision making”: intellectual abilities, moral aptitudes, natural talents, learned skills, emotional and intuitive qualities, values and life-models to be admired, social and institutional norms and expectations, institutional patterns for decision making, systems of rewards and punishments and general principles that shape conduct and influence behaviours. Even though, we believe that, when the time comes, all these resources may not be enough (or determinant) to reach a decision.

Yet another question may arise (Palazzo, Krings, & Hoffrage, 2011):

People may behave unethically without being aware of it – they may even be convinced that they are doing the right thing. It is only later that they realize the unethical dimension of their decision. We call this state *ethical blindness*: the decision maker’s temporary inability to see the ethical dimension of a decision at stake. (p. 324)

In this subject, others argue that unethical decision-making can only be understood as the result of a process that unfolds over time (den Nieuwenboer & Kaptein, 2007; Fleming &

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<sup>23</sup> In some parts of the English-speaking world, the word “accountancy” is commonly used to refer to the work activity of accountants. However, in the USA, the term “accounting profession” is more likely to be used, and in this thesis we have decided to use, almost exclusively, the term “accounting” instead of “accountancy”.

Zyglidopoulos, 2007; McDevitt, Giapponi, & Tromley, 2006). In fact, “ethical blindness is the result of a sense making process that unfolds over time” (Palazzo et al., 2011, p. 334).

We will not approach the *ethical blindness* issue; instead, we will build on the assumption that decisions are made by rational actors. The rational perspective is not free from criticism (e.g., Sonenshein, 2007) and our decision is not free from questioning and judgment.

### **1.3. Ethical theories**

We can resort to the fields of moral philosophy (specific principles or values people use to decide what is right or wrong) and theology and shed some light into the most important ethical theories that can work like a compass when facing ethical issues. In fact, multiple perspectives may be addressed but none of them are perfect because they may lead us to different conclusions. However, they intend to help us think more carefully and comprehensively about a given ethical issue in order to help prevent entering a path by mistake or accident. It will help us analyze a certain situation from different angles giving us the opportunity to explain our decision-making process, if needed.

Nevertheless we must not forget that ethical theories, really, are just theories and ethical behaviour depends on many factors, such as: the individuals (how they think and how they apply ethical theories), the circumstances of the situation or the moral intensity of the situation.

Our approach will be brief and simple – considering the main objective of our study – and focused on providing a broader perspective on the subject. A more thorough approach can be found, e.g., in Fryer (2015), Stanwick & Stanwick (2014), Duska, Duska, & Ragatz (2011) or MacIntyre (1998), among others.

We will start distinguishing between *absolutism* and *relativism*: an absolutist would follow (obey to) one set of moral rules, no matter the circumstances and advocate that those rules should be common to everyone and unlikely to change over time; a relativist would believe that there are many sets of acceptable rules in society and that those rules can change over time, depending on circumstances or on time. In brief, absolutists may be called dogmatic

because they believe in absolute “truths” that must be followed; differently, relativists would be called pragmatic, because they believe there are no absolute “truths” and we must assess each situation we come to.

On another stance, a *deontological* approach to ethics lies on a non consequentialist<sup>24</sup> theory: the decision of whether an action is moral or not is not dependent on the consequences, the moral right or wrong is not dependent on the outcome, therefore, it is the *means* which are more important than the *ends*; on the other hand, when the outcome drives the moral decision, we are adopting a *teleological* approach, based on a consequentialist theory, where the *ends* are more important than the *means*, i.e. the decision of whether an action is moral or not is dependent on the consequences, on the outcomes.

Philosophers have been struggling with ethical decision-making for a long time and ethical behaviour may be the sum of moral reasoning (the rules – ethical theories) and character (the motivation – traits like courage, integrity, justice, honesty, wisdom, ...), i.e. we must understand what is the right thing to do but if we do not have the character to do the right thing, knowing the right thing becomes irrelevant. If we reason incorrectly, probably we will do the wrong thing and if we do not have the character we may not have the strength to do the right thing. So, in our opinion, we need them both.

In fact, when we remember all the scandals that have been mentioned, it is hard to believe that those who failed to do the right thing actually did not know that those actions were wrong. Understanding what is the right thing (or the wrong) to do it is often complicated but after knowing that, how do we get ourselves to do the right thing? That is why the “character” part is very important.

Following Stuart et al. (2014), Treviño & Nelson (2014) and Fryer (2015) very closely, we will now introduce four approaches of moral philosophy: utilitarianism, deontology, virtue ethics and the social contract theory.

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<sup>24</sup> The term “consequentialism” was introduced by the British philosopher Elizabeth Anscombe. For further detail see Anscombe (1958).

First we must remember that each approach considers the human being as a *moral agent*, who decides how to act. According to Jones (1991, p. 367), a *moral agent* is “a person who makes a moral decision, even though he or she may not recognize that moral issues are at stake”. Frequently, these *agents* find themselves in problematic situations or circumstances that give rise to moral issues and the *agents* may face situations of conflict (commonly called *dilemmas*). To deal with those situations, *agents* have a number of resources (character traits, values, norms) to help them in their ethics decision-making but resolving ethical dilemmas is not an easy task. However, moral philosophy can be an excellent first-hand resource for ethical decision-making.

### **1.3.1. Utilitarianism**

Utilitarianism is a well-known consequentialist (teleological) theory and it rests on the principle of utility: “an ethical decision should maximize benefits to society and minimize harms. What matters is the net balance of good consequences over bad for society overall” (Treviño & Nelson, 2014, p. 40).

According to this approach, the moral agent evaluates alternate courses of actions and the right way is the one that promotes happiness for those affected by the decision – choosing the course of action which brings about the best consequences. Utilitarianism was introduced by Jeremy Bentham (1748-1832) and advocated by John Stuart Mill (1806-1873).

According to Fryer (2015), utilitarianism:

Judges the ethicality of actions in relation to their propensity to promote desirable things like benefit, advantage, pleasure and happiness, and to avoid undesirable things like mischief, pain, evil and unhappiness. (...) As far as utilitarianism is concerned, an ethically right action is one which brings about the greatest amount of good for the greatest number of people. (p. 56)

In another feature of the utilitarian thought, the moral agent may consider a standard (principle or rule) to assist him in the evaluation of different alternatives asking himself which rule, standard or principle will lead to happiness for the people involved in the moral issue and for those affected for his decision. As stated by Stuart et al. (2014):

This consideration of rules and guidelines moves our attention from particular actions that are appropriate to a given circumstance, from “act-utilitarianism”, where the focus is on how those actions may cause happiness (create utility), to a focus on “rule-utilitarianism”, where the question is whether a given rule applied in a situation (and other similar situations) may cause the most happiness. (p. 40)

The utilitarian approach can be extremely helpful in resolving an ethical dilemma because people often look at the consequences of a particular action trying to decide if it is right, considering benefits and harms. According to Treviño & Nelson (2014), this approach:

Remains particularly important to ethical decision making in business for a variety of reasons. First, utilitarian thinking underlies much of the business and economic literature. Second, on the face of it, most of us would admit that considering the consequences of one’s decisions or actions for society is extremely important to good ethical decision making. (p. 42)

In fact, some studies have found that business managers rely on the utilitarian approach when making business decisions (Fritzsche & Becker, 1984; Premeaux & Mondy, 1993; Premeaux, 2009).

### **1.3.2. Deontology**

The word *deontology* “is derived from the Greek words το δεον (that which is proper) and Λογια, knowledge – meaning the knowledge of what is right or proper” (Bentham, 1834, p. 21). In other words, *deontology* comes from the Greek *deon*, which means “duty”.

Deontology is a non-consequentialist theory based on the idea that moral principles guide ethical decision-making, i. e., “deontologists base their decisions about what’s right on broad, abstract universal ethical principles or values such as honesty, promise keeping, fairness, loyalty, rights (to safety, privacy, etc.), justice, responsibility, compassion, and respect for human beings and property” (Treviño & Nelson, 2014, p. 42). Therefore, the moral agent follows his “duty”: obey the core principles and promote their application within any given situation. In sequence, there is no consideration for the consequences of a decision because what is important is to discern the core principle and then act in accordance with that principle. If the action is fulfilled following the moral principle, then

the action is right. For this reason, the moral agent should try to make a list of values or moral principles that are really important to him (and in which he deeply believes) and then act in conformity with those values, not forgetting to respect the rights of others as well.

When faced with the need to decide, “feelings and emotions, inclinations to follow conventional social standards, thoughts of punishment or reward – all these are considered to be “temptations”. (...) The sole motive of the moral agent is supposed to be the reason-driven desire to do one’s duty” (Stuart et al., 2014, p. 41). So, if we have to decide who is in charge, the heart or the head, deontologists are clear to assert that the head takes precedence: reason should always come before sentiment.

The German philosopher Immanuel Kant (1724-1804) based his moral philosophy on reason and developed his work based on the following works: *Groundwork of the Metaphysic of Morals* (1785), *Critique of Practical Reason* (1788), and *Metaphysics of Morals* (1797). He proposed that, no matter what sentiments or emotions we may experience, the moral agent should always consider reason to discover what is ethical or unethical. Kant also provided (*Groundwork of the Metaphysic of Morals*) an important moral rule with his *categorical imperative*: “Act only on that maxim through which you can at the same time will that it should become a universal law” (Kant, 1993, p. 30). This rule asks us to consider if our underlying principle for a given action is appropriate to become a universal law that everyone could follow. Kant also added other *formulas* to help us, the moral agent, to become more capable of deciding ethically but we will not address them here.

### **1.3.3. Virtue ethics**

The idea of *virtue* is strongly associated with the Ancient Greek philosopher Aristotle (384 BC-322 BC) and his (probably) best-known work on ethics: *Nicomachean Ethics* (350 BC). In his work, Aristotle defines virtue as follows (Aristotle, 1893):

Virtue, then, is a habit or trained faculty of choice, the characteristic of which lies in moderation or observance of the mean relatively to the persons concerned, as determined by reason, i.e. by the reason by which the prudent man would determine it. And it is a



moderation, firstly, inasmuch as it comes in the middle or mean between two vices, one on the side of excess, the other on the side of defect; and, secondly, inasmuch as, while these vices fall short of or exceed the due measure in feeling and in action, it finds and chooses the mean, middling, or moderate amount. (pp. 46-47)

And it is probably from here that has derived the well-known adage: “the virtue lies in the middle”; the term invites us to find the equilibrium that, most of the times, arises between two extremes, therefore outside of every exaggeration.

Writing about the Aristotelian theory of the virtues, MacIntyre (2007, p. 150) states that the exercise of virtues requires a “capacity to judge and to do the right thing in the right place at the right time in the right way”; afterwards, MacIntyre (2007, p. 191), asserts that “a virtue is an acquired human quality, the possession and exercise of which tends to enable us to achieve those goods which are internal to practices and the lack of which effectively prevents us from achieving any such goods”.

This *virtue ethics* approach differs from those explored before because virtue ethics is focused on character rather than on actions; its prime focus is on the integrity of the moral agent than on the moral act itself.

The previous approaches (utilitarianism and deontology) draw attention to the results or the requirements of duty; this approach focuses on character traits or virtues and encourages the moral agent to think about the type of person he/she wants to be in order to be ethical, as stated by Stuart et al. (2014):

By contrast to the utilitarian and the deontological approaches, virtue ethics addresses the moral issues that arise from social roles and the workplace by giving primary attention to the qualities of character of the moral agent – considering virtues possessed by people and looking for the realization of those virtues in actions they take. In brief: as one faces action-choices to resolve a moral dilemma, virtue ethicists first want to speak about the qualities of character of a moral agent as the potential intellectual and moral resources for decision making. (p. 42)

According to Mintz (2006, p. 99) “the accounting profession acknowledges the significance of virtue in performing professional responsibilities”; for example, the American Institute of Certified Public Accountants (AICPA) *Code of Professional*

*Conduct*, in its “Principles of Professional Conduct” section, identifies “Integrity” as the quality of one’s character necessary to “maintain and broaden public confidence” (AICPA, 2014, p. 5). We can find the same principle in the International Ethics Standards Board for Accountants (IESBA) *Code of Ethics for Professional Accountants* (2015), and in the Portuguese *Código Deontológico da Ordem dos Contabilistas Certificados* (2015).

In fact, although accounting principles, rules and results are important, we cannot forget the importance of being an accountant with character, i.e., an accountant must own intellectual and moral traits (expertise, attitude, talent), as well as ethical sensibility, in order to demonstrate technical competence, apply the rules, seek for common good, resist temptations (and pressures) and strive to meet objectives.

#### **1.3.4. Social contract theory**

This theory was introduced by Thomas Hobbes (1588-1679), in his work *Leviathan* (1651), and considered of great importance for social thought and Western political theory. John Locke (1632-1704) and Jean-Jacques Rousseau (1712-1778) were equally important to social contract theory. Those philosophers advocate that people have certain advantages to living as part of society: it allows us to escape the physical hazards associated with the state of nature (Hobbes), it will help us to respect one another’s possessions (Locke) and enables information to be shared and knowledge to be captured (Rousseau). However, all three agreed that, in society, we need to give up our freedom to do whatever we want to do. Instead, we must do what is necessary to ensure the proper functioning of society. But, they believed, in agreeing to the social contract, people would give up the right to freedom in order to enjoy the benefits of society (Fryer, 2015).

In this line of thought, Stuart et al. (2014) clarify:

The social contract theory presupposes that a moral agent acts as a citizen within a specific type of society. In this theory, the society itself is formed through the voluntary consent (choices) of its citizens. These individuals bind themselves in obligation and support one another for the sake of everyone’s protection against the threat of violence. Individuals form a *social contract* with one another. (...) By giving consent and joining in the social contract, the individual voluntarily submits to constraints on his own freedom and accepts limitations on his own self-interest. (p. 43)

When performing an action or reaching a decision, the moral agent should submit it (together with some explanations) to the judgment of others. If the action and explanations were considered reasonable, by consensus, and citizen rights were followed, this would constitute a correct action, and vice-versa. Supported on this pattern (decision based on consensus and dialogue) it is not hard to accept that a given decision will have impact on multiple stakeholders and that the decision will increase the individual's social responsibility for protecting the interests and rights of others. In our case, the accountant will have the obligation to serve the public interest of the society in which he operates.

### **1.3.5. Lawrence Kohlberg's model of cognitive moral development (CMD)**

Lawrence Kohlberg (1927-1987) was an American psychologist who wanted to understand how people made moral decisions. He agreed with Jean Piaget's (1896-1980) theory of *moral development* (Piaget, 1932) and built upon it, developing his ideas further. By observing his own and other children, Piaget was interested in deciphering children's understanding of rules, moral responsibility and justice (punishment). He realized that children's ideas changed as they got older and suggested two main types of moral thinking: heteronomous morality (moral realism – children observe morality as obeying other people's rules and laws, that cannot be changed) and autonomous morality (moral relativism – children acknowledge that there is no absolute right or wrong and that morality depends on intentions, not consequences).

Kohlberg's research was first developed following seventy-two American (Chicago) boys, from both middle and lower-class families, ranging in age from ten to sixteen years old. This work was carried out in the context of his doctoral dissertation (1958) through which he conducted interviews with hypothetical moral dilemmas, asking children to try to solve them. The responses were analyzed and Kohlberg was, in fact, really interested in the reasoning behind the answer (how the respondent got to his answer) and not whether the subject responded "yes" or "no" to a specific dilemma (Crain, 1985).

His theory is a cognitive developmental theory focused on understanding how people think and make decisions about what course of action is ethically right. He proposes that moral

reasoning develops through a sequence of three levels (preconventional, conventional and postconventional), each composed of two stages (Kohlberg & Hersch, 1977).

Each stage is more advanced than the stage before and as people climb this stepladder (Table 1.3), their reasoning becomes more refined, demonstrating that they are less self-centered and increasingly more capable to reason according to universal values or principles, as Treviño & Nelson (2014) affirm:

As individuals move forward through the sequence of stages, they are cognitively capable of comprehending all reasoning at stages below their own, but they cannot comprehend reasoning more than one stage above their own. Development through the stages results from the cognitive disequilibrium that occurs when an individual perceives a contradiction between his or her own reasoning level and the next higher one. (p. 76)

Although initially developed with children / adolescents and not specifically designed for business contexts, Kohlberg's theory was also applied, with relative success, to studies of adults in business settings (Trevino & Youngblood, 1990).

Kohlberg came to speculate about the existence of a seventh stage (Kohlberg, 1973; Kohlberg & Power, 1981) – Transcendental Morality or Morality of Cosmic Orientation – linking religion with moral reasoning; however, he admitted that the existence of a seventh stage would only have theoretical acceptance (Kohlberg, 1981). Furthermore, he was not able to provide definite empirical evidence for the existence of a sixth stage (Colby et al., 1983; Treviño, Weaver, & Reynolds, 2006).

Kohlberg's theory has received criticism from many researchers (e.g., Gilligan, 1977; Munsey, 1980; Murphy & Gilligan, 1980; Turiel, 1983; Snarey, 1985; Modgil & Modgil, 1986; Rest, 1986; Treviño, 1986; Shweder, Mahapatra, & Miller, 1987; Fraedrich, Thorne, & Ferrell, 1994; Snell, 1996; Rest, Narvaez, Bebeau, & Thoma, 1999, 2000; Lind, 2008; Ferrell et al., 2015), but he tried hard to reconcile his theory with many of its criticisms, changing considerably (becoming more complex) his approach (Kohlberg, 1984; Kohlberg, 1986; Kohlberg, Boyd, & Levine, 1990).

Nevertheless, his theory continues to inspire new investigation (e.g., Lourenço, 2013) and also inspired James R. Rest (1986) to draw his "Four-Component Model", that we will address further on.

**Table 1.3**  
**Kohlberg's stages of moral development**

<b>Level and stage</b>	<b>What is right</b>	<b>Reasons for doing right</b>
<b>LEVEL 1: PRECONVENTIONAL</b>		
<b>Stage 1:</b> Heteronomous morality	To avoid breaking rules backed by punishment, obedience for its own sake, and avoiding physical damage to persons and property.	Avoidance of punishment and the superior power of authorities.
<b>Stage 2:</b> Individualism, instrumental purpose, and exchange	Following rules only when it is to someone's own immediate interest; acting to meet one's own interests and needs and letting others do the same. Right is also what's fair, what's an equal exchange, a deal, an agreement.	To serve one's own needs or interests in a world where you have to recognize that other people have their interests, too.
<b>LEVEL 2: CONVENTIONAL</b>		
<b>Stage 3:</b> Mutual interpersonal expectations, relationships, and interpersonal conformity	Living up to what is expected by people close to you or what people generally expect of people in your role as son, brother, friend, etc. "Being good" is important and means having good motives, showing concern about others. It also means keeping mutual relationships such as trust, loyalty, respect, and gratitude.	The need to be a good person in your own eyes and those of others. Your caring for others. Belief in the Golden Rule. Desire to maintain rules and authority which support stereotypical good behaviour.
<b>Stage 4:</b> Social System and Conscience	Fulfilling the actual duties to which you have agreed. Laws are to be upheld except in extreme cases where they conflict with other fixed social duties. Right is also contributing to society, the group, or institution.	To keep the institution going as a whole, to avoid a breakdown in the system "if everyone did it", or the imperative of conscience to meet one's defined obligations.
<b>LEVEL 3: POSTCONVENTIONAL OR PRINCIPLED</b>		
<b>Stage 5:</b> Social contract or utility and individual rights	Being aware that people hold a variety of values and opinions that most values and rules are relative to your group. These relative rules should usually be upheld, however, in the interest of impartiality and because they are the social contract. Some nonrelatives' values and rights like life and liberty, however, must be upheld in any society and regardless of majority opinion.	A sense of obligation to law because of one's social contract to make and abide by laws for the welfare of all and for the protection of all people's rights. A feeling of contractual commitment freely entered upon, to family, friendship, trust, and work obligations. Concern that laws and duties be based on rational calculation of overall utility, "the greatest good for the greatest number".
<b>Stage 6:</b> Universal ethical principles	Following self-chosen ethical principles. Particular laws or social agreements are usually valid because they rest on such principles. When laws violate these principles, one acts in accordance with the principle. Principles are universal principles of justice: the equality of human rights and respect for the dignity of human beings as individual persons.	The belief as a rational person in the validity of universal moral principles and a sense of personal commitment to them.

Source: Colby & Kohlberg (1987, pp. 18-19)

### 1.4. Empirical research on ethical decision-making

The extant literature around ethical decision-making in business has already provided theoretical and empirical information regarding the conditions, factors, influences and models that may explain how people make decisions and ethical decisions, in particular (Ford & Richardson, 1994; Loe, Ferrell, & Mansfield, 2000; O'Fallon & Butterfield, 2005; Craft, 2013; Lehnert, Park, & Singh, 2015). Through these literature reviews it is possible to understand what has been done (Table 1.4) and what is still left to do and they have been profusely cited in the ethical decision-making literature (Table 1.5).

However, these literature reviews are limited in scope and, in some cases, redundant, challenging extra reviewing (e.g., Treviño et al., 2006; Tenbrunsel & Smith-Crowe, 2008; MacDougall, Martin, Bagdasarov, & Mumford, 2014; Schwartz, 2015).

**Table 1.4**  
**Empirical ethical decision-making literature (1978-2015)**

Reviews	Number of studies	Number of findings			Totals
		Individual factors	Organizational factors	Moral intensity	
Ford & Richardson (1994)	53	59	43	0	<b>102</b>
Loe, Ferrell, & Mansfield (2000)	123	122	64	2	<b>188</b>
O'Fallon & Butterfield (2005)	174	270	82	32	<b>384</b>
Craft (2013)	84	274	61	22	<b>357</b>
Lehnert, Park, & Singh (2015)	141 <sup>25</sup>	248	60	29	<b>337</b>
<b>Totals</b>		<b>973</b>	<b>310</b>	<b>85</b>	

Source: Ford & Richardson (1994); Loe et al. (2000); O'Fallon & Butterfield (2005); Craft (2013); Lehnert et al. (2015)

According to O'Fallon & Butterfield (2005):

The field of business ethics is commonly divided into two realms – normative ethics, which resides largely in the realm of moral philosophy and theology and guides individuals as to how they should behave, and descriptive (or empirical) ethics, which resides largely in the realm of management and business and is concerned with explaining and predicting individuals' actual behaviour. (p. 375)

<sup>25</sup> Lehnert et al. (2015) literature review includes a total of 141 studies but they have only added 49 studies to Craft (2013) review.

**Table 1.5**  
**Ethical decision-making literature reviews: Google Scholar citations**

Authors	Title	Google Scholar citations on July 15 <sup>th</sup> , 2016
Ford & Richardson (1994)	Ethical Decision Making: A Review of the Empirical Literature	1 095
Loe, Ferrell, & Mansfield (2000)	A Review of Empirical Studies Assessing Ethical Decision Making in Business	720
O'Fallon & Butterfield (2005)	A Review of The Empirical Ethical Decision-Making Literature: 1996–2003	897
Craft (2013)	A Review of the Empirical Ethical Decision-Making Literature: 2004–2011	109
Lehnert, Park, & Singh (2015)	Research Note and Review of the Empirical Ethical Decision-Making Literature: Boundary Conditions and Extensions	7
<b>Total:</b>		<b>2 828</b>

We will, mainly, focus on empirical findings within the descriptive ethical decision-making literature.

Ford & Richardson (1994) summarized empirical research from 1978 to 1992 and it was the first literature review on this subject. Their review indicates that research on ethical decision-making involved individual factors (28 studies with 59 findings) and organizational factors (25 studies with 43 findings) – see Table 1.6.

Their conclusions reflect the absence of some factors (e.g., marital status, children, career type) and other factors which are seldom reported or poorly understood (e.g., level of education, age, number of years employed, income level). They suggest further research in order to test the existing models, study personality factors and to foster research around attitudinal factors. They also encourage the study of the impact of organizational variables on ethical decision-making, showing added concern on the general lack of common terminology. They state that the study of ethics does not need additional models of ethical behaviour but further testing of plausible existing models. This literature review was not able to find a single study whose sample consisted of accountants.

Loe et al. (2000) published a review of the empirical research on ethical decision-making between 1992 and 1996. Their review involved individual factors (88 studies with 122 findings), organizational factors (48 studies with 64 findings) and moral intensity factors (2 studies with 2 findings) – Table 1.4 – and updated Ford and Richardson's work by evaluating empirical studies in organizational settings and relating them to Jones (1991) model, because it “provides the most comprehensive synthesis model of ethical decision

making” (Loe et al., 2000, p. 186). Proof of this is the inclusion of moral intensity as a separate factor (Table 1.6).

**Table 1.6**  
**Empirical studies and findings by construct (1978-1996)**

<b>Construct</b>	<b>1978-1992</b>		<b>1992-1996</b>	
	<b>Studies<sup>26</sup></b>	<b>Findings</b>	<b>Studies<sup>26</sup></b>	<b>Findings</b>
<i>Awareness</i>			15	15
<i>Individual factors</i>				
Cognitive moral development			6	6
Moral philosophy			21	21
Gender	13	13	26	26
Age	8	8	15	15
Education and work experience	18	18	18	18
Nationality	5	5	10	10
Religion	3	3	3	3
Personality/Beliefs/Values	5	7		
Locus of control			4	4
Intent			4	4
<i>Organizational factors</i>	12	14		
Referent groups	11	13		
Type of ethical conflict	2	2		
Industry factors	5	5		
Opportunity			3	3
Codes of conduct	9	8	17	17
Rewards and sanctions			15	15
Culture and climate			18	18
Significant others			11	11
<i>Moral intensity</i>			2	2

Source: Ford & Richardson (1994); Loe et al. (2000)

Loe et al. (2000, p. 199) call for more empirical testing and indicate “a need to more thoroughly integrate ethics issues in other areas of research” and “to consider methodological issues when conducting ethics research”. They also draw attention to the need for longitudinal studies and to the difference between “studying ethics in the personal lives of individuals and the ethical decisions made in organizations” (Loe et al., 2000, p. 200). They also urge researchers to try to understand how and why individuals and groups make ethical decisions in a business context. Finally, they advocate the need for more research on intent and moral intensity.

Finally, Loe et al. (2000) found four studies whose sample composition mentioned accounting professionals, and accounting academics (Table 1.7).

<sup>26</sup> In this column there are studies mentioned more than once because, in some cases, the authors of the studies analysed the impact of more than one factor.



**Table 1.7**  
**Studies mentioning accounting professionals (1992-2003)**

Authors	Sample	Findings
Tyson (1992)	415 Students + 68 CPAs	Individuals perceive their own behaviour to be more ethical than others; Females have greater ethical sensitivity; Regardless of age, individuals rated themselves as more ethical than others; A relationship exists between significant others and ethical decision-making in the organization.
Shaub, Finn, & Munter (1993)	207 CPAs	Ethical orientation influences ethical sensitivity.
Cohen & Sharp (1993)	113 Accounting academics	Accountants use different philosophies.
Jones & Hildebeitel (1995)	250 Members of the Institute of Management Accountants <sup>27</sup>	Organizational support influences ethical decision processes.
Eynon, Hills, & Stevens (1997)	121 CPAs	Moral reasoning decreases with age; Females have higher moral reasoning scores than males; CPAs in small-firms scored significantly lower in moral reasoning than CPAs in Big 6 firms; Those who completed an ethics course reported significantly higher P_scores.
Gibson & Frakes (1997)	188 CPAs	Attitude toward the behaviour and subjective norms explained a significant portion of unethical intentions.
Hume, Larkins, & Iyer (1999)	100 CPAs	CPAs were not more likely to follow professional codes than unlicensed accountants.
Radtke (2000)	51 Accountants	In 5 of 16 scenarios, there were significant differences in responses between males and females.
Ryan (2001)	107 Accountants	Moral reasoning was positively related to the helping and sportsmanship organizational citizenship behaviour (OCB), but not the civic virtue OCB.
Cohen et al. (2001)	127 Professional Accountants + 213 Students	No major differences between entry-level students and graduating students, as well as between students and professional accountants.
Douglas, Davidson, & Schwartz (2001)	304 Accountants	Ethical judgments in situations of high moral intensity are affected by personal values and by environmental variables, such as the professional code of conduct (direct and indirect effects) and previous ethics instruction (direct effect only); Corporate ethical culture, and a relatively strong firm rulesorientation, affect auditors' idealism but not relativism, and therefore indirectly affect ethical judgments.
Elias (2002)	338 CPAs + 180 Students + 245 Accounting Faculty	High idealists judged the earnings management actions as more unethical and high relativists judged them as more ethical
Shapeero, Koh, & Killough (2003)	81 Accountants	Internals are less likely to intend to engage in unethical behaviour; Deontological individuals are less likely to intend to engage in unethical behaviour than teleological individuals; Greater likelihood of reward results in intention to engage in unethical behaviour.

Source: Loe et al. (2000); O'Fallon & Butterfield (2005)

O'Fallon & Butterfield (2005) reviewed the empirical research on ethical decision-making between 1996 and 2003, that was considered “the most comprehensive literature review on ethical decision-making” (Craft, 2013, p. 223). Their review involved individual factors, organizational factors and moral intensity factors (Table 1.4): the number of studies published rose, the number of findings doubled and the number of individual and organizational factors nearly doubled, in comparison with the previous literature review.

Further, O'Fallon & Butterfield (2005) cross-referenced each finding using Rest's (1986) “four-component model” dependent variables: awareness, judgment, intent and behaviour. Consequently and according to O'Fallon & Butterfield (2005):

This review provides the reader with a sense of which independent and dependent variables have received the greatest amount of attention, which ones have been largely overlooked,

<sup>27</sup> The Institute of Management Accountants (IMA) was founded in 1919 and is a professional organization headquartered in Montvale, New Jersey (USA). The organization also has offices in Zurich (Switzerland), Dubai (UAE), Cairo (Egypt), Beijing e Shanghai (China). For detail, please see: <http://www.imanet.org/>

and which variables have provided the most consistent findings in the ethical decision-making literature. (p. 376)

We present, in Table 1.8, a summary of the overall statistics, and supported on O’Fallon & Butterfield (2005, p. 377), we highlight some figures:

- the vast majority of findings (185) were labelled under the *judgment* variable;
- the majority of the research continued to report *gender* (49 findings);
- factors with more research were: *philosophy/value orientation* (42 findings), *education, employment, job satisfaction and work experience* (41 findings), *moral intensity* (32 findings), *nationality* (25 findings), *CMD/Ethical judgment* (23 findings), *age* (21 findings), and *codes of ethics* (20 findings).

**Table 1.8**  
**Empirical findings by each construct on the dependent variables (1996-2003)**

Construct	Number of empirical studies by dependent variable				
	Awareness	Judgment	Intent	Behaviour	Totals <sup>28</sup>
Individual factors	18	143	59	50	<b>270</b>
Organizational Factors	4	28	19	31	<b>82</b>
Moral Intensity	6	14	8	4	<b>32</b>
<b>Totals<sup>27</sup></b>	<b>28</b>	<b>185</b>	<b>86</b>	<b>85</b>	<b>384</b>

Source: O’Fallon & Butterfield (2005)

Apart from comparing his review with previous reviews, O’Fallon & Butterfield (2005) draw conclusions regarding trends in the ethical decision-making literature and outline several directions for future research, summarized in topics, as follows:

- it is imperative that future studies focus more attention on theory development (move beyond Rest’s framework, test additional individual, situational, and issue-related influences);
- examine Rest’s model in its entirety (so far, not a single empirical study had been found that tested all four variables);

<sup>28</sup> Totals do not indicate the total number of articles. It represents the total number of findings by each independent variable on the dependent variables. The total number of studies included is 174.

- within Rest's framework, increase attention on the relationship between moral intent and moral behaviour (what an individual intends to do, matches with what an individual actually does?);
- within Rest's framework, increase need for research on the first step – moral awareness;
- examine the impact of ethical culture on moral awareness;
- examine additional philosophies or values, such as those suggested by moral philosophy or contemporary business practices (e.g., caring or sensitivity);
- examine the interaction between formal and informal aspects of ethical culture;
- researchers should use appropriate samples and avoid using student samples simply because of their availability (since 1996, roughly 40% of empirical studies used a student sample or a combination of students and other individuals);
- research should carefully consider the purpose of their study and only use scenarios when appropriate (of the 174 studies included in this review, 95 (55%) used scenarios or a variation of scenarios in their methodological approach);
- measure behaviour in less conventional ways: (1) asking respondents to think of an ethical dilemma that they have encountered in their work environment; (2) asking the respondents to answer the questions from other peoples' perspectives; (3) asking the subjects to rate their own behaviour in the workplace over the past year; (4) classifying an organization as ethical/unethical based on recent internal audits; (5) asking respondents to rate the extent to which they have observed others engaging in unethical behaviour;
- use alternative methods such as lab studies, field experiments, in-basket exercises, and simulation techniques;
- further use of meta-analytic procedures to advance our understanding of the ethical decision-making process.

In our study, we met some of these suggestions: move beyond Rest's framework, test poorly researched individual variables; avoid student samples; ask the respondents to answer the questions from other peoples' perspectives.

O'Fallon & Butterfield (2005) found nine studies whose sample composition mentioned accounting and auditing professionals, accounting academics, and accounting faculty (Table 1.7).

Craft (2013) published a review of the empirical research on ethical decision-making between 2004 and 2011 extending the three previous literature reviews. Eighty-four studies were reviewed, eliciting 357 findings (Table 1.4), combining Rest's (1986) "four-component model" (awareness, judgment, intent and behaviour) and Jones's (1991) synthesis of ethical decision-making model. Their review involved individual factors, organizational factors and moral intensity factors. We present, in Table 1.9, a summary of the overall statistics and supported on Craft (2013), we highlight some figures:

- *moral awareness* received more attention: researchers published nearly triple the number of findings between 2004 and 2011 (77) than between 1993 and 2003 (28);
- *moral behaviour* decreased in volume: in O'Fallon & Butterfield (2005), there were 85 findings and, in contrast, this literature review reported only 37 findings;
- the majority of findings (131) were labelled under the *intent* variable, contrary to the trend so far, evidencing an increase of over 50%;
- factors with more research were: *personality* (43 findings), *gender* (38 findings), *cultural values/nationality* (35 findings), *philosophy/value orientation* (32 findings), *education, employment, and experience* (27 findings), *moral intensity* (22 findings), and *situation* (22 findings).

**Table 1.9**  
**Empirical findings by each construct on the dependent variables (2004-2011)**

Construct	Number of empirical studies by dependent variable				
	Awareness	Judgment	Intent	Behaviour	Totals <sup>29</sup>
Individual factors	57	78	108	31	<b>274</b>
Organizational Factors	15	22	18	6	<b>61</b>
Moral Intensity	5	12	5	0	<b>22</b>
<b>Totals<sup>28</sup></b>	<b>77</b>	<b>112</b>	<b>131</b>	<b>37</b>	<b>357</b>

Source: Craft (2013)

<sup>29</sup> Totals indicate the number of individual findings by independent variable. The number of studies reviewed is 84.

Craft (2013) also draw some trends and future directions and provides an overview of the future direction of research on ethical decision-making as called for by O'Fallon & Butterfield (2005):

- researchers are reluctant to move beyond the established theories (the majority of theories date from 1980 to 1991) into more innovative territory but they should develop new instruments or modify existing ones to test different aspects of ethical decision-making;
- not a single empirical study had been found that tested all four variables in Rest's model, as noted by O'Fallon & Butterfield (2005);
- further research needs to be carried on the link between moral intent and moral behaviour;
- further study should be done to uncover the impact of ethical culture on moral awareness;
- contrary to the request from O'Fallon & Butterfield (2005), numbers show an increase use of student samples (40% to 53%);
- multi-year, long-term research is needed throughout the broad scope of business management literature.

This literature review strengthened our belief of not using a student sample and to try to move beyond the established models.

Craft (2013) found five studies whose sample composition mentioned accounting professionals, auditing students and accounting trainees (Table 1.10).

Lehnert et al. (2015), building on previous reviews, updated and extended the literature review found in Craft (2013), adding 49 studies to her work.

Since past studies have focused on categorizing results based upon various independent variables, Lehnert et al. (2015, p. 196) tried to “synthesize and examine these trends based upon the four dependent variables most commonly associated with ethical decision making (Rest 1986): Awareness, Behaviour, Judgment, and Intention, and the associated independent variables related to individual, organizational, and moral intensity factors”.

Moreover, they also focused “on the moderation and mediation effects found within these studies and provide an in-depth analysis of future trends (...) highlighting key methodological concerns and outline overarching trends and directions of future research in empirical ethical decision making” Lehnert et al. (2015, p. 196). Their review involved individual factors, organizational factors and moral intensity factors (a total of 141 studies and 337 findings).

**Table 1.10**  
**Studies mentioning accounting professionals (2004-2015)**

Authors	Sample	Findings
Buchan (2005)	95 Accountants	Attitudes positively influenced ethical intentions; No positive relationship was found between a subjective norm (should/should not do) and attitude; No positive relationship was found between perceived behavioural control and intent; No support was found for a relationship between moral sensitivity and ethical intentions; No positive relationship was found between subjective norms (should/should not do) and attitude.
Pflugrath, Martinov-Bennie, & Chen (2007)	52 Accountants + 60 Auditing Students	The quality of auditor judgment was explained by the general auditing experience; Professional accountants were significantly more aware of the risk of misstatement than students; The presence of a code of ethics appeared to have a significant influence on the audit judgments of professional accountants rather than auditing students.
Marques & Azevedo-Pereira (2009)	276 Accountants	Age was the major determinant of relativism; Older respondents revealed themselves significantly more relativistic than younger ones; Gender seems to be the most important determinant of ethical judgments; against expectations, men evidenced significantly stricter judgments than women in two of the five scenarios; Respondents' ethical judgments did not differ significantly based on their ethical ideology, supporting the idea that ethical ideology is not an important determinant of ethical judgments; No significant differences in ethical judgments between older and younger respondents were found; No statistically significant relationship was found between education level and ethical standards.
Hwang, Staley, Chen, & Lan (2008)	32 CPAs + 208 Accountants + 199 on an accounting related profession	A majority of respondents believe that a general sense of morality was the most important factor to encourage whistle-blowing, with abiding by the policy of their organization as the second; <i>Guanxi</i> , fear of retaliation, and fear of media coverage may discourage whistle-blowing in a Chinese society.
Pierce & Sweeney (2010)	463 trainee Accountants of the Institute of Chartered Accountants in Ireland	Differences in ethical judgment depending on area of work of respondents (audit vs. non-audit) were significant; Further education had only a limited impact on ethical views of trainee accountants; The relationship between length of experience and ethicality was complex; Respondents from medium-sized firms had lower ethical views and respondents from Big 4 firms had higher ethical views.
Arnold, Bernardi, Neidermeyer, & Schmee (2007)	294 Accountants from eight countries	There are differences in the subjects' perceptions of ethical inappropriateness to activities frequently covered by business codes of conduct. Such differences associate with the subjects' country to a much greater degree than with the subjects' employer, employment level or gender; Individuals from societies that are more masculine and more individualistic found that the scenarios were deemed to be less unethical.
Bobek, Hageman, & Radtke, (2015)	134 accounting professionals	Males and females use different decision-making processes.

Source: Craft (2013); Lehnert et al. (2015)

We present, in Table 1.11, a summary of the overall statistics and supported on Lehnert et al. (2015, p. 200), we highlight some figures:

- *moral judgment* receives less attention (63 findings), compared with Craft (2013);

- *moral behaviour* increases in volume (91 findings), compared with Craft (2013);
- factors with more research were: *philosophy/value orientation* (44 findings), *CMD/Ethical judgment* (30 findings), *gender* (29 findings), *moral intensity* (29 findings), *education, employment, job satisfaction and work experience* (27 findings), and a category labelled *new factors* (e.g., time, subjective norms, place of unethical behaviour, emotion or affect, reflection or contemplation) with a total of 40 findings;
- personality (43 findings), gender (38 findings), cultural values/nationality (35 findings), philosophy/value orientation (32 findings), education, employment, and experience (27 findings), moral intensity (22 findings), and situation (22 findings).

**Table 1.11**  
**Empirical findings by each construct on the dependent variables (2004-2015)**

Construct	Number of empirical studies by dependent variable				
	Awareness	Judgment	Intent	Behaviour	Totals <sup>30</sup>
Individual factors	66	46	71	65	<b>248</b>
Organizational Factors	8	15	19	18	<b>60</b>
Moral Intensity	7	2	12	8	<b>29</b>
<b>Totals<sup>28</sup></b>	<b>81</b>	<b>63</b>	<b>102</b>	<b>91</b>	<b>337</b>

Source: Lehnert et al. (2015)

According to Lehnert et al. (2015), future research should:

- further examine the relationships between factors such as age, employment, locus of control, religion, ethical climate, organizational climate, and ethical decision-making;
- continue to critically examine Rest's model of ethical decision making and identify more antecedents, moderators, and mediators of the relationships between the four stages of ethical decision-making;
- empirically validate the role of perceived importance of an ethical issue and moral obligation in the ethical decision-making process;

<sup>30</sup> Totals indicate the number of individual findings by independent variable. The number of studies reviewed is 84.

- try to test all four steps of the ethical decision-making model; so far only one study has endeavoured to take upon this task (Nguyen & Biderman, 2008);
- continue to integrate various theories and models from other disciplines;
- continue to pay attention to impact of social desirability bias on subject responses
- pay specific attention to the issue of sample selection and sample size determination.

Lehnert et al. (2015) added one study (Arnold, Bernardi, Neidermeyer, & Schmee, 2007) to Craft's review, mentioning accountants from eight countries (Denmark, England, France, Ireland, Italy, The Netherlands, Spain and Sweden) – Table 1.10.

#### **1.4.1. Ethical decision-making models**

The literature has already offered us indications about characteristic behaviour patterns within organizations (Ferrell et al., 2015). These indications are based on abundant investigation that produced ethical decision models, broadly accepted by practitioners and academics.

Several theoretical models have been proposed, by a number of authors, trying to explain the process by which an ethical decision is accomplished. The “four component model” (Rest, 1986) has been considered as the groundwork for the majority of theoretical models, over the last three decades (Groves, Vance, & Paik, 2008). Cognitive (rational) models have been the ones who gained more visibility and that triggered more research so far. But researchers have already begun to explore non-cognitive (non-rational) perspectives, trying to assess how important they are to the ethical decision-making process.

Within the group of cognitive models, we will make reference to the models of Ferrell & Gresham (1985), Rest (1986), Hunt & Vitell (1986), Treviño (1986) and Jones (1991). This choice was made based on the literature review and we also provide its number of citations in Google Scholar (Table 1.12), to illustrate the importance, acceptance and utilization of these models to date.



**Table 1.12**  
**Ethical decision-making models: Google Scholar citations**

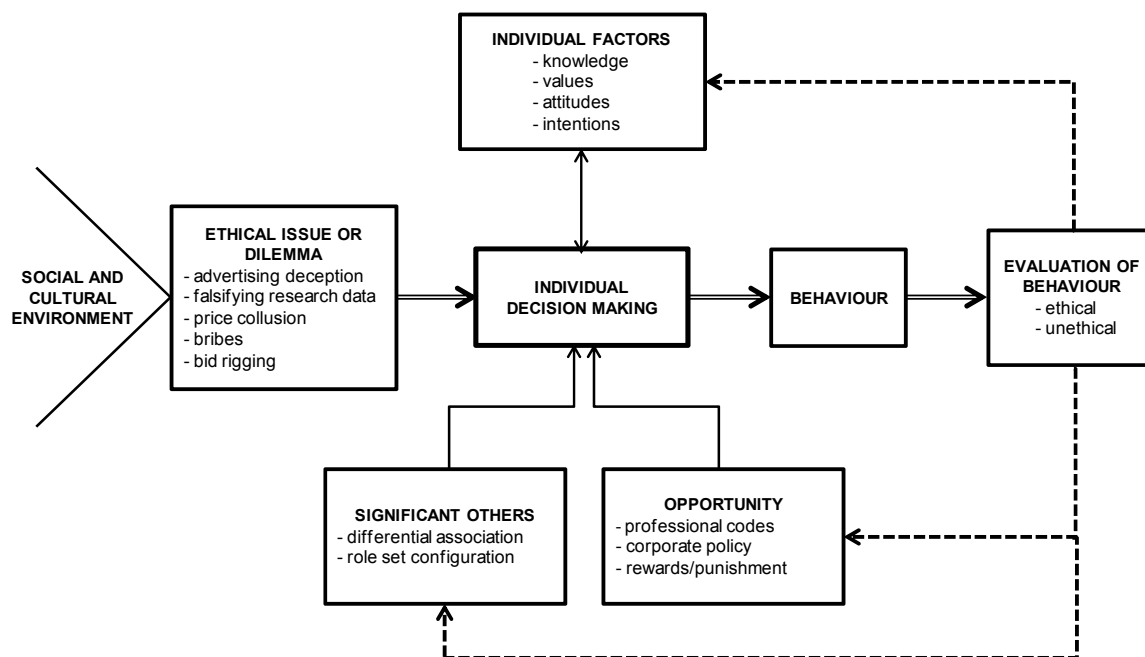
<b>Authors</b>	<b>Title</b>	<b>Google Scholar citations on July 15, 2016</b>
Ferrell & Gresham (1985)	A Contingency Framework for Understanding Ethical Decision Making in Marketing	1 796
Rest (1986)	Moral development: Advances in Research and Theory	3 029
Hunt & Vitell (1986)	A General Theory of Marketing Ethics	2 483
Treviño (1986)	Ethical Decision Making in Organizations: A Person-Situation Interactionist Model	2 911
Jones (1991)	Ethical Decision Making by Individuals in Organizations: An Issue-Contingent Model	3 155
<b>Total:</b>		<b>13 374</b>

Other models<sup>31</sup> with less acceptance and utilization (that we will not analyze) are: Laczniak (1983), Bommer, Gratto, Gravander, & Tuttle (1987), Dubinsky & Loken (1989), Ferrell, Gresham, & Fraedrich (1989), Fritzsche (1991), Strong & Meyer (1992), Harrington (1997), Brass, Butterfield, & Skaggs (1998), Thorne (1998), Malhotra & Miller (1998), Kelley & Elm (2003), McDevitt et al. (2007), and Pimentel, Kuntz, & Elenkov (2010).

#### **1.4.1.1. Ferrell & Gresham (1985) Model**

The authors, drawing on Kohlberg's Cognitive Development Model, wanted to address a gap in the theoretical literature on marketing ethics and intended to integrate the key determinants of ethical/unethical behaviour in what would be considered "the first comprehensive contingency description of how ethical decision making works in organizations" (Ferrell, Crittenden, Ferrell, & Crittenden, 2013, p. 54). Their framework (Figure 1.2) is based on the premise that the behavioural outcome of an ethical dilemma is related to the first order interaction between the nature of the ethical situation and characteristics associated with the individual (cognitive factor) and the organizational environment (significant others, and opportunity).

<sup>31</sup> Virtually all of them are based in an attempt to improve the models mentioned in the previous paragraph.



**Figure 1.2. Ferrell & Gresham (1985, p. 89) Model**

According to Tenbrunsel & Smith-Crowe (2008), they have conceived a:

Contingency model of ethical decision making in which an ethical dilemma engenders ethical decision making, a process influenced by both individual and situational factors ranging from teleological and deontological considerations (e.g., how many people will be harmed and what principles are at stake, respectively) to significant others who influence thinking by setting norms to reward and punishment structures within organizations. The result of this process of decision making is a behavioural outcome or decision which is subsequently evaluated in what Ferrell and Gresham suggested is the “learning component” of the process, an evaluation that in turn influences future ethical decision making. (p. 572)

Meanwhile, several studies have supported the importance of social learning and the influence of significant others in ethical decision-making (e.g. Weaver, Treviño, & Agle, 2005; Hanna, Crittenden, & Crittenden, 2013).

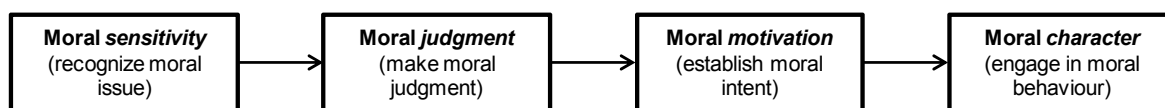
#### 1.4.1.2. Rest (1986) Model

As we mentioned before, Kohlberg studied moral reasoning presenting moral dilemmas; he, then, categorized the subjects' reasoning (used in the responses to the dilemmas) into six different stages. Rest (1986) responded to Kohlberg's work (and criticisms) developing what may well be the most widely used model of moral development: the four-component model.

He began by posing a question: "When a person is behaving morally, what must we suppose has happened psychologically to produce that behaviour?" (Rest, 1986, p. 3); and, after this, he tried to determine what steps produced such behaviour. He hypothesized that, in order for moral behaviour to take place, four major kinds of psychological processes must have occurred (Rest, Narvaez, Bebeau, et al., 1999):

- Component 1: moral *sensitivity* (recognition/awareness) – interpreting the situation, role taking how various actions would affect the parties concerned, imagining cause-effect chains of events, and being aware that there is a moral problem when it exists;
- Component 2: moral *judgment* – judging which action would be most justifiable in a moral sense;
- Component 3: moral *motivation* (intent) – the degree of commitment to taking the moral course of action, valuing moral values over other values, and taking personal responsibility for moral outcomes;
- Component 4: moral *character* – persisting in a moral task, having courage, overcoming fatigue and temptations, and implementing subroutines that serve a moral goal.

Rest's model was, eventually, referred as having four components (Figure 1.3): *awareness*, *judgment*, *intent* and *behaviour*. Rest et al. (1999, p. 102) were clear to assert that "the components do not follow each other in a set of temporal order – as there are complex feed-forward and feed-backward loops, and complex interactions".



**Figure 1.3. Rest (1986) Model**

Rest's model has been considered (Craft, 2013) one of the most prevalent models that has supported ethical decision-making research through the last three decades. It becomes unfeasible to mention here all the studies that have been performed based on this model, but Table 1.12 clearly shows the attractiveness of Rest's model.

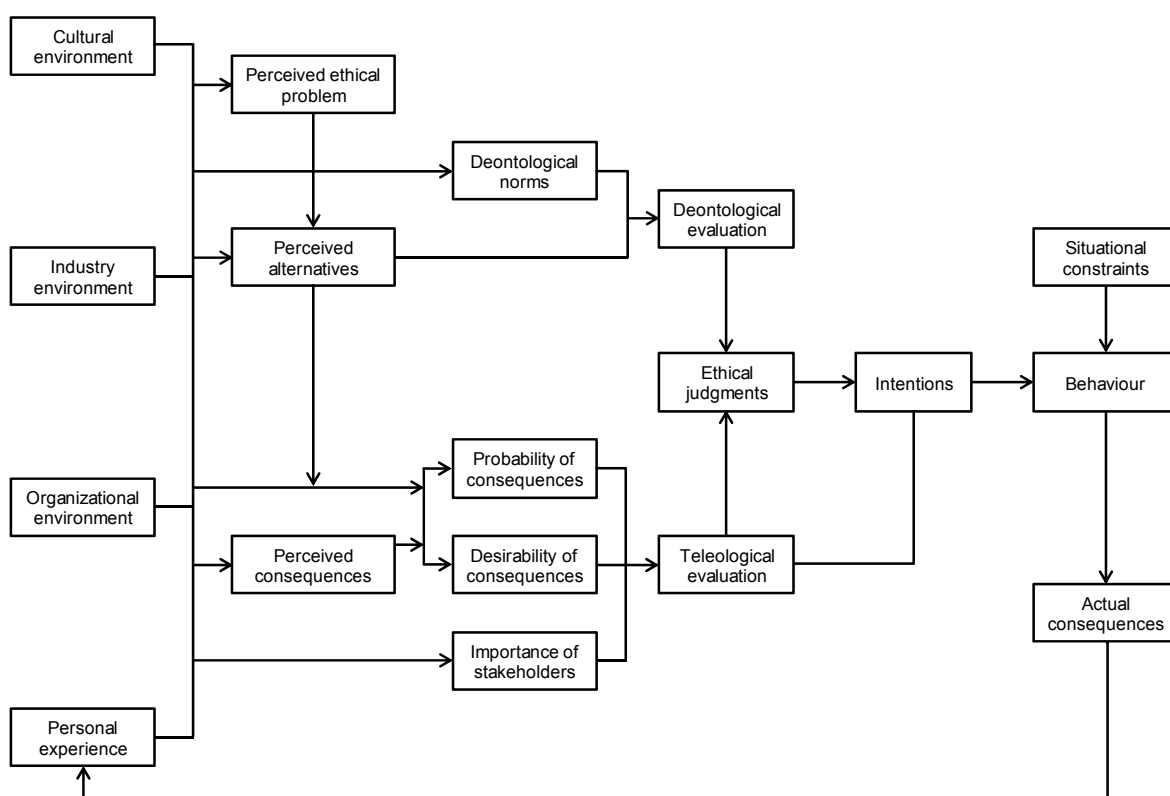
#### 1.4.1.3. Hunt & Vitell (1986) Model

Hunt and Vitell also stressed the importance of moral reasoning and wanted to develop a *general theory of marketing ethics* to guide empirical research and analysis, based on the presumption that "almost all of the theorizing concerning ethics in both moral philosophy and marketing has been normative in nature" and as "individuals actually follow these prescriptions, any positive model of marketing ethics should include them" (Hunt & Vitell, 1986, p. 15).

Their theory explains that an individual must reach an ethical decision, anchored in teleological and deontological considerations; moral judgment will lead to intention, which will lead to behaviour (constrained by situational factors such as opportunity). Hunt and Vitell model (Figure 1.4) "describes teleological evaluations as an examination of the probabilities of consequences, desirability of consequences, and the importance of stakeholders" (Ferrell et al., 2013, p. 54). Later, Hunt (2013) would explain, in detail, how the stakeholder theory was derived and how it developed over time.

We also highlight that Hunt and Vitell model was criticized (Laczniak & Murphy, 1993), because of the prominence given to normative philosophies; however (and surprisingly), according to Schlegelmilch & Öberseder (2010, p. 12) the majority of the top ten cited articles in marketing ethics<sup>32</sup> "are in the empirical positive ethics tradition, although marketing ethics, as part of moral philosophy, is inherently normative".

<sup>32</sup> Based upon a comprehensive review of the literature on marketing ethics over almost 50 years.



**Figure 1.4. Hunt & Vitell (1986, p. 8) Model**

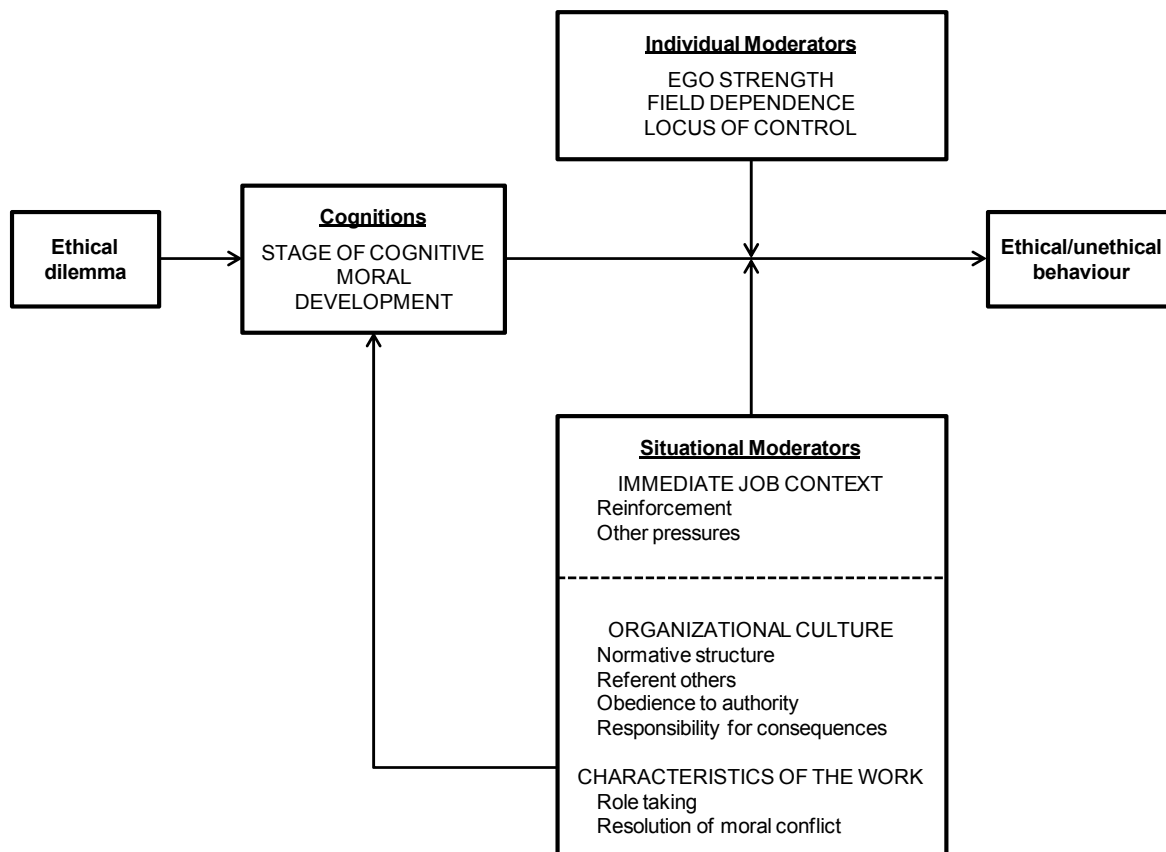
#### 1.4.1.4. Treviño (1986) Model

Ferrell and Gresham (1985) and Hunt and Vitell (1986) models (social and environmental contingency models) were proposed as descriptive marketing ethics frameworks. Influenced by Kohlberg's work, Treviño (1986) conceived a framework that could be applied to organizational ethical decision-making in general.

Her interactionist model (Figure 1.5) proposes that “ethical decision-making in organizations is explained by the interaction of individual and situational components” (Treviño, 1986, p. 602), influenced by one's stage of CMD.

The first component (CMD), inspired on Kohlberg's theory, posits that when facing different ethical dilemmas, people make different decisions because they are in different stages of CMD. The second component (individual moderators) is divided into three factors and the third component (situational moderators) includes factors related to

immediate job context, organizational culture and characteristics of the work. The second and third components are external to the ethical decision-making process that will terminate in behaviour (ethical or unethical).



**Figure 1.5. Treviño (1986, p. 603) Model**

Finally, a quick reference to Ferrell et al. (1989), who conceived what they called a “Synthesis Integrated Model of Ethical Decision Making in Business”, combining features from Ferrell & Gresham (1985) “Contingency Framework”, Hunt & Vitell (1986) “General Theory of Marketing Ethics” and Treviño (1986) “Interactionist Model”, seeking to describe how people make decisions with regard to ethical dilemmas. According to the authors, their synthesis is not a new model, because it integrates components from the models developed by Kohlberg, Ferrell and Gresham, and Hunt and Vitell. By doing this, “a more complete perspective emerges that better describes the ethical decision-making process” (Ferrell et al., 1989, p. 60). Their work has also been continuously cited (611 citations on Google Scholar; July 15, 2016).

#### 1.4.1.5. Jones (1991) Model

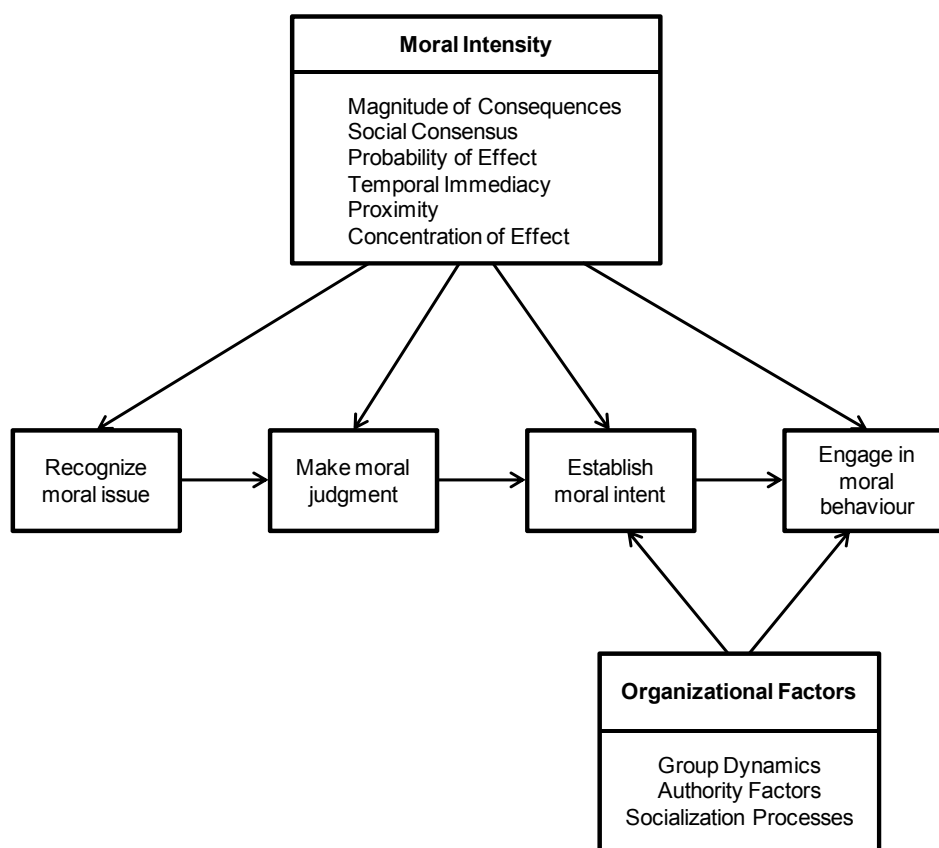
Following this sequence of theories, Jones (1991, p. 367) asserted his purpose: “to introduce concepts not present in prior models and to offer a model that supplements, but does not replace, other models”. To achieve this goal, he first presented a synthesis of ethical decision-making models (Jones, 1991, p. 370) based on the premise that “existing theoretical models have ignored the effect of characteristics of the moral issue itself on ethical decision making and behaviour in organizations” (Jones, 1991, p. 391).

Supported on previous research, he posited that moral awareness leads to moral judgment, which leads to intent, which leads to behaviour (Figure 1.6). Jones’ contribution leaned on the factors assumed to have impact on each stage of this process. He, then, theorizes the introduction of a “moral intensity” factor: “ethical decision making is issue contingent; that is, characteristics of the moral issue itself, collectively called *moral intensity*, are important determinants of ethical decision making and behaviour” (Jones, 1991, p. 371).

Jones emphasizes that “moral intensity focuses on the moral issue, not on the moral agent or the organizational context” (Jones, 1991, p. 373). He identified six dimensions of moral intensity:

- *magnitude of consequences* of the moral issue: defined as the sum of the harms (or benefits) done to victims (or beneficiaries) of the moral act in question;
- *social consensus* of the moral issue: defined as the degree of social agreement that a proposed act is evil (or good);
- *probability of effect* of the moral act in question: is a joint function of the probability that the act in question will actually take place and the act in question will actually cause the harm (benefit) predicted;
- *temporal immediacy* of the moral issue: the length of time between the present and the onset of consequences of the moral act in question (shorter length of time implies greater immediacy);
- *proximity* of the moral issue: the feeling of nearness (social, cultural, psychological, or physical) that the moral agent has for victims (beneficiaries) of the evil (beneficial) act in question;

- *concentration of effect* of the moral act: an inverse function of the number of people affected by an act of given magnitude.



**Figure 1.6. Jones (1991, p. 379) Model**

To conclude, “the issue-contingent model (...) suggests that the moral intensity of the issue itself has a significant effect on moral decision making and behaviour at all stages of the process” (Jones, 1991, p. 391) and empirical evidence has already demonstrated support for this theory (e.g. Treviño et al., 2006; Tenbrunsel & Smith-Crowe, 2008).

In conclusion, all these models attempt to define drivers that lead to ethical/unethical behaviour in organizations. They suggest a number of individual and organizational/situational factors that may influence ethical/unethical behaviour and we, too, want to understand the influence/impact of some of these factors while measuring the moral competence of the Portuguese certified accountants. Further on, supported on the literature review, we will analyse the factors and the reasons that determined our choices.



### **1.4.2. Emotions and ethical decision-making**

Until very recently, a diverse range of philosophers, psychologists, ethics educators and ethics researchers have built upon the assumption that individuals base their ethical decision-making on reason and logic, solving problems through mindful reflection, and trying to achieve rational ethical decisions. However, the scenario is changing because they are beginning to understand how important, and central, emotions are to ethical decision-making (e.g., Eisenberg, 2000; Miner & Petocz, 2003; Tangney, Stuewig, & Mashek, 2007).

Interestingly, in recent years, there has been a stream of interest in the study of the human brain and its neural mechanisms as they relate to decision-making and behaviour, and several reviews have been written to synthesize this growing literature (e.g., Casebeer & Churchland, 2003; Greene & Cohen, 2004; Lee & Chamberlain, 2007).

In fact, emotions are being accepted not only as an important component in the process of ethical decision-making (e.g., Srnka, 2004; Reynolds, 2006; Sonenshein, 2007; Woiceshyn, 2011; Dedeker, 2015; Schwartz, 2015; Zollo, Pellegrini, & Ciappei, 2016) but as an effective driver that often leads to right action.

Salvador & Folger (2009) reviewed theoretical developments in and empirical evidence from cognitive neuroscientific studies of ethical decision-making, exploring what these mean for the field of business ethics. In particular, they state:

Ethical decision-making appears to be distinct from other types of cognitive and decision-making processes. (...) several medical case studies and neuroimaging studies provide evidence that moral cognition, judgment, and behaviour are distinct from other forms of cognitive and decision-making processes in the sense that ethical decision-making not only appears to be independent of intellectual ability, but also entails neural mechanisms that can be distinguished from those associated with other mental processes. In other words, ethical decision making appears to be dissociable from other forms of «thinking». (p. 5)

An interesting issue is how important emotions are to the ethical decision process. Gaudine & Thorne (2001, p. 175) argue that “emotion is not antithetical to a rational ethical decision process and should not be ignored or necessarily avoided”. They show that emotion is vital to a rational ethical decision process. Most importantly, the paper suggests

that “emotion is not to be ignored as it is a trigger that signals the existence of an ethical dilemma. Thus, it is neither possible nor desirable for organizations to eliminate the influence of emotion on ethical decision-making” (Gaudine & Thorne, 2001, p. 183).

So, “emotions are clearly important in ethical decision making, and continuing research will help us more fully understand the process” (Treviño & Nelson, 2014, p. 94).

Another well-known social psychologist that is a leading proponent of the affective approach to ethical decision-making is Jonathan Haidt. He argues that “moral reasoning does not cause moral judgment; rather, moral reasoning is usually a post hoc construction, generated after a judgment has been reached” (Haidt, 2001, p. 814). Haidt called his approach the *social intuitionist model*, presenting itself as an alternative to rationalist models.

This new approach to ethical decision-making has already originated a considerable amount of research (e.g., Connelly, Helton-Fauth, & Mumford, 2004; Krishnakumar & Rymph, 2012; Agarwal & Chaudhary, 2013; Lee & Selart, 2014), pursuing to highlight and motivate reflection about the role of emotion in moral judgment, which is only one of the components of the rationalist models.

On a broader perspective, we mention the work of Damasio (1994), who questioned the distinction between cognitive and emotional feelings, and stated the importance of emotions in the ethical-decision process: “reason may not be as pure as most of us think it is or wish it were, that emotions and feelings may not be intruders in the bastion of reason at all: they may be enmeshed in its networks, for worse and for better” (Damasio, 1994, p. xii), clarifying:

Feelings, along with the emotions they come from, are not a luxury. They serve as internal guides, and they help us communicate to others signals that can also guide them. And feelings are neither intangible nor elusive. Contrary to traditional scientific opinion, feelings are just as cognitive as other precepts. They are the result of a most curious physiological arrangement that has turned the brain into the body's captive audience. (p. xv)

Together with several other researchers (e.g., Messick & Bazerman, 1996; Haidt, 2001; Wheatley & Haidt, 2005), Damasio (1994), “presents a very different picture of ethical

decision making from that offered up several decades ago” (Tenbrunsel & Smith-Crowe, 2008, pp. 575-576).

### **1.4.3. The Dual-Aspect theory of moral judgment competence**

Almost fifty years ago, Jean Piaget and Barbel Inhelder broke new ground proposing that *affect* (i.e., sentiments, emotions) and *cognition* were not casually related:

There is no behaviour pattern, however intellectual, which does not involve affective factors as motives; but, reciprocally, there can be no affective states without the intervention of perceptions or comprehensions which constitute their cognitive structure. (...). The two aspects, affective and cognitive, are at the same time inseparable and irreducible. (Piaget & Inhelder, 1969, p. 158)

But, inseparable does not mean indistinguishable. This insight fostered Jean Piaget’s Affective-Cognitive Parallelism theory that inspired Kohlberg (1984) to develop his CMD model and Georg Lind to follow with the Dual-Aspect Theory (Lind, 1985a, 1985b, 1985c, 1998, 2008).

Lind (1998) clarifies:

The dual aspect theory states that for a comprehensive description of moral behaviour both affective as well as cognitive properties need to be considered. A full description of a person’s moral behaviour involves a) the moral ideals and principles that informs it and b) the cognitive capacities that a person has when applying these ideals and principles in his or her decision making processes. (p.7)

The dual-aspect theory of moral behaviour and development has already been supported by several researchers (e.g., Prehn, 2013; Schillinger-Agati, 2013), and led Lind to create a new method for measuring this construct, the Moral Judgment Test (MJT), renamed Moral Competence Test, in 2013<sup>33</sup>.

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<sup>33</sup> Georg Lind changed the name of the test to be aligned to the construct it measures, namely moral competence (C-score). Competence is a persisting human trait while judgment is an ephemeral phenomenon. He also speaks now of “moral competence” rather than “moral judgment competence” to indicate that this competence can be observed only when it shows itself in overt action. From now on, we will address to it as Moral Competence Test (MCT).

According to Lind (2008):

The dual-aspect theory incorporates many postulates from cognitive developmental theory by Piaget and Kohlberg, but makes also some clarifications and modifications to make the theory more coherent and consistent with empirical data. The main postulates that are relevant for measuring moral judgment competence are:

1. *Inseparability*: Affective and cognitive mechanisms are inseparable, although distinct;
2. *Moral task*: To measure moral judgment competence, the instrument must contain a moral task, which requires this competence for its solution;
3. *Nonfakeability*: To be a reliable measure of moral judgment competence, individuals should not be able to fake their competence scores upward;
4. *Sensitivity to change*: Although the competence score should not be upward fakeable, it should be sensitive to real changes over a wide range of the scale, either to upward changes, as a function of moral learning and intervention, or to downward changes, as a function of competence erosion;
5. *Internal moral principles*: The score for moral-judgment competence should take the individual's own moral principles into account and not impose on him or her external moral expectations;
6. *Quasi-simplex*: If the test dilemmas demand principled moral judgment, the acceptability ratings of each stage should support the notion of an ordered sequence, that is, the correlations among the stage ratings should form a quasi-simplex structure;
7. *Parallelism*: Although, the affective and the cognitive aspects of moral judgment behaviour are distinct and independently scored, the two aspects should be parallel, that is, they should correlate highly with each other;
8. *Equivalence of pro and con-arguments*: To be able to measure participants' moral competencies irrespective of their particular stance on the dilemmas presented, they must be confronted with pro and contra-arguments that are equivalent for both stances. (pp. 193-195).

#### 1.4.4. The Moral Competence Test (MCT)

As we have mentioned before, the quest to answer the question “why people act ethically or unethically?” has led philosophers, psychologists, ethics educators and researchers to focus on the individuals’ moral reasoning abilities. We have also seen theoretical models that try to explain how individuals reason their way through morally supported decisions and behaviour.

Supported on these theoretical foundations, several researchers have developed a set of instruments to aid scholars and practitioners to seek to measure an individual’s moral reasoning process<sup>34</sup>: *Ethical Reasoning Inventory* (Page & Bode, 1980), *Moral Judgment Interview* (Colby & Kohlberg, 1987), *group-administered Moral Judgment Interview* (Gibbs, Widaman, & Colby, 1982), *Adapted Moral Judgment Interview* (Weber, 1991), *Defining Issues Test* (Rest, 1986), *revised scoring for the Defining Issues Test* (Rest, Thoma, Narvaez, & Bebeau, 1997), *Defining Issues Test – Version 2* (DIT2) (Rest, Narvaez, Thoma, & Bebeau, 1999), *Multidimensional Ethics Scale* (Reidenbach & Robin, 1990; Cohen & Sharp, 1993; Robin, Gordon, Jordan, & Reidenbach, 1996), and *Moral Reasoning Inventory* (Weber & McGivern, 2010).

In the early 1970s, Georg Lind did not find an adequate instrument to measure individuals' moral-judgment competence besides assessing their moral attitudes (Lind, 1985c, 1998, 2008), which gave him the opportunity to figure out a way of measuring both aspects simultaneously. For that reason, he developed a new instrument, the *Moral Competence Test*, which:

Should make it possible to assess the ability of people to judge arguments pro and con a controversial moral problem on the basis of their own moral principles, that is, irrespective of their opinion on the particular problem. Besides this, it should provide measures of the participants' attitudes toward the six Kohlbergian stages of moral reasoning” (Lind, 2008, p. 195).

The MCT was constructed to assess subjects’ moral judgment competence as it has been defined by Lawrence Kohlberg: “the capacity to make decisions and judgments which are

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<sup>34</sup> We will not analyse these instruments; instead we will focus all our attention on the MCT. Further, there were other examples of constructs to mention but its poor use does not justify the reference.

moral (i.e., based on internal principles) and to act in accordance with such judgments” (Kohlberg, 1964, p. 425 as cited in Lind, 1998). Lind (1998) reinforced this idea:

If we want to find a moral basis for a just solution of a conflict, we must be able to appreciate arguments not only of people who support our position but also of those who oppose it. Such a competence, it seems, is most crucial for participating in a democratic, pluralistic society. (p. 3)

The MCT confronts individuals with two stories with highly demanding moral principles: the Worker’s dilemma and the Doctor’s dilemma. Each story deals with a person who is trapped in a behavioural dilemma: whatever he or she decides to do, it will conflict with rules of conduct. It is the quality of the decision that is important and not the decision itself. The goodness or badness of the decision depends on the reasons behind it. After presenting the story, the subject is asked to rate the rightness or wrongness of the protagonist’s decision on a scale from “I strongly disagree” (-3) (*Discordo fortemente*) to “I strongly agree” (+3) (*Concordo fortemente*) – Appendix A. After this first task, subjects are asked to judge arguments for their acceptability. These arguments present different levels of moral reasoning (as described by Kohlberg’s six stages of reasoning), six supporting the decision that the protagonist in the story made, and six arguing against his or her decision. So for each dilemma, the respondent is to judge twelve arguments (Lind, 1998).

In this phase, subjects must rate arguments in favour (pro) and against (con) this decision on a scale from “I strongly reject” (-4) (*Rejeito completamente*) to “I strongly accept” (+4) (*Aceito completamente*).

The two sets of arguments (pro and con) are matched to represent the same qualities or levels of moral reasoning though with opposing implications. What we want to find out with this arrangement is: Do participants base their ratings on the different moral qualities of the arguments, and thus demonstrate some moral-judgment competence, or do they base their judgment rather on the fact whether the arguments speak in favour of or against their own opinions? (Lind, 2008, p. 196)

The MCT should be administered without a time restriction and can be used with children as young as ten years of age. However, Georg Lind has developed a simplified version for children from 8 to 10 years.

The stories and the arguments cannot be changed or the new version would have to be submitted to a validation study again (Lind, 2008). With the MCT:

*Moral-judgment competence is operationally defined as the ability of a subject to accept or reject arguments on a particular moral issue consistently in regard to their moral quality even though they oppose the subject's stance on that issue. (Lind, 2008, p. 200)*

The MCT produces two sets of scores, one for its cognitive aspect and one for its affective aspect. The most important cognitive score is the C-score, which indexes the subjects' moral competence and “reflects the degree to which an individual accepts or rejects arguments in a discussion on a moral issue with regard to their moral quality rather than with regard to their agreement with the individual's opinion (or other nonmoral properties)” (Lind, 2008, p. 200). Each dilemma produces an individual score (C\_W: Workers' dilemma; C\_D: Doctors' dilemma) and the combined score (C\_W\_D) will give us the C\_score that measures moral competence – the (original) MCT.

The MCT C-score can range from 0 to 100 but normally ranges somewhere between 0 and 40. The C\_score is sometimes categorized as very low (1-9), low (10-19), medium (20-29), high (30-39), very high (40-49) and extraordinary high (above 50). If the C-score is calculated only for each dilemma separately (C\_W; C\_D), it will be higher because variance due to dilemma context is omitted (Lind, 2008). Furthermore, we should not interpret the C-score of an individual because it is often determined by many, unknown factors and thus does not always give reliable information on an individual's moral competence. In order to get reliable, stable information, C-scores should be averaged on the basis of the scores of at least ten individuals.

The MCT has been theoretically and empirically validated, and Lind gives his best effort to sustain the prevalence of this instrument, on opposition to others (e.g., Lind, 1998, 2000, 2005, 2008, 2009, 2011, 2011b, 2013; Bataglia, Morais, & Lepre, 2010; Bataglia & Schillinger-Agati, 2013; Feitosa, Rego, Bataglia, Guilhermina Rego, & Nunes, 2013; Lind & Nowak, 2015).

According to Lind (2008, pp. 203-204):

To be called valid, the MCT had to meet five empirical criteria derived from the cognitive-developmental theory and the dual-aspect theory of moral behaviour:

1. *The preferences for the six Kohlbergian stages of moral reasoning (affective aspect) are ordered in a predictable way:* moral reasoning on high Kohlbergian stages is preferred over reasoning on lower stages (...);
2. The correlations between the stage-preferences form a quasi-simplex structure, that is, the correlation between the preferences of neighbouring stages (like four and five) should be higher than the correlation between more distant stages like four and six (...);
3. *Cognitive and affective aspects are parallel:* The higher a participant's moral Judgment competence is, the more clearly does he or she accept higher stage arguments and reject lower stage arguments (...);
4. *Pro and con arguments are equivalent:* Indeed, the profile of preferences for pro arguments by the pro subjects was almost identical with the preferences of con arguments by con subjects. The same holds true for the preferences of opposing arguments by the two groups;
5. *The MCT is a difficult moral task and, hence, the C-index is an index of moral competencies (rather than of moral attitudes).*

Until this date the MCT has been translated into 39 languages<sup>35</sup>, Portuguese included (Bataglia, 2010), and most have been certified as a cross-culturally valid measure of moral competence demonstrating that the hypothesis of affective-cognitive parallelism could be tested in many different countries and cultures.

Meanwhile, studies conducted in Brazil by Bataglia et al. (2002), and Schillinger-Agati & Lind (2001, 2003), and in Mexico (Mesa, Frishancho, Rangel, Hernandez, & Moreno, 2000) showed that individuals reveal a considerably lower moral judgment competence in the Doctor's dilemma than in the Worker's dilemma. They have called this phenomenon "moral segmentation" (Lind, 2000b). To investigate this phenomenon in Brazil, Bataglia, Quevedo, Schillinger-Agati, & Lind (2003) developed a new dilemma – "Judge Steinberg's dilemma" – which involved similar moral principles but did not raise an issue that was tabooed by Christian churches like the Doctor's dilemma. The dilemma was validated, allowing extending the Moral Competence Test (MCT xt): with this dilemma included, the segmentation phenomenon did not occur.

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<sup>35</sup> Please see: [http://www.uni-konstanz.de/ag-moral/mut/mjt-certification.htm#certified\\_versions](http://www.uni-konstanz.de/ag-moral/mut/mjt-certification.htm#certified_versions)



Finally, in 2009, Kodwani & Schillinger-Agati (2009), in collaboration with the ACCA<sup>36</sup>, tried to develop a new dilemma – “Accountant’s dilemma” – with a content related to accountants’ work life, presenting data from an intervention study conducted with approximately 500 ACCA students from more than ten different countries; however, the dilemma did not fulfil the validation criteria to be considered as an extension of the MCT but the authors suggested that it can be used as an exercise for discussion and reflection about moral and ethical issues with students or professionals (Lind & Schillinger-Agati, 2009).

The MCT (formerly MJT) has been widely used (subject to prior validation), and the literature provides information about its use in different countries and with different samples. We have decided to present some of those results in Table 1.13, where we can observe the individual scores of the different dilemmas (Worker, Doctor, and Judge), when data is available and applicable, together with the combined scores: MCT (C\_W\_D: Worker + Doctor) and the total score for the studies that used the Judge Steinberg’s dilemma (TOTAL: Worker + Doctor + Judge). A special reference to the study conducted with the collaboration of the ACCA that, besides applying the MCT (see Table 1.13), has also applied the Accountants’ dilemma (C\_A) to two samples, and with the following scores: 320 students (June, 2007), C\_A = 29.2; 200 students (September, 2008), C\_A = 27.

The analysis of Table 1.13 allows us to draw the following conclusions:

- Considering all studies, the MCT score ranges from 6.50 to 37.80, confirming Lind’s indication (normally ranging from 0 to 40);
- In all studies where data are available, the Workers’ dilemma ranges higher than the Doctors’ dilemma in all cases except one (Schillinger-Agati & Lind, 2003 – 72 German students of Psychology);
- The Judge Steinberg’s dilemma was scored in six cases, of which, in four, scored higher than the Doctors’ dilemma and close to the Workers’ dilemma score.

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<sup>36</sup> Founded in 1904, the ACCA is the global body for professional accountants, supporting 178 000 members and 455 000 students in 181 countries, helping them to develop successful careers in accounting and business. For more detail, please see: <http://www.accaglobal.com/gb/en.html>

**Table 1.13**  
**Studies using MCT and the Judge Steinberg’s dilemma**

Authors	Country	Sample	Worker	Doctor	Judge	MCT	TOTAL
			C_W	C_D	C_J	C_W_D	C_W_D_J
Bataglia et al. (2002)	Brazil	54 individuals without commitment to religion	40.30	16.54	(b)	<b>15.62</b>	(b)
		55 individuals with strong commitment to religion	33.22	12.38	(b)	<b>12.33</b>	(b)
Schillinger-Agati & Lind (2003)	Brazil	618 Students (psychology, business administration and medicine)	40.00	26.70	(b)	<b>18.70</b>	(b)
		233 Students (Psychology)	39.50	29.40	(b)	<b>20.00</b>	(b)
	Germany	72 Students (Psychology)	49.50	55.00	(b)	<b>37.80</b>	(b)
Thielen, Nascimento, Hartmann, & Pollli (2006)	Brazil	10 chauffeurs	27.84	18.41	(b)	<b>8.97</b>	(b)
Oliveira (2008)	Brazil	26 Students (Nursing - 1st period)	42.00	23.00	43.00	(a)	<b>17.60</b>
		22 Students (Nursing - 9th period)	33.80	15.70	25.10	(a)	<b>11.10</b>
Francia (2009)	Spain	115 Students (Economics)	39.39	25.90	(b)	<b>15.19</b>	(b)
Lind (2009)	Germany	3102 Students (Psychology and Education)	(a)	(a)	(b)	<b>31.00</b>	(b)
Rondon (2009)		115 Students (Theology)	30.93	21.13	30.86	(a)	<b>14.61</b>
Lupu & Lind (2009)	Romania	477 Students (University level - 1st year)	(a)	(a)	(b)	<b>17.17</b>	(b)
		477 Students (University level - 4th year)	(a)	(a)	(b)	<b>17.66</b>	(b)
Lind & Schillinger-Agati (2009)	Several	320 ACCA Students	29.90	27.70	(b)	<b>16.80</b>	(b)
Bernardo (2011)	Brazil	27 Technicians that help adolescents in conflict with the law	37.80	23.00	37.70	n.a.	<b>15.20</b>
Liaquat (2012)	Pakistan	394 Students (Bachelor level)	(a)	(a)	(b)	<b>11.80</b>	(b)
Bereta & Batagli (2013)	Brazil	28 Traffic Psychologists	31.51	26.73	28.67	<b>15.27</b>	<b>11.43</b>
Lepre et al. (2013)	Brazil	223 Students (Pedagogy - Public school)	(a)	(a)	(b)	<b>9.05</b>	(b)
		317 Students (Pedagogy - Private school)	(a)	(a)	(b)	<b>6.50</b>	(b)
Feitosa, Rego, Bataglia, Guilhermina Rego, et al. (2013)	Brazil	58 Students (Medicine - 1st Semester)	44.00	33.80	(b)	<b>26.20</b>	(b)
		55 Students (Medicine - 8th Semester)	42.40	28.00	(b)	<b>20.50</b>	(b)
Feitosa, Rego, Bataglia, Sancho, et al. (2013)	Brazil	56 Students (Medicine - 1st Semester)	50.47	28.64	(b)	<b>25.49</b>	(b)
		59 Students (Medicine - 8th Semester)	33.02	20.63	(b)	<b>15.03</b>	(b)
	Portugal	144 Students (Medicine - 1st Semester)	46.83	41.99	(b)	<b>31.31</b>	(b)
		165 Students (Medicine - 8th Semester)	50.81	35.54	(b)	<b>28.32</b>	(b)
Garcia et al. (2014)	Mexico	63 Students (Medicine)	(a)	(a)	(b)	<b>10.30</b>	(b)
		93 Students (Medicine)	(a)	(a)	(b)	<b>11.90</b>	(b)
Landim, Silva, Feitosa, & Nuto (2015)	Brazil	280 Students (Odontology)	38.30	23.80	(b)	<b>18.30</b>	(b)
Silva & Bataglia (2015)	Brazil	28 Traffic Psychologists	38.40	31.50	25.00	<b>18.40</b>	<b>14.10</b>
Biggs & Colesante (2015)	USA	772 Students (undergraduate)	(a)	(a)	(b)	<b>16.90</b>	(b)
		19 Seminararians (Experimental group)	36.32	26.87	41.8	<b>18.80</b>	<b>20.28</b>
Moraes (2016)	Brazil	32 Students (Philosophy)	33.8	14.5	29.1	<b>12.60</b>	<b>10.1</b>
		28 Students (Theology)	37.22	11.36	28.22	<b>10.45</b>	<b>9.34</b>

(a) Not available

(b) Not applicable

In our study, we have decided to use the (original) Moral Competence Test (and the Accountants’ dilemma), applying it to a sample of Portuguese Certified Accountants, in two different scenarios: in presence (face-to-face) and through an online platform.

To this purpose, we asked Professor Georg’s permission to use its instrument and the permission was granted but with some reservations. One was: “If you use the MCT for a dissertation study and your reviewer requires documenting the MCT, you may not include it into your dissertation (which you will publish) but provide it as an attachment for your reviewer only”. Therefore, we could not include show it in the thesis final version.

### 1.4.5. Organizational factors

Organizational/situational factors have received considerable attention (Table 1.4), although the amount of studies is (in accordance with literature reviews) decreasing.

According to Ford & Richardson (1994, p. 212), “this category includes a variety of situational forces that are conceptually distinct from the individual factors. These forces then represent the situational pressures which come to bear on the individual to encourage or discourage ethical decision making”. The literature reviews clearly displays some of the most studied factors, which can be seen, listed in Table 1.14 (descending order), and that were not the object of our study.

**Table 1.14**  
**Organizational factors incidence (1978-2015)**

Factor	Findings				Totals
	A	B	C	D	
Codes of conduct	9	17	5	26	57
Referent groups - Rewards and sanctions	4	15	17	16	52
Ethical culture			10	27	37
Culture and climate		18	5	12	35
Organization size	3		4	10	17
Significant others		11		3	14
Industry type	3			10	13
Business competitiveness	5		4	4	13
Organization effects	5		1	5	11
Subjective norms			5	5	10
New				9	9
Organization level	6		1		7
Training			2	4	6
Referent groups - Peer group influence	5				5
Opportunity		3		2	5
External environment				5	5
Referent groups - Top management influence	4				4
Policies/procedures			4		4
Professional relationships			1	2	3
Type of ethical conflict	2				2
Teams			1		1
Intent				1	1

**A:** Ford & Richardson (1994); **B:** Loe, Ferrell, & Mansfield (2000); **C:** O’Fallon & Butterfield (2005); **D:** Craft (2013) + Lehnert, Park, & Singh (2015)

### 1.4.6. Hypotheses development

Individual factors have received, by far, the most research attention in the empirical literature (Table 1.4). This category includes factors that are “uniquely associated with the individual decision maker (...) representing the sum total of the life experiences and circumstances of birth that a particular individual brings to the decision making process” (Ford & Richardson, 1994, p. 206). The literature reviews perceptibly demonstrates some of the most studied variables, which can be found, listed in Table 1.15 (descending order).

**Table 1.15**  
**Individual factors incidence (1978-2015)**

Factor	Findings				Totals
	A	B	C	D	
Gender/Sex	13	26	49	38	126
Education, employment, job satisfactions, work experience	23	18	41	27	109
Philosophy/value orientation		21	42	44	107
Nationality	5	10	25	35	75
CMD/Ethical judgment		6	23	30	59
Age	8	15	21	14	58
Personality/Beliefs/Values	7			43	50
New factors				40	40
Awareness		15	7	6	28
Religion	3	3	10	10	26
Locus of control		4	11	8	23
Situation				22	22
Significant others			9	7	16
Machiavellianism			10	3	13
Peers/management				11	11
Personal values				11	11
Other individual effects			10		10
Intent		4	1	3	8
Organizational commitment			4	4	8
Emotions/mood				7	7
Behaviour				6	6
Decision style				6	6
Conflict			2	2	4
Need for cognition			2	2	4
Professional affiliation			1	3	4
Biases			2	1	3

**A:** Ford & Richardson (1994); **B:** Loe, Ferrell, & Mansfield (2000); **C:** O’Fallon & Butterfield (2005); **D:** Craft (2013) + Lehnert, Park, & Singh (2015)

Following this list we have decided to study the relation of some individual factors with the moral competence of the Portuguese Certified Accountants. We have chosen individual factors widely studied and introduced other that had been poorly researched so far.

Hence, our choice fell on the following factors: gender, age, level of education, marital status, children (with or without), years of experience, annual income and religion (faith). Considering the Portuguese Certified Accountants context, we also wanted to get extra information about: profession practicing location (district), profession exercise mode and responsibility status.

#### **1.4.6.1. Gender**

Gender is the most heavily researched area of study and it has not yet been possible to draw a definite trend.

Supported on the literature review, we conclude that gender often tends to produce no significant results (e.g., Browning & Zabriskie, 1983; McNichols & Zimmerer, 1985; Singhapakdi & Vitell, 1990; Callan, 1992; Wimalasiri, Pavri, & Jalil, 1996; Shafer, Morris, & Morris, 2001; Abdolmohammadi, Read, & Scarbrough, 2003; Fleischman & Valentine, 2003; Hartikainen & Torstila, 2004; Forte, 2004; Marques & Azevedo-Pereira, 2009; Torre & Proença, 2011; Ballantine & Mccourt, 2011; Costa et al., 2016), but when differences are found, there's a stronger tendency for women to be more ethical than men (e.g., Beltramini, Peterson, & Kozmetsky, 1984; Kidwell, Stevens, & Bethke, 1987; Ferrell & Skinner, 1988; Akaah, 1989; Ruegger & King, 1992; Tyson, 1992; Ameen, Guffey, & McMillan, 1996; Cole & Smith, 1996; Eynon et al., 1997; Weeks, Moore, Mckinney, & Longenecker, 1999; Singhapakdi, Karande, Rao, & Vitell, 2001; Cohen et al., 2001; Herington & Weaven, 2008; Eweje & Brunton, 2010; Sweeney, Arnold, & Pierce, 2010).

Within the referenced literature reviews, Ford & Richardson (1994) reported seven studies revealing that females are likely to act more ethically than males and another seven studies found that gender had no impact on ethical beliefs. Later, Loe et al. (2000) noted that, of the twenty-six studies considered, nine reported no significant gender differences and twelve disclosed that females tend to be more ethically sensitive than males. O'Fallon &

Butterfield (2005) reported 49 studies in this category, with twenty-three studies not finding significant gender differences; females were found to be more ethical than males in sixteen studies. In Craft (2013), twelve studies showed that females are more ethical than males but the majority of the studies did not find significant gender differences. Finally, Lehnert et al. (2015), reported that nineteen studies confirm that females are more ethical than males, while five studies report the opposite (males are more ethical).

But are women really more ethical than men? While some studies affirm that men and women are ethically equivalent (e.g. Sikula & Costa, 1994; Loo, 2003), other studies (Hoffman, 1998) say that the way in which men and women respond to an ethical problem, relative to each other, is contingent on the situational dynamics that are associated with the problem. It has also been argued that women score as high or higher on moral development tests than do men (White Jr., 1999). On another perspective, studies (e.g. Lewicki & Robinson, 1998; Robinson, Lewicki, & Donahue, 2000), suggest a clear tendency for women to be more averse to questionable bargaining tactics than men and have higher thresholds than men in this subject. But will that mean that men are willing to compromise moral standards to prove their masculinity or social dominance? Are there genetic differences between genders that may confirm this tendency? Kray & Haselhuhn (2012) experiments lead us to conclude that, in American culture, men tend to lower their ethical standards, when their manhood is being challenged, becoming more defensive and aggressive. Meanwhile, in a study conducted for the Pew Research Center<sup>37</sup>, eighty percent of Americans said that women were more compassionate than men (Taylor, Mrin, Cohn, Clark, & Wang, 2008). Does this feature mean that women, for their caring nature, are more prone to ethical judgment or behaviour? It is a fact that we are talking about very complex concepts that may never have a definite resolution.

In Portugal, Ferreira (2013) conducted an exploratory study analyzing statistical data provided by the OCC, and examined the ethical violations of 970 accounting professionals who have committed disciplinary offenses between 2002 and 2011, to conclude that women are significantly more ethical than men. This study led us to question if the same could happen in our case, regarding the fact that we want to administer a questionnaire to a

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<sup>37</sup> For more detail, please see <http://www.pewresearch.org/>

sample of accounting professionals that are in active service (that is, practicing the profession).

Given that the great majority of the study's results show either no difference or that women are more ethical than men (providing mixed results), further testing is necessary, and the following relationship is hypothesised:

H1: Women accountants have higher moral competence than man.

#### **1.4.6.2. Age**

Mixed findings were found in the literature review relating ethical decision-making to age.

Early reviews (Ford & Richardson, 1994; Loe et al., 2000) show that only eight studies found age differences, while six did not. O'Fallon & Butterfield (2005) report twenty-one findings, of which eight found few or no significant age differences, whereas five studies reported a negative relationship to ethical decision-making and six a positive relationship. Craft (2013) report fourteen findings, all showing impact of age on ethical decision-making. Finally, in Lehnert et al. (2015) review, twelve findings were reported; of those, seven studies showed no significant effect of age in ethical decision-making whereas four reported a significant effect (three findings reported that older people tend to behave more ethically than younger people).

As a whole, the bulk of studies report an effect of age on ethical decision-making but we cannot state, without doubt, that the impact is clear. Within the studies that demonstrate a significant relationship between age and ethical decisions, the majority shows that older people tend to behave more ethically than younger people (e.g., Shaub, 1989; Serwinek, 1992; Ruegger & King, 1992; Stevens, Harris, & Williamson, 1993; Karcher, 1996; Hunt & Jennings, 1997; Lund, 2000; Peterson, 2002; Kim & Chun, 2003; Hartikainen & Torstila, 2004; Chan & Leung, 2006; Valentine & Rittenburg, 2007; Krambia-Kapardis & Zopiatis, 2008; Brouthers, Lascu, & Werner, 2008; Elango, Paul, Kundu, & Paudel, 2010; Pereira, 2014), whereas the minority shows that younger people behave more ethically than older people (e.g., Browning & Zabriskie, 1983; Eynon et al., 1997; Kracher, Chatterjee, & Lundquist, 2002; Sankaran & Bui, 2003; Ebrahimi, Petrick, & Young, 2005). Finally, a

number of studies show mixed results or no significant relationship between age and ethical decision-making (e.g., Kidwell, Stevens, & Bethke, 1987; Izraeli, 1998; Tyson, 1992; Kohut & Corriher, 1994; Glover, Bumpus, Logan, & Ciesla, 1997; Larkin, 2000; Shafer et al., 2001; Razzaque & Hwee, 2002; Ross & Robertson, 2003; Forte, 2004; Cagle & Baucus, 2006; Marques & Azevedo-Pereira, 2009; Costa et al., 2016).

In conclusion, are age and ethics related? While Sikula & Costa (1994a) have concluded, with surprise, that younger students were more ethical than older students, Ferreira (2013) concluded alike, in a study that analysed statistical data related to Portuguese Certified Accountants. This last study, led us to consider that we could face the same conclusion, regarding that our population is the same.

Given these findings, further testing is necessary, and the following relationship is hypothesised:

H2: Younger accountants have higher moral competence than older accountants.

#### **1.4.6.3. Education (level of)**

As already said, the accountant's competency has two dimensions: technical proficiency and ethical sensibility. The IAESB *Framework for International Education Standards for Professional Accountants and Aspiring Professional Accountants* (IFAC, 2015a, p. 9), states that "Professional competence goes beyond knowledge of principles, standards, concepts, facts, and procedures; it is the integration and application of (a) technical competence, (b) professional skills, and (c) professional values, ethics, and attitudes" and identifies the key qualifications to be acquired by an accountant: general education (typically conducted in academic environments), professional level education (through a professional recognized accounting body) and practical experience (workplace activities relevant to develop professional competence). In Portugal, the OCC requires the same and accounting students must take an ethics course in their general education stage.

Thus, we believe that the education level, as an individual factor, must be considered in developing and enhancing ethical decision-making for accountants.



This category has also been heavily researched and the findings are, as well, mixed.

Ford & Richardson (1994) identified six studies pertaining “years of education” and concluded that, in four, the influence in ethical decision-making was almost nonexistent or not significant (e.g., Kidwell et al., 1987; Serwinek, 1992). However, Browning & Zabriskie (1983) found that managers with more education tended to be more ethical than less educated managers. Ford & Richardson (1994) also examined eight studies on the subject of “type of education” and five of them reported little or no significant findings (e.g., McNichols & Zimmerer, 1985), while the remaining three produced mixed results: for example, Beltramini et al. (1984) reported that business majors were more concerned with ethical issues than other majors.

Loe et al. (2000) findings reported that education had negligible or no influence on ethical decision-making (e.g., Dubinsky & Ingram, 1984).

O’Fallon & Butterfield (2005) review indicates that education has little or no effect on the ethical decision-making process (e.g., Lund, 2000; Wu, 2003): six studies examined differences between student majors on the ethical decision-making process; of these, five found no significant differences (e.g., Green & Weber, 1997) but Sankaran & Bui (2003) found that non-business majors were more ethical than business majors. Also, some studies report positive influences of education on ethical decision-making (e.g., Eynon et al., 1997; Weeks et al., 1999; Razzaque & Hwee, 2002; Kracher et al., 2002) while others report negative influences (e.g., Vitell, Lumpkin, & Rawwas, 1991; Tse & Au, 1997).

Thus, education not only referred to the amount of education of managers but also the effect of education on moral decisions.

Craft (2013) reported several studies on education (amount of education and the effect of education on moral decisions). Findings indicate no significant relationship between education level, moral reasoning ability, or ethical standards (e.g., Forte, 2004; Marques & Azevedo-Pereira, 2009). Awasthi (2008) reported that students who took an ethics course were more inclined to judge a decision as managerially bad when compared to others but Cagle & Baucus (2006) stated that studying ethics scandals positively impacted student perceptions of the ethics of business people; Sweeney & Costello (2009) also found that

accounting students were able to identify an ethical dilemma better than non-accounting students. Ultimately, Pierce & Sweeney (2010) showed evidence of a significant association between level of education and perceived ethical culture.

Finally, Lehnert et al. (2015) reviewed sixteen studies in this category and, overall, the impact of education on the ethical decision-making process was not supported. A significant relationship between education and ethical decision making was reported in five studies (e.g., Cagle & Baucus, 2006). Lehnert et al. (2015, p. 202) also state that “Grade point average, major, and student type were not found to be significantly related to ethical decision-making”.

In Portugal, Carreira & Gonçalves (2008) evaluated individuals’ attitudes towards ethics before and after ethical training to conclude with the notion that behavioural change does occur with ethics instruction but no conclusion was drawn regarding the level of education. Ferreira (2013) found no significant relation between the educational level and the penalties (sanctions) applied to the Portuguese Certified Accountants. The same happened with Costa et al. (2016): the attendance of a course on ethics did not prove to be influential in decision-making by students with attitudes towards ethically questionable scenarios. However, the question remains, regarding Portugal: is the educational level related to Portuguese Certified Accountants judgment or behaviour?

Given these findings, further testing is necessary, and the following relationship is hypothesised:

H3: The moral competence of accountants is related to the level of education.

#### **1.4.6.4. Years of experience**

Overall, the impact of this category (together with work experience and employment) has not been significant in the ethical decision-making literature from 1978 to 2015.

Ford & Richardson (1994) identified four studies, of which, two revealed no significant findings (Dubinsky & Ingram, 1984; Serwinek, 1992); on the other hand, Callan (1992) found that the length of service was not related to ethical values, and Kidwell et al. (1987) reported that those with more years employed tended to exhibit more ethical responses. In

addition, Shaub (1989) was unable to find any significant difference between experience levels with his measure of ethical sensitivity.

Loe et al. (2000) findings also report a not significant relation between experience and ethical decision-making (Kohut & Corriher, 1994); however, Henthorne, Robin, & Reidenbach (1992) reported a substantial variance between the responses from retail managers versus retail salespeople.

O'Fallon & Butterfield (2005) review indicates that experience did not significantly influence (or marginally influenced) ethical decision-making (e.g., Karcher, 1996; Roozen, De Pelsmacker, & Bostyn, 2001; Wu, 2003). Other studies reported positive influences (e.g., Weeks et al., 1999; Larkin, 2000; McCullough & Faight, 2005) while others report negative influences (e.g., Chavez, Wiggins, & Yolas, 2001). Sparks & Hunt (1998) noted that practitioners are more ethically sensitive than students, and Cohen et al. (2001) reported that accountants are more ethical than students.

Craft (2013, p. 238) reports that “type of employment or level of employment and its impact on ethical decision-making appeared repeatedly in the findings, particularly in the audit and accounting journals”: Pflugrath et al. (2007) revealed that, in the auditing profession, the quality of auditor judgments was explained by the level of experience but differences in ethical intention between auditors and non-auditors were not significant (Pierce & Sweeney, 2010). In general, committed professionals were more likely to make ethical decisions (e.g., Zgheib, 2005; Jr., Norman, & Wier, 2008), more experienced students appeared to be more ethically oriented (Eweje & Brunton, 2010), and ethical judgment was associated with increased experience (Valentine & Rittenburg, 2007).

Finally, Lehnert et al. (2015) reviewed five studies related to work experience and four studies related to employment: three of the four studies reported a positive and significant relationship between employment level and ethical decision making (e.g., Arnold et al., 2007), while the remaining study failed to support a significant relationship (Forte, 2004).

Given these mixed findings, further testing is necessary, and the following relationship is hypothesised:

H4: The moral competence of accountants is related to the years of experience.

#### 1.4.6.5. Religion

The relevance of Religion has already been pointed out by philosophers and theologians, as reported by Wimalasiri (2001):

Historically, philosophers and theologians have attempted to link moral principles to religion or to the existence of God. The rationale for this linkage is that moral principles are assumed to be absolute and eternal and to gain this status they must rest on the nature of God, which is also absolute and eternal. (p. 621)

Conroy & Emerson (2004, p. 333) offer a reason to explain why people tend to follow religious guidance: “perhaps believers in God are less willing to act unethically because they believe that an omniscient God will “catch” them in the act – or by extension, know their unethical thoughts or attitudes”.

We concur that religion may provide guidance for those who are willing to understand the difference between right and wrong (Ali, Camp, & Gibbs, 2004). Nevertheless, the subject has been researched, specifically in the ethical decision-making literature.

According to Bernardi, Lecca, Murphy, & Sturgis (2011, p. 236), “Religion typically refers to a specific faith such as Roman Catholic, Methodist, Baptist, Lutheran, Muslim, Judaism, etc. On the other hand, religiosity has been defined in several ways”. In fact, Cornwall, Albrecht, Cunningham, & Pitcher (1986) defined Religiosity, listing a set of terms (cognition, affect and behaviour) as a starting point for understanding the components of religiosity. Devonish, Alleyne, Cadogan-McClean, & Greenidge (2009, p. 169) defined religiosity as “a strong belief in moral principles and doctrines; this belief, in turn, can translate into ethical behaviour in everyday life”.

Calkins (2000), on a study that surveyed western business ethics’ recent history, concluded that “religion contains the narratives that shape our collective memory and inspire us to act” and suggests that:

To see itself as just an applied philosophy or social science overly narrows business ethics and that to rectify this problem and at the same time enhance its autonomy and become stronger and more integrated and interesting as an academic discipline, business ethics ought to reclaim unabashedly its religious traditions. (p. 348)

Conroy & Emerson (2004, p. 391) concluded that “the impact of religiosity on ethical attitudes is fairly robust in the literature” and the literature reviews tend to indicate that religion is positively related to ethical decision-making, although “the overall trend shows relationship between religiosity and ethical intentions or attitudes may be very complicated” (Lehnert et al., 2015, p. 203).

Ford & Richardson (1994) identified four studies pertaining “Religion”; of these only McNichols & Zimmerer (1985) reported that strong religious beliefs are associated with negative attitudes toward the acceptability of a certain behaviour.

Loe et al. (2000) did not include any new studies other than those reported in Ford & Richardson (1994).

O’Fallon & Butterfield (2005) review indicates ten findings of which, eight report that religion had a positive relationship to ethical decision-making (e.g., Wimalasiri et al., 1996; Tse & Au, 1997; Singhapakdi, Marta, Rallapalli, & Rao, 2000) while Giacalone & Jurkiewicz (2003) found that spirituality negatively influences an individual’s perception of a questionable business.

Craft (2013) reported ten studies in this category but she reported that the role of religion/spirituality was not consistently captured when exploring its impact on ethical decision-making. However, Kurpis, Beqiri, & Helgeson (2008) reported that, compared to religiosity, commitment to moral self-improvement was a better predictor of the perceived importance of ethics, ethical problem recognition, and ethical behavioural intentions.

Finally, Lehnert et al. (2015) report nine studies of which two (Rawwas, Swaidan, & Al-Khatib, 2006; Oumlil & Balloun, 2009) found religiosity is not an important factor; four studies found a significant and positive effect of religion in ethical decision-making (McCullough & Faught, 2005; Vitell et al., 2009; Ho, 2010; Fernando & Chowdhury, 2010) and the remaining three produced mixed findings (Ibrahim, Howard, & Angelidis, 2008; Kurpis et al., 2008; Bloodgood et al., 2008).

Moreover, a number of studies concerning religiosity suggested that future research should consider broader demographics (Conroy, Emerson, & Pons, 2009), different populations

and cultures (Vitell & Paolillo, 2003), and account for national influences (Parboteeah, Hoegl, & Cullen, 2008).

Portugal is, by tradition, a country where people tend to assume their religiosity. Table 1.16 resumes information retrieved from the *Instituto Nacional de Estatística* (Statistics Portugal) website. For instances: according to the Census 2011, the Portuguese population is mostly Catholic (81%) and only 3.87% professes another religion. As a result, 84.87% of the Portuguese population claims to have a religious preference.

**Table 1.16**  
**Religions in Portugal (Census 2001 and 2011)**

		Portugal <sup>38</sup>			
		Census 2001		Census 2011	
		Population	%	Population	%
	<b>Total</b>	<b>8 699 515</b>	<b>100,00</b>	<b>8 989 849</b>	<b>100,00</b>
	No response	786 822	9,04	744 874	8,29
	Catholic	7 353 548	84,53	7 281 887	81,00
	Orthodox	17 443	0,20	56 550	0,63
	Protestant	48 301	0,56	75 571	0,84
<b>Religion</b>	Other Christian	122 745	1,41	163 338	1,82
	Judaic	1 773	0,02	3 061	0,03
	Muslim	12 014	0,14	20 640	0,23
	Other non Christian	13 882	0,16	28 596	0,32
	Without Religion	342 987	3,94	615 332	6,84

Source: Instituto Nacional de Estatística (Statistics Portugal)

Given these findings, the Portuguese context and the suggestions for further research, the following relationships are hypothesised:

H5: Accountants who classify themselves as a “person of faith” have higher moral competence.

H6: Accountants showing higher strength of religious faith have higher moral competence.

<sup>38</sup> Resident population with fifteen and more years old.

#### **1.4.6.6. Income, Marital status and Children**

These factors have not been heavily researched in the ethical decision-making literature; quite the contrary. For that reason, we will address them in one topic.

Marital status and the existence of children (people having children) have been poorly researched but some studies tried to measure its impact on ethical decision-making.

Regarding these two factors, the literature already told us that:

- marital status and dependent children status proved to be unreliable ethics predictors (Serwinek, 1992);
- relations between marital status and subjective wellbeing are similar across forty-two nations in the world (Diener & Oishi, 2000);
- marital status is strongly correlated with position (staff, senior, manager) but does not correlate with ethical orientation (Douglas, Davidson, & Schwartz, 2001);
- women and men in formal marriages experience higher levels of life satisfaction than do people in other family arrangements; a life-long marriage is the most satisfying; divorce without remarriage, or long lasting cohabitation without formal marriage, reduce the lifetime sum of subjective well-being (Evans & Kelley, 2004);
- marital status is positively associated with higher life satisfaction (Mroczek & Spiro, 2005);
- married people generally possess higher job-satisfaction than their single counterparts (Knerr, 2005);
- there are no significant differences between the attitudes of married students and those who are not married (Baglione, 2008);
- marital status of an individual does not affect his/her level of job satisfaction (Sharma & Jyoti, 2009);
- various spheres of influence (religious principles, family values, educational training, workplace environment and peer interactions) do not affect the perceptions of individual (business ethics undergraduate students) ethical behaviour; additional data is needed to assess the impact of other spheres of influence such as the work

environment, peers, education, and family – marital status or having children (Niles & Barbour, 2014).

Nadler & Kufahl (2014) used an experimental design that manipulated gender, marital status, and sexual orientation in interview simulations and examined participants' (365 working adults) hiring decisions. Building on assumptions as:

typical gender stereotypes indicate that a man is commendable and loyal when he works to support his wife and their children; however, a woman is seen as commendable and loyal when she is willing to leave her career to follow her husband's career or care for their children (Nadler & Kufahl, 2014, p. 270),

and,

when a man is married, he is considered to be socially supported and is seen as having less family or role conflict with work roles, whereas when a woman is married, she is considered to have more social responsibilities, contributing to greater work or family role conflict (Nadler & Kufahl, 2014, p. 271),

they conclude that those assumptions “may contribute to the perceptions that married men are more motivated and more dedicated to work, whereas married women are more motivated and more dedicated to their families” (Nadler & Kufahl, 2014, p. 271). They also assert that “to the degree that a marital status indicates the intention to have children, perceptions of workers may change on the basis of marital status through assumptions of the different roles of motherhood and fatherhood” (Nadler & Kufahl, 2014, p. 271).

Finally, Gorjidoz & Greenman (2014) investigated the relationship between the independent variables of marital status, religiosity, and years of work experience and the dependent variable of ethical decision-making. Their research involved eighty-three members of the Michigan Association of Certified Public Accountants (MACPA), and along with other conclusions, they have reported that there was no statistically significant relationship between marital status and ethical decision-making.



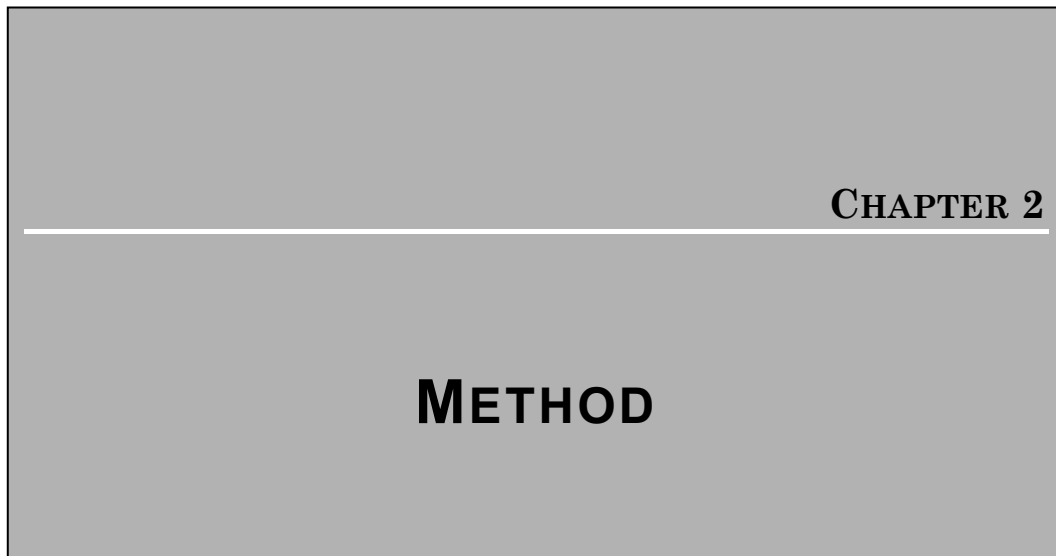
The impact of income on ethical decision-making is, as well, poorly researched. Literature already allowed us to report:

- individuals with greater ethical concern have lower income (Muncy & Vitell, 1992);
- the importance of money is negatively correlated with life satisfaction among college students from forty-one nations (Diener & Oishi, 2000);
- high income is negatively associated with unethical behaviour (Tang & Chiu, 2003);
- as income increases, social relationships and enjoyment at work tend to play an important role toward subjective well-being<sup>39</sup> (Diener & Seligman, 2004);
- income is not significantly related to quality of life (Tang, 2007).

Given these findings, we have decided not to formulate hypotheses but to explore our data, searching for relations between the moral competence of certified accountants, and marital status, children (having), or annual income.

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<sup>39</sup> Subjective well-being (SWB) may involve happiness, life satisfaction, and positive affect (Diener, 1984)



“Truth is the daughter of time, not of authority.”

Francis Bacon (1561-1626)  
(English Lawyer and Philosopher)

“It is easy to dodge our responsibilities, but we cannot dodge the consequences of dodging our responsibilities.”

Josiah Charles Stamp (1880-1941)  
(English Economist and President of the Bank of England)

## 2.1. Sample, pilot study and data collection

In order to collect the data, we used a survey in the form of a questionnaire (e.g., Pardal & Correia, 1995; White, 2000; Colauto & Beuren, 2006; Hill & Hill, 2009; Smith, 2015), addressed to the Portuguese Certified Accountants.

Survey methods are often criticized as being a poor man's experiment (e.g., Young, 1996; Van der Stede, Young, & Chen, 2005) but "the survey method has been one of the most commonly used methods in social sciences to study the characteristics and interrelationships of sociological and psychological variables" (Nazari, Kline, & Herremans, 2006, p. 428). Quivy & Campenhoudt (1998) also emphasize the importance and advantage of using questionnaires.

To fulfil our purposes, we have drafted the first version of the questionnaire, using Georg Lind's Moral Competence Test (Workers' dilemma and Doctors' dilemma). We have also included the new dilemma – Accountants' dilemma – which we have mentioned in the previous chapter and will also address below. After including the three dilemmas, we have included a set of questions intended to characterize the respondents and to provide the data needed to evaluate the influence of certain individual factors on the respondents' moral competence. We gave our best effort to choose the appropriate language, questions and scales, in all questions (Hill & Hill, 2009).

In order to improve the suitability, readability and validity of the questionnaire, we carried out a pre-test, in order to demonstrate if the questionnaire was capable of generating the required responses from the respondents (Royer & Zarlowski, 2001; Ferreira & Sarmiento, 2009; Smith, 2015). The pre-test took place between the 09<sup>th</sup> and the 17<sup>th</sup> February 2016.

The pre-test was performed by ten volunteers: four Certified Accountants (they were a part of the target population), four volunteers that, at the same time, were Certified Accountants and University Teachers in the field of Accounting and two volunteers that were only University Teachers in the field of Accounting (Ferreira & Sarmiento, 2009). The survey was sent by e-mail, together with a form to facilitate the volunteer suggestions. The form asked each volunteer to report on: time spent responding, possible commentaries to each question mentioning any difficulties in interpreting or responding, and suggestions for changes. Considering the answers, the survey undergone several improvements: the

instructions section was diminished and simplified (this reduced the average time for response), some questions were rewritten because of some ambiguity on the words used and the Accountants' dilemma description was also rewritten to become more simple and direct; finally, there were some layout improvements.

This improved version was, nevertheless, submitted to a second pre-test (Ferreira & Sarmiento, 2009) by three University Teachers in the field of Accounting in order to refine the final version. This happened on the 18<sup>th</sup> and 19<sup>th</sup> February 2016. The final version is available on Appendix A (Portuguese version).

Afterwards, we have decided to apply the questionnaire without the presence of the researcher/investigator, to exclude any possibility of intimidation or distortion of the respondents' most honest opinion (Ferreira & Sarmiento, 2009).

According to the OCCs' 2015 Annual Report<sup>40</sup> ("Relatório e Contas 2015"), in December, 31<sup>st</sup> 2015, there were 71 565 Certified Accountants registered in the OCC. Of those, 48.08% (34 410) were men and 51.92% (37 155) were women.

However, our target population is composed of the Portuguese Certified Accountants in active service (practicing the profession), which amount to 31 090 (December 31<sup>st</sup>, 2014<sup>41</sup>). We have decided to administer the questionnaire to those who are, effectively, in active service and not to those who are not, actually, in active service. We reasoned that the ones on active service are the ones that are confronted, in a daily basis, with many ethical problems and that should necessarily be more attentive to these issues.

To reach our objectives, we undertook the empirical study based on data collected from a convenience sample of our target population: Portuguese Certified Accountants in active service.

Because of this, the sample cannot be referred as representative – the subjects were not randomly drawn from a sample frame or from the population – and we may not aspire for external validity, i.e., we cannot generalize our findings to the overall population. This

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<sup>40</sup> Available in <http://www.occ.pt/pt/a-ordem/relatorios-e-orcamentos/>

<sup>41</sup> The OCC could not provide data updated to December 31<sup>st</sup>, 2015

option was due to the impossibility to obtain access to a sample frame or to achieve a stratified sample.

To apply the questionnaire we have requested permission to the OCC to implement the survey in debriefing sessions denominated “Reunião Livre” that are usually held every fortnight, on Wednesdays, around the country. We have considered this a reasonable way to apply the survey, considering that these meetings take place countrywide and the number of attendees is, according to OCC information, usually large. We believed that the number of responses could be potentially high and obtained at a reasonable cost.

Considering that almost all sessions (twenty-three locations) were to take place in the same day (24<sup>th</sup> February 2016), and at the same hour (18.30h to 20.30h), we asked the OCC statistical data that would allow us to choose the places with greater affluence of Certified Accountants. We obtained information that allowed us to elect the following locations (in Portuguese): Lisboa, Porto, Leiria, Braga e Coimbra; to enrich this set, we have also included Aveiro, Bragança, Évora, Faro, Viseu e Angra do Heroísmo (Açores). We were unable to extend the application of the questionnaire to more locations.

Nevertheless, we also decided to place the survey online<sup>42</sup>, and to spread the link through the OCCs’ forum and other forums usually frequented by Certified Accountants, with the express indication that the questionnaire could only be answered by accountants who were practicing. Moreover, we have searched the Internet for valid e-mail addresses from Certified Accountants’ and accounting enterprises throughout the country; we have collected 2 151 valid e-mails addresses to which we sent a request with the link to our questionnaire. We also requested them to spread the link to other Certified Accountants.

The survey was placed online between the 21<sup>st</sup> February 2016 and the 21<sup>st</sup> of March 2016.

Our goal was to increase the number of responses and to allow other Certified Accountants, who could not attend those “Reuniões Livres”, the opportunity to participate in our study. We have considered that the Portuguese Certified Accountants have regular access to computers and to the Internet, regarding that they are forced to comply with many tax obligations using that platform.

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<sup>42</sup> The survey was online on the link: <http://questionarios.ua.pt/index.php/881419/lang-pt>

Following these procedures, we were allowed to measure the internal consistency of the instrument (MCT) using alternate (parallel) forms reliability (Anastasi & Urbina, 2000).

We have collected 573 valid questionnaires answered on paper and 464 valid questionnaires answered online, totalizing 1 037 valid questionnaires (see Tables B.1 and B.2 in Appendix B).

There were a number of questionnaires (187) that had to be considered invalid, due to the following reasons:

- 119 questionnaires were incomplete
- 68 questionnaires had an entire dilemma with the answer “zero” to all twelve arguments or to an entire section (six) of pro or con arguments

These decisions were based on Georg Linds’ direct instructions with the justification that incomplete questionnaires or “zeros” would influence the MCT calculation, distorting its result in an unpredictable way.

Our sample was, therefore, composed of 1 037 individuals. In order to evaluate if this value was acceptable to perform all the validation tests, we have used the Sample Size Table<sup>43</sup>, provided by The Researchers Group. According to their opinion, the recommended sample size for a population of 31 090 individuals (Certified Accountants in active service according to the OCC, on December 31<sup>st</sup>, 2014), with a confidence level of 95% and a degree of accuracy/margin of error of 0.03, is of 1 032 individuals<sup>44</sup>. This sample size also complies with the criteria of Nunnally (1978), Bryman & Cramer (1992), and Pocinho (2012): the first states that a validation sample should have between 300 and 1 000 individuals; the second, that a validation sample should have between three and five individuals per variable (in our case, we have 36 variables; therefore, 180 individuals) and the last, that a validation sample should have ten individuals per variable (in our case, we have 36 variables; therefore, 360 individuals).

Considering these references, we believe that the sample meets the requirements necessary to support a validation study.

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<sup>43</sup> Copyright, 2006, The Research Advisors (<http://research-advisors.com>). All rights reserved.

<sup>44</sup> As a reference for comparison, if N = 35 000, the sample would have to be 1 036.

## 2.2. The questionnaire and the Accountants' dilemma

The final version of the questionnaire (Appendix A) is divided in four parts (not considering the instructions section, in the beginning): (i) Workers' dilemma; (ii) Doctors' dilemma; (iii) Accountants' dilemma; (iv) Identification and characterization of Certified Accountants.

The first two dilemmas had already been validated for the Portuguese Language (Bataglia, 2010) and the pre-test was important to refine only some minor issues.

The Accountants' dilemma required a different attention. As we said earlier, Kodwani & Schillinger-Agati (2009), in collaboration with the ACCA, tried to develop a new dilemma – “Accountant's dilemma” – with a content related to accountants' work life, presenting data from an intervention study conducted with approximately 500 ACCA students from more than ten different countries; however, the dilemma did not fulfil the validation criteria to be considered as an extension of the MCT but the authors suggested that it could be used as an exercise for discussion and reflection about moral and ethical issues with accounting students or professionals (Lind & Schillinger-Agati, 2009).

Building on that, we have requested authorization to the ACCA (on January 7<sup>th</sup> 2016) to try to repeat the study, making improvements and bearing in mind the possibility of certification (that could only be granted through Georg Lind's appreciation and examination). The authorization was conceded in the same day and we were able to proceed.

The certification of the Accountant's dilemma posed itself as a very complex and controversial question because it would require following complex and time consuming stages (Bataglia, 2010). For this reason, we have decided not to try to certificate it in this phase but to validate and use it only as an extra exercise, analyzing its results separately from and together with the other dilemmas. This path was also a result of matured conversations with Patricia Bataglia, Marcia Schillinger-Agati, Devendra Kodwani and Georg Lind.

Hence, we have received (from Devendra Kodwani) the English version of the dilemma and we began the process of translation and back translation to make sure that the

Portuguese version was not distorted from the English version. For this, we have resorted to two native professors in English and that teach English in Portugal: one translated the English version to Portuguese and the other one back translated it to English again (without knowing the original English version). After this, they both analyzed the differences to achieve a final version in Portuguese. On top of this we also obtained an extra translation from English to Portuguese, from a Portuguese English University Teacher in order to confirm their version. Finally, and after minor changes, we have included it on the questionnaire (Appendix A).

In the questionnaire, the questions posed, aim to achieve the following:

1. To assess the C-score for the Workers' dilemma (Section I)
2. To assess the C-score for the Doctors' dilemma (Section II)
3. To assess the C-score for the Accountants' dilemma (Section III)
4. To make a socio-demographic, professional and technical characterization of the respondents (Section IV)

Regarding the three dilemmas, the scales presented were explained in Lind (2008); regarding the other type of questions, the nature of the variables and the scales of attitudes, we have used the following (Porton & Beuren, 2006; Hill & Hill, 2009):

1. Closed dichotomous questions - nominal scale:
  - a. Gender
  - b. Age
  - c. Marital status
  - d. Do you have children?
  - e. Mode of professional exercise (mark every option that characterizes you)
  - f. Are you responsible, before the OCC, for any entity accounts?
  - g. Regardless your religion, do you consider yourself a person of faith?
2. Closed multiple response questions - ordinal scale:
  - a. Academic qualifications (last concluded)



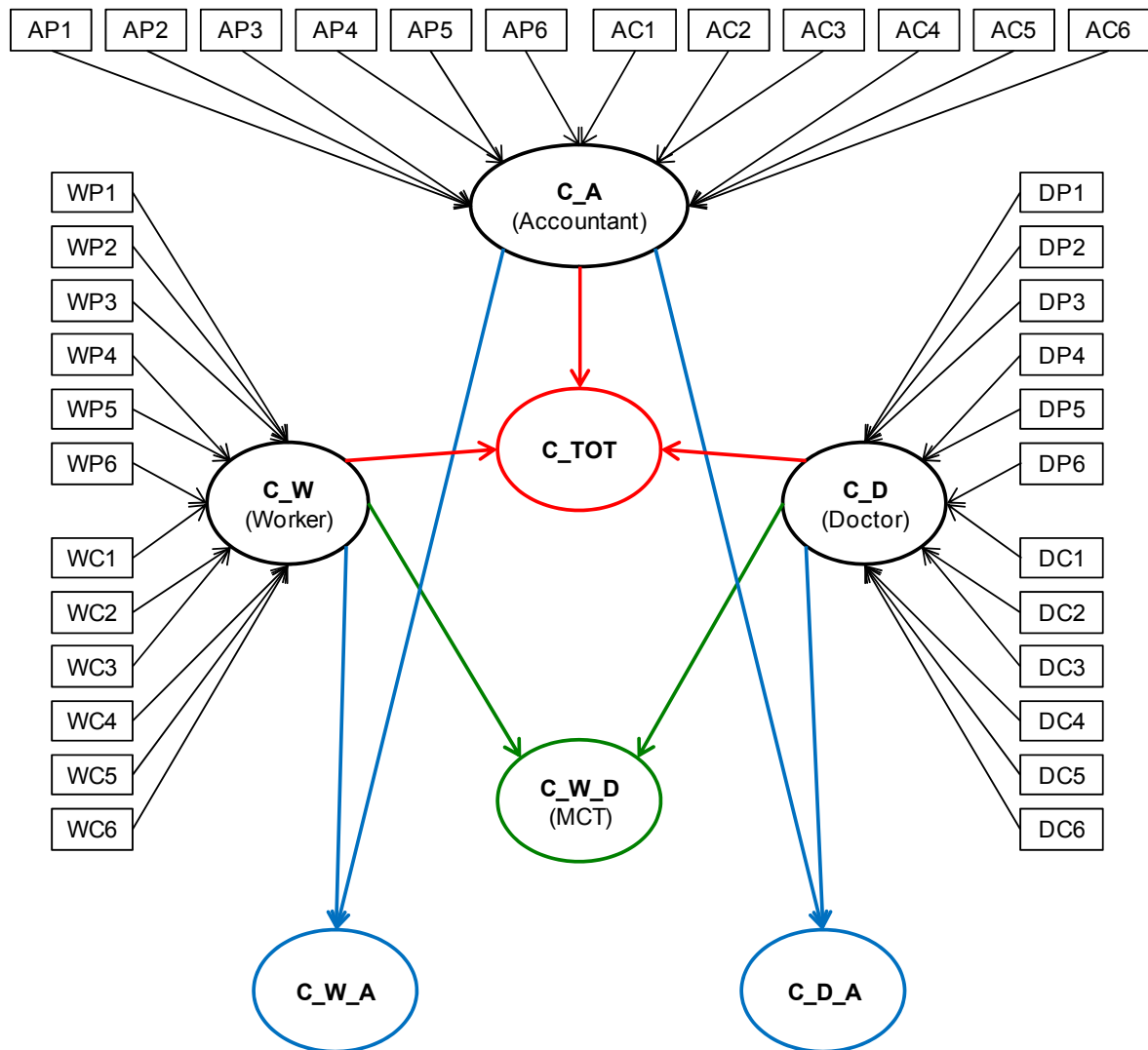
- b. What is your annual income?
3. Open questions:
  - a. Years of experience in the profession, as a recognized practicing professional
  - b. District/Region where you practice your profession
4. Questions with Likert attitude scale:
  - a. If yes and regarding your faith, please answer using the indicated scale

### **2.3. Research variables**

To implement the questionnaire we have resorted, as already stated, to the face-to-face (presence) “Reuniões Livres” and to an online platform. In this section, we present the variables analyzed in our questionnaire.

The moral competence can be analysed studying the individual score of each dilemma (C\_W; C\_D; C\_A) or the combined scores between dilemmas (C\_W\_D; C\_W\_A; C\_D\_A). These will be our dependent variables. The C\_scores are computed according to Lind (1998). The questionnaire (Appendix A) provides information about the other independent variables.

We present, in Figure 2.1, the diagram model used to understand the scoring of moral competence. Variables placed on the model diagram are either observed variables (represented by rectangular boxes) or latent variables (they do not exist in the original data, and are represented by the circular or elliptical shapes).



**Figure 2.1. Diagram model for scoring moral competence**

Legend:

- C\_W** C\_score of the Workers' dilemma
- C\_D** C\_score of the Doctors' dilemma
- C\_A** C\_score of the Accountants' dilemma
- C\_W\_D** Combined C\_score Worker + Doctor (original MCT)
- C\_W\_A** Combined C\_score Worker + Accountant
- C\_D\_A** Combined C\_score Doctor + Accountant
- C\_TOT** Total C\_score combining all three dilemmas

#### 2.4. The Santa Clara Strength of Religious Faith Questionnaire (SCSRFQ)

Regarding Religion, our questionnaire included two questions in this subject. We started by asking “Regardless of your religion, do you consider yourself a person of faith?”. People who said “Yes” were, afterwards, invited to answer a set of ten questions, with the objective of measuring the strength of their faith. For this purpose we used the Santa Clara Strength of Religious Faith Questionnaire, introduced (Plante & Boccaccini, 1997b) and validated (Plante & Boccaccini, 1997a) by the same authors.

According to Plante & Boccaccini (1997a), the SCSRFQ:

Is a 10-item measure designed by Plante in order to measure strength of religious faith. Items on the SCSRFQ were generated from Plante’s clinical contact with religious patients. Items are scored on a 4-point scale and were designed to measure strength of religious faith regardless of denomination. (p. 431)

In its first preliminary validation study (Plante & Boccaccini, 1997b), the SCSRFQ scored a mean of 26.39 (Median = 26) and was found to have high internal reliability (Cronbach’s  $\alpha = .95$ ). In a posterior validation study (Plante & Boccaccini, 1997a), with three samples, the SCSRFQ was found to have high internal reliability (Cronbach’s  $\alpha = .94; .97; .96$ ) and scored a mean of 27.74, 24.89, and 27.73 respectively.

Plante (2010) provides an overview of the scale and current research findings, together with results from different validation studies that have investigated the internal consistency of the scale (Cronbach’s alpha’s ranging from .94 to .97).

In our case, we carried out an internal consistency validation test and the SCSRFQ found high internal reliability (Figure 2.2).

We have also performed this internal consistency validation considering the type of administration – online (Cronbach’s  $\alpha = .91$ ) and face-to-face (Cronbach’s  $\alpha = .93$ ) – and gender – female (Cronbach’s  $\alpha = .92$ ) and male (Cronbach’s  $\alpha = .92$ ).

In order to use a validated version of the scale, we have contacted Professor Thomas Plante and asked permission to use the scale. The permission was granted on January 26<sup>th</sup> 2016,

and Professor Thomas Plante gave us a validated Portuguese version of the scale, available on his website<sup>45</sup>.

Meanwhile, we became aware that Professor Bruno Gonçalves (Associate Professor – Faculty of Psychology, University of Lisbon) was conducting a study in Portugal, using the same scale (also authorized by Professor Thomas Plante). We have got in touch with him and he gave us the version that he had validated for the Portuguese population. We have decided to use this version, with his permission (See Appendix A).

Cronbach's Alpha	N of Items		Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
.918	10	SCSRF1	24.88	26.034	.716	.909
		SCSRF2	25.60	24.940	.621	.917
		SCSRF3	25.15	25.186	.756	.907
		SCSRF4	25.00	25.566	.754	.907
		SCSRF5	25.57	25.726	.654	.913
		SCSRF6	24.96	26.164	.709	.910
		SCSRF7	24.91	25.719	.752	.907
		SCSRF8	25.28	26.171	.661	.912
		SCSRF9	24.97	26.637	.694	.911
		SCSRF10	25.17	25.726	.692	.910

**Figure 2.2. SCSRFQ Cronbach's alpha**

<sup>45</sup> For more information, please see <https://www.scu.edu/cas/psychology/faculty-and-staff/plante.html>





“Good people do not need laws to tell them to act responsibly, while bad people will find a way around the laws.”

Plato (428-347 BC)  
(Greek philosopher; pupil of Socrates; teacher of Aristotle)

“It takes less time to do things right, than to explain why you did it wrong.”

Henry Wadsworth Longfellow (1807-1882)  
(American poet and educator)

### 3.1. Findings – Descriptive statistics

In order to summarize and structure the information contained in the collected data we will make an exploratory data analysis focusing in the univariate, bivariate and multivariate data analysis.

To describe and analyze trends and relationships between the different variables, several analyzes shall be reported (in the text and appendices) using Version 23 of the IBM Statistical Package for the Social Sciences [SPSS] Statistics software.

We emphasize that we do not accuse the existence of non-responses because we have eliminated all incomplete questionnaires; thus, it is not necessary to perform any statistical treatment in that matter.

We present the socio-demographic and the technical and professional characteristics of the sample in Appendix C.

Given the heterogeneity found in the variables “Age” and “Exper” (years of experience in the profession) and to facilitate the analysis, we have decided to group each of these variables in classes. We tried different cut-off points; however, the absence of a common grouping criterion, in the literature, brought extra difficulty. For that reason, we have decided to explore (separately) the correlation between these two variables and the various moral competence scores (see Table C.1 in Appendix C); the results showed very weak correlations between variables and, as a criterion, we chose, as a cut-off point in both variables, the result of “mean  $\pm$  standard deviation” (see Tables C.2 and C.3 in Appendix C). The analysis shown below already incorporates these recoding.

The analysis allows us to conclude, among other things (see tables and figures in Appendix C):

1. In the sample, most respondents (54%) are men (Table C.4). Figure C.1 shows that, in recent years, more women than men have entered the profession;
2. The majority of respondents (83%) have a university degree (Table C.4);
3. Also, the great majority (73%) is married (Table C.4);
4. Most respondents (77%) have children (Table C.4);

5. The majority of our respondents (65%) work in the following regions/districts: Porto, Braga, Aveiro, Lisboa, and Leiria; 33% of the respondents work in the northern region of Portugal, 38% in the centre, 25% in the south region, and 4% work in the autonomous regions of Açores and Madeira (Table C.4);
6. A vast majority of respondents (82%) consider themselves as a person of faith (Table C.4);
7. Of all respondents, 88% assumed the responsibility for the accounts of their clients or companies to which they work for (Table C.5);
8. With regard to the gross annual income, 58% of our respondents have a gross annual income below 19 999€ (Table C.5);
9. Regarding age, our respondents are distributed between 22 and 84 years; 42.5% of them are between 35 and 45 years; 21% are between 53 and 63 years of age; finally, 8.1% are above 65 years of age (Figure C.2); furthermore, the mean age is 47 years (Table C.6);
10. Regarding the profession's mode of exercise, the results were analysed cross tabulating the three options given, considering that one respondent can choose more than one option. For this reason, it is possible to say, among other conclusions, that 31% are exclusively self-employed, 36% are exclusively working for hire and reward and that 20% are exclusively working as partners, or accounting companies' managers (Table C.7);
11. Regarding the years of experience in the profession, our respondents range from 0 to 60; 27% have 10 years or less of professional experience, 38% have between 11 and 20 years of experience, and 19% have between 21 and 30 years of experience (Figure C.3); moreover, the mean years of work experience is 19 years (Table C.6);
12. Regarding the Santa Clara Strength of Religious Faith score – SCSRF\_TT – ranging from 10 to 40 – the mean response is 27.94 (Table C.8).

In this phase, besides calculating scores for the Workers' dilemma (C\_W) and the Doctors' dilemma (C\_D), we have calculated the original MCT score (C\_W\_D). However, we have also calculated the score for the Accountants' dilemma (C\_A) and the combined scores



with this dilemma (C\_W\_A; C\_D\_A), as well as the total score, considering all three dilemmas (C\_TOT).

The calculations (Table 3.1) show that the Workers' dilemma reached the higher mean value (30.26), while the other two dilemmas have scores that are very similar: 23.22 and 24.03 (Doctors' and Accountants' dilemma, respectively). The same happens with the combined scores. Furthermore, we have also analysed our scores behaviour regarding age, education, experience and income (see Figures C.4 to C.7 in Appendix C).

According to Lind (2008), the C\_score is sometimes categorized as very low (1-9), low (10-19), medium (20-29), high (30-39), very high (40-49) and extraordinary high (above 50). Table 3.1 summarizes the classification of our scores.

**Table 3.1**  
**Sample score classification**

	N	Minimum	Maximum	Mean	Std. Deviation	Score classification
C_W	1037	,00	97,20	<b>30,26</b>	21,491	High
C_D	1037	,00	97,80	<b>23,22</b>	20,349	Medium
C_A	1037	,00	100,00	<b>24,03</b>	20,882	Medium
C_W_D	1037	,00	68,70	<b>13,91</b>	11,756	Low
C_W_A	1037	,00	57,60	<b>12,63</b>	9,989	Low
C_D_A	1037	,00	73,00	<b>11,13</b>	10,734	Low
C_TOT	1037	,00	53,60	<b>8,97</b>	7,943	Very low

Regarding the answers to the dilemmas (OP\_W; OP\_D; OP\_A), the respondents opinion is shown in Figures C.8, C.9, and C.10 (Appendix C). Analysing these outputs, we conclude:

- Most respondents (682 – 65.8%) disagreed (-3, -2, -1) with the workers' behaviour, and 10.2% (106) choose not to decide;
- Most respondents (537 – 51.8%) agreed (1, 2, 3) with the doctors' behaviour, and 15.3% (159) choose not to decide;
- Most respondents (589 – 56.8%) disagreed (-3, -2, -1) with the accountants' behaviour, and 14.3% (148) choose not to decide.

We will discuss these values below.

### 3.2. Findings – Bivariate and multivariate analysis

In this section, we will begin with the psychometric adaptation and evaluation of the possibility of MCT validation for the Portuguese population (Certified Accountants). Later, we will address the hypotheses.

#### 3.2.1. Psychometric adaptation and validation of the MCT

Factor analysis (and principal component analysis) is a multivariate statistics and a technique for identifying groups or clusters of variables. According to Field (2009):

This technique has three main uses: (1) to understand the structure of a set of variables (...); (2) to construct a questionnaire to measure an underlying variable (...); and (3) to reduce a data set to a more manageable size while retaining as much of the original information as possible. (p. 628)

Bearing in mind uses (1) and (2), we have to evaluate, previously, if the sample size is appropriate for factorial analysis. Laros (2005) and Field (2009) indicate a set of references on this subject (Table 3.2). Considering all references, we have decided to move forward, convinced that the sample is sufficient to proceed with the factor analysis (principal component analysis).

**Table 3.2**  
**Factor analysis – sample size requirements**

<b>Authors</b>	<b>Sample size criteria</b>
Gorsuch (1983)	At least 5 participants per variable and a total sample of at least 200 subjects
Crocker & Algina (1986)	10 participants per variable, with a minimum of 100 subjects in the total sample
Guadagnoli & Velicer (1988)	Sample size depends of factor loadings: minimum sample size of 50 subjects with factor loadings around 0.80; minimum sample size of 400 subjects with factor loadings around 0.40
Comrey & Lee (1992)	Definition of intervals: sample size of 50 (very low); sample size of 100 (low); sample size of 200 (reasonable); sample size of 500 (very good); sample size of 1 000 (excellent)
Wolins (1995)	There is no minimum sample size to make a factor analysis with a number of variables
Pasquali (1999)	A minimum of 100 subjects by measured factor
MacCallum, Widaman, Zhang & Hong (1999)	Minimum sample size depends on the communalities: above 0.6 (sample size of 100 subjects); in the 0.5 range (sample size of 100 to 200 subjects); below 0.5 (sample size above 500 subjects)

To adapt the original MCT to the Portuguese population (Certified Accountants) and to validate the new dilemma – Accountants’ dilemma – we have pursued the following procedures:

1. Factor analysis (using the principal component analysis – PCA – method), eigenvalues analysis (extracted factor must explain, at least, 50% of the variance), and communalities analysis (equal or above 0.5);
2. Reliability analysis:
  - a. Internal consistency analysis by dilemma and by positioning (pros and cons);
  - b. Internal consistency analysis depending on the type of administration (online or face-to-face – in presence) – parallel form;
  - c. Internal consistency analysis depending on gender.

### **3.2.1.1. Factor analysis (PCA method), eigenvalues and communalities**

One of the suitability criteria for the conduct of the principal component analysis is given by Bartlett's test of sphericity. Bartlett's test of sphericity is based on the variance-covariance matrix and examines whether this matrix is proportional to an identity matrix<sup>46</sup>. Consequently, “Bartlett's test effectively tests whether the diagonal elements of the variance–covariance matrix are equal (i.e. group variances are the same), and that the off-diagonal elements are approximately zero (i.e. the dependent variables are not correlated)” Field (2009, p. 612). Bartlett's test of sphericity should be significant (the value of *Sig.* should be less than .05).

Furthermore, we will also use the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970), that represents the ratio of the squared correlation between variables to the squared partial correlation between variables, varying between 0 (factor analysis is likely to be inappropriate) and 1 (factor analysis should yield distinct and reliable factors). Kaiser (1974) recommends a bare minimum of 0.5, and that values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between

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<sup>46</sup> The identity matrix is one in which the diagonal elements are one and the off-diagonal elements are zero.

0.8 and 0.9 are great and values above 0.9 are superb. KMO can be calculated for multiple and individual variables. The KMO values for individual variables are produced on the diagonal of the anti-image correlation matrix (see Table D.1 in Appendix D): the values should be above the bare minimum of 0.5 for all variables (and preferably higher).

In our case, a PCA was conducted on the 36 items with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .92 ('superb'), and all KMO values for individual items were > .801, which is well above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity  $\chi^2(630) = 23411.060$ ,  $p < .001$ , indicated that correlations between items were sufficiently large for PCA (Table 3.3).

**Table 3.3**  
**KMO and Bartlett's test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
	Approx. Chi-Square	23411.06
Bartlett's Test of Sphericity	df	630
	Sig.	.000

The first part of the factor extraction process is to determine the linear components within the data set (the eigenvectors). An initial analysis was run to obtain eigenvalues for each component in the data. Table D.2 (Appendix D) lists the eigenvalues associated with each linear component (factor) before extraction, after extraction and after rotation. Before extraction, SPSS has identified 36 linear components within the data set (as many eigenvectors as there are variables and so there will be as many factors as variables). Six components had eigenvalues over Kaiser's criterion of 1 and in combination explained 65.36% of the variance.

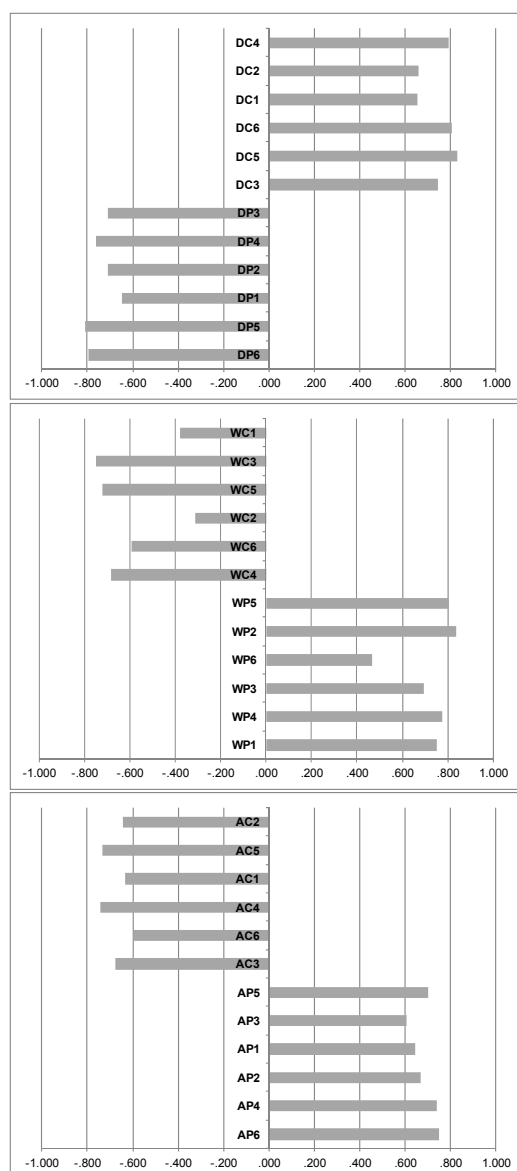
However, the matrix was of difficult interpretation and we have decided to rotate to three factors, making the factor solution more interpretable without changing the mathematical properties of the solution. Rotating the three factors, component 1 explains 19.10% of the variance, component 2 explains 16.08% of the variance, and component 3 explains 16.05% of the variance, totalizing 51.22% of the variance (Table 3.4).

**Table 3.4**  
**PCA: total variance explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.447	26.241	26.241	9.447	26.241	26.241	6.875	19.096	19.096
2	5.017	13.936	40.177	5.017	13.936	40.177	5.787	16.075	35.171
3	3.975	11.042	51.219	3.975	11.042	51.219	5.777	16.048	51.219
4	2.554	7.094	58.313						
5	1.376	3.823	62.135						
6	1.160	3.224	65.359						
7	0.946	2.627	67.986						

Table D.3 (Appendix D) shows the communalities before and after extraction. Principal component analysis works on the initial hypothesis that all variance is common; therefore, before extraction the communalities are all 1. Once factors have been extracted, we can see how much variance is, in reality, common. In our case, eight communalities exceed 0.7 and the average of the communalities is 0.654. According to Field (2009), when the sample size exceeds 250 and the average communality is greater than 0.6, the criterion chosen (three factors) is accurate.

Table D.4 (Appendix D) shows the component matrix after rotation. The analysis of this table allows us to distinguish, clearly, the arguments in favour (pro) and the arguments against (con), in each dilemma and independently of each dilemma (Worker, Doctor, Accountant). Figure 3.1 illustrates this. Considering all factor loadings, we conclude that none of them is below  $|0.3|$  (Bryman & Cramer, 1992).



**Figure 3.1. Factor loadings for each variable onto each factor**

### 3.2.1.2. Reliability analysis

According to Field (2009, p. 673), “reliability means that a measure (...) should consistently reflect the construct that it is measuring”. Field (2009) clarifies:

In statistical terms, the usual way to look at reliability is based on the idea that individual items (or sets of items) should produce results consistent with the overall questionnaire. (...) The simplest way to do this in practice is to use split-half reliability. (...) The problem with this method is that there are several ways in which a set of data can be split into two and so the results could be a product of the way in which the data were split. (p. 674)

To overcome this trouble, Cronbach (1951) suggested a formula “loosely equivalent to splitting data in two in every possible way and computing the correlation coefficient for each split. The average of these values is equivalent to Cronbach’s alpha,  $\alpha$ , which is the most common measure of scale reliability” (Field, 2009, p. 674).

One important aspect of reliability that can be assessed is “internal consistency”. According to Pallant (2007, p. 6), “this is the degree to which the items that make up the scale are all measuring the same underlying attribute”. Internal consistency can be measured using Cronbach's coefficient alpha. Values range from 0 to 1, with higher values indicating greater reliability.

We often see that a value of .7 to .8 is an acceptable value for Cronbach’s  $\alpha$ ; values substantially lower indicate an unreliable scale (Field, 2009). In this subject, Nunnally (1978) recommends a minimum level of .7 for Cronbach’s  $\alpha$  and Kline (2000) indicates .8 as an acceptable value.

We began the analysis of reliability placing all the items in the review panel which resulted in a Cronbach's alpha of .614 for the thirty-six items (see Figure D.1 in Appendix D). With this result we considered that this was due to the fact that we have grouped the arguments (pro and con) of all the dilemmas; for this reason, we carried out a separate analysis by dilemma (twelve items each). The result of this analysis revealed a Cronbach's alpha well below the previous one, which would be unacceptable (see Figures D.2, D.3 and D.4, in Appendix D).

We assumed that these results were due to joining all types of arguments (pro and con), which would negatively influence the consistency. We then analyzed them separately and found that this was the most reliable and more consistent decision. Table 3.5 shows these results.

**Table 3.5**  
**Reliability statistics (Dilemmas' separate arguments)**

	Cronbach's Alpha	N. of Items
WP	0.883	6
WC	0.799	6
DP	0.917	6
DC	0.894	6
AP	0.874	6
AC	0.861	6

In fact, all the dilemmas, separated by arguments, have very good internal consistency (see Figures D.5, D.6 and D.7, in Appendix D).

After this analysis, we carried out an internal consistency analysis depending on the type of administration (online or face to face – in presence) – parallel form – alternate form.

**Table 3.6**  
**Reliability statistics (type of administration)**

Components	Cronbach's Alpha	
	Online	Presencial (face to face)
WP	0.881	0.884
WC	0.785	0.810
DP	0.918	0.917
DC	0.886	0.900
AP	0.864	0.881
AC	0.864	0.859

The results (Table 3.6) show that regardless of the type of administration, the internal consistency remains alike (see Figures D.8, D.9 and D.10, in Appendix D).

### 3.2.2. Research hypotheses testing

Once validated the instrument and in the light of the coefficients obtained, it became necessary to verify the assumptions made in the first part of our study.

Our hypotheses were developed in order to test the relation (if any) of some individual factors on moral competence, namely: gender, age, level of education, years of experience, and religion (religious on non-religious and strength of faith). Furthermore, we wanted to

explore the relation between three other variables and moral competence: marital status, children (with or without), and annual income.

For a better understanding, we present our findings separately for each variable, showing values related to mean, standard deviation (SD) and the tests performed. Furthermore, we will assume the central limit theorem (Marôco, 2011), considering that our sample is very large.

### Gender

To test our hypothesis we carried out an independent *t*-test (Table 3.7), which is “used in situations in which there are two experimental conditions and different participants have been used in each condition” (Field, 2009, p. 334). Comparing means we, then, have to conclude if the differences are statistically significant.

**Table 3.7**  
**H1: statistics and independent *t*-test (Gender)<sup>47</sup>**

Score	GENDER		Tests	
	Female	Male		
C_Worker	Mean	31.8	29.0	t = 2.104 df = 1 035
	SD	21.8	21.1	p = <b>0.036</b>
C_Doctor	Mean	22.7	23.6	t = - 0.727 df = 1 035
	SD	20.9	19.9	p = 0.468
C_Accountant	Mean	25.4	22.9	t = 1.969 df = 1 035
	SD	21.3	20.4	p = <b>0.049</b>
C_W_D	Mean	13.9	13.9	t = - 0.092 df = 1 035
	SD	12.0	11.6	p = 0.927
C_W_A	Mean	13.4	11.9	t = 2.393 df = 1 035
	SD	10.3	9.6	p = <b>0.017</b>
C_D_A	Mean	11.6	10.7	t = 1.431 df = 1 035
	SD	11.2	10.3	p = <b>0.013</b>
C_TOT	Mean	9.3	8.7	t = 1.318 df = 1 035
	SD	8.2	7.8	p = 0.188

The output allows us to conclude:

- On average, when statistical significant differences are found (Workers’ dilemma, Accountants’ dilemma, C\_W\_A, and C\_D\_A), women have higher moral competence than man. In all other cases, women always have equal or higher moral competence than men.

<sup>47</sup> See Tables D.5 and D.6 in Appendix D



## Age

To test our hypothesis we carried out a one-way ANOVA test (Table 3.8). This test:

Tells us whether three or more means are the same, so it tests the null hypothesis that all group means are equal. An ANOVA produces an *F*-statistic or *F*-ratio, which is similar to the *t*-statistic in that it compares the amount of systematic variance in the data to the amount of unsystematic variance. In other words, *F* is the ratio of the model to its error. (Field, 2009, p. 349)

**Table 3.8**  
**H2: statistics and independent one-way ANOVA (Age)<sup>48</sup>**

Score		AGE (in groups) (etario_mdp)				Total	Tests
		< 35.1	35.2 - 47.1	47.2 - 59.1	> 59.1		
C_Worker	Mean	31.8	31.8	29.1	26.9	30.26	F = 2.789
	SD	20.6	22.2	21.2	20.3	21.49	df = 3 p = <b>0.04</b>
C_Doctor	Mean	25.5	23.2	23.6	21.2	23.22	F = 1.298
	SD	18.4	21.3	20.0	19.7	20.35	df = 3 p = 0.274
C_Accountant	Mean	25.4	24.2	22.5	24.3	24.03	F = 0.651
	SD	22.0	20.2	20.3	22.4	20.88	df = 3 p = 0.583
C_W_D	Mean	15.4	14.4	13.8	11.6	13.90	F = 3.454
	SD	10.9	12.4	11.8	10.4	11.76	df = 3 p = <b>0.016</b>
C_W_A	Mean	13.5	13.2	12.2	11.2	12.63	F = 2.384
	SD	10.0	10.6	9.5	8.8	9.99	df = 3 p = 0.068
C_D_A	Mean	12.9	11.3	10.7	10.0	11.13	F = 2.148
	SD	12.4	10.6	10.5	9.9	10.73	df = 3 p = 0.093
C_TOT	Mean	10.1	9.4	8.7	7.5	8.97	F = 3.580
	SD	8.0	8.5	7.5	6.7	7.94	df = 3 p = <b>0.014</b>

The output allows us to conclude:

- On average, when statistical significant differences are found (Workers' dilemma, MCT – C\_W\_D – and C\_TOT), younger accountants show higher moral competence than older accountants. In all other cases, younger accountants always have higher moral competence than older accountants, except in the Accountants' dilemma where accountants over 59.1 years of age show a subtle inversion of this tendency.

<sup>48</sup> See Tables D.7 and D.8 in Appendix D

## Education level

To test our hypothesis we carried out a one-way ANOVA test (Table 3.9).

**Table 3.9**  
**H3: statistics and independent one-way ANOVA (Education level)<sup>49</sup>**

Score	Education level (Education)								
	Up 3.º CEB	Secondary	Bachelor	Graduation	Post-Grad.	Master	PhD	Total	
<b>C_Worker</b>	Mean	27.6	30.1	30.4	30.6	24.5	30.1	26.8	30.26
	SD	21.0	22.9	21.1	21.6	18.9	19.8	26.3	21.49
	Tests	F = 0.290			df = 6	p = 0.942			
<b>C_Doctor</b>	Mean	28.6	21.2	23.7	23.4	28.0	21.7	17.3	23.22
	SD	21.5	20.7	20.4	20.3	23.6	19.4	12.0	20.35
	Tests	F = 0.939			df = 6	p = 0.466			
<b>C_Accountant</b>	Mean	22.4	22.7	24.7	24.6	22.3	21.6	44.8	24.03
	SD	22.8	20.3	21.3	21.0	19.3	20.0	23.5	20.88
	Tests	F = 0.794			df = 6	p = 0.575			
<b>C_W_D</b>	Mean	13.2	12.2	13.7	14.5	13.3	13.4	17.0	13.90
	SD	11.3	11.7	11.6	11.9	11.3	11.3	16.1	11.76
	Tests	F = 0.831			df = 6	p = 0.546			
<b>C_W_A</b>	Mean	10.8	11.8	12.3	13.0	12.4	12.2	16.6	12.63
	SD	7.7	9.9	9.4	10.3	10.8	9.8	15.8	9.99
	Tests	F = 0.640			df = 6	p = 0.698			
<b>C_D_A</b>	Mean	10.8	9.7	11.0	11.4	15.8	10.9	19.6	11.13
	SD	9.6	9.3	10.9	10.7	16.6	11.8	23.8	10.73
	Tests	F = 1.149			df = 6	p = 0.332			
<b>C_TOT</b>	Mean	8.0	7.6	8.9	9.4	10.4	8.7	12.8	8.97
	SD	7.2	6.7	7.7	8.2	10.0	8.0	16.1	7.94
	Tests	F = 1.247			df = 6	p = 0.279			

The output allows us to conclude:

- On average, there are no statistical significant differences to report. The accountants' moral competence is not related to the level of education. Even so, in the combined scores, there is a subtle tendency to show that higher educated accountants have higher moral competence.

<sup>49</sup> See Tables D.9 and D.10 in Appendix D

## Experience

To test our hypothesis we carried out a one-way ANOVA test (Table 3.10).

**Table 3.10**  
**H4: statistics and independent one-way ANOVA (Years of experience)<sup>50</sup>**

Score	YEARS OF EXPERIENCE (in groups) (Experience)					
	<= 8	9 - 19	20 - 31	> 32	Total	
<b>C_Worker</b>	Mean	31.9	31.0	31.1	25.2	30.26
	SD	21.3	22.5	20.5	20.2	21.49
	Tests	F = 3.756 df = 3 p = <b>0.011</b>				
<b>C_Doctor</b>	Mean	24.8	23.1	24.3	19.9	23.22
	SD	20.5	20.5	20.4	19.4	20.35
	Tests	F = 2.132 df = 3 p = 0.095				
<b>C_Accountant</b>	Mean	24.1	25.2	22.8	23.2	24.03
	SD	20.4	21.1	20.4	21.7	20.88
	Tests	F = 0.859 df = 3 p = 0.462				
<b>C_W_D</b>	Mean	15.6	13.8	14.8	10.7	13.90
	SD	12.3	11.9	11.9	9.9	11.76
	Tests	F = 6.120 df = 3 p = <b>0.000</b>				
<b>C_W_A</b>	Mean	13.3	13.1	12.8	10.7	12.63
	SD	10.0	10.7	9.6	8.6	9.99
	Tests	F = 2.738 df = 3 p = <b>0.042</b>				
<b>C_D_A</b>	Mean	12.5	11.7	10.7	9.1	11.13
	SD	12.3	11.0	10.0	9.5	10.73
	Tests	F = 3.326 df = 3 p = <b>0.019</b>				
<b>C_TOT</b>	Mean	10.1	9.2	9.2	6.8	8.97
	SD	8.7	8.4	7.5	6.3	7.94
	Tests	F = 5.485 df = 3 p = <b>0.001</b>				

The output allows us to conclude:

- On average, when statistical significant differences are found (all scores except in the Doctors' and Accountants' dilemmas), less experienced accountants show higher moral competence than more experienced accountants. In the Doctors' and Accountants' dilemmas the tendency is not clear.

<sup>50</sup> See Tables D.11 and D.12 in Appendix D

### Religion (Faith)

To test our hypothesis we carried out an independent *t*-test (Table 3.11).

**Table 3.11**  
**H5: statistics and independent *t*-test (Religion – Faith)<sup>51</sup>**

Score	FAITH		Tests	
	Yes	No		
<b>C_Worker</b>	Mean	30.1	31.2	t = - 0.633 df = 1 035 p = 0.527
	SD	21.4	21.9	
<b>C_Doctor</b>	Mean	22.5	26.5	t = - 2.428 df = 1 035 p = <b>0.015</b>
	SD	20.5	19.3	
<b>C_Accountant</b>	Mean	23.4	27.1	t = - 2.208 df = 1 035 p = <b>0.027</b>
	SD	20.6	21.7	
<b>C_W_D</b>	Mean	13.6	15.1	t = - 1.494 df = 1 035 p = 0.135
	SD	11.8	11.7	
<b>C_W_A</b>	Mean	12.4	13.8	t = - 1.779 df = 1 035 p = 0.076
	SD	9.9	10.3	
<b>C_D_A</b>	Mean	10.7	13.2	t = - 2.962 df = 1 035 p = <b>0.003</b>
	SD	10.6	11.1	
<b>C_TOT</b>	Mean	8.7	10.1	t = - 2.116 df = 1 035 p = <b>0.035</b>
	SD	7.9	8.2	

The output allows us to conclude:

- On average, when statistical significant differences are found (Doctors' dilemma, Accountants' dilemma, C\_D\_A, and C\_TOT), accountants who said to be a person of faith show lower moral competence than accountants who claimed otherwise. In all other cases, although not significant, the tendency is the same.

<sup>51</sup> See Tables D.13 and D.14 in Appendix D

### Religion (Strength of Faith)

Considering that we are using a quantitative index (SCSRF\_TT) – already computed – we used the Pearson correlation coefficient (Pearson, 1896). The results are on Table 3.12.

**Table 3.12**  
**H6: Pearson correlation coefficient (Strength of Faith)**

	SCSRF_TT	
<b>C_W</b>	Pearson	.043
	Sig. (2-tailed)	.213
	N	848
<b>C_D</b>	Pearson	-.115
	Sig. (2-tailed)	<b>.001</b>
	N	848
<b>C_A</b>	Pearson	-.011
	Sig. (2-tailed)	.745
	N	848
<b>C_W_D</b>	Pearson	-.015
	Sig. (2-tailed)	.671
	N	848
<b>C_W_A</b>	Pearson	.018
	Sig. (2-tailed)	.601
	N	848
<b>C_D_A</b>	Pearson	-.058
	Sig. (2-tailed)	.093
	N	848
<b>C_TOT</b>	Pearson	-.024
	Sig. (2-tailed)	.493
	N	848

The output allows us to conclude:

- There was a negative and significant relationship between the Doctors' dilemma (C\_D) and the Santa Clara Strength of Religious Faith score (SCSRF\_TT),  $r = -.115$ ,  $p$  (2-tailed)  $< .001$ ; however, this coefficient must be considered irrelevant because it only explains 1.3% ( $r^2$ ) of the variance, i.e., the SCSRF\_TT score explains the Doctors' dilemma score in only 1.3%, letting the remaining 98.7% unexplained. For this reason there is no relation between accountants' strength of religious faith and moral competence.

### 3.2.3. Exploring the data for further relations

In this topic, we will explore the data in search for more relations or significant differences.

#### Samples' type of administration method

To explore the relationship (if any) between moral competence and the type of administration method, we carried out an independent *t*-test (Table 3.13).

**Table 3.13**  
**Statistics and independent *t*-test (type of administration)**

Score	Administration		Tests	
	Online	Face-to-face		
<b>C_Worker</b>	Mean	30.1	30.4	t = - 0.236 df = 1 035 p = 0.531
	SD	21.4	21.6	
<b>C_Doctor</b>	Mean	24.4	22.3	t = 1.677 df = 1 035 p = 0.667
	SD	20.5	20.2	
<b>C_Accountant</b>	Mean	23.8	24.2	t = - 0.324 df = 1 035 p = 0.962
	SD	21.1	20.7	
<b>C_W_D</b>	Mean	14.3	13.6	t = 1.045 df = 1 035 p = 0.747
	SD	11.8	11.7	
<b>C_W_A</b>	Mean	12.9	12.4	t = 0.708 df = 1 035 p = 0.126
	SD	10.4	9.7	
<b>C_D_A</b>	Mean	11.4	10.9	t = 0.708 df = 1 035 p = 0.418
	SD	10.8	10.7	
<b>C_TOT</b>	Mean	9.3	8.7	t = 1.179 df = 1 035 p = 0.546
	SD	8.0	7.9	

The output allows us to conclude:

- On average, there are no statistical significant differences to report and the differences are quite small. The moral competence does not change considering the type of administration.

### Marital Status

To explore the relationship (if any) between moral competence and the marital status, we carried out a one-way ANOVA test (Table 3.14).

**Table 3.14**  
**Statistics and independent one-way ANOVA (Marital status)<sup>52</sup>**

Score	MARITAL STATUS					
	Single	Married	Divorced	Widowed	Total	
<b>C_Worker</b>	Mean	30.8	30.0	32.0	28.6	30.26
	SD	21.7	21.5	21.6	13.8	21.49
	Tests	F = 0.296 df = 3 p = 0.829				
<b>C_Doctor</b>	Mean	21.7	23.4	25.4	22.5	23.22
	SD	18.5	20.6	22.5	15.1	20.35
	Tests	F = 0.672 df = 3 p = 0.569				
<b>C_Accountant</b>	Mean	23.3	24.3	23.6	24.2	24.03
	SD	21.4	20.8	21.1	18.2	20.88
	Tests	F = 0.127 df = 3 p = 0.944				
<b>C_W_D</b>	Mean	13.5	14.0	14.3	11.2	13.90
	SD	11.3	11.8	13.3	4.3	11.76
	Tests	F = 0.305 df = 3 p = 0.822				
<b>C_W_A</b>	Mean	12.2	12.6	13.2	13.7	12.63
	SD	9.6	10.0	11.2	10.5	9.99
	Tests	F = 0.232 df = 3 p = 0.874				
<b>C_D_A</b>	Mean	11.0	11.1	11.4	11.7	11.13
	SD	10.7	10.7	11.4	9.5	10.73
	Tests	F = 0.035 df = 3 p = 0.991				
<b>C_TOT</b>	Mean	8.8	9.0	9.3	8.8	8.97
	SD	7.7	7.9	9.3	7.4	7.94
	Tests	F = 0.085 df = 3 p = 0.968				

The output allows us to conclude:

- On average, there are no statistical significant differences to report. Nevertheless, and considering individual scores (C\_W; C\_D; C\_A), divorced accountants show higher moral competence on the first two dilemmas (Worker and Doctor). Moral competence is not related to the marital status.

<sup>52</sup> See Tables D.15 and D.16 in Appendix D

### Children status dependency

In order to explore the relationship (if any) between moral competence and children (having) we carried out an independent *t*-test (Table 3.15).

**Table 3.15**  
**Statistics and independent *t*-test (Children status dependency)<sup>53</sup>**

Score	CHILDREN		Tests	
	Yes	No		
<b>C_Worker</b>	Mean	30.0	31.3	t = - 0.844 df = 1 035 p = 0.399
	SD	21.4	21.9	
<b>C_Doctor</b>	Mean	23.5	22.4	t = 0.694 df = 1 035 p = 0.488
	SD	20.5	20.0	
<b>C_Accountant</b>	Mean	24.2	23.6	t = 0.372 df = 1 035 p = 0.710
	SD	20.8	21.2	
<b>C_W_D</b>	Mean	13.8	14.4	t = - 0.684 df = 1 035 p = 0.494
	SD	11.5	12.5	
<b>C_W_A</b>	Mean	12.6	12.6	t = - 0.026 df = 1 035 p = 0.979
	SD	9.7	10.8	
<b>C_D_A</b>	Mean	11.0	11.5	t = - 0.646 df = 1 035 p = 0.518
	SD	10.5	11.5	
<b>C_TOT</b>	Mean	8.9	9.2	t = - 0.503 df = 1 035 p = 0.615
	SD	7.7	8.6	

The output allows us to conclude:

- On average, there are no statistical significant differences to report. The mean differences are very small: Moral competence is not related with the existence of children.

<sup>53</sup> See Tables D.17 and D.18 in Appendix D



## Income

Considering the nature of the variable “income” (ordinal variable), and in order to explore the relationship (if any) between moral competence and accountants’ annual income, we have used the Spearman’s rho correlation coefficient (Spearman, 1910). The results are presented in Table 3.16.

**Table 3.16**  
**Spearman’s rho correlation coefficient (Income)**

		<b>Income</b>	
<b>Spearman's rho</b>	<b>C_W</b>	Correlation Coefficient	-.019
		Sig. (2-tailed)	.549
		N	1037
<b>C_D</b>	Correlation Coefficient	-.022	
	Sig. (2-tailed)	.477	
	N	1037	
<b>C_A</b>	Correlation Coefficient	-.067	
	Sig. (2-tailed)	.031	
	N	1037	
<b>C_W_D</b>	Correlation Coefficient	.002	
	Sig. (2-tailed)	.949	
	N	1037	
<b>C_W_A</b>	Correlation Coefficient	-.028	
	Sig. (2-tailed)	.374	
	N	1037	
<b>C_D_A</b>	Correlation Coefficient	-.024	
	Sig. (2-tailed)	.442	
	N	1037	
<b>C_TOT</b>	Correlation Coefficient	-.008	
	Sig. (2-tailed)	.800	
	N	1037	

The output allows us to conclude:

- There is no statistical significant relationship between moral competence and accountant’s annual income.

### 3.2.4. Regression analysis

According to Field (2009), the essence of regression analysis is:

We fit a model to our data and use it to predict values of the dependent variable (DV) from one or more independent variables (IVs). Regression analysis is a way of predicting an outcome variable from one predictor variable (simple regression) or several predictor variables (multiple regression). (p. 198)

However, to draw conclusions about a population based on a regression analysis done on a sample, several assumptions must be hold (Field, 2009, p. 220):

- All predictor variables must be quantitative or categorical (with two categories), and the outcome variable must be quantitative, continuous and unbounded;
- The predictors should have some variation in value;
- There should be no perfect linear relationship between two or more of the predictors. So, the predictor variables should not correlate too highly;
- Predictors must be uncorrelated with “external variables” (variables that have not been included in the regression model which influence the outcome variable);
- At each level of the predictor variable(s), the variance of the residual terms should be constant;
- For any two observations the residual terms should be uncorrelated (or independent);
- It is assumed that the residuals in the model are random, normally distributed variables with a mean of 0 (zero);
- It is assumed that all of the values of the outcome variable are independent;
- The mean values of the outcome variable for each increment of the predictor(s) lie along a straight line.

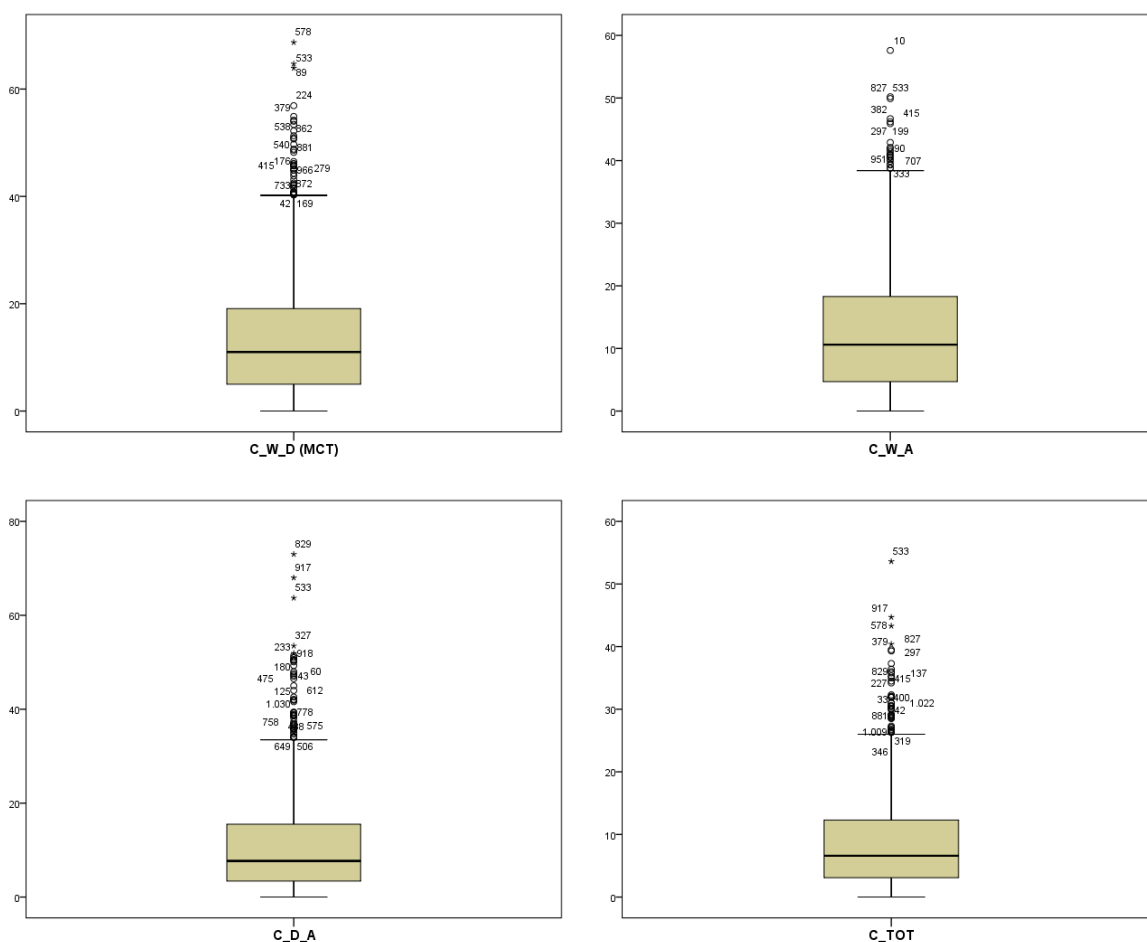
Following all previous analysis, we have decided to carry out a multiple regression analysis, verifying, previously, the assumptions. We have considered the dependent variables C\_W\_D, C\_W\_A, C\_D\_A, and C\_TOT (all combined scores of moral competence).

This verification turned out to be a problem because the analysis of the sample data has demonstrated statistics that violate the assumptions, making the regression analysis improper to interpret. The sample fails normality tests (Table 3.17) and we acknowledge the existence of several severe outliers (Figure 3.2).

**Table 3.17**  
**Dependent variables: tests of normality**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
C_W_D	.118	1037	.000	.890	1037	.000
C_W_A	.103	1037	.000	.915	1037	.000
C_D_A	.150	1037	.000	.838	1037	.000
C_TOT	.130	1037	.000	.861	1037	.000

a. Lilliefors Significance Correction



**Figure 3.2. Boxplots (dependent variables)**

Nonetheless, we have decided to carry out a multiple regression analysis, using the stepwise<sup>54</sup> method and considering as dependent variables, all the combined scores (C\_W\_D, C\_W\_A, C\_D\_A, and C\_TOT), and as predictors, the variables gender, age, experience, and the SCSRF\_TT (strength of religious faith score). Note that all predictor variables must be quantitative or categorical (with two categories). Supported on Field (2009), we will proceed with the analysis of the outputs.

The results shown in Figure 3.3, tells us whether the model is successful in predicting the combined scores of moral competence.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.103 <sup>a</sup>	.011	.009	11.71224	.011	9.045	1	846	.003
2	.124 <sup>b</sup>	.015	.013	11.69019	.005	4.194	1	845	.041

a. Predictors: (Constant), Age

b. Predictors: (Constant), Age, Gender

c. Dependent Variable: C\_W\_D

**Figure 3.3. Model summary (C\_W\_D)**

Regarding the dependent variable C\_W\_D (original MCT), the model summary tells us what the dependent variable (outcome) was and what the predictors were in each of the two models. In the column labelled R are the values of the multiple correlation coefficients between the predictors and the outcome. When only *age* is used as a predictor, this is the simple correlation between *age* and *moral competence* (0.103). The next column gives us a value of  $R^2$ , which measures how much of the variability in the outcome is accounted for by the predictors. For the first model its value is .011, which means that *age* accounts for 1.1% of the accountants' moral competence. However, when the other predictor is included (*gender*) as well (model 2), this value increases to .013 or 1.3% of the variance in *moral competence*, which is extremely low.

The adjusted  $R^2$  gives us some idea of how well our model generalizes. Ideally we would like its value to be the same, or very close to, the value of  $R^2$ . In this case the difference for the final model is very small (in fact the difference between the values is  $.015 - .013 =$

<sup>54</sup> Stepwise criteria: Probability-of-F-to-enter  $\leq .050$ , Probability-of-F-to-remove  $\geq .100$ .

.002 – about 0.2%). This reduction means that if the model were derived from the population rather than a sample it would account for approximately 0.2% less variance in the outcome. The “change statistics” tell us whether the change in  $R^2$  is significant: as  $p > 0.001$ , the changes are not significant. When performing this same analysis for the other dependent variables (see Figure E.1 in Appendix E), we conclude:

- Regarding  $C\_W\_A$ , *age* accounts for 0.8% of the accountants’ moral competence;
- Regarding  $C\_D\_A$ , *experience* accounts for 1.2% of the accountants’ moral competence;
- Regarding  $C\_TOT$ , *age* accounts for 1.4% of the accountants’ moral competence.

The ANOVA outputs (Figure E.2 in Appendix E) tests whether the model is significantly better at predicting the outcome than using the mean as a better option. For all dependent variables, except  $C\_TOT$ , the value of  $F$  is not significant ( $p > 0.001$ ). Regarding  $C\_TOT$ , the  $F$  value is significant ( $p < 0.001$ ).

The next part of the outputs is concerned with the parameters of the model. Regarding  $C\_W\_D$  (Figure 3.4), the first step in our hierarchy was to include *age*. The second model includes the predictors *age* and *gender*. The first part of the table gives us estimates for the  $b$ -values and these values indicate the individual contribution of each predictor to the model. If we place the  $b$ -values in the regression equation we find that we can define the model as follows:

$$C\_W\_D_i = b_0 + b_1age_i + b_2gender_i = 17.19 + (-0.133age_i) + (1.800gender_i)$$

Model	Coefficients <sup>a</sup>										
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	18.474	1.655		11.165	.000					
	Age	-.102	.034	-.103	-3.008	.003	-.103	-.103	-.103	1.000	1.000
2	(Constant)	17.191	1.766		9.733	.000					
	Age	-.133	.037	-.134	-3.585	.000	-.103	-.122	-.122	.835	1.197
	Gender	1.800	.879	.076	2.048	.041	.022	.070	.070	.835	1.197

a. Dependent Variable:  $C\_W\_D$

**Figure 3.4. Model parameters ( $C\_W\_D$ )**

*Age* has a negative relationship with moral competence (as age increases, moral competence decreases) while *gender* has a positive relationship with moral competence (as *gender* changes, moral competence increases).

Regarding the other dependent variables (see Figure E.3 in Appendix E), we can conclude:

- Regarding C\_W\_A, *age* has a negative relationship with moral competence;
- Regarding C\_D\_A, *experience* has a negative relationship with moral competence;
- Regarding C\_TOT, *age* has a negative relationship with moral competence.

Figure E.3 (Appendix E) also provided measures of whether there is collinearity in the data. If the average VIF is substantially greater than 1 then the regression may be biased. In our case and for the C\_W\_D variable the average VIF is 1.197. For all other dependent variables, the VIF is 1.000. This confirms that collinearity is not a problem for the model.

Figure E.4 (Appendix E) provides a summary of any variables that have not yet been entered into each model: in stepwise regression these tables contain summaries of the variables that SPSS is considering entering into the model. In a stepwise regression, SPSS should enter the predictor with the highest *t*-statistic and will continue entering predictors until there are none left with *t*-statistics that have significance values less than .05 (which is not our case, in any dependent variable).

Regardless these conclusions, we made another attempt and have resorted to a MANOVA (multivariate analysis of variance). MANOVA “can be thought of as ANOVA for situations in which there are several dependent variables” (Field, 2009, p. 585).

This multivariate analysis of the variance will allow us to evaluate the effect of the independent variables on the set of dependent variables, as well as the effect of the independent variables on each dependent variable.

The assumptions of variance homogeneity (Levene’s Test) and equality of covariances were complied (Table 3.18 and 3.19).

**Table 3.18**  
**Levene's test of equality of error variances<sup>a</sup>**

	F	df1	df2	Sig.
C_W_D	1.027	444	590	.383
C_W_A	1.027	444	590	.382
C_D_A	1.141	444	590	.067
C_TOT	1.131	444	590	.082

a. Design: Intercept + Sex + Education + Marital\_status + Children + Faith + Income + etario\_mdp + Experience

**Table 3.19**  
**Test of equality of covariance matrices<sup>a</sup>**

Box's M	790.993
F	1.473
df1	400
df2	11501.736
Sig.	.000

a. Design: Intercept + Sex + Education + Marital\_status + Children + Faith + Income + etario\_mdp + Experience

However, the results have shown to be significant but irrelevant in terms of its explicative power (see Table E.1 in Appendix E). Analysing this last output, we can conclude that the variables gender, age (etario\_mdp), education, marital\_status, children, faith, experience and income explain 14.9% of all variance, on the intersection of all dependent variables with each independent variable; the variable that explains the most is faith, with 1.3%, in all dependent variables.

A subsequent analysis of the effect of each independent variable with each one of the dependent variables has demonstrated that, separately, none of these combinations shows an explicative power above 1% (see Table E.2 in Appendix E).



**CHAPTER 4**

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**DISCUSSION AND CONCLUSIONS**

“First they ignore you, then they laugh at you, then they fight you, then you win.”

Mohandas Karamchand Gandhi (1869-1948)  
(Indian spiritual and political leader)

“We are what we repeatedly do. Excellence then, is not an act, but a habit.”

Aristotle (384-322 BC)  
(Greek philosopher, scientist and physician)



#### 4.1. Discussion

The results of this study require an analysis and assessment in the light of previous literature and based on the context in which they were drawn.

Regarding the measure of moral competence and the original Moral Competence Test, our respondents scored 30.26 in the Workers' dilemma and 23.22 in the Doctors' dilemma. The MCT (C\_W\_D) scored 13.91.

In our case, respondents reveal a considerably lower moral judgment competence in the Doctor's dilemma than in the Worker's dilemma: this phenomenon has been called "moral segmentation" (Lind, 2000b). To investigate this phenomenon in Brazil, Bataglia, Quevedo, Schillinger-Agati, & Lind (2003) developed a new dilemma – "Judge Steinberg's dilemma" – extending the Moral Competence Test (MCT xt): with this dilemma included, the segmentation phenomenon did not occur, i.e., the score of the Judge Steinberg's dilemma was close to the Workers' dilemma, demonstrating that the Doctors' dilemma was a very particular situation that might involve aspects related to religion. This phenomenon also occurred with several other authors (e.g. Bataglia et al., 2002; Schillinger-Agati & Lind, 2003; Thielen, Nascimento, Hartmann, & Polli, 2006; Oliveira, 2008; Francia, 2009; Lind, 2009; Rondon, 2009; Lupu & Lind, 2009; Lind & Schillinger-Agati, 2009; Bernardo, 2011; Liaquat, 2012; Bereta & Bataglia, 2013; Lepre et al., 2013; Feitosa, Rego, Bataglia, Guilhermina Rego, et al., 2013; Feitosa, Rego, Bataglia, Sancho, et al., 2013; García et al., 2014; Landim, Silva, Feitosa, & Nuto, 2015; Silva & Bataglia, 2015; Biggs & Colesante, 2015; Moraes, 2016).

Considering the studies in our literature review, the average in the Workers' dilemma is 38.64, in the Doctors' dilemma is 25.76, and in the MCT is 17.87. Our results are lower than these averages but are in conformity with Lind (2008): the MCT should range somewhere between 0 and 40. Moreover, since it was the first time that was measured the moral competence of practicing accountants, our results may not be a problem considering that most of the samples used in other studies included students and in subject areas quite different from ours. However, in the one study that involved accounting students (Lind & Schillinger-Agati, 2009), their results were quite close to ours: Workers' dilemma = 29.90; Doctors' dilemma = 27.70; MCT = 16.80.

In what regards the new dilemma – Accountants’ dilemma – Lind & Schillinger-Agati (2009) used two samples with 320 and 200 students, scoring 29.2 and 27, respectively. In our case, we have scored 24.03. However, although we have validated its use in the Portuguese accounting profession, the dilemma cannot be used internationally until Professor Georg Lind performs some specific tests, as was told by him. These scores were also shared with Professor Patricia Bataglia, in Brazil, who found them rather interesting. This is because the score that we have found in the Accountants’ dilemma (24.03), is very close to the Doctors’ dilemma score (25.76). With these results, the “moral segmentation” phenomenon must be addressed with extra caution because we have developed one dilemma with similar score to the Doctors’ dilemma. However, we believe that this new dilemma brought a new perspective over the “moral segmentation” phenomenon and to the moral competence evaluation. By its use we are capable of saying that the reasons that have been adduced to justify the score difference between the Workers’ and the Doctors’ dilemmas (mainly supported by the notion that the C\_score not only reflects the individual competence and the difficulty in performing a given task, but also the powerful influence of social actors, such as the Church, the military and other institutions) should be reevaluated and further investigated. So, in our opinion, the new dilemma enriches the analysis of moral competence.

Considering the answers to the individual dilemmas, 65.8% of the respondents disagreed (-3, -2, -1) with the workers’ behaviour. We believe that respondents felt important to show that they consider theft as unethical even if an alleged moral justification is presented for the situation. However, 10.2% did not know what to decide. Regarding the Doctors’ dilemma, 51.8% of the respondents agreed (1, 2, 3) with the doctors’ attitude (“mercy killing”) and 15.3% were not able to decide. These results confirm the complexity of the issue at hand but one might argue that it does not give any guarantee about the actual decision accountants would make if they were to decide about a close relative, for instances. However, we must not forget that moral competence has been defined as “the capacity to make decisions and judgments which are moral (i.e., based on internal principles) and to act in accordance with such judgments” (Kohlberg, 1964, p. 425 as cited in Lind, 1998). Finally, most respondents (56.8%) disagreed with the accountants’ decision not to report her boss irregularities, and 14.3% were not capable to decide.

In the sample, 54% of the respondents were men. Historically and according to the OCCs' Annual Reports (2012 to 2015)<sup>55</sup>, the profession has been dominated by the male gender. However, over the last years (since 1999) this trend has been reversing, because more women than men have entered the profession. Consequently, and according to the OCC<sup>56</sup> it is a fact that the profession has more women than men. Regarding gender, our hypothesis was validated: women accountants have higher moral competence than man. The conclusion that women are more ethical than men is in accordance with several other studies (e.g., Beltramini, Peterson, & Kozmetsky, 1984; Kidwell, Stevens, & Bethke, 1987; Ferrell & Skinner, 1988; Akaah, 1989; Ruegger & King, 1992; Tyson, 1992; Ameen, Guffey, & McMillan, 1996; Cole & Smith, 1996; Eynon et al., 1997; Weeks, Moore, Mckinney, & Longenecker, 1999; Singhapakdi, Karande, Rao, & Vitell, 2001; Cohen et al., 2001; Herington & Weaven, 2008; Eweje & Brunton, 2010; Sweeney, Arnold, & Pierce, 2010). One might wonder why this happens: is it a question of genetic differences (that do exist), family educational background, personality traits, personality strength, professional context in which men and women work, society pressures that differentiate male and female behaviour and expectations? Our study was not developed to find the reason and further research should be encouraged in this subject, exploring other areas of knowledge, as Psychology and Sociology. Nevertheless, it seems clear that those issues, among others, must be considered and might help in the process of explaining the rationale behind these conclusions. The OCC, that regulates the profession in Portugal, does not discriminate male and female access to the profession and they both must comply with the same access procedures and, after that, they both have to observe all other professional duties and obligations brought by the profession, in the same environment, or job context.

Regarding age, 54.2% of our respondents have 45 years or less, i.e. our sample is relatively young. According to the OCC's 2014 Annual Report, 55.2% of the Portuguese Certified Accountants (PCA) have 45 years or less; furthermore, 41% of them have entered the profession since the year 2000. This means that, as a whole, the profession, like our sample, is relatively young. Regarding age, our hypothesis was validated: younger accountants have higher moral competence than older accountants. These results are in

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<sup>55</sup> Available on <http://www.occ.pt/pt/a-ordem/relatorios-e-orcamentos/>

<sup>56</sup> In December, 31<sup>st</sup>, 2015, 71 565 Certified Accountants were registered in the OCC, of which, 37 155 (51.9%) were women and 34 410 (48.1%) were men.

accordance with those of other studies (e.g., Browning & Zabriskie, 1983; Eynon et al., 1997; Kracher, Chatterjee, & Lundquist, 2002; Sankaran & Bui, 2003; Ebrahimi, Petrick, & Young, 2005). In the particular case of Portugal, which factors will help to explain the differences? We believe that the academic training that has been given, in recent years, to accounting students all over the country (in schools), has contributed decisively to increase the ethical awareness of their obligations towards their clients (or employers), to the State and to what the OCC establishes in its Statutes and Code of Ethics. Further, the OCC has continuously strived to promote an ethical collective consciousness of the profession, continually encouraging professionals to fulfil their legal and ethical obligations. There is another aspect to consider: are young people more sensitive to social causes, influence and discussion groups, civic and political intervention (among others) that can increase their capacity to learn to better deal with the problems that arise in their personal and professional sphere? Or is it possible that older accountants feel upon themselves greater pressure to provide for family financial support, thus contributing to accepting superior pressures (or show willingness) to “do whatever it takes” in order to guarantee his/her job and the salary that is necessary for the family structure to remain stable and secure? If so, this situation may involve unethical judgment and behaviour. On another stance, one might argue that younger accountants, struggling to maintain their jobs, might be an easy prey for unethical behaviour. Although further research is required, we tend to believe that, probably, younger accountants, often more idealistic and utopian, nourish stronger feelings towards ethical behaviour.

Considering the education level, the majority of our respondents (83%) have a university degree. Unfortunately, the OCC could not provide any data concerning the population, precluding any possibility of comparison. Regarding the level of education, our hypothesis was not validated: the accountants’ moral competence is not related to the level of education. These results are in accordance with those of other studies (e.g., Dubinsky & Ingram, 1984; McNichols & Zimmerer, 1985; Kidwell et al., 1987; Serwinek, 1992; Lund, 2000; Wu, 2003; Forte, 2004; Marques & Azevedo-Pereira, 2009). These results were not expected because we were hoping to find a relation between moral competence and level of education. Moreover, this result is even more surprising considering that we have found that younger accountants have higher moral competence than older accountants. Our rationale is: younger accountants recently completed their university degrees, with serious

demands both from a technical point of view and from an ethical point of view. For this reason, and considering that the development of professional values and ethical behaviour has been fostered since early years, they should be better able to judge and decide when faced with ethical problems. We also believe that the need to look for a new (first) job should not be the reason to submit to pressures or accept proposals that lead to unethical behaviour; quite the contrary. On the other hand, it is clear that academic training may not have an influence in that capacity, in which case, other factors have to be considered: personal and family education and extra training already achieved by older accountants, in the context of the profession, can help us explain this balance.

Regarding professional experience, 65% of our respondents have twenty years or less practicing the profession (27% have 10 years or less of professional experience). Again, we conclude that our sample is relatively young in what comes to professional experience. Unfortunately, the OCC could not provide any data concerning this subject, excluding any possibility of comparison. In this regard, our hypothesis was validated: the moral competence of accountants is related to the years of experience, and, concretely, less experienced accountants show higher moral competence than more experienced accountants. This conclusion is in accordance with those of other studies (e.g., Chavez, Wiggins, & Yolas, 2001; Eweje & Brunton, 2010). Considering our previous findings, this comes as no surprise because less experienced accountants are, in general, younger accountants in age.

Regarding religion, a vast majority of respondents (82%) consider themselves as persons of faith. According to information retrieved from the Instituto Nacional de Estatística (Statistics Portugal) website, the Portuguese population is mostly Catholic (81%) and only 3.87% professes another religion. As a result, 84.87% of the Portuguese population claims to have a religious preference. For this reason, the sample is close to the national figures. On this subject, our hypothesis was not validated: accountants who said to be a person of faith scored lower moral competence than accountants who claimed otherwise. These findings, rather surprising to us, contrast with the prevalent literature (e.g., McNichols & Zimmerer, 1985; Wimalasiri et al., 1996; Tse & Au, 1997; Singhapakdi, Marta, Rallapalli, & Rao, 2000; (McCullough & Faught, 2005; Vitell et al., 2009; Ho, 2010; Fernando & Chowdhury, 2010). In a country where so many claim to be Catholic, and considering that

religion may provide significant guidance for those who are willing to understand the difference between right and wrong, we find it hard to understand these results. However, one important question must be addressed: even if people claim to be religious, that does not mean that they are effectively striving to engage in actual ethical judgment or behaviour consistent with the religion which they say they have. Considering these findings, we understand better the answer to the other hypothesis: there is no relation between accountants' strength of religious faith and moral competence. What we mean is if accountants' faith (person of faith) does not make a difference in assessing moral competence, we should expect that its strength would not be related, as well, to moral competence. In this case, it must also be considered that the instrument (Santa Clara Strength of Religious Faith Questionnaire) is not adequate and other would provide better results. These conclusions recommend further research in the subject.

In addition, we have decided to explore our data, searching for further information regarding possible relationship between moral competence and marital status, children (having or not) or annual income. In all three, no significant differences were found. However, we could expect that annual income could provide a different result, i.e., higher annual income could be related to higher moral competence. The rationale for this could be supported on the notion that people with lower income may feel often tempted to submit to all kinds of pressures, since their jobs may depend on this submission; and people more financially comforted may feel freer to decide and adopt behaviours considered appropriate because they do not feel these pressures on them. However, we believe that ethical behaviour cannot depend on income.

Finally, the multivariate regression analysis did not provide any relevant result in the interpretation of our data.

## **4.2. Conclusions**

Our study had three main objectives: to measure the Portuguese Certified Accountants' moral competence, validate (and implement) a new dilemma for the accounting domain, enriching the analysis of moral competence, and verify the relation of moral competence with some individual factors.

Regarding the first objective, we have measured the Portuguese Certified Accountants' moral competence, using Georg Lind's Moral Competence Test, which is based on his Dual-Aspect Theory. The results were below the average of several other studies presented in this thesis but the level of moral competence is within the standards defined by Professor Lind. Considering the moral competence scores that were drawn from our study, it would be important to take into account that the Portuguese Certified Accountants reached rather modest scores and that their moral competence must be cultivated. Regulatory bodies should improve continuous emphasis on the importance of ethical judgment and behaviour, promoting open discussions among accountants in training sessions, fostering their capacity to engage in moral behaviour and exploring factors that may improve this capacity.

Concerning the new dilemma, we have validated its use with Portuguese Certified Accountants but there are some issues to consider: (1) it will not be possible, already, to use it internationally because Professor Georg Lind must perform some specific tests to assure its validity as he did with the Judge Steinberg's dilemma; (2) we must be cautious with its integration on MCT, extending from two dilemmas to three dilemmas and this must only be considered when we are using this instrument in the accounting domain, for now; (3) as a training exercise, the dilemma can and should be used, for accounting practitioners and accounting students and further research might even consider the development of similar dilemmas in the accounting field.

Regarding gender, we have concluded that women accountants have higher moral competence than man. Considering that our conclusion is in accordance with most of the literature on ethical decision-making, these findings suggest that, regulatory bodies that manage the access to the accounting profession should take the issue into consideration, providing more ethical training and reflection, within different scenarios, in order to mitigate gender differences.

Regarding age, we have concluded that younger accountants have higher moral competence than older accountants. Considering our findings and discussion, our study raises awareness on the need for the OCC (in Portugal) to pay more attention to ethics training of older workers, considering that they are the ones who, in most cases, receive the newest in the profession and instruct them on how they should deal with the problems that

the profession raises. Considering our results, it should be considered the possibility of having older accountants guiding younger accountants to attitudes and behaviours less suited to what the profession requires.

Considering the level of education and professional experience, we have concluded that the accountants' moral competence is not related to their level of education. When it comes to professional experience, we have concluded that the moral competence of accountants is related to the years of experience, and, concretely, less experienced accountants show higher moral competence than more experienced accountants. These results raise awareness for the importance of professional training of all accountants, since the academic background has no relationship with their moral competence and more experienced accountants show lower moral competence. The regulatory bodies of the profession should, therefore, enhance and enrich the accountants' training in a professional context, encouraging accountants to continuously improve their expertise and their ethical sensitivity.

Regarding religion, accountants who said to be a person of faith scored lower moral competence than accountants who claimed otherwise, and the former showed that there is no relation between accountants' strength of religious faith and moral competence. We believe that the relation of moral competence to religion must be studied with greater depth. Furthermore, other instruments should be considered to measure this relation and its implications.

Finally and considering extra factors, we have tried to understand if there was any relation between accountants' moral competence and marital status, the existence of children or with annual income. All these factors show no significant relation to moral competence.

In conclusion, we have developed a study that, as far as we know (from the literature review and according to Professor Georg Lind), is the first, in the world, to apply the Moral Competence Test to professional accounting practitioners. We believe that this subject requires (and deserves) further investigation in the future, since this thesis has introduced the importance of those professionals into the debate around moral competence.



### **4.3. Limitations and future research**

Any study on ethics is necessarily incomplete and partial. This process required much deliberation and choices. Those who build a house know well that once built, it would be magnificent returning to the beginning and redo it in a much more complete and appropriate way. We share the feeling.

We begin by pointing out the limitations imposed by the theme itself, sufficiently vast that it could be treated in several ways. From the beginning, we were faced with choices, having to decide the best route to take. Each topic could have been more explored, given its complexity and involvement with many other subjects.

Moral competence is a rather complex subject that requires the researcher to master several subjects, especially out of the accounting domain. In this issue, we assume that the researcher has some training deficits in these areas, and in the instrument used by Professor Georg Lind (MCT), preventing a wider analysis of implications. However, the researcher is committed to address these gaps in order to be able to continuously explore, in depth, the field of moral competence.

Regarding the empirical study, we observed serious limitations in the administration of the questionnaire because we were not able to go around the country, to all sessions (“Reuniões livres”). Although we have also applied the questionnaire online, our sample cannot be called representative but we believe that with a representative sample our results would have been quite similar. However, generalizations cannot be deduced from the results.

Another limitation relates to the environment in which the questionnaires were answered: the face-to-face questionnaires were answered during a training session of the OCC, where the respondents could have been distracted from the necessary attention and reflection that the questionnaire demands. The online respondents may have overcome this limitation but we are not aware of the conditions in which they have responded. Nevertheless, we believe that our goal was achieved and that, in general, respondents have answered with care, reflection and personal rigor.

These limitations may now serve as avenues of research to be held in the future by us or by other interested parties.

Hence, future research can be promoted to deepen and extend this research. We suggest:

- Replication of the study with a representative sample;
- Further study of the relationship of moral competence with the factors studied, looking for broader interpretations and based on other fields of knowledge
- Explore the relation of moral competence with other individual factors and extend this analysis to the organizational factors;
- Develop a comparative study with accounting students; actually, we have already began to collect data, regarding accounting students, to perform a comparative study further on;
- Gather data to perform a longitudinal study with professional accounting practitioners;
- Explore, with greater depth, the relation between religiosity and moral competence;
- Explore, with greater depth, the relation between income and moral competence.





**APPENDICES**

“I am only one, but I am one. I can’t do everything, but I can do something. The something I ought to do, I can do. And by the grace of God, I will.”

Edward Everett Hale (1822-1909)  
(American Author and Unitarian Clergyman)

“It’s not hard to make decisions when you know what your values are.”

Roy Oliver Disney (1893-1971)  
(American businessman, partner and co-founder of Walt Disney Productions)

## Appendix A: Questionnaire (Portuguese version)

# QUESTIONÁRIO



Universidade do Minho

(este questionário deve ser respondido apenas por **contabilistas que exercem a profissão**)  
(caso já tenha respondido ao questionário online, por favor não responda novamente)

### Introdução

Chamo-me Alberto Costa, sou Contabilista Certificado (n.º 27974) e aluno do Programa Doutoral em Contabilidade da Universidade de Aveiro/Universidade do Minho.

O objetivo deste questionário é aferir a sensibilidade dos profissionais relativamente a algumas questões de natureza ética.

O questionário inclui três histórias; em cada uma existe uma pessoa que tem de resolver uma situação de conflito. Pretende-se que expresse a sua opinião sobre a resolução encontrada e sobre os argumentos utilizados pelas pessoas. Não existem, por isso, respostas certas ou erradas.

Agradeço imenso o tempo que vai dispensar, dado que a sua participação, completamente voluntária, é muito importante. Solicito-lhe que, ao preencher, não deixe nenhuma pergunta sem resposta. Todos os dados recolhidos são anónimos, garantindo-se a sua completa confidencialidade.

O tempo de preenchimento é de, aproximadamente, 15 minutos.

Caso necessite de algum esclarecimento adicional, contacte-me pelo endereço [alberto.costa@ua.pt](mailto:alberto.costa@ua.pt).

Muito obrigado pela sua colaboração!

### Instruções

São apresentadas três histórias para análise: Dilema dos Operários, Dilema do Médico e Dilema da Contabilista.

Inicie com o Dilema dos Operários. Leia atentamente a descrição da história e a solução apresentada. Em primeiro lugar, deve julgar o comportamento dos operários ou seja, dizer se discorda ou concorda com o comportamento dos mesmos, respondendo (com uma cruz) numa escala de -3 a +3 (forte discordância até forte concordância).

De seguida, são apresentados 6 argumentos a FAVOR da atitude dos operários e 6 argumentos CONTRA essa mesma atitude. A sua tarefa é decidir (com uma cruz), numa escala de -4 a +4 (*rejeito completamente* até *aceito completamente*), o quanto aceita ou não cada um dos argumentos. Se estiver indeciso ou considerar que não consegue decidir, coloque a cruz no número zero.

Assim que terminar, siga as mesmas instruções para o Dilema do Médico e para o Dilema da Contabilista.

A última parte do questionário contém algumas questões de caracterização dos inquiridos.

## Questionário – Contabilistas Certificados

## I. Dilema dos Operários

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O  
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ro

**Note:** For copyright reasons, we are not allowed to publish the MCT. If you are interested in the MCT, please contact Professor Georg Lind ([georg.lind@uni-konstanz.de](mailto:georg.lind@uni-konstanz.de))

**OP\_W** Discorda ou concorda com o comportamento dos operários?

**Discordo** **Concordo**  
**fortemente** **fortemente**

-3	-2	-1	0	1	2	3
----	----	----	---	---	---	---

(assinale com uma cruz)

Os argumentos seguintes são a **FAVOR** do comportamento dos dois operários. Suponha que alguém dá estas justificações para agir como os operários agiram. Considera estas justificações aceitáveis?

Numa escala de -4 a +4, como as classificaria?

**WP1** 1. |

**Rejeito** **Aceito**  
**completamente** **completamente**  
(assinale com uma cruz)

-4	-3	-2	-1	0	1	2	3	4
----	----	----	----	---	---	---	---	---

**WP4** 2. |

me  
res

-4	-3	-2	-1	0	1	2	3	4
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**WP3** 3. |

fica

-4	-3	-2	-1	0	1	2	3	4
----	----	----	----	---	---	---	---	---

**WP6** 4. |

que

-4	-3	-2	-1	0	1	2	3	4
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**WP2** 5. |

ope

-4	-3	-2	-1	0	1	2	3	4
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**WP5** 6. |

usc  
por

-4	-3	-2	-1	0	1	2	3	4
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Os argumentos seguintes são **CONTRA** o comportamento dos dois operários. Suponha que alguém dá estas justificações para não agir como os operários agiram. Considera estas justificações aceitáveis?

Numa escala de -4 a +4, como as classificaria?

**WC4** 7. |

tod

**Rejeito** **Aceito**  
**completamente** **completamente**  
(assinale com uma cruz)

-4	-3	-2	-1	0	1	2	3	4
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**WC6** 8. |

pro  
alg

-4	-3	-2	-1	0	1	2	3	4
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**WC2** 9. |

de

-4	-3	-2	-1	0	1	2	3	4
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**WC5** 10. |

exi

-4	-3	-2	-1	0	1	2	3	4
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**WC3** 11. |

inv

-4	-3	-2	-1	0	1	2	3	4
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**WC1** 12. |

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as

-4	-3	-2	-1	0	1	2	3	4
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## Questionário – Contabilistas Certificados

## II. Dilema do Médico

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est  
um  
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que  
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**Discordo  
fortemente** **Concordo  
fortemente**

-3	-2	-1	0	1	2	3
----	----	----	---	---	---	---

(assinale com uma cruz)

## OP\_D Discorda ou concorda com o comportamento do médico?

Os argumentos seguintes são a **FAVOR** do comportamento do médico. Suponha que alguém dá estas justificações para dizer que o médico agiu corretamente. Considera estas justificações aceitáveis?

Numa escala de -4 a +4, como as classificaria?

**Rejeito  
completamente** **Aceito  
completamente**

(assinale com uma cruz)

-4	-3	-2	-1	0	1	2	3	4
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DP6 1. (est mo

DP5 2. (o re

DP1 3. (de

DP2 4. /dar

DP4 5. /mu sof

DP3 6. /cor aq

-4	-3	-2	-1	0	1	2	3	4
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-4	-3	-2	-1	0	1	2	3	4
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-4	-3	-2	-1	0	1	2	3	4
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-4	-3	-2	-1	0	1	2	3	4
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Os argumentos seguintes são **CONTRA** o comportamento do médico. Suponha que alguém dá estas justificações para dizer que o médico agiu de modo errado. Considera estas justificações aceitáveis?

Numa escala de -4 a +4, como as classificaria?

**Rejeito  
completamente** **Aceito  
completamente**

(assinale com uma cruz)

-4	-3	-2	-1	0	1	2	3	4
----	----	----	----	---	---	---	---	---

DC3 7. /mé

DC5 8. /pre mu

DC6 9. /um dife dec

DC1 10. /pes

DC2 11. /pac

DC4 12. /dev

-4	-3	-2	-1	0	1	2	3	4
----	----	----	----	---	---	---	---	---

-4	-3	-2	-1	0	1	2	3	4
----	----	----	----	---	---	---	---	---

-4	-3	-2	-1	0	1	2	3	4
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-4	-3	-2	-1	0	1	2	3	4
----	----	----	----	---	---	---	---	---

-4	-3	-2	-1	0	1	2	3	4
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## Questionário – Contabilistas Certificados

## III. Dilema da Contabilista

Ar  
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co

	Discordo fortemente						Concordo fortemente
<b>OP_A</b> Discorda ou concorda com o comportamento da contabilista?	-3	-2	-1	0	1	2	3
	(assinale com uma cruz)						

Os argumentos seguintes são a **FAVOR** do comportamento da contabilista. Suponha que alguém dá estas justificações para dizer que a contabilista agiu corretamente. Considera estas justificações aceitáveis?

Numa escala de -4 a +4, como as classificaria?

	Rejeito completamente							Aceito completamente	
	(assinale com uma cruz)								
<b>AP1</b> 1. A ética	-4	-3	-2	-1	0	1	2	3	4
<b>AP4</b> 2. C má	-4	-3	-2	-1	0	1	2	3	4
<b>AP3</b> 3. C	-4	-3	-2	-1	0	1	2	3	4
<b>AP6</b> 4. / des	-4	-3	-2	-1	0	1	2	3	4
<b>AP2</b> 5.   leal	-4	-3	-2	-1	0	1	2	3	4
<b>AP5</b> 6. C	-4	-3	-2	-1	0	1	2	3	4

Os argumentos seguintes são **CONTRA** o comportamento da contabilista. Suponha que alguém dá estas justificações para dizer que a contabilista agiu de modo errado. Considera estas justificações aceitáveis?

Numa escala de -4 a +4, como as classificaria?

	Rejeito completamente							Aceito completamente	
	(assinale com uma cruz)								
<b>AC4</b> 7. / fact	-4	-3	-2	-1	0	1	2	3	4
<b>AC6</b> 8. ε tom	-4	-3	-2	-1	0	1	2	3	4
<b>AC2</b> 9. C	-4	-3	-2	-1	0	1	2	3	4
<b>AC5</b> 10. pod	-4	-3	-2	-1	0	1	2	3	4
<b>AC3</b> 11. inve	-4	-3	-2	-1	0	1	2	3	4
<b>AC1</b> 12. ape afet	-4	-3	-2	-1	0	1	2	3	4



## Questionário – Contabilistas Certificados

## IV. Identificação

**Gender** **Sexo:** Masculino  Feminino

**Age** **Idade:** \_\_\_\_\_ (anos)

**Education** **Habilitações literárias (a última concluída):**

- Até ao 3.º Ciclo do ensino básico (antigo 9.º ano)  Mestrado  
 Ensino secundário (antigo 12.º ano)  Doutoramento  
 Bacharelato  Outro: \_\_\_\_\_  
 Licenciatura

**Marital\_status** **Estado civil:**

- Solteiro(a)  Divorciado(a) ou separado(a)  
 Casado(a), com ou sem registo  Viúvo(a)

**Children** **Tem filhos?** Sim  Não

**Exper** **Anos de experiência na profissão, como profissional reconhecido para o seu exercício:** \_\_\_\_\_ (anos)

**District** **Distrito/Região autónoma onde exerce a sua profissão:** \_\_\_\_\_

**Modo de exercício da atividade (assinale as opções que o(a) caracterizam):**

- W self**  Por conta própria  
**W others**  Por conta de outrem  
**W\_soc**  Como sócio, administrador ou gerente de uma sociedade profissional de contabilistas certificados ou de uma sociedade de contabilidade

**Resp** **É responsável, perante a Ordem, pela contabilidade de alguma entidade?** Sim  Não

**Faith** **Independentemente da sua religião, considera-se uma pessoa de fé?** Sim  Não

**Se sim e relativamente à sua fé, responda utilizando a escala indicada:**

	Discordo totalmente	Discordo	Concordo	Concordo totalmente
<b>SCSRF1</b> 1. A minha fé religiosa é muito importante para mim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF2</b> 2. Rezo diariamente	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF3</b> 3. Considero a minha fé uma fonte de inspiração	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF4</b> 4. Considero que a minha fé dá significado e um propósito à minha vida	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF5</b> 5. Considero-me uma pessoa ativa na minha fé ou na minha igreja	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF6</b> 6. A minha fé é uma parte importante daquilo que sou como pessoa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF7</b> 7. A minha relação com Deus é muito importante para mim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF8</b> 8. Gosto de estar junto com outros que partilham a minha fé	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF9</b> 9. Considero a minha fé uma fonte de conforto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SCSRF10</b> 10. A minha fé influencia muitas das minhas decisões	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Income** **Qual o seu rendimento anual bruto?**

- Até 19 999€  De 40 000 a 49 999€  
 De 20 000 a 29 999€  Acima de 50 000€  
 De 30 000 a 39 999€

## Appendix B: Sample and data collection additional information

**Table B.1**  
Questionnaire responses (paper format)

Region/District	Presences	Questionnaires filled	Valid questionnaires	Response rate %
Aveiro	54	52	50	92.59%
Braga	295	130	105	35.59%
Bragança	50	34	26	52.00%
Coimbra	104	54	46	44.23%
Évora	30	8	7	23.33%
Faro	71	48	39	54.93%
Leiria	264	116	95	35.98%
Lisboa	372	60	51	13.71%
Porto	260	99	78	30.00%
Viseu	90	62	52	57.78%
Região Autónoma dos Açores	32	25	24	75.00%
<b>Totais</b>	<b>1 622</b>	<b>688</b>	<b>573</b>	<b>35.33%</b>

**Table B.2**  
Questionnaire responses (online)

Region/District	Questionnaires filled	Valid questionnaires
Aveiro	86	82
Beja	3	2
Braga	43	41
Bragança	3	2
Castelo Branco	12	11
Coimbra	33	30
Évora	6	5
Faro	15	13
Guarda	6	5
Leiria	25	23
Lisboa	85	81
Portalegre	12	11
Porto	77	73
Santarém	24	22
Setúbal	26	24
Viana do Castelo	8	7
Vila Real	8	8
Viseu	12	10
Região Autónoma da Madeira	7	6
Região Autónoma dos Açores	9	8
<b>Totais</b>	<b>500</b>	<b>464</b>

## Appendix C: Descriptive statistics

**Table C.1**

**Frequency table – variable *etario\_mdp* (variable *Age* grouped)**

		Age	Experience
<b>C_Worker</b>	Pearson Correlation	-.101**	-.084**
	Sig. (2-tailed)	0.001	0.007
	N	1 037	1 037
<b>C_Doctor</b>	Pearson Correlation	-.070*	-.063*
	Sig. (2-tailed)	0.025	0.042
	N	1 037	1 037
<b>C_Accountant</b>	Pearson Correlation	-0.047	-0.038
	Sig. (2-tailed)	0.131	0.224
	N	1 037	1 037
<b>C_W_D</b>	Pearson Correlation	-.109**	-.104**
	Sig. (2-tailed)	0	0.001
	N	1 037	1 037
<b>C_W_A</b>	Pearson Correlation	-.105**	-.083**
	Sig. (2-tailed)	0.001	0.007
	N	1 037	1 037
<b>C_D_A</b>	Pearson Correlation	-.103**	-.097**
	Sig. (2-tailed)	0.001	0.002
	N	1 037	1 037
<b>C_TOT</b>	Pearson Correlation	-.126**	-.113**
	Sig. (2-tailed)	0	0
	N	1 037	1 037

\*\* Correlation is significant at the level of 0.01 level (2-tailed)

\* Correlation is significant at the level of 0.05 level (2-tailed)

**Table C.2**

**Frequency table – variable *etario\_mdp* (variable *Age* grouped)**

<b>etario_mdp</b>	Frequency	Percent	Cumulative Percent
< 35,1 years	146	14.1	14.1
Between 35,2 and 47,1 years	468	45.1	59.2
Between 47,2 and 59,1 years	231	22.3	81.5
> than 59,1	192	18.5	100.0
<b>Total</b>	<b>1037</b>	<b>100.0</b>	

**Table C.3**

**Frequency table – variable *Experience* (variable *Exper* grouped)**

<b>Experience</b>	Frequency	Percent	Cumulative Percent
<= 8	171	16.5	16.5
9 - 19	401	38.7	55.2
20 - 31	298	28.7	83.9
> 32	167	16.1	100.0
<b>Total</b>	<b>1037</b>	<b>100.0</b>	

**Table C.4**  
**Respondents' socio-demographic characteristics**

		Sample					
		Online		Presence		Total	
		N	%	N	%	N	%
<b>Gender</b>	Female	229	49.40%	249	43.50%	478	46%
	Male	235	50.60%	324	56.50%	559	54%
<b>Education</b>	Up to 3.º CEB	15	3.20%	22	3.80%	37	4%
	Secondary education	49	10.60%	94	16.40%	143	14%
	Bachelor degree	59	12.70%	73	12.70%	132	13%
	Graduation	273	58.80%	346	60.40%	619	60%
	Postgraduate studies	9	1.90%	4	0.70%	13	1%
	Master's degree	59	12.70%	32	5.60%	91	9%
	PhD	0	0.00%	2	0.30%	2	0%
<b>Marital Status</b>	Single	82	17.70%	106	18.50%	188	18%
	Married	345	74.40%	410	71.60%	755	73%
	Divorced	34	7.30%	49	8.60%	83	8%
	Widowed	3	0.60%	8	1.40%	11	1%
<b>Have children</b>	Yes	352	75.90%	442	77.10%	794	77%
	No	112	24.10%	131	22.90%	243	23%
<b>District/Region</b>	Aveiro	82	17.7%	50	8.7%	132	13%
	Beja	2	4%	0	0.0%	2	0%
	Braga	41	8.8%	104	18.2%	145	14%
	Bragança	2	4%	25	4.4%	27	3%
	Castelo Branco	11	2.4%	0	0.0%	11	1%
	Coimbra	30	6.5%	46	8.0%	76	7%
	Évora	5	1.1%	7	1.2%	12	1%
	Faro	13	2.8%	39	6.8%	52	5%
	Guarda	5	1.1%	0	0.0%	5	0%
	Leiria	23	5.0%	87	15.2%	110	11%
	Lisboa	81	17.5%	47	8.2%	128	12%
	Portalegre	11	2.4%	0	0.0%	11	1%
	Porto	73	15.7%	78	13.6%	151	15%
	Santarém	22	4.7%	8	1.4%	30	3%
	Setúbal	24	5.2%	4	.7%	28	3%
	Viana do Castelo	7	1.5%	1	.2%	8	1%
	Vila Real	8	1.7%	1	.2%	9	1%
	Viseu	10	2.2%	52	9.1%	62	6%
	Região Autónoma da Madeira	6	1.3%	0	0.0%	6	1%
	Região Autónoma dos Açores	8	1.7%	24	4.2%	32	3%
<b>Person of faith</b>	Yes	361	77.80%	487	85.00%	848	82%
	No	103	22.20%	86	15.00%	189	18%

**Table C.5**  
**Respondents' Technical and professional characteristics**

		Sample					
		Online		Presence		Total	
		N	%	N	%	N	%
Income	Up to 19 999€	262	56.5%	338	59.0%	600	58%
	From 20 000 to 29 999€	130	28.0%	136	23.7%	266	26%
	From 30 000 to 39 999€	41	8.8%	61	10.6%	102	10%
	From 40 000 to 49 999€	18	3.9%	18	3.1%	36	3%
	Above 50 000€	13	2.8%	20	3.5%	33	3%
Self-employed (W_self)	No	307	66.2%	283	49.4%	590	57%
	Yes	157	33.8%	290	50.6%	447	43%
Work for hire and reward (W_others)	No	237	51.1%	304	53.1%	541	52%
	Yes	227	48.9%	269	46.9%	496	48%
Partner or company manager (W_soc)	No	312	67.2%	485	84.6%	797	77%
	Yes	152	32.8%	88	15.4%	240	23%
Responsible for accounting (Resp)	Yes	405	87.30%	504	88.00%	909	88%
	No	59	12.70%	69	12.00%	128	12%

**Table C.6**  
**Summary statistics of responses – Age and experience**

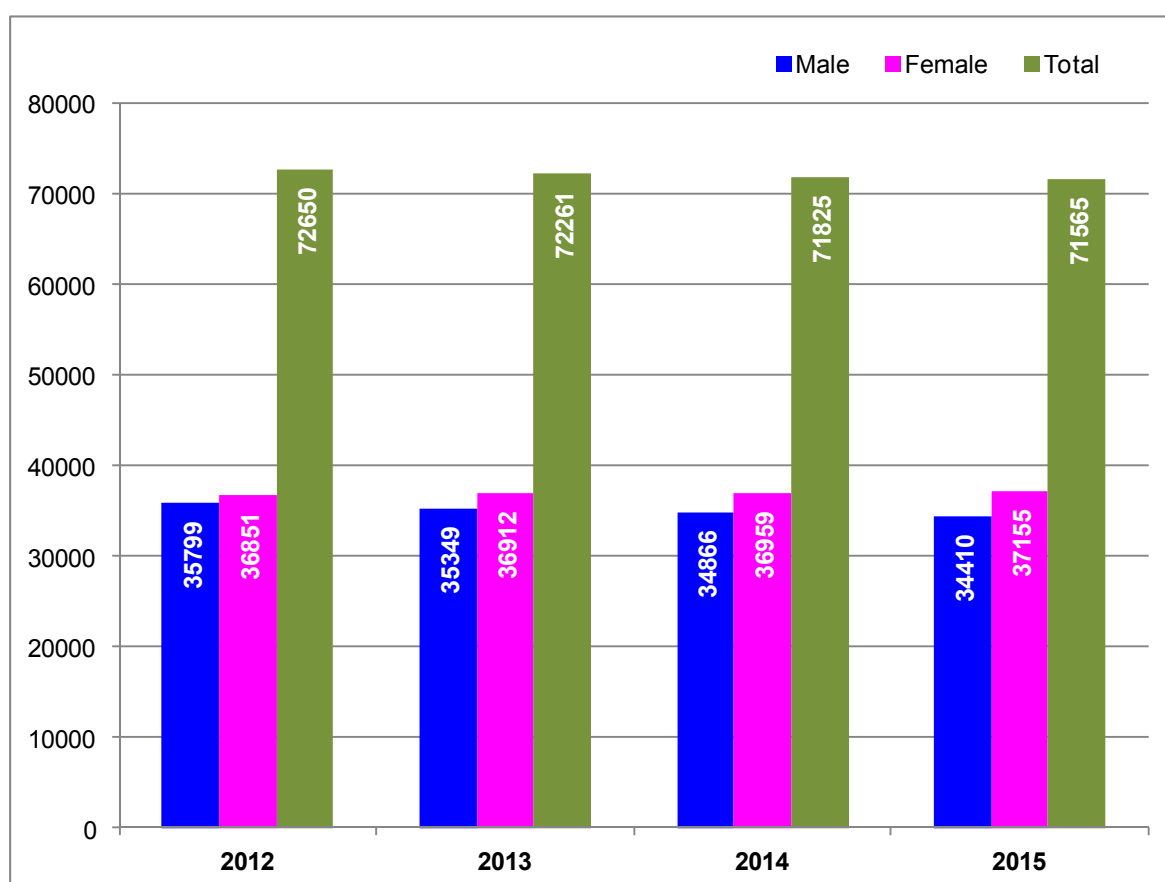
	N	Minimum	Maximum	Mean	Std. Deviation
Age	1037	22	84	47,08	11,968
Exper	1037	0	60	19,36	11,794

**Table C.7**  
**Respondents' activity exercise mode: cross tabulation**

W_soc	W_self		W_others		Total		
			No	Yes			
No	W_self	No	0	0	373	<b>36%</b>	373
		Yes	321	<b>31%</b>	103	10%	424
	Total		321		476		797
Yes	W_self	No	204	<b>20%</b>	13	1%	217
		Yes	16	2%	7	1%	23
	Total		220		20		240
Total	W_self	No	204		386		590
		Yes	337		110		447
	Total		541		496		1037

**Table C.8**  
**Summary statistics of responses – Santa Clara Strength of Religious Faith**

Question	Variable	Mean response	Standard deviation
1. A minha fé religiosa é muito importante para mim	SCSRF1	3.06	0.689
2. Rezo diariamente	SCSRF2	2.35	0.927
3. Considero a minha fé uma fonte de inspiração	SCSRF3	2.79	0.762
4. Considero que a minha fé dá significado e um propósito à minha vida	SCSRF4	2.94	0.717
5. Considero-me uma pessoa ativa na minha fé ou na minha igreja	SCSRF5	2.37	0.785
6. A minha fé é uma parte importante daquilo que sou como pessoa	SCSRF6	2.98	0.679
7. A minha relação com Deus é muito importante para mim	SCSRF7	3.04	0.700
8. Gosto de estar junto com outros que partilham a minha fé	SCSRF8	2.66	0.719
9. Considero a minha fé uma fonte de conforto	SCSRF9	2.97	0.630
10. A minha fé influencia muitas das minhas decisões	SCSRF10	2.78	0.749
<b>Santa Clara Strength of Religious Faith - Score</b>	SCSRF_TT	27.94	5.617



**Figure C.1. Portuguese Certified Accountants by gender (2012-2015)**

Source: OCC Annual Reports

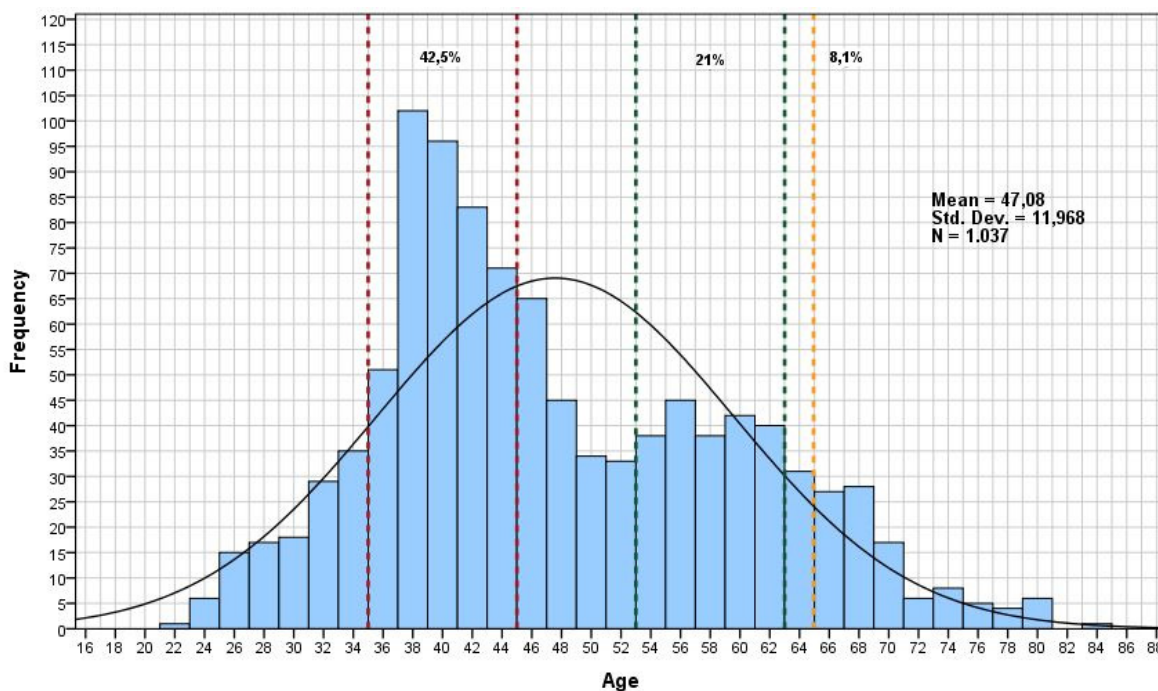


Figure C.2. Respondents' Age

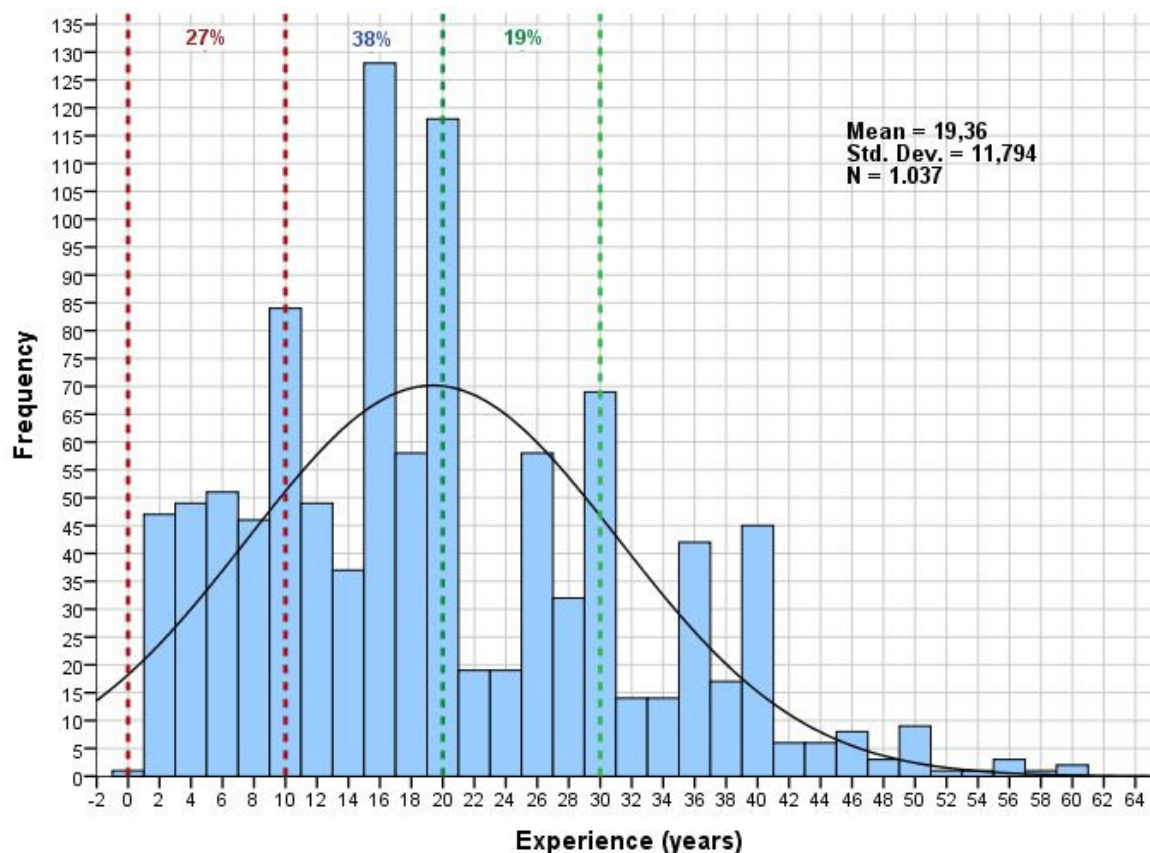


Figure C.3. Respondents' Years of experience in the profession

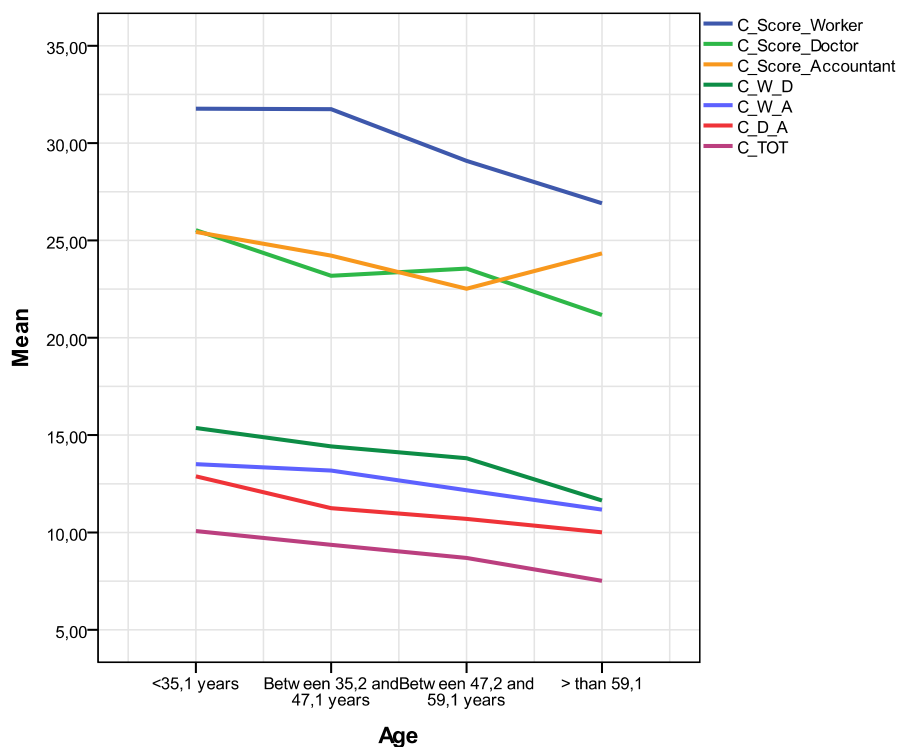


Figure C.4. Scores according to Age (*etario\_mdp*)

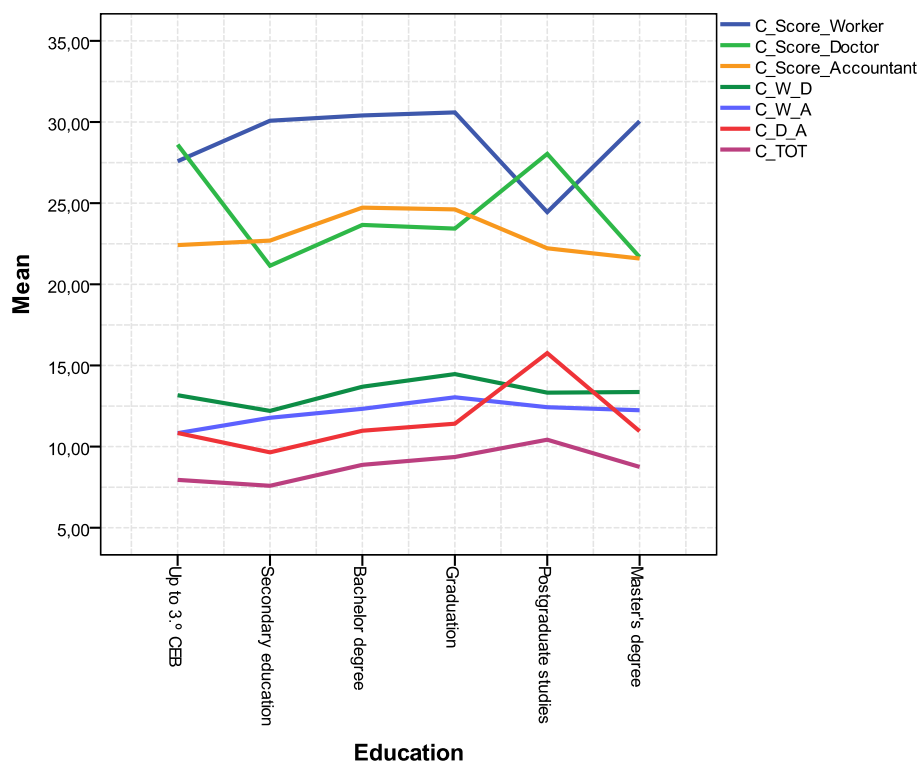


Figure C.5. Scores according to Education



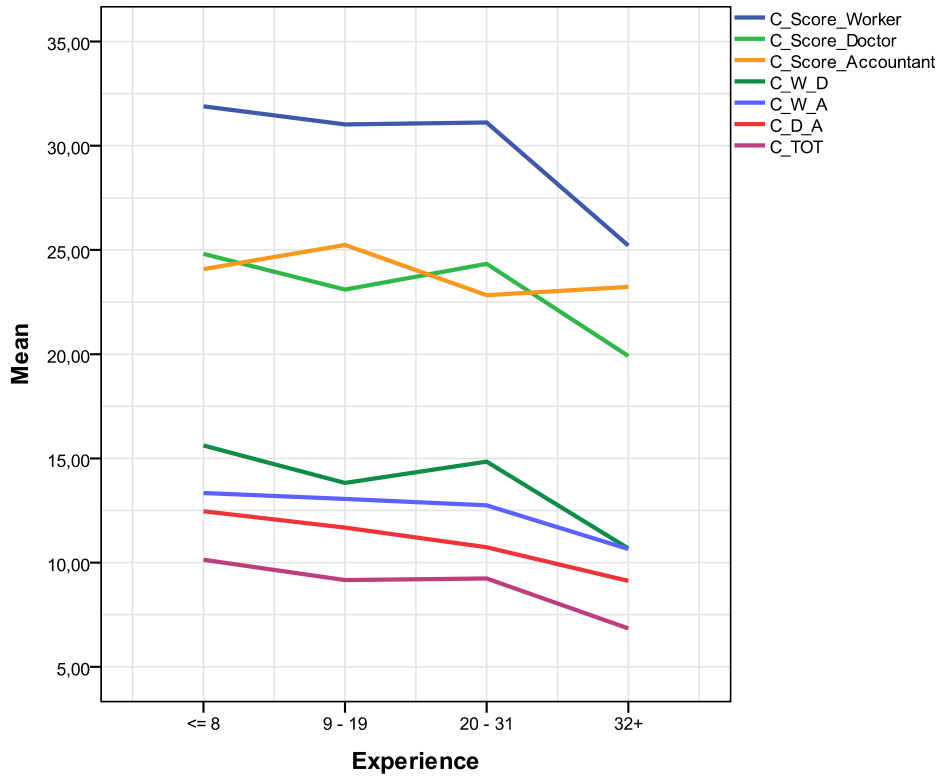


Figure C.6. Scores according to Experience

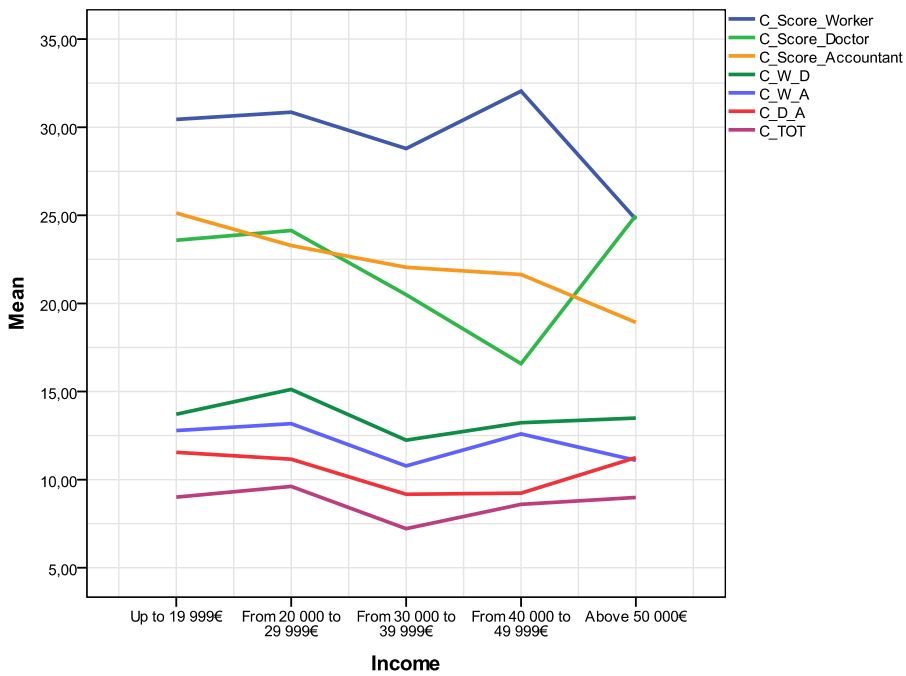
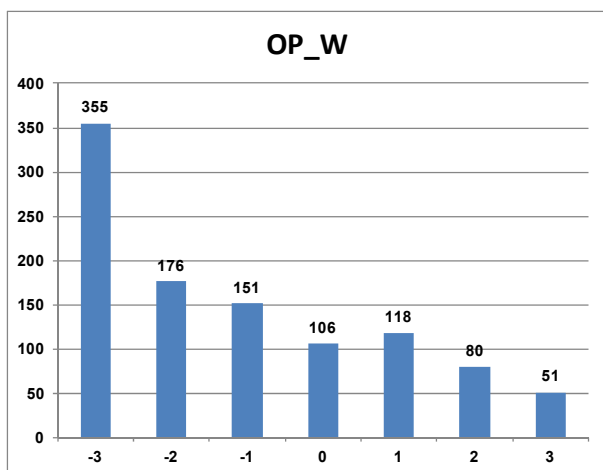
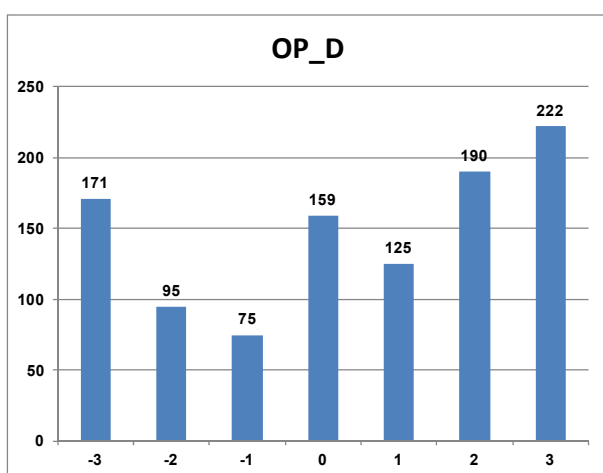


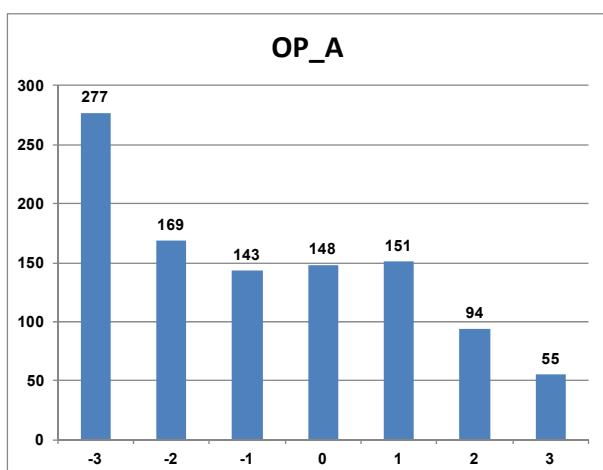
Figure C.7. Scores according to Income



**Figure C.8. Respondents answers to the Workers' dilemma**



**Figure C.9. Respondents answers to the Doctors' dilemma**



**Figure C.10. Respondents answers to the Accountants' dilemma**

Appendix D: Bivariate and multivariate statistics

Table D.1  
Anti-image matrix

	WP1	WP4	WP3	WP6	WP2	WP5	WC4	WC6	WC5	WC3	WC1	DP6	DP5	DP1	DP2	DP4	DP3	DC3	DC5	DC6	DC1	DC2	DC4	AP6	AP4	AP2	AP1	AP3	AP5	AP3	AC6	AC4	AC1	AC5	AC2		
WP1	.951*	-.243	-.144	-.081	-.110	-.175	.067	.011	-.017	.018	.018	-.028	.072	.009	-.071	-.029	.032	-.075	-.037	.032	.019	.020	-.066	-.015	-.074	.021	-.007	-.022	.045	-.034	.013	-.020	-.02	-.02	.00		
WP4	-.243	.941*	-.239	-.026	-.247	-.159	.070	-.008	-.004	.017	-.002	-.008	.034	-.027	-.015	-.020	-.049	.132	-.020	.000	-.009	-.021	.071	.036	.021	-.019	-.009	.052	-.042	-.005	-.013	-.038	.02	.01	.08	-.02	
WP3	-.144	-.239	.930*	-.185	-.082	-.103	.008	.036	-.012	.027	-.046	.010	.003	-.045	.013	.005	.033	.086	.025	-.058	.021	-.106	.005	.031	-.001	-.010	-.001	.056	-.136	.008	.041	-.077	.089	-.06	.01	-.02	.04
WP6	-.081	-.026	-.185	.941*	.008	-.090	.026	.070	.085	-.005	.006	-.007	.004	-.061	.058	.027	.071	.003	.018	.021	-.049	.033	.020	.043	.015	.017	.032	.007	-.007	.033	-.03	.01	-.01	.02	.03	.01	
WP2	-.110	-.247	-.092	.008	.934*	-.368	.030	.070	-.044	.175	.070	.008	.024	.050	.004	-.073	-.072	.020	.008	.031	.020	.015	-.008	.015	-.030	.008	.039	-.009	-.051	-.064	.019	-.01	-.02	.03	.01		
WP5	-.175	-.159	-.103	-.090	-.368	.933*	-.029	-.027	.034	.126	.091	-.046	-.052	.073	.068	.001	.032	.009	.046	.046	.068	.037	-.009	-.002	.030	.067	.059	.044	.022	.035	-.040	.02	-.04	-.04	.00		
WC4	.067	.070	.008	.026	.030	.029	.923*	-.368	-.048	-.054	.194	.011	-.001	.021	.007	.020	-.016	.025	.009	-.031	.008	-.037	.072	.027	-.023	.057	.008	.007	.047	-.063	.016	-.049	-.11	.00	.04	-.03	
WC6	.011	-.008	.036	-.070	.070	-.027	-.368	.918*	-.062	-.096	-.093	-.027	.031	-.005	.027	.004	.079	.015	.016	.015	.035	.039	.067	.022	-.055	.008	.026	.017	.039	.034	.035	.008	.01	-.04	.01	.05	
WC2	-.017	-.004	.012	.085	-.044	.034	-.048	.062	.801*	-.023	-.077	.388	.096	-.087	.040	-.029	.050	.027	.005	.061	.037	.008	-.103	.036	.028	.009	.096	.059	.066	.022	.03	.03	.02	.03	.02	.01	
WC5	.018	.017	.027	-.005	.175	-.054	-.054	-.096	-.023	.905*	-.499	-.028	.025	.020	.025	.036	.044	.055	.046	.051	.030	.011	.000	.048	.008	.000	.057	.040	.046	-.011	.019	.025	.00	-.01	.08	-.02	
WC3	.018	-.002	-.046	.006	.079	.126	-.194	-.093	-.077	.499	.893*	-.144	.024	-.037	.071	-.020	.031	.042	.020	.066	.029	.003	.024	-.097	.039	.037	.052	.010	-.012	-.033	-.058	.030	.03	.01	.06	.05	
WC1	-.028	-.008	.010	-.007	.008	.091	.011	-.027	.388	-.028	.144	.820*	.033	.053	.079	.102	.044	.065	.085	.014	.001	.003	.044	.040	.019	.030	.004	.028	.006	-.021	-.068	-.007	.01	.02	.11	-.07	
DP6	.072	.034	.003	-.004	.024	.046	-.001	.031	.066	.025	.024	.033	.899*	-.658	-.021	.077	-.046	.104	.035	.014	.053	-.023	.040	.042	-.017	.016	.032	.036	.004	-.015	.088	.050	.03	.04	.04	-.04	
DP5	.009	-.027	-.046	-.024	.050	-.052	.021	-.005	-.087	-.020	.037	.063	.897*	-.076	.079	.088	-.113	.077	.057	.065	.071	.033	.020	.041	-.072	-.019	.026	.072	.022	.071	.025	.04	-.05	.07	.05		
DP1	-.071	-.015	.013	-.061	.004	.073	.007	-.027	.040	.025	.071	-.079	.021	-.076	.931*	-.431	.180	.013	.058	.031	.012	.123	.027	-.028	.031	.073	-.036	.004	.025	-.057	-.023	.073	.01	.02	.00	-.01	
DP2	.039	-.020	.005	.058	-.073	.068	.020	.004	-.029	.036	.020	.102	.077	.079	.431	.935*	.193	.065	.041	.008	.032	.038	.014	.063	.009	.003	.033	.019	.014	-.019	.021	.001	.04	.00	.03	-.10	
DP4	.032	.049	.033	.027	-.072	.001	-.016	.079	-.050	-.044	.031	.044	.046	-.088	-.180	-.193	.958*	.237	.012	.024	.022	.143	.008	.104	.051	.027	-.017	.003	.013	-.011	.016	-.028	.03	.00	.03	.03	
DP3	-.075	.132	-.086	-.071	.020	.032	-.025	.015	.027	.055	.042	-.065	-.104	.113	.013	.065	-.237	.956*	.001	.096	.017	.096	.046	.060	.064	.019	.002	.051	.005	-.021	-.079	-.008	.04	.03	.00	-.04	
DC3	-.037	-.020	.025	-.003	-.020	.009	.009	.016	-.005	.046	-.020	.085	.035	.077	-.058	.041	.012	.001	.953*	.254	.108	-.081	.137	.049	.019	-.036	.068	.033	.055	-.017	-.099	.020	.01	.06	.06	.00	
DC5	.032	.000	-.058	-.018	-.008	.046	-.031	.015	-.061	-.051	.066	.014	.014	.057	.031	.008	-.024	.096	-.254	.922*	-.436	.065	.028	.252	.028	.041	.021	.037	-.074	.046	-.027	.051	.00	.03	.01	.02	
DC6	.019	-.009	.021	.021	-.031	-.046	.008	-.035	.037	-.030	-.029	.001	.053	.065	.012	.032	.022	.017	-.108	-.436	.942*	-.053	.118	-.026	.017	-.006	.020	.028	-.022	.035	.036	.031	-.03	.03	.07	-.04	
DC1	.020	-.021	-.106	-.049	-.002	.058	-.037	.039	.008	-.011	.003	.003	.023	-.071	.123	-.038	.143	.054	.081	.065	.053	.916*	.339	.181	.048	-.020	.043	.019	-.020	.002	.042	.01	.02	.03	.09		
DC2	-.066	.071	.005	-.033	.015	-.037	.072	-.067	.103	.000	.024	-.044	.040	.033	-.027	.014	.008	.046	.137	.028	.118	.339	.914*	.177	.026	.092	.050	.034	.045	-.001	-.033	.042	.04	-.02	.03	-.03	
DC4	-.015	.036	-.001	.031	-.008	-.009	.027	-.022	-.003	.048	-.097	.040	.042	.020	.028	.063	.104	.060	.049	.252	.026	.026	.181	-.177	.954*	.100	-.113	.014	.002	.031	-.014	-.050	.018	.05	-.02	.02	.04
AP6	-.074	.021	.010	-.020	.015	-.002	-.023	.055	-.036	.008	.039	.019	.017	.041	.031	.009	.051	.064	.019	.028	.017	-.048	.026	.100	.895*	-.542	.079	.050	.101	.074	.001	.077	.05	.04	.05	.03	
AP4	.021	-.019	-.001	-.043	-.030	-.057	.008	.028	.000	-.037	.030	.016	-.072	.073	.003	.027	.019	.036	.041	.006	.020	.092	.113	.542	.864*	.074	-.146	.008	.114	.228	-.020	.06	.05	-.03	.03		
AP2	-.007	-.009	.056	-.015	-.008	-.067	.008	.026	-.009	.057	-.052	.004	.032	.019	-.036	.033	.017	.002	.068	.021	.020	.043	.050	.014	.079	.074	.931*	-.218	-.154	-.284	.064	.034	.02	.01	.08	.03	
AP1	-.022	.052	-.136	.017	.039	-.059	.007	-.017	-.096	.040	.010	.028	.036	.026	.004	-.019	.003	.051	.033	.037	.028	-.043	.034	.002	-.050	-.146	-.218	.932*	-.107	.174	.080	.064	.01	.02	.07	-.06	
AP3	.045	-.042	.008	-.032	-.009	.044	.047	.039	-.059	-.046	.012	.006	.004	-.072	.025	.014	.013	.005	.055	-.074	-.022	.019	-.045	.031	-.101	-.008	.154	.107	.903*	-.360	.015	.036	-.04	.01	.02	.00	
AC3	-.034	-.005	.041	.007	-.051	.022	-.063	.034	.066	-.011	-.033	-.021	.015	.022	.057	.019	.011	.021	.017	.046	.035	-.020	.001	-.014	-.074	.114	-.284	-.174	.360	.907*	-.035	.057	.04	-.02	.01	.02	
AC5	.013	-.013	.078	-.064	.035	.016	-.035	-.022	.019	-.058	-.068	.088	.088	-.071	.023	-.021	.016	.079	.099	.027	.036	.002	.033	.050	.001	.228	.064	.080	.015	-.035	.928*	-.165	-.19	.11	-.01	-.08	
AC6	-.020	-.038	.069	-.003	.019	-.040	-.049	.008	.022	.025	.030	-.007	.050	.025	.073	.001	-.028	.008	.020	.051	.031	.042	.042	.018	.077	.020	-.034	.064	.036	.057	.165	.938*	.16	.07	.06	-.08	
AC4	-.023	-.023	.059	-.033	-.013	.023	-.108	.014	-.031	.001	.034	-.012	.032	.038	.008	.041	.035	.040	.010	.004	.032	.005	.036	.053	.055	.022	.006	-.035	.038	-.188	-.161	.907*	.09	-.43	-.03		
AC1	-.017	.007	.006	-.012	-.017	-.037	-.001	-.044	-.025	-.012	.007	.020	.040	-.048	.021	0.000	.003	.025	.062	.030	.027	.018	-.018	-.021	.036	.053	.013	.024	-.012	-.025	-.111	-.075	-.063	.886*	.08	-.49	
AC5	-.02	.08	-.02	.00	-.03	-.04	.04	-.01	.02	-.08	.06	.11	.04	-.07	.00	.03	.03	.																			

**Table D.2**  
**Principal component analysis: total variance explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of	Cumulative	Total	% of	Cumulative	Total	% of	Cumulative
1	9.447	26.241	26.241	9.447	26.241	26.241	6.929	19.246	19.246
2	5.017	13.936	40.177	5.017	13.936	40.177	3.909	10.857	30.104
3	3.975	11.042	51.219	3.975	11.042	51.219	3.706	10.294	40.398
4	2.554	7.094	58.313	2.554	7.094	58.313	3.584	9.955	50.353
5	1.376	3.823	62.135	1.376	3.823	62.135	3.499	9.719	60.071
6	1.160	3.224	65.359	1.160	3.224	65.359	1.904	5.288	65.359
7	0.946	2.627	67.986						
8	0.770	2.139	70.125						
9	0.707	1.964	72.089						
10	0.671	1.864	73.953						
11	0.651	1.808	75.761						
12	0.597	1.660	77.421						
13	0.564	1.566	78.987						
14	0.521	1.448	80.435						
15	0.505	1.403	81.837						
16	0.484	1.345	83.182						
17	0.456	1.266	84.448						
18	0.440	1.223	85.671						
19	0.410	1.138	86.809						
20	0.403	1.119	87.928						
21	0.384	1.067	88.995						
22	0.364	1.012	90.007						
23	0.348	0.967	90.973						
24	0.341	0.946	91.920						
25	0.327	0.908	92.827						
26	0.300	0.832	93.660						
27	0.297	0.825	94.485						
28	0.284	0.788	95.273						
29	0.258	0.716	95.989						
30	0.255	0.709	96.698						
31	0.242	0.673	97.372						
32	0.223	0.620	97.991						
33	0.218	0.605	98.596						
34	0.201	0.558	99.155						
35	0.185	0.514	99.669						
36	0.119	0.331	100.000						

**Table D.3**  
**Communalities**

	Initial	Extraction
WP1	1.000	.666
WP4	1.000	.703
WP3	1.000	.667
WP6	1.000	.500
WP2	1.000	.744
WP5	1.000	.721
WC4	1.000	.635
WC6	1.000	.605
WC2	1.000	.588
WC5	1.000	.673
WC3	1.000	.725
WC1	1.000	.644
DP6	1.000	.704
DP5	1.000	.747
DP1	1.000	.690
DP2	1.000	.734
DP4	1.000	.697
DP3	1.000	.609
DC3	1.000	.638
DC5	1.000	.718
DC6	1.000	.669
DC1	1.000	.535
DC2	1.000	.558
DC4	1.000	.659
AP6	1.000	.660
AP4	1.000	.670
AP2	1.000	.646
AP1	1.000	.616
AP3	1.000	.630
AP5	1.000	.734
AC3	1.000	.602
AC6	1.000	.471
AC4	1.000	.662
AC1	1.000	.654
AC5	1.000	.678
AC2	1.000	.677

**Table D.4**  
**Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
WP1		.754	
WP4		.775	
WP3		.694	
WP6		.468	
WP2		.837	
WP5		.804	
WC4		-.684	
WC6		-.592	
WC2		-.311	
WC5		-.721	
WC3		-.750	
WC1		-.378	
DP6	-.795		
DP5	-.807		
DP1	-.649		
DP2	-.709		
DP4	-.762		
DP3	-.709		
DC3	.744		
DC5	.828		
DC6	.803		
DC1	.656		
DC2	.658		
DC4	.791		
AP6			.749
AP4			.740
AP2			.667
AP1			.643
AP3			.606
AP5			.703
AC3			-.674
AC6			-.594
AC4			-.744
AC1			-.633
AC5			-.732
AC2			-.645

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

**Table D.5**  
**T-test – Group statistics (Gender)**

	Gender	N	Mean	Std. Deviation	Std. Error Mean
C_W	Female	478	31.775	21.816	.99784
	Male	559	28.962	21.143	.89425
C_D	Female	478	22.726	20.920	.95684
	Male	559	23.647	19.856	.83982
C_A	Female	478	25.411	21.346	.97636
	Male	559	22.853	20.421	.86373
C_W_D	Female	478	13.868	11.952	.54668
	Male	559	13.936	11.597	.49049
C_W_A	Female	478	13.427	10.334	.47269
	Male	559	11.941	9.640	.40774
C_D_A	Female	478	11.642	11.210	.51273
	Male	559	10.685	10.299	.43560
C_TOT	Female	478	9.323	8.155	.37302
	Male	559	8.671	7.750	.32781

**Table D.6**  
**T-test – Independent Samples Test (Gender)**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence	
									Lower	Upper
C_W	Equal variances assumed	.547	.460	2.104	1035	.036	2.81285	1.33664	.19002	5.43568
	Equal variances not assumed			2.099	999.666	.036	2.81285	1.33992	.18348	5.44222
C_D	Equal variances assumed	1.255	.263	-.727	1035	.468	-.92126	1.26795	-3.40930	1.56679
	Equal variances not assumed			-.724	991.837	.469	-.92126	1.27313	-3.41958	1.57707
C_A	Equal variances assumed	.926	.336	1.969	1035	.049	2.55830	1.29907	.00919	5.10741
	Equal variances not assumed			1.963	994.871	.050	2.55830	1.30357	.00023	5.11637
C_W_D	Equal variances assumed	.067	.796	-.092	1035	.927	-.06755	.73273	-1.50536	1.37027
	Equal variances not assumed			-.092	1000.082	.927	-.06755	.73446	-1.50881	1.37372
C_W_A	Equal variances assumed	1.357	.244	2.393	1035	.017	1.48584	.62087	.26754	2.70415
	Equal variances not assumed			2.380	984.837	.017	1.48584	.62425	.26083	2.71085
C_D_A	Equal variances assumed	6.250	.013	1.431	1035	.153	.95666	.66835	-.35483	2.26814
	Equal variances not assumed			1.422	978.363	.155	.95666	.67279	-.36362	2.27693
C_TOT	Equal variances assumed	.686	.408	1.318	1035	.188	.65202	.49462	-.31854	1.62259
	Equal variances not assumed			1.313	992.329	.189	.65202	.49659	-.32246	1.62651

**Table D.7**  
**Independent one-way ANOVA – statistics (Age)**

AGE (in groups) (etario_mdp)	C_W	C_D	C_A	C_W_D	C_W_A	C_D_A	C_TOT	
< 35,1 years	Mean	31.7637	25.5247	25.4371	15.3664	13.5068	12.8801	10.0705
	Std. Deviation	20.62013	18.37918	22.03896	10.91798	9.96052	12.44035	7.96842
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	87.70	92.40	98.10	46.50	57.60	68.00	44.70
	N	146	146	146	146	146	146	146
Between 35,2 and 47,1 years	Mean	31.7455	23.1833	24.2163	14.4222	13.1759	11.2504	9.3641
	Std. Deviation	22.21186	21.31149	20.15794	12.37852	10.61592	10.55170	8.52769
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	94.50	97.80	100.00	68.70	50.20	51.40	43.30
	N	468	468	468	468	468	468	468
Between 47,2 and 59,1 years	Mean	29.0835	23.5554	22.5172	13.8134	12.1658	10.6961	8.6909
	Std. Deviation	21.23321	19.99630	20.31094	11.84357	9.49811	10.53222	7.49752
	Minimum	0.00	0.00	0.00	.10	0.00	0.00	.10
	Maximum	92.40	81.90	86.26	64.70	49.90	73.00	53.60
	N	231	231	231	231	231	231	231
> than 59,1	Mean	26.9047	21.1682	24.3355	11.6422	11.1698	10.0057	7.5177
	Std. Deviation	20.32551	19.72454	22.39765	10.40008	8.83088	9.88817	6.70401
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	97.20	78.30	95.44	50.70	38.80	53.50	32.10
	N	192	192	192	192	192	192	192
Total	Mean	30.2588	23.2228	24.0318	13.9048	12.6260	11.1259	8.9717
	Std. Deviation	21.49125	20.34851	20.88167	11.75624	9.98893	10.73389	7.94245
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	97.20	97.80	100.00	68.70	57.60	73.00	53.60
	N	1037	1037	1037	1037	1037	1037	1037

**Table D.8**  
**Independent one-way ANOVA (Age)**

		Sum of Squares	df	Mean Square	F	Sig.
C_W * etario_mdp	Between Groups (Combined)	3844.150	3	1281.383	2.789	.040
	Within Groups	474657.281	1033	459.494		
	Total	478501.432	1036			
C_D * etario_mdp	Between Groups (Combined)	1610.355	3	536.785	1.298	.274
	Within Groups	427357.928	1033	413.706		
	Total	428968.283	1036			
C_A * etario_mdp	Between Groups (Combined)	851.853	3	283.951	.651	.583
	Within Groups	450889.745	1033	436.486		
	Total	451741.598	1036			
C_W_D * etario_mdp	Between Groups (Combined)	1422.065	3	474.022	3.454	.016
	Within Groups	141762.691	1033	137.234		
	Total	143184.756	1036			
C_W_A * etario_mdp	Between Groups (Combined)	710.842	3	236.947	2.384	.068
	Within Groups	102659.875	1033	99.380		
	Total	103370.717	1036			
C_D_A * etario_mdp	Between Groups (Combined)	740.140	3	246.713	2.148	.093
	Within Groups	118624.133	1033	114.835		
	Total	119364.272	1036			
C_TOT * etario_mdp	Between Groups (Combined)	672.471	3	224.157	3.580	.014
	Within Groups	64680.991	1033	62.615		
	Total	65353.462	1036			

**Table D.9**  
**Independent one-way ANOVA – statistics (Education level)**

Education level (Education)	C_W	C_D	C_A	C_W_D	C_W_A	C_D_A	C_TOT	
<b>Up to 3.º CEB</b>	Mean	27.5865	28.6162	22.4138	13.1676	10.8270	7.9568	
	Std. Deviation	20.96723	21.44893	22.83953	11.33495	7.67983	7.24291	
	Minimum	0.00	0.00	0.00	.90	0.00	0.00	.30
	Maximum	78.30	77.50	93.94	44.90	26.10	38.60	32.00
	N	37	37	37	37	37	37	37
<b>Secondary education</b>	Mean	30.0839	21.1483	22.6899	12.2007	11.7797	9.6510	7.5839
	Std. Deviation	22.91201	20.70401	20.29433	11.66146	9.88550	9.34675	6.69631
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	97.20	80.00	82.86	64.70	45.90	51.90	35.30
	N	143	143	143	143	143	143	143
<b>Bachelor degree</b>	Mean	30.4091	23.6644	24.7219	13.6886	12.3341	10.9765	8.8758
	Std. Deviation	21.14215	20.37376	21.29113	11.56470	9.42767	10.92442	7.70111
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	85.70	77.60	95.44	48.80	46.20	53.50	40.40
	N	132	132	132	132	132	132	132
<b>Graduation</b>	Mean	30.5910	23.4304	24.6215	14.4703	13.0388	11.4173	9.3637
	Std. Deviation	21.60448	20.28113	20.98135	11.91279	10.25712	10.69653	8.21162
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	94.50	97.80	100.00	68.70	49.90	68.00	53.60
	N	619	619	619	619	619	619	619
<b>Postgraduate studies</b>	Mean	24.4538	28.0385	22.2262	13.3231	12.4308	15.7615	10.4308
	Std. Deviation	18.91418	23.56015	19.27103	11.27742	10.78119	16.63052	10.03123
	Minimum	.20	0.00	0.00	.10	1.00	0.00	.60
	Maximum	58.80	88.00	73.49	36.20	38.20	50.40	30.10
	N	13	13	13	13	13	13	13
<b>Master's degree</b>	Mean	30.0484	21.6791	21.5878	13.3648	12.2440	10.9473	8.7462
	Std. Deviation	19.81308	19.38607	19.98684	11.32831	9.81977	11.82555	7.97025
	Minimum	0.00	0.00	0.00	.20	.30	0.00	.50
	Maximum	78.00	81.90	93.58	56.90	57.60	73.00	39.50
	N	91	91	91	91	91	91	91
<b>PhD</b>	Mean	26.8000	17.3000	44.7800	17.0000	16.6000	19.5500	12.8000
	Std. Deviation	26.30437	12.02082	23.49009	16.12203	15.83919	23.82950	16.12203
	Minimum	8.20	8.80	28.17	5.60	5.40	2.70	1.40
	Maximum	45.40	25.80	61.39	28.40	27.80	36.40	24.20
	N	2	2	2	2	2	2	2
<b>Total</b>	Mean	30.2588	23.2228	24.0318	13.9048	12.6260	11.1259	8.9717
	Std. Deviation	21.49125	20.34851	20.88167	11.75624	9.98893	10.73389	7.94245
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	97.20	97.80	100.00	68.70	57.60	73.00	53.60
	N	1037	1037	1037	1037	1037	1037	1037



**Table D.10**  
**Independent one-way ANOVA (Education level)**

			Sum of Squares	df	Mean Square	F	Sig.
<b>C_W * Education</b>	Betw een Groups	(Combined)	805.898	6	134.316	.290	.942
	Within Groups		477695.534	1030	463.782		
	Total		478501.432	1036			
<b>C_D * Education</b>	Betw een Groups	(Combined)	2332.623	6	388.770	.939	.466
	Within Groups		426635.660	1030	414.209		
	Total		428968.283	1036			
<b>C_A * Education</b>	Betw een Groups	(Combined)	2079.413	6	346.569	.794	.575
	Within Groups		449662.185	1030	436.565		
	Total		451741.598	1036			
<b>C_W_D * Education</b>	Betw een Groups	(Combined)	689.568	6	114.928	.831	.546
	Within Groups		142495.188	1030	138.345		
	Total		143184.756	1036			
<b>C_W_A * Education</b>	Betw een Groups	(Combined)	384.235	6	64.039	.640	.698
	Within Groups		102986.482	1030	99.987		
	Total		103370.717	1036			
<b>C_D_A * Education</b>	Betw een Groups	(Combined)	793.761	6	132.293	1.149	.332
	Within Groups		118570.511	1030	115.117		
	Total		119364.272	1036			
<b>C_TOT * Education</b>	Betw een Groups	(Combined)	471.450	6	78.575	1.247	.279
	Within Groups		64882.012	1030	62.992		
	Total		65353.462	1036			

**Table D.11**  
**Independent one-way ANOVA – statistics (Years of experience)**

YEARS OF EXPERIENCE (in groups) (Experience)		C_W	C_D	C_A	C_W_D	C_W_A	C_D_A	C_TOT
<= 8	Mean	31.8930	24.8099	24.0806	15.6164	13.3392	12.4614	10.1368
	Std. Deviation	21.31070	20.52335	20.39212	12.27339	9.95895	12.29798	8.66372
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	87.70	92.40	89.22	68.70	41.70	68.00	44.70
	N	171	171	171	171	171	171	171
9 - 19	Mean	31.0254	23.0975	25.2389	13.8222	13.0521	11.6783	9.1646
	Std. Deviation	22.53673	20.51495	21.06355	11.92503	10.72633	10.95336	8.40968
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	94.50	89.80	100.00	56.90	57.60	73.00	40.40
	N	401	401	401	401	401	401	401
20 - 31	Mean	31.1171	24.3369	22.8272	14.8406	12.7500	10.7389	9.2366
	Std. Deviation	20.51016	20.43486	20.44243	11.88847	9.61850	9.99246	7.50173
	Minimum	0.00	0.00	0.00	.00	0.00	0.00	.00
	Maximum	88.90	97.80	93.94	63.90	49.90	63.70	53.60
	N	298	298	298	298	298	298	298
> 32	Mean	25.2132	19.9102	23.2326	10.6808	10.6515	9.1228	6.8431
	Std. Deviation	20.24451	19.38139	21.72416	9.88393	8.57136	9.46322	6.28902
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	97.20	78.30	95.44	64.70	38.40	53.50	32.10
	N	167	167	167	167	167	167	167
Total	Mean	30.2588	23.2228	24.0318	13.9048	12.6260	11.1259	8.9717
	Std. Deviation	21.49125	20.34851	20.88167	11.75624	9.98893	10.73389	7.94245
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	97.20	97.80	100.00	68.70	57.60	73.00	53.60
	N	1037	1037	1037	1037	1037	1037	1037

**Table D.12**  
**Independent one-way ANOVA (Years of experience)**

		Sum of Squares	df	Mean Square	F	Sig.
C_W * Experience	Between Groups (Combined)	5163.426	3	1721.142	3.756	.011
	Within Groups	473338.006	1033	458.217		
	Total	478501.432	1036			
C_D * Experience	Between Groups (Combined)	2639.506	3	879.835	2.132	.095
	Within Groups	426328.777	1033	412.709		
	Total	428968.283	1036			
C_A * Experience	Between Groups (Combined)	1123.741	3	374.580	.859	.462
	Within Groups	450617.857	1033	436.223		
	Total	451741.598	1036			
C_W_D * Experience	Between Groups (Combined)	2500.432	3	833.477	6.120	.000
	Within Groups	140684.324	1033	136.190		
	Total	143184.756	1036			
C_W_A * Experience	Between Groups (Combined)	815.447	3	271.816	2.738	.042
	Within Groups	102555.270	1033	99.279		
	Total	103370.717	1036			
C_D_A * Experience	Between Groups (Combined)	1142.084	3	380.695	3.326	.019
	Within Groups	118222.188	1033	114.445		
	Total	119364.272	1036			
C_TOT * Experience	Between Groups (Combined)	1024.626	3	341.542	5.485	.001
	Within Groups	64328.836	1033	62.274		
	Total	65353.462	1036			

**Table D.13**  
**T-test – Group statistics (Religion – Faith)**

	FAITH	N	Mean	Std. Deviation	Std. Error Mean
C_W	Yes	848	30.059	21.405	.73503
	No	189	31.153	21.911	1.59382
C_D	Yes	848	22.500	20.517	.70456
	No	189	26.465	19.295	1.40349
C_A	Yes	848	23.357	20.648	.70904
	No	189	27.058	21.700	1.57843
C_W_D	Yes	848	13.647	11.768	.40411
	No	189	15.060	11.666	.84855
C_W_A	Yes	848	12.366	9.907	.34021
	No	189	13.794	10.294	.74877
C_D_A	Yes	848	10.662	10.607	.36425
	No	189	13.210	11.076	.80567
C_TOT	Yes	848	8.726	7.873	.27035
	No	189	10.075	8.179	.59495

**Table D.14**  
**T-test – Independent Samples Test (Religion – Faith)**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
C_W	Equal variances assumed	.244	.621	-.633	1035	.527	-1.09401	1.72921	-4.48716	2.29915
	Equal variances not assumed			-.623	273.725	.534	-1.09401	1.75515	-4.54930	2.36129
C_D	Equal variances assumed	.999	.318	-2.428	1035	.015	-3.96431	1.63294	-7.16856	-.76007
	Equal variances not assumed			-2.524	290.599	.012	-3.96431	1.57041	-7.05514	-.87349
C_A	Equal variances assumed	.629	.428	-2.208	1035	.027	-3.70114	1.67655	-6.99096	-.41133
	Equal variances not assumed			-2.139	269.096	.033	-3.70114	1.73037	-7.10792	-.29436
C_W_D	Equal variances assumed	.601	.438	-1.494	1035	.135	-1.41238	.94508	-3.26688	.44212
	Equal variances not assumed			-1.503	279.751	.134	-1.41238	.93986	-3.26248	.43772
C_W_A	Equal variances assumed	1.158	.282	-1.779	1035	.076	-1.42785	.80265	-3.00286	.14716
	Equal variances not assumed			-1.736	271.071	.084	-1.42785	.82244	-3.04703	.19133
C_D_A	Equal variances assumed	1.472	.225	-2.962	1035	.003	-2.54797	.86019	-4.23588	-.86005
	Equal variances not assumed			-2.882	270.205	.004	-2.54797	.88418	-4.28873	-.80721
C_TOT	Equal variances assumed	1.478	.224	-2.116	1035	.035	-1.34931	.63780	-2.60084	-.09777
	Equal variances not assumed			-2.065	271.088	.040	-1.34931	.65349	-2.63587	-.06275

**Table D.15**  
**Independent one-way ANOVA – statistics (Marital status)**

MARITAL STATUS		C_W	C_D	C_A	C_W_D	C_W_A	C_D_A	C_TOT
Single	Mean	30.8213	21.7266	23.2751	13.5426	12.2431	11.0064	8.7654
	Std. Deviation	21.73850	18.46101	21.42787	11.26642	9.59125	10.66804	7.67655
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	90.00	88.00	100.00	51.30	46.20	50.60	40.40
	N	188	188	188	188	188	188	188
Married	Mean	29.9525	23.3673	24.2672	13.9899	12.6409	11.1188	8.9927
	Std. Deviation	21.53163	20.62021	20.79210	11.78516	9.95027	10.71399	7.87054
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	97.20	97.80	98.10	68.70	57.60	73.00	44.70
	N	755	755	755	755	755	755	755
Divorced	Mean	31.9928	25.3988	23.5813	14.3145	13.2108	11.3795	9.2711
	Std. Deviation	21.60192	22.50257	21.07583	13.25645	11.23318	11.37595	9.27957
	Minimum	0.20	0.00	0.00	.10	0.40	0.00	.20
	Maximum	92.40	87.50	82.36	64.70	49.90	63.70	53.60
	N	83	83	83	83	83	83	83
Widowed	Mean	28.5909	22.4545	24.2073	11.1636	13.7364	11.7455	8.8000
	Std. Deviation	13.76266	15.11128	18.23993	4.34172	10.48554	9.52327	7.41377
	Minimum	7.60	3.80	1.67	2.80	1.80	0.80	2.50
	Maximum	48.60	49.50	60.55	19.10	38.40	33.40	26.30
	N	11	11	11	11	11	11	11
Total	Mean	30.2588	23.2228	24.0318	13.9048	12.6260	11.1259	8.9717
	Std. Deviation	21.49125	20.34851	20.88167	11.75624	9.98893	10.73389	7.94245
	Minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Maximum	97.20	97.80	100.00	68.70	57.60	73.00	53.60
	N	1037	1037	1037	1037	1037	1037	1037

**Table D.16**  
**Independent one-way ANOVA (Marital status)**

		Sum of Squares	df	Mean Square	F	Sig.
C_W * Marital_status	Between Groups (Combined)	410.489	3	136.830	0.296	.829
	Within Groups	478090.943	1033	462.818		
	Total	478501.432	1036			
C_D * Marital_status	Between Groups (Combined)	836.117	3	278.706	0.672	.569
	Within Groups	428132.166	1033	414.455		
	Total	428968.283	1036			
C_A * Marital_status	Between Groups (Combined)	166.648	3	55.549	.127	.944
	Within Groups	451574.950	1033	437.149		
	Total	451741.598	1036			
C_W_D * Marital_status	Between Groups (Combined)	126.725	3	42.242	0.305	.822
	Within Groups	143058.031	1033	138.488		
	Total	143184.756	1036			
C_W_A * Marital_status	Between Groups (Combined)	69.685	3	23.228	0.232	.874
	Within Groups	103301.032	1033	100.001		
	Total	103370.717	1036			
C_D_A * Marital_status	Between Groups (Combined)	12.284	3	4.095	0.035	.991
	Within Groups	119351.988	1033	115.539		
	Total	119364.272	1036			
C_TOT * Marital_status	Between Groups (Combined)	16.096	3	5.365	0.085	.968
	Within Groups	65337.366	1033	63.250		
	Total	65353.462	1036			

**Table D.17**  
**T-test – Group statistics (Children status dependency)**

	CHILDREN	N	Mean	Std. Deviation	Std. Error Mean
C_W	Yes	794	29.947	21.362	.75812
	No	243	31.277	21.921	1.40623
C_D	Yes	794	23.465	20.480	.72681
	No	243	22.430	19.934	1.27877
C_A	Yes	794	24.165	20.792	.73789
	No	243	23.596	21.209	1.36054
C_W_D	Yes	794	13.767	11.533	.40931
	No	243	14.356	12.470	.79998
C_W_A	Yes	794	12.622	9.725	.34513
	No	243	12.641	10.828	.69460
C_D_A	Yes	794	11.007	10.498	.37255
	No	243	11.515	11.486	.73680
C_TOT	Yes	794	8.903	7.734	.27448
	No	243	9.196	8.600	.55172

**Table D.18**  
**T-test – Independent samples test (Children status dependency)**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
C_W	Equal variances assumed	.625	.429	-.844	1035	.399	-1.32919	1.57579	-4.42129	1.76292
	Equal variances not assumed			-.832	392.986	.406	-1.32919	1.59757	-4.47004	1.81166
C_D	Equal variances assumed	.145	.703	.694	1035	.488	1.03532	1.49217	-1.89269	3.96334
	Equal variances not assumed			.704	410.529	.482	1.03532	1.47089	-1.85608	3.92673
C_A	Equal variances assumed	.013	.909	.372	1035	.710	.56940	1.53152	-2.43583	3.57463
	Equal variances not assumed			.368	394.876	.713	.56940	1.54776	-2.47348	3.61228
C_W_D	Equal variances assumed	1.570	.210	-.684	1035	.494	-.58975	.86210	-2.28141	1.10190
	Equal variances not assumed			-.656	377.394	.512	-.58975	.89861	-2.35667	1.17716
C_W_A	Equal variances assumed	1.562	.212	-.026	1035	.979	-.01920	.73266	-1.45688	1.41847
	Equal variances not assumed			-.025	369.370	.980	-.01920	.77562	-1.54438	1.50598
C_D_A	Equal variances assumed	3.003	.083	-.646	1035	.518	-.50843	.78715	-2.05301	1.03616
	Equal variances not assumed			-.616	374.099	.538	-.50843	.82563	-2.13189	1.11504
C_TOT	Equal variances assumed	2.430	.119	-.503	1035	.615	-.29274	.58249	-1.43573	.85026
	Equal variances not assumed			-.475	369.709	.635	-.29274	.61622	-1.50448	.91901

<b>Reliability Statistics</b>				
Cronbach's Alpha	N of Items			
.614	36			

<b>Item-Total Statistics</b>				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
WP1	12.64	475.350	.369	.587
WP4	12.63	480.311	.320	.592
WP3	11.83	468.610	.386	.584
WP6	10.54	481.907	.274	.596
WP2	13.13	482.644	.307	.594
WP5	12.25	483.132	.281	.595
WC4	9.37	525.225	-.086	.626
WC6	9.30	519.265	-.018	.620
WC2	10.66	492.119	.224	.601
WC5	8.56	525.982	-.096	.624
WC3	8.85	521.992	-.050	.622
WC1	11.14	497.048	.152	.608
DP6	11.01	497.846	.132	.610
DP5	10.94	491.504	.184	.605
DP1	12.90	488.025	.255	.598
DP2	12.52	484.671	.258	.597
DP4	12.19	493.792	.164	.607
DP3	11.24	489.172	.206	.603
DC3	11.57	503.555	.094	.613
DC5	10.87	517.139	-.021	.624
DC6	10.62	520.605	-.051	.627
DC1	10.15	499.089	.162	.607
DC2	11.06	493.520	.185	.605
DC4	10.46	518.123	-.029	.625
AP6	12.18	489.892	.223	.601
AP4	11.57	496.786	.156	.607
AP2	13.49	490.364	.299	.597
AP1	12.49	479.758	.335	.591
AP3	12.40	482.911	.310	.593
AP5	12.96	481.755	.346	.591
AC3	10.42	507.201	.088	.613
AC6	9.78	514.446	.009	.620
AC4	9.29	517.880	-.003	.619
AC1	9.62	501.933	.145	.608
AC5	9.25	520.333	-.031	.621
AC2	9.76	501.353	.147	.608

**Figure D.1. Cronbach's alpha for all thirty-six items**

Reliability Statistics		Item-Total Statistics				
Cronbach's Alpha	N of Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
<b>.437</b>	12					
		WP1	7.35	86.321	.401	.332
		WP4	7.34	87.214	.377	.340
		WP3	6.54	82.611	.423	.314
		WP6	5.25	88.925	.292	.367
		WP2	7.84	91.193	.297	.370
		WP5	6.96	89.759	.300	.366
		WC4	4.08	113.785	-.163	.500
		WC6	4.01	109.310	-.052	.468
		WC2	5.37	98.794	.137	.423
		WC5	3.27	113.835	-.161	.487
		WC3	3.56	112.699	-.136	.489
		WC1	5.85	100.692	.067	.448

**Figure D.2. Cronbach's alpha for twelve items (Workers' dilemma)**

Reliability Statistics		Item-Total Statistics				
Cronbach's Alpha	N of Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
<b>.229</b>	12					
		DP6	1.07	90.128	.107	.197
		DP5	1.00	89.244	.123	.189
		DP1	2.96	86.385	.239	.138
		DP2	2.58	85.274	.226	.138
		DP4	2.25	89.902	.109	.196
		DP3	1.30	88.774	.135	.183
		DC3	1.64	95.606	.014	.241
		DC5	.94	100.814	-.084	.284
		DC6	.69	101.802	-.104	.293
		DC1	.21	93.206	.099	.203
		DC2	1.12	89.830	.136	.184
		DC4	.53	101.279	-.093	.288

**Figure D.3. Cronbach's alpha for twelve items (Doctors' dilemma)**

Reliability Statistics		Item-Total Statistics				
Cronbach's Alpha	N of Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
<b>.429</b>	12					
		AP6	4.57	89.611	.142	.412
		AP4	3.96	92.136	.082	.434
		AP2	5.88	89.703	.235	.385
		AP1	4.88	84.435	.280	.364
		AP3	4.79	83.575	.308	.354
		AP5	5.35	84.496	.316	.354
		AC3	2.81	97.430	.007	.453
		AC6	2.17	94.180	.059	.440
		AC4	1.68	97.183	.050	.436
		AC1	2.01	89.841	.190	.396
		AC5	1.64	97.833	.036	.439
		AC2	2.15	90.384	.171	.402

**Figure D.4. Cronbach's alpha for twelve items (Accountants' dilemma)**

Reliability Statistics	
Cronbach's Alpha	N of Items
.883	6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
WP1	-3.29	105.403	.734	.857
WP4	-3.30	103.646	.771	.851
WP3	-4.10	103.121	.694	.863
WP6	-5.38	115.102	.461	.901
WP2	-2.80	104.702	.768	.851
WP5	-3.68	102.532	.767	.851

Reliability Statistics	
Cronbach's Alpha	N of Items
.799	6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
WC4	8.58	58.100	.588	.760
WC6	8.51	60.767	.566	.766
WC2	9.88	59.132	.450	.796
WC5	7.78	61.101	.629	.757
WC3	8.07	56.626	.706	.735
WC1	10.36	56.099	.474	.795

Figure D.5. Cronbach's alpha for six items (Workers' dilemma – pro and con arguments)

Reliability Statistics	
Cronbach's Alpha	N of Items
.917	6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
DP6	-2.70	125.198	.790	.899
DP5	-2.77	123.433	.819	.894
DP1	-.81	134.284	.719	.908
DP2	-1.19	127.900	.775	.901
DP4	-1.51	125.397	.777	.900
DP3	-2.46	129.189	.713	.909

Reliability Statistics	
Cronbach's Alpha	N of Items
.894	6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
DC3	3.92	107.611	.704	.878
DC5	3.22	104.170	.791	.864
DC6	2.97	105.956	.745	.871
DC1	2.50	114.538	.651	.886
DC2	3.41	110.041	.661	.884
DC4	2.81	106.066	.747	.871

Figure D.6. Cronbach's alpha for six items (Doctors' dilemma – pro and con arguments)

Reliability Statistics	
Cronbach's Alpha	N of Items
.874	6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
AP6	-5.82	85.425	.710	.847
AP4	-6.43	86.780	.660	.856
AP2	-4.51	94.798	.663	.857
AP1	-5.51	88.613	.669	.854
AP3	-5.60	90.457	.632	.860
AP5	-5.04	88.189	.745	.842

Reliability Statistics	
Cronbach's Alpha	N of Items
.861	6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
AC3	9.39	71.773	.626	.843
AC6	8.75	71.963	.560	.858
AC4	8.27	73.477	.714	.829
AC1	8.59	70.373	.684	.832
AC5	8.22	74.731	.681	.835
AC2	8.73	69.720	.690	.831

Figure D.7. Cronbach's alpha for six items (Accountants' dilemma – pro and con arguments)



Reliability Statistics			Reliability Statistics		
Sample	Cronbach's Alpha	N of Items	Sample	Cronbach's Alpha	N of Items
Online	.881	6	Online	.785	6
Presence	.884	6	Presence	.810	6

Item-Total Statistics					Item-Total Statistics						
Sample	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Sample	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted		
Online	WP1	-4.08	99.916	.778	.846	Online	WC4	8.58	54.996	.576	.743
	WP4	-4.15	98.124	.783	.844		WC6	8.62	56.361	.572	.745
	WP3	-4.92	98.652	.670	.864		WC2	10.06	56.368	.418	.786
	WP6	-6.30	112.407	.418	.905		WC5	7.80	58.950	.611	.743
	WP2	-3.55	101.656	.772	.848		WC3	8.04	54.925	.667	.725
	WP5	-4.47	98.673	.767	.847		WC1	10.47	53.433	.462	.778
Presence	WP1	-2.64	109.107	.700	.863	WC4	8.59	60.714	.598	.774	
	WP4	-2.61	107.228	.762	.854	WC6	8.43	64.424	.564	.783	
	WP3	-3.43	105.931	.713	.861	WC2	9.74	61.427	.477	.803	
	WP6	-4.65	116.264	.495	.897	WC5	7.75	62.948	.643	.768	
	WP2	-2.19	106.520	.764	.853	WC3	8.09	58.101	.737	.744	
WP5	-3.04	104.926	.764	.853	WC1	10.27	58.338	.483	.808		

Figure D.8. Cronbach's alpha for type of administration (Workers' dilemma)

Reliability Statistics			Reliability Statistics		
Sample	Cronbach's Alpha	N of Items	Sample	Cronbach's Alpha	N of Items
Online	.918	6	Online	.886	6
Presence	.917	6	Presence	.900	6

Item-Total Statistics					Item-Total Statistics						
Sample	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Sample	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted		
Online	DP6	-2.61	120.248	.806	.898	Online	DC3	3.39	101.016	.656	.873
	DP5	-2.69	118.120	.821	.895		DC5	2.67	94.723	.783	.852
	DP1	-.53	129.977	.720	.910		DC6	2.38	95.947	.771	.854
	DP2	-1.03	123.481	.762	.904		DC1	1.84	105.579	.626	.877
	DP4	-1.35	121.482	.775	.902		DC2	2.85	101.276	.634	.877
	DP3	-2.27	122.869	.722	.910		DC4	2.19	97.875	.728	.861
Presence	DP6	-2.77	129.412	.778	.900	DC3	4.35	112.722	.737	.881	
	DP5	-2.83	127.939	.818	.894	DC5	3.67	111.545	.796	.872	
	DP1	-1.03	137.896	.720	.908	DC6	3.45	113.727	.727	.882	
	DP2	-1.31	131.666	.785	.899	DC1	3.03	121.356	.669	.891	
	DP4	-1.64	128.748	.779	.899	DC2	3.86	116.872	.679	.890	
	DP3	-2.62	134.478	.706	.910	DC4	3.31	112.317	.761	.877	

Figure D.9. Cronbach's alpha for type of administration (Doctors' dilemma)

Reliability Statistics			Reliability Statistics		
Sample	Cronbach's Alpha	N of Items	Sample	Cronbach's Alpha	N of Items
Online	.864	6	Online	.864	6
Presence	.881	6	Presence	.859	6

Item-Total Statistics					Item-Total Statistics						
Sample	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Sample	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted		
Online	AP6	-6.39	77.521	.707	.833	Online	AC3	10.17	65.370	.638	.845
	AP4	-7.08	77.855	.660	.842		AC6	9.30	67.663	.535	.865
	AP2	-5.07	89.163	.629	.849		AC4	9.02	67.840	.715	.833
	AP1	-6.04	82.001	.644	.844		AC1	9.34	64.468	.669	.839
	AP3	-6.31	83.902	.582	.855		AC5	8.98	67.902	.713	.833
	AP5	-5.65	80.086	.760	.824		AC2	9.49	63.084	.715	.830
Presence	AP6	-5.37	91.506	.712	.856	AC3	8.76	76.194	.617	.841	
	AP4	-5.90	93.532	.661	.865	AC6	8.31	75.126	.573	.852	
	AP2	-4.06	99.069	.684	.862	AC4	7.66	77.341	.711	.826	
	AP1	-5.08	93.709	.684	.861	AC1	7.98	74.444	.694	.827	
	AP3	-5.02	95.181	.671	.863	AC5	7.61	79.546	.657	.835	
	AP5	-4.54	94.354	.734	.853	AC2	8.11	74.359	.672	.831	

Figure D.10. Cronbach's alpha for type of administration (Accountants' dilemma)

Reliability Statistics			Item-Total Statistics					
Gender	Cronbach's Alpha	N. of Items	Gender	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
Female	<b>.875</b>	6						
Male	<b>.889</b>	6						
			Female	WP1	-2.80	99.795	.727	.846
				WP4	-2.90	98.506	.758	.841
				WP3	-3.62	97.021	.688	.853
				WP6	-4.92	110.370	.443	.893
				WP2	-2.31	99.597	.754	.842
				WP5	-3.38	97.243	.731	.845
			Male	WP1	-3.70	110.013	.740	.865
				WP4	-3.64	107.978	.781	.858
				WP3	-4.51	108.154	.700	.871
				WP6	-5.78	119.005	.475	.908
				WP2	-3.22	108.872	.779	.859
				WP5	-3.94	107.096	.798	.856

**Figure D.11. Cronbach's alpha for Gender (Workers' dilemma – pro arguments)**

Reliability Statistics			Item-Total Statistics					
Gender	Cronbach's Alpha	N. of Items	Gender	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
Female	<b>.798</b>	6						
Male	<b>.801</b>	6						
			Female	WC4	8.37	56.784	.587	.760
				WC6	8.41	58.125	.597	.760
				WC2	9.81	55.227	.479	.789
				WC5	7.59	60.339	.610	.762
				WC3	7.96	54.278	.697	.735
				WC1	10.46	53.859	.458	.800
			Male	WC4	8.76	59.260	.592	.762
				WC6	8.61	63.117	.543	.774
				WC2	9.94	62.568	.426	.803
				WC5	7.93	61.807	.648	.754
				WC3	8.15	58.718	.714	.737
				WC1	10.28	58.100	.492	.791

**Figure D.12. Cronbach's alpha for Gender (Workers' dilemma – con arguments)**

Reliability Statistics			Item-Total Statistics					
Gender	Cronbach's Alpha	N. of Items	Gender	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
Female	<b>.919</b>	6						
Male	<b>.916</b>	6						
			Female	DP6	-2.02	124.889	.806	.900
				DP5	-2.22	123.969	.826	.897
				DP1	-.02	133.691	.716	.912
				DP2	-.44	127.337	.771	.904
				DP4	-1.06	123.112	.793	.901
				DP3	-1.71	130.289	.709	.913
				DP6	-3.28	124.953	.776	.899
				DP5	-3.23	122.725	.813	.893
			Male	DP1	-1.48	134.056	.724	.906
				DP2	-1.82	127.736	.779	.898
				DP4	-1.90	127.247	.766	.900
				DP3	-3.10	127.588	.718	.907

**Figure D.13. Cronbach's alpha for Gender (Doctors' dilemma – pro arguments)**

Reliability Statistics			Item-Total Statistics					
Gender	Cronbach's Alpha	N. of Items	Gender	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
Female	<b>.905</b>	6						
Male	<b>.883</b>	6						
			Female	DC3	3.22	114.048	.706	.893
				DC5	2.47	108.480	.822	.876
				DC6	2.27	112.195	.755	.886
				DC1	1.59	118.918	.684	.896
				DC2	2.59	114.841	.687	.896
				DC4	2.03	110.490	.782	.882
				DC3	4.53	101.504	.700	.862
				DC5	3.87	99.766	.760	.852
			Male	DC6	3.57	100.034	.735	.856
				DC1	3.27	109.683	.622	.874
				DC2	4.11	105.080	.636	.873
				DC4	3.48	101.490	.714	.860

**Figure D.14. Cronbach's alpha for Gender (Doctors' dilemma – con arguments)**

Reliability Statistics			Item-Total Statistics					
Gender	Cronbach's Alpha	N. of Items	Gender	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
Female	<b>.877</b>	6						
Male	<b>.873</b>	6						
			Female	AP6	-5.68	84.829	.697	.854
				AP4	-6.53	85.822	.647	.863
				AP2	-4.37	93.689	.657	.861
				AP1	-5.31	87.013	.678	.857
				AP3	-5.31	87.424	.706	.852
				AP5	-4.91	87.808	.728	.849
				AP6	-5.95	86.054	.722	.843
			Male	AP4	-6.35	87.740	.678	.851
				AP2	-4.64	95.885	.668	.854
				AP1	-5.68	90.075	.662	.854
				AP3	-5.84	93.078	.579	.868
				AP5	-5.14	88.648	.759	.837

**Figure D.15. Cronbach's alpha for Gender (Accountants' dilemma – pro arguments)**

Reliability Statistics			Item-Total Statistics					
Gender	Cronbach's Alpha	N. of Items	Gender	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
Female	<b>.854</b>	6						
Male	<b>.867</b>	6						
			Female	AC3	9.82	63.643	.627	.833
				AC6	8.84	65.161	.576	.843
				AC4	8.59	66.330	.691	.823
				AC1	8.86	63.299	.680	.823
				AC5	8.49	68.393	.641	.832
				AC2	9.05	62.524	.657	.827
			Male	AC3	9.02	78.560	.631	.850
				AC6	8.68	77.893	.552	.868
				AC4	7.99	79.548	.731	.835
				AC1	8.36	76.432	.686	.840
				AC5	7.99	80.168	.709	.838
				AC2	8.46	75.837	.716	.835

**Figure D.16. Cronbach's alpha for Gender (Accountants' dilemma – con arguments)**

## Appendix E: Multivariate regression analysis outputs

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,094 <sup>a</sup>	.009	.008	9.86902	.009	7.556	1	846	.006

a. Predictors: (Constant), Age

b. Dependent Variable: C\_W\_A

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,114 <sup>a</sup>	.013	.012	10.54392	.013	11.187	1	846	.001

a. Predictors: (Constant), Exper

b. Dependent Variable: C\_D\_A

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,122 <sup>a</sup>	.015	.014	7.81807	.015	12.854	1	846	.000

a. Predictors: (Constant), Age

b. Dependent Variable: C\_TOT

**Figure E.1. Model summary (C\_W\_A; C\_D\_A; C\_TOT)**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1240.772	1	1240.772	9.045	,003 <sup>b</sup>
	Residual	116051.282	846	137.176		
	Total	117292.054	847			
2	Regression	1813.874	2	906.937	6.636	,001 <sup>c</sup>
	Residual	115478.180	845	136.661		
	Total	117292.054	847			

a. Dependent Variable: C\_W\_D

b. Predictors: (Constant), Age

c. Predictors: (Constant), Age, Gender

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	735.925	1	735.925	7.556	,006 <sup>b</sup>
	Residual	82398.383	846	97.398		
	Total	83134.308	847			

a. Dependent Variable: C\_W\_A

b. Predictors: (Constant), Age

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1243.674	1	1243.674	11.187	,001 <sup>b</sup>
	Residual	94053.453	846	111.174		
	Total	95297.127	847			

a. Dependent Variable: C\_D\_A

b. Predictors: (Constant), Exper

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	785.687	1	785.687	12.854	,000 <sup>b</sup>
	Residual	51709.438	846	61.122		
	Total	52495.124	847			

a. Dependent Variable: C\_TOT

b. Predictors: (Constant), Age

**Figure E.2. ANOVA (C\_W\_D; C\_W\_A; C\_D\_A; C\_TOT)**

Coefficients <sup>a</sup>											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	16.083	1.394		11.536	.000					
	Age	-.079	.029	-.094	-2.749	.006	-.094	-.094	-.094	1.000	1.000

a. Dependent Variable: C\_W\_A

Coefficients <sup>a</sup>											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	12.702	.709		17.905	.000					
	Exper	-.105	.031	-.114	-3.345	.001	-.114	-.114	-.114	1.000	1.000

a. Dependent Variable: C\_D\_A

Coefficients <sup>a</sup>											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	12.567	1.104		11.378	.000					
	Age	-.082	.023	-.122	-3.585	.000	-.122	-.122	-.122	1.000	1.000

a. Dependent Variable: C\_TOT

**Figure E.3. Model parameters (C\_W\_A; C\_D\_A; C\_TOT)**

Excluded Variables <sup>a</sup>								
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	SCSRF_TT	-.011 <sup>b</sup>	-.323	.746	-.011	.999	1.001	.999
	Exper	-.048 <sup>b</sup>	-.750	.453	-.026	.284	3.527	.284
	Gender	.076 <sup>b</sup>	2.048	.041	.070	.835	1.197	.835
2	SCSRF_TT	-.006 <sup>c</sup>	-.166	.868	-.006	.993	1.007	.830
	Exper	-.048 <sup>c</sup>	-.756	.450	-.026	.283	3.527	.269

a. Dependent Variable: C\_W\_D

b. Predictors in the Model: (Constant), Age

c. Predictors in the Model: (Constant), Age, Gender

Excluded Variables <sup>a</sup>								
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	SCSRF_TT	.021 <sup>b</sup>	.620	.535	.021	.999	1.001	.999
	Exper	.033 <sup>b</sup>	.513	.608	.018	.284	3.527	.284
	Gender	-.052 <sup>b</sup>	-1.383	.167	-.048	.835	1.197	.835

a. Dependent Variable: C\_W\_A

b. Predictors in the Model: (Constant), Age

Excluded Variables <sup>a</sup>								
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	SCSRF_TT	-.055 <sup>b</sup>	-1.621	.105	-.056	1.000	1.000	1.000
	Age	-.048 <sup>b</sup>	-.744	.457	-.026	.284	3.527	.284
	Gender	-.015 <sup>b</sup>	-.417	.677	-.014	.881	1.135	.881

a. Dependent Variable: C\_D\_A

b. Predictors in the Model: (Constant), Exper

Excluded Variables <sup>a</sup>								
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	SCSRF_TT	-.019 <sup>b</sup>	-.568	.570	-.020	.999	1.001	.999
	Exper	-.028 <sup>b</sup>	-.440	.660	-.015	.284	3.527	.284
	Gender	.013 <sup>b</sup>	.350	.726	.012	.835	1.197	.835

a. Dependent Variable: C\_TOT

b. Predictors in the Model: (Constant), Age

**Figure E.4. Excluded variables (C\_W\_D; C\_W\_A; C\_D\_A; C\_TOT)**



**Table E.1**  
**MANOVA – Multivariate tests<sup>a</sup>**

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>d</sup>
Intercept	Pillai's Trace	.149	44,098 <sup>b</sup>	4.000	1005.000	.000	.149	176.390	1.000
	Wilks' Lambda	.851	44,098 <sup>b</sup>	4.000	1005.000	.000	.149	176.390	1.000
	Hotelling's Trace	.176	44,098 <sup>b</sup>	4.000	1005.000	.000	.149	176.390	1.000
	Roy's Largest Root	.176	44,098 <sup>b</sup>	4.000	1005.000	.000	.149	176.390	1.000
Sex	Pillai's Trace	.007	1,736 <sup>b</sup>	4.000	1005.000	.140	.007	6.942	.534
	Wilks' Lambda	.993	1,736 <sup>b</sup>	4.000	1005.000	.140	.007	6.942	.534
	Hotelling's Trace	.007	1,736 <sup>b</sup>	4.000	1005.000	.140	.007	6.942	.534
	Roy's Largest Root	.007	1,736 <sup>b</sup>	4.000	1005.000	.140	.007	6.942	.534
Education	Pillai's Trace	.013	.672	20.000	4032.000	.857	.003	13.448	.547
	Wilks' Lambda	.987	.672	20.000	3334.158	.857	.003	11.138	.449
	Hotelling's Trace	.013	.672	20.000	4014.000	.858	.003	13.432	.547
	Roy's Largest Root	.009	1,780 <sup>c</sup>	5.000	1008.000	.114	.009	8.900	.615
Marital_status	Pillai's Trace	.008	.688	12.000	3021.000	.764	.003	8.258	.414
	Wilks' Lambda	.992	.688	12.000	2659.272	.765	.003	7.278	.362
	Hotelling's Trace	.008	.687	12.000	3011.000	.765	.003	8.250	.413
	Roy's Largest Root	.006	1,554 <sup>c</sup>	4.000	1007.000	.185	.006	6.216	.483
Children	Pillai's Trace	.002	.407 <sup>b</sup>	4.000	1005.000	.803	.002	1.630	.146
	Wilks' Lambda	.998	.407 <sup>b</sup>	4.000	1005.000	.803	.002	1.630	.146
	Hotelling's Trace	.002	.407 <sup>b</sup>	4.000	1005.000	.803	.002	1.630	.146
	Roy's Largest Root	.002	.407 <sup>b</sup>	4.000	1005.000	.803	.002	1.630	.146
Faith	Pillai's Trace	.013	3,298 <sup>b</sup>	4.000	1005.000	.011	.013	13.193	.841
	Wilks' Lambda	.987	3,298 <sup>b</sup>	4.000	1005.000	.011	.013	13.193	.841
	Hotelling's Trace	.013	3,298 <sup>b</sup>	4.000	1005.000	.011	.013	13.193	.841
	Roy's Largest Root	.013	3,298 <sup>b</sup>	4.000	1005.000	.011	.013	13.193	.841
Income	Pillai's Trace	.019	1,211	16.000	4032.000	.251	.005	19.370	.801
	Wilks' Lambda	.981	1,210	16.000	3070.963	.251	.005	14.775	.651
	Hotelling's Trace	.019	1,209	16.000	4014.000	.252	.005	19.341	.800
	Roy's Largest Root	.011	2,811 <sup>c</sup>	4.000	1008.000	.024	.011	11.244	.770
etario_mdp	Pillai's Trace	.008	.646	12.000	3021.000	.804	.003	7.749	.387
	Wilks' Lambda	.992	.645	12.000	2659.272	.805	.003	6.827	.338
	Hotelling's Trace	.008	.645	12.000	3011.000	.805	.003	7.736	.386
	Roy's Largest Root	.005	1,328 <sup>c</sup>	4.000	1007.000	.257	.005	5.313	.418
Experience	Pillai's Trace	.016	1,312	12.000	3021.000	.204	.005	15.738	.748
	Wilks' Lambda	.985	1,312	12.000	2659.272	.204	.005	13.876	.679
	Hotelling's Trace	.016	1,311	12.000	3011.000	.204	.005	15.737	.748
	Roy's Largest Root	.010	2,636 <sup>c</sup>	4.000	1007.000	.033	.010	10.543	.740

a. Design: Intercept + Sex + Education + Marital\_status + Children + Faith + Income + etario\_mdp + Experience

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Computed using alpha = .05

**Table E.2**  
**MANOVA – Tests of between-subjects effects**

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>e</sup>
Corrected Model	C_W_D	5261,677 <sup>a</sup>	26	202.372	1.482	.057	.037	38.533	.973
	C_W_A	2602,012 <sup>b</sup>	26	100.077	1.004	.459	.025	26.101	.850
	C_D_A	4110,374 <sup>c</sup>	26	158.091	1.391	.092	.035	36.172	.962
	C_TOT	2299,595 <sup>d</sup>	26	88.446	1.420	.080	.035	36.932	.966
Intercept	C_W_D	10939.359	1	10939.359	80.112	.000	.074	80.112	1.000
	C_W_A	10024.355	1	10024.355	100.557	.000	.091	100.557	1.000
	C_D_A	9169.335	1	9169.335	80.691	.000	.074	80.691	1.000
	C_TOT	5408.974	1	5408.974	86.868	.000	.079	86.868	1.000
Sex	C_W_D	10.867	1	10.867	.080	.778	.000	.080	.059
	C_W_A	3.593	1	3.593	.036	.849	.000	.036	.054
	C_D_A	76.998	1	76.998	.678	.411	.001	.678	.130
	C_TOT	2.316	1	2.316	.037	.847	.000	.037	.054
Education	C_W_D	202.307	5	40.461	.296	.915	.001	1.482	.125
	C_W_A	94.844	5	18.969	.190	.966	.001	.951	.096
	C_D_A	431.974	5	86.395	.760	.579	.004	3.801	.276
	C_TOT	127.170	5	25.434	.408	.843	.002	2.042	.159
Marital_status	C_W_D	680.909	3	226.970	1.662	.174	.005	4.986	.438
	C_W_A	326.405	3	108.802	1.091	.352	.003	3.274	.297
	C_D_A	363.405	3	121.135	1.066	.363	.003	3.198	.290
	C_TOT	256.184	3	85.395	1.371	.250	.004	4.114	.367
Children	C_W_D	95.104	1	95.104	.696	.404	.001	.696	.133
	C_W_A	1.482	1	1.482	.015	.903	.000	.015	.052
	C_D_A	6.325	1	6.325	.056	.814	.000	.056	.056
	C_TOT	3.999	1	3.999	.064	.800	.000	.064	.057
Faith	C_W_D	298.303	1	298.303	2.185	.140	.002	2.185	.315
	C_W_A	414.200	1	414.200	4.155	.042	.004	4.155	.531
	C_D_A	1161.739	1	1161.739	10.223	.001	.010	10.223	.891
	C_TOT	302.403	1	302.403	4.857	.028	.005	4.857	.596
Income	C_W_D	724.859	4	181.215	1.327	.258	.005	5.308	.417
	C_W_A	418.387	4	104.597	1.049	.381	.004	4.197	.334
	C_D_A	443.391	4	110.848	.975	.420	.004	3.902	.311
	C_TOT	397.665	4	99.416	1.597	.173	.006	6.387	.496
etario_mdp	C_W_D	407.216	3	135.739	.994	.395	.003	2.982	.272
	C_W_A	119.432	3	39.811	.399	.754	.001	1.198	.130
	C_D_A	244.955	3	81.652	.719	.541	.002	2.156	.204
	C_TOT	92.800	3	30.933	.497	.685	.001	1.490	.152
Experience	C_W_D	1204.376	3	401.459	2.940	.032	.009	8.820	.700
	C_W_A	191.642	3	63.881	.641	.589	.002	1.922	.185
	C_D_A	515.509	3	171.836	1.512	.210	.004	4.537	.401
	C_TOT	370.872	3	123.624	1.985	.114	.006	5.956	.513
Error	C_W_D	137643.962	1008	136.552					
	C_W_A	100486.179	1008	99.689					
	C_D_A	114543.849	1008	113.635					
	C_TOT	62764.579	1008	62.266					
Total	C_W_D	342844.630	1035						
	C_W_A	267883.940	1035						
	C_D_A	246398.670	1035						
	C_TOT	148236.290	1035						
Corrected Total	C_W_D	142905.639	1034						
	C_W_A	103088.191	1034						
	C_D_A	118654.223	1034						
	C_TOT	65064.174	1034						

a. R Squared = .037 (Adjusted R Squared = .012)

b. R Squared = .025 (Adjusted R Squared = .000)

c. R Squared = .035 (Adjusted R Squared = .010)

d. R Squared = .035 (Adjusted R Squared = .010)

e. Computed using alpha = .05





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“Knowing is not enough; we must apply. Willing is not enough; we must do.”

Johann Wolfgang von Goethe (1749-1832)  
(German poet, novelist, playwright, natural philosopher, diplomat)

“Ethical behaviour is doing the right thing when no one else is watching – even when  
doing the wrong thing is legal.”

Aldo Leopold (1887-1948)  
(American author, scientist, ecologist, forester, and environmentalist)

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