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ΔΙΑΤΡΙΒΗ

*για την απόκτηση διδακτορικού διπλώματος του Τμήματος
Διοίκησης Επιχειρήσεων*

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**Forensic Accounting: Fraud examination and
prevention through the identification of fraudster's
profile and organizational culture**

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Ethical Statement

“I am the exclusive author of this Doctoral thesis titled “Forensic accounting: Fraud examination and prevention through the identification of fraudster’s profile and organizational culture”. This thesis is original and has been prepared exclusively for the award of Doctor of Philosophy of the Department of Business Administration. Any help provided in order to prepare my thesis is being acknowledged and is referred within the thesis. In addition, within my thesis I refer all sources and data that I have used, even though their inclusion is indirect. In general, I confirm that through the preparation of this thesis, I has followed the law provisions for intellectual property and personal information privacy, and principles of academic ethics”.

Δήλωση Ηθικής

«Είμαι ο αποκλειστικός συγγραφέας της υποβληθείσας διδακτορικής διατριβής με τίτλο «Δικανική λογιστική: Η διερεύνηση και πρόληψη της απάτης υπό το πρίσμα της ανάλυσης των χαρακτηριστικών του πιθανού δράστη και της κουλτούρας του οργανισμού». Η συγκεκριμένη Διδακτορική Διατριβή είναι πρωτότυπη και εκπονήθηκε αποκλειστικά για την απόκτηση του Διδακτορικού διπλώματος του Τμήματος Διοίκησης Επιχειρήσεων. Κάθε βοήθεια, την οποία είχα για την προετοιμασία της, αναγνωρίζεται πλήρως και αναφέρεται επακριβώς στην εργασία. Επίσης, επακριβώς αναφέρω στην εργασία τις πηγές, τις οποίες χρησιμοποίησα, και μνημονεύω επώνυμα τα δεδομένα ή τις ιδέες που αποτελούν προϊόν πνευματικής ιδιοκτησίας άλλων, ακόμη κι εάν η συμπερίληψή τους στην παρούσα εργασία υπήρξε έμμεση ή παραφρασμένη. Γενικότερα, βεβαιώνω ότι κατά την εκπόνηση της διδακτορικής διατριβής έχω τηρήσει απαρέγκλιτα όσα ο νόμος ορίζει περί διανοητικής ιδιοκτησίας και έχω συμμορφωθεί πλήρως με τα προβλεπόμενα στο νόμο περί προστασίας προσωπικών δεδομένων και τις αρχές Ακαδημαϊκής Δεοντολογίας».

Abstract

Fraud is a multidimensional issue that concerns investors, regulators, auditors, and the public. The wave of corporate failures at the beginning of the 21st century, raised interest on this issue, making forensic accounting an emerging and promising mechanism available to professionals for effective and efficient prevention, detection, and deterrence of fraud and also a challenging research area for academics. Even though regulation was issued in the aftermath of fraud scandals and the disclosure of corporate governance deficiencies, still legislating human behavior is impossible. As it is “human beings who commit fraud” (Ramamoorti, 2008), it is important to reveal the inner forces that lead employees to fraudulent acts, and in turn delve into their psychology. However, considering that employees work within a context, their behavior affects the firm and vice-versa, firm’s organizational culture does affect their behavior.

That being the case, the objective of this thesis is to map the profile of a possible fraud perpetrator and, in turn answer the question of “why employees do bad things”. To achieve this aim, a sample of 214 employees working in private firms in Greece was examined through a four-stage research. In the first stage of the research, the impact of personal attributes, involving personality traits and demographics, on employees’ propensity to commit or engage in fraud, is being explored. The results reveal that an employee who is characterized as being unconscientious, disagreeable, close to experience, and extrovert, includes the typical characteristics of a possible fraud perpetrator.

Then, in the second stage of the research, the impact of organizational culture on employees’ fraudulent behavior is being examined. The results reveal that the existence of an ethical organizational culture within a firm reduces fraud likelihood. In specific, congruency of management, feasibility, and transparency, significantly influence employees’ aversion to fraud. In the third stage of the research the moderating role of organizational culture on the relationship between personal attributes and fraudulent behavior is being explored. The results reveal a significant intervening role of ethical culture on the relationships between openness and extraversion with behavior.

Finally, in the fourth stage of the research, four additional analyses are being performed. The first examines the impact of personal attributes and organizational culture simultaneously on employees’ fraudulent behavior. The other three analyses investigate the personal attributes that affect an employee’s tendency to commit financial statement fraud, be corrupted, and

misappropriate firm's assets. The results reveal that when culture is included in the research model, only conscientiousness and openness affect an employee's behavior. In addition, regarding the fraudster's profile in view of the three types of occupational fraud, the possible financial statement fraud perpetrator and the employee who is likely to commit asset misappropriation, is unconscientious and close to experience, while the possible corrupted employee is extravert.

The results of this thesis are useful to academics and professionals. In terms of academic contribution, this thesis expands the forensic accounting literature on the behavioral analysis of fraud by mapping the profile of a possible fraud perpetrator and applying an interdisciplinary approach through the use of accounting and psychology theories. In terms of professionals, the results of the thesis can be used during selection and recruiting processes, as an additional means of evaluating employees' tendency to fraud, preventing in this way future fraud incidents within the firm. In addition, the results can be used as red flags by auditors and forensic accountants when investigating a fraud case.

Περίληψη

Η απάτη αποτελεί ένα πολυδιάστατο και πολύπλευρο φαινόμενο που απασχολεί πέραν των επενδυτών, ελεγκτών, νομοθετών, και τους απλούς πολίτες. Η αποκάλυψη πλήθους εταιρικών σκανδάλων στις αρχές του 21^{ου} αιώνα, αύξησε ιδιαίτερα το ενδιαφέρον όλων αναφορικά με το συγκεκριμένο ζήτημα, εμφανίζοντας τη δικανική λογιστική ως το μέσο για την αποτελεσματική πρόληψη, αντιμετώπιση και περιορισμό της απάτης. Παράλληλα, η δικανική λογιστική αναδείχθηκε ως ένας νέος τομέας έρευνας για τους ακαδημαϊκούς στην προσπάθεια περεταίρω συμβολής τους στον επιχειρηματικό κόσμο.

Παρότι σημαντικές νομοθετικές ρυθμίσεις πραγματοποιήθηκαν ως επακόλουθο των σκανδάλων, η νομοθέτηση της ανθρώπινης συμπεριφοράς παραμένει αδύνατη. Καθώς «οι άνθρωποι είναι αυτοί που διαπράττουν απάτη» (Ramamoorti, 2008), είναι σημαντικό να εντοπιστούν οι εσωτερικές δυνάμεις που ωθούν έναν εργαζόμενο στη διάπραξη απάτης και ως εκ τούτου κρίνεται σκόπιμο να διερευνηθούν σε βάθος τα ψυχολογικά χαρακτηριστικά που τους οδηγούν σε τέτοια συμπεριφοροφορά. Ωστόσο, λαμβάνοντας υπόψη ότι οι υπάλληλοι εργάζονται εντός ενός δομημένου περιβάλλοντος εργασίας, αξίζει να σημειωθεί ότι η συμπεριφορά των ιδίων επηρεάζει και ταυτόχρονα επηρεάζεται από την οργανωσιακή κουλτούρα της επιχείρησης στην οποία εργάζονται.

Κατόπιν των παραπάνω, σκοπό της παρούσας διατριβής αποτελεί η σκιαγράφηση του προφίλ του πιθανού δράστη και κατά συνέπεια η απάντηση του ερωτήματος «γιατί οι εργαζόμενοι διαπράττουν οικονομικά εγκλήματα». Προκειμένου να επιτευχθεί ο συγκεκριμένος στόχος, εξετάστηκε δείγμα 214 υπαλλήλων που απασχολούνται σε ιδιωτικές επιχειρήσεις στην Ελλάδα μέσω μίας έρευνας τεσσάρων σταδίων. Ειδικότερα, στην πρώτη φάση της έρευνας, εξετάστηκε η επίδραση των δημογραφικών χαρακτηριστικών και των χαρακτηριστικών της προσωπικότητας των εργαζομένων στην τάση τους για διάπραξη ή συμμετοχή σε απάτη. Σύμφωνα με τα αποτελέσματα αυτής της φάσης, ένας εργαζόμενος που χαρακτηρίζεται ως ασυνείδητος, δυσάρεστος, εξωστρεφής και μη δεκτικός σε νέες εμπειρίες, αποτελεί τυπικό παράδειγμα πιθανού δράστη.

Στη συνέχεια, στο δεύτερο στάδιο της έρευνας εξετάστηκε η επίδραση της οργανωσιακής κουλτούρας στην τάση των εργαζομένων για διάπραξη ή συμμετοχή σε απάτη. Σύμφωνα με τα αποτελέσματα αυτής της φάσης, η ύπαρξη μίας ηθικής οργανωσιακής κουλτούρας στην επιχείρηση μειώνει την πιθανότητα διάπραξης απάτης από πλευράς των εργαζομένων. Πιο συγκεκριμένα, η διαφάνεια, η συνέπεια των διευθυντικών στελεχών και η

εφαρμοσιμότητα των επιχειρηματικών στόχων, αποτελούν τους πιο σημαντικούς παράγοντες οργανωσιακής κουλτούρας, η ύπαρξη των οποίων οδηγεί του εργαζόμενους σε αποστροφή εμφάνισης ή υιοθέτησης παραβατικής συμπεριφοράς.

Στο τρίτο στάδιο της έρευνας εξετάστηκε ο διαμεσολαβητικός ρόλος της οργανωσιακής κουλτούρας στις σχέσεις που αναπτύσσονται ανάμεσα στα προσωπικά χαρακτηριστικά ενός εργαζόμενου και στην τάση του για διάπραξη ή συμμετοχή σε απάτη. Σύμφωνα με τα αποτελέσματα αυτής της φάσης, η ύπαρξη ηθικής οργανωσιακής κουλτούρας διαμεσολαβεί στατιστικά σημαντικά στις σχέσεις συμπεριφοράς-εξωστρέφιας και συμπεριφοράς-δεκτικότητας σε νέες εμπειρίες.

Τέλος, στο τέταρτο στάδιο της έρευνας, διενεργήθηκαν τέσσερις επιπρόσθετες αναλύσεις. Στην πρώτη εξετάστηκε η επίδραση των προσωπικών χαρακτηριστικών των εργαζομένων και της οργανωσιακής κουλτούρας της επιχείρησης ταυτόχρονα στην τάση των υπαλλήλων για απάτη. Στις άλλες τρεις διερευνήθηκε διακριτά η επίδραση των προσωπικών χαρακτηριστικών των εργαζομένων στη τάση τους για διάπραξη απάτης στις οικονομικές καταστάσεις, διαφθορά και ιδιοποίηση περιουσιακών στοιχείων. Σύμφωνα με τα αποτελέσματα των παραπάνω αναλύσεων, όταν η οργανωσιακή κουλτούρα συμπεριλαμβάνεται στο ερευνητικό μοντέλο, μόνο η ενσυνειδησία και η δεκτικότητα σε νέες εμπειρίες επηρεάζουν την παραβατική συμπεριφορά των εργαζομένων. Επιπλέον, αναφορικά με το προφίλ του πιθανού δράστη σε σχέση με τους τρεις τύπους απάτης, ο πιθανός δράστης παραποίησης οικονομικών καταστάσεων και ιδιοποίησης περιουσιακών στοιχείων εμφανίζει παρόμοια χαρακτηριστικά και παρουσιάζεται ως ασυνείδητος και μη δεκτικός σε νέες εμπειρίες, ενώ αντίθετα ο εργαζόμενος με τάση στη διαφθορά εμφανίζει χαρακτηριστικά εξωστρέφιας.

Τα αποτελέσματα της παρούσας διατριβής είναι χρήσιμα τόσο στην ακαδημαϊκή κοινότητα, όσο και στους επαγγελματίες. Όσο αφορά την ακαδημαϊκή συμβολή, η παρούσα μελέτη διευρύνει τη βιβλιογραφία της δικανικής λογιστικής σε σχέση με τη συμπεριφορική ανάλυση της απάτης μέσω της σκιαγράφησης του προφίλ του πιθανού δράστη και της εφαρμογής μίας διεπιστημονικής προσέγγισης όπου συνδυάζονται θεωρίες της λογιστικής και της ψυχολογίας. Όσο αφορά την πρακτική συμβολή, τα αποτελέσματα της μελέτης δύναται να αξιοποιηθούν από τις επιχειρήσεις κατά της διάρκειας των διαδικασιών επιλογής και πρόσληψης εργαζομένων, ως ένα επιπρόσθετο μέσο για την αξιολόγηση της τάσης τους για συμμετοχή ή διάπραξη απάτης, προλαμβάνοντας με αυτό τον τρόπο την εμφάνιση

μελλοντικών φαινομένων απάτης στην επιχείρηση από πλευράς των εργαζομένων. Πέραν αυτών, τα αποτελέσματα της διατριβής μπορούν επιπρόσθετα να χρησιμοποιηθούν ως σημάδια απάτης από τους ελεγκτές και τους επαγγελματίες απάτης κατά τη διάρκεια διερεύνησης τέτοιου είδους περιπτώσεων.

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Table of Contents

1. Introduction.....	17
1.1. Motivations, aims, and research questions.....	18
1.2. Research methodology	21
1.3. Research contribution.....	21
1.4. PhD thesis structure.....	22
1.5. Summary of chapter 1	23
2. Forensic accounting and fraud examination	24
2.1 Forensic accounting.....	24
2.1.1 Defining forensic accounting.....	24
2.1.2 Brief history of forensic accounting	25
2.1.3 Forensic accountants’ skills.....	26
2.2 Fraud examination.....	27
2.2.1 Defining fraud.....	28
2.2.2 Types of fraud.....	28
2.2.3 Fraud models	33
2.2.4 Red flags	41
2.3 Fraud-related research: A literature review	43
2.4 Summary of chapter 2	70
3. Psychological approach to fraud	72
3.1. Psychoanalytic theory of personality	72
3.2. Trait theories	73
3.3. Behaviorism	79
3.4. Social cognitive theory.....	81
3.5. Summary of chapter 3	89
4. Organizational culture and fraud detection	91
4.1 Defining corporate governance	91

4.2. Good corporate governance	93
4.3. Corporate governance systems.....	94
4.4. Corporate governance principles.....	98
4.5. Corporate governance framework.....	99
4.5.1. Corporate governance pillars.....	100
4.5.2. Corporate governance key players	101
4.5.3. Related parties	102
4.6. Corporate governance and corporate failures.....	103
4.6.1. Corporate failures in the USA	103
4.6.2 Corporate failures in Europe.....	106
4.6.3. Corporate failures in Asia.....	107
4.7. The post-corporate failures era.....	108
4.8. The role of ethics and corporate culture in the success of corporate governance regulation	109
4.9. The role of ethics in auditors' judgement.....	111
4.10 Summary of chapter 4	121
5. Research methodology	122
5.1. Research objectives, questions, and hypotheses development.....	122
5.2. Research methodology framework.....	128
5.3. Research philosophy	130
5.4. Approach to theory development	131
5.5. Methodological choice	132
5.6. Research strategy.....	133
5.7. Time horizon	134
5.8. Summary of chapter 5	135
6. Data collection and analysis	136
6.1. Procedure for data collection.....	136

6.1.1. Population, sample, and sampling technique.....	136
6.1.2. Access to participants	137
6.1.3. Nature and sources of data.....	137
6.1.4. Research instrument	138
6.1.5. Research variables	139
6.1.6. Measurement scales	142
6.1.7. Pilot testing	144
6.1.8. Questionnaire administration and retrieval.....	145
6.2. Data analysis	145
6.2.1. Data preparation	145
6.2.2. Data analysis.....	145
6.3. Research ethics.....	150
6.4. Summary of chapter 6	151
7. Results	152
7.1. Demographic information of responders.....	152
7.1.1. Gender	155
7.1.2. Age.....	155
7.1.3. Level of education	156
7.1.4. Experience	157
7.1.5. Tenure.....	157
7.1.6. Position	158
7.1.7. Annual salary	159
7.1.8. Industry.....	159
7.2. Test of hypotheses	161
7.2.1. Test of hypotheses 1 & 2	161
7.2.2. Test of hypothesis 3	172
7.2.3. Test of hypothesis 4.....	184

7.3. Additional analyses	192
7.3.1. Simultaneous analysis of culture and personal attributes	192
7.3.2. Corrupted employee’s profile	195
7.3.3. Financial statement fraudster’s profile	198
7.3.4. Profile of an employee eager to commit asset misappropriation.....	200
7.3.5. Summary of additional analyses	203
7.4 Summary of chapter 7	204
8. Conclusion	205
8.1. First stage of the study	206
8.2. Second stage of the study	208
8.3. Third stage of the study	210
8.4. Fourth stage of the study	210
8.5. Discussion of research findings.....	212
8.6. Research contribution.....	214
8.7. Research limitations	216
8.8. Recommendations for future research.....	217
References.....	218
Appendix 1: Letter of Introduction.....	250
Appendix 2: Questionnaire Survey Instrument	251
Appendix 3: Journals’ Abbreviations	263

List of Abbreviations

ACFE	Association of Certified Fraud Examiners
AICPA	American Institute of Certified Public Accountants
CEO	Chief Executive Officer
CFO	Chief Financial Officer
EC	European Commission
IESBA	International Ethics Standards Board for Accountants
IFAC	International Federation of Accountants
IT	Information Technology
NAS	Non audit services
OECD	Organization for Economic Co-operation and Development
SCT	Social Cognitive Theory
SEBI	Securities and Exchange Board of India
SOX	Sarbanes-Oxley Act

List of Tables

Table 2.1 Fraud-related studies	44
Table 3.1 Cattell’s personality traits	75
Table 4.1 Auditors’ ethics principles related studies	115
Table 5.1 Research strategies	133
Table 6.1 Research variables.....	140
Table 6.2 Reliability of scales	147
Table 6.3 Item reliability of scales	147
Table 7.1 Demographic details of responders	152
Table 7.2 Distribution of industry among responders.....	160
Table 7.3 Descriptive statistics.....	163
Table 7.4 Pearson correlation.....	165
Table 7.5 Personal attributes (IVs) as determinants of fraudulent behavior (DV)	167
Table 7.6 Hypotheses 1 and 2 results	169
Table 7.7 Model summary	169
Table 7.8 ANOVA test.....	170
Table 7.9 Descriptive statistics.....	173
Table 7.10 Pearson correlation.....	173
Table 7.11 Organizational culture (IV) as determinant of fraudulent behavior (DV)	174
Table 7.12 Hypothesis 3 results	175
Table 7.13 Model summary	175
Table 7.14 ANOVA test.....	175
Table 7.15 Descriptive statistics.....	177
Table 7.16 Pearson correlation.....	179
Table 7.17 Culture sub-dimensions (IVs) as determinants of fraudulent behavior (DV).....	181
Table 7.18 Model summary	182
Table 7.19 ANOVA test.....	182
Table 7.20 Pearson correlation.....	186
Table 7.21 Personal attributes (IVs) as determinants of and fraudulent behavior (DV) controlled by culture	188
Table 7.22 Hypotheses 4 results.....	189
Table 7.23 Model summary	190
Table 7.24 ANOVA test.....	190

Table 7.25 Personal attributes and culture (IVs) as determinants of fraudulent behavior (DV), when examined simultaneously	193
Table 7.26 Model summary	195
Table 7.27 ANOVA test.....	195
Table 7.28 Personal attributes and culture (IVs) as determinants of employees’ propensity to corruption (DV)	196
Table 7.29 Model summary	197
Table 7.30 ANOVA test.....	197
Table 7.31 Personal attributes and culture (IVs) as determinants of employees’ propensity to financial statement fraud (DV)	198
Table 7.32 Model summary	200
Table 7.33 ANOVA test.....	200
Table 7.34 Personal attributes and culture (IVs) as determinants of employees’ propensity to asset misappropriation (DV)	201
Table 7.35 Model summary	202
Table 7.36 ANOVA test.....	203

List of Figures

Figure 2.1 The Fraud Tree	30
Figure 2.2 The fraud triangle	34
Figure 2.3 The fraud scale.....	36
Figure 2.4 The fraud diamond.....	37
Figure 2.5 The A-B-C Analysis of white-collar crime	39
Figure 2.6 The Meta-model of white-collar crime.....	39
Figure 2.7 The S.C.O.R.E. model	40
Figure 2.8 The S.C.C.O.R.E. model	41
Figure 3.1 The hierarchical structure of extraversion.....	77
Figure 3.2 The hierarchical structure of neuroticism.....	77
Figure 3.3 The hierarchical structure of psychoticism.....	77
Figure 3.4 Conceptual scheme of radical behaviorism	81
Figure 3.5 Triadic reciprocity of social cognitive theory.....	82
Figure 3.6 Sub-processes governing observational learning modelling	86
Figure 3.7 Self-regulation sub-processes	88

Figure 4.1 OECD corporate governance framework	100
Figure 5.1 Research model.....	128
Figure 5.2 The Research onion	129
Figure 5.3 Steps of deductive approach	132
Figure 6.1 General ethical research principles	150
Figure 7.1 Distribution of gender among responders	155
Figure 7.2 Distribution of age among responders.....	156
Figure 7.3 Distribution of education among responders.....	156
Figure 7.4 Distribution of working experience among responders.....	157
Figure 7.5 Distribution of tenure among responders	158
Figure 7.6 Distribution of position among responders	158
Figure 7.7 Distribution of annual salary among responders	159
Figure 7.8 Distribution of listed and non-listed companies among responders.....	161
Figure 7.9 Hypotheses regarding the relationship between personality traits and employees' fraudulent behavior	162
Figure 7.10 Personality profile of fraud perpetrator	172
Figure 7.11 Ethical organizational culture and aversion to fraud.....	184
Figure 7.12 Personality profile of possible fraudster.....	194
Figure 7.13 Profiles of fraud perpetrator in view of each type of occupational fraud.....	204

1. Introduction

The wave of corporate scandals that were disclosed at the beginning of the 21st century was related to increased fraud incidence and awareness, raising the interest among accounting academics and fraud professionals, and making forensic accounting a challenging area of research. Although regulation was applied across countries all over the world to eliminate the opportunity for fraud and to enhance control environment within firms, still fraud scandals are being disclosed, leading large firms to bankruptcy, employees to unemployment, and white-collar criminals to jail; the Bernard Madoff Ponzi scheme, the Toshiba and Siemens cases, are among the most prominent.

Fraud has been defined as a series of activities perpetrated to gain property or money, to avoid payment, or even secure business and personal advantages. In other words, fraud is either can be committed in favor or against a company. These fraudulent acts do not involve the application of any physical force or threat of violence, and can be perpetrated by anyone within a firm, regardless of his position or experience (ACFE, 2018).

In addition, it is argued that opportunities for fraud increase when the preventive and detective means are weak, not effective, or absent (Dorminey et al., 2012; Kassem and Higson, 2016). Hence, corporate governance professionals, including the board of directors, the audit committee, the management, internal and external auditors, are expected to enhance controls giving priority to the mitigation of fraud risk by applying effective and innovative preventive and detective mechanisms.

In this line, forensic accounting has been identified as an emerging and promising mechanism available to accounting professionals for effective and efficient prevention, detection, and deterrence of fraud. As Hopwood et al. (2012) argue, forensic accounting is “the application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets the standards required by courts of law”. In other words, forensic accounting, known also as forensic investigations, involves the application of accounting, auditing, and investigative skills for the purpose of providing solutions to fraud cases based on evidence that can stand in front of the court.

However, even though new regulation has been applied, corporate governance rules have been developed, and new professional paths have been identified and created to prevent, detect, and eliminate fraud incidents, it still remains unrealistic to legislate individuals' ethics.

As “it is human beings who commit crimes” (Ramamoorti, 2008), it is important to delve into the psychology of individuals in order to understand the inner motives that lead them to commit fraudulent acts (Harrison et al. 2016). Theoretical models surrounding the behavioral aspects of fraud perpetrators have been developed in the 1940s and 1950s and are based on the early works of Sutherland and Cressey. The early Cressey’s fraud triangle model (Cressey, 1953) has evolved over the years, including other than pressure, opportunity, and rationalization, individual’s skills, integrity, ego, and power, to explore the potential profile of a fraud perpetrator (Albrecht et al., 2016; Wolfe and Hermanson, 2004; Kranacher et al., 2011; Dorminey et al., 2012).

Moreover, the perpetration of a fraudulent act is also originated on identifiable organizational causes (Murphy & Free 2016). As firms are similar to societies, employees interact and behave in accordance with rules, codes, and norms (Solomon, 2004). According to the Aristotelean approach to business ethics, while a firm has its specific goals, practices, and directives, its employees also have their own beliefs, responsibilities, and virtues. Hence, it is impossible for a company to exist and operate without employees, and in turn the firm’s ethical environment determines an individual’s virtues and vice versa (Solomon, 1992), making ethical organizational culture an integral part of fraud prevention and detection (Ramamoorti, 2008).

This chapter thus introduces the aims and motivations of the current thesis, its research questions, the methods applied for data collection, and the contributions of the current study. The rest of this chapter is structured as follows. Section 1.1 presents the aims, motivations, and research questions of the current thesis. Section 1.2 explains the research context, the methods applied for data collection, and the philosophy underpinning the current study. Section 1.3 describes the contributions of the current research. Section 1.4 shows how the thesis is being structured. Finally, section 1.5 is a summary of the chapter.

1.1. Motivations, aims, and research questions

Research motivation and objectives

The current thesis was motivated to fill in the gaps identified in the theory and practice of fraud prevention and detection. In the early work of Sutherland (1940), personality was not associated with economic crime (Blickle et al., 2006), but the rise of high-profile corporate collapses involving high-status businessmen, such as Bernard Madoff, Bernard Ebbers, and

Kenneth Lay, raised researchers' interest in studying personality as a possible inner force hidden behind fraud. In fact, reviewing prior literature revealed that there are recent studies providing empirical evidence that personality indeed matters in economic crimes, and in turn personality traits may provide insight into why individuals commit or engage in fraud (Trompeter et al., 2013; Holtbrugge et al., 2015).

However, even though it is individuals who commit fraud, research so far has concentrated on examining the impact of organizational context and in particular corporate governance mechanisms on individuals' (un)ethical or fraudulent behavior. In an over-thirty-year meta-analysis of the literature about the causes of (un)ethical decision-making in the workplace, Kish-Gephart and Harisson (2010) concluded that researchers have not investigated in depth the impact of personal attributes on individuals' behavior. In the same line, in a review of the prior literature about the psychological profiles of white-collar criminals, Ragatz and Fremouw (2010) concluded that there are only four studies that have explored the psychological traits of fraud perpetrators by discussing at least one of the Big Five Inventory (BFI) dimensions; extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (Goldberg, 1990).

Other than these, this study was also motivated by the call for interdisciplinary research regarding fraud prevention and detection by Ramamoorti (2008) and Mele et al. (2017). In view of responding these calls, and providing a more thorough understanding of the real incentives that lead an employee to fraudulent behavior, this study applied forensic accounting and psychological theories and models to identify the personality profile of a fraud perpetrator and the organizational causes that can motivate or avert an employee to commit fraud.

In addition, reviewing prior literature, a lack of empirical evidence with regard to the personality traits that lead to fraudulent behavior in Greece was identified. Little empirical evidence was also found with regard to the relationship between organizational conditions and fraud in Greece (Krambia-Kapardis and Papastergiou, 2016), leaving in turn a lacuna in the research of fraud. Hence, this lacuna motivated the current study to explore these areas. In particular, this thesis was motivated to investigate the personality traits; extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience, demographic characteristics; gender, age, and level of education, and organizational culture of firms in Greece, in order to identify the real reasons that lead an employee to commit fraud. The findings of this research shed light on fraud issue by profiling the possible fraud perpetrator and giving

insight about the way ethical organizational culture can avert employees from committing fraudulent acts.

That being the case, the current thesis aims at contributing to accounting and management literature on the behavioral analysis of fraud by answering the question of “why employees do bad things” and in turn provide a basis for fraud prevention and detection. In addition, this thesis aims at helping management to increase the likelihood of preventing fraudulent acts within an organization and forensic accountants, fraud examiners, and auditors to detect fraud. In order to achieve this, this study explores what motivates employees to commit or engage in fraud, trying in this way, to identify the possible profile of a fraud perpetrator. In particular, it investigates the impact of an employee’s personal attributes, including personality traits and demographic characteristics, on his propensity to commit fraud. Other than this, it is also explored how the existence of an organizational (un) ethical context may affect an employee’s propensity to fraud. Moreover, this study also examines the moderating role of organizational conditions on the relationship between employees’ attributes and their tendency to commit or engage in fraud, so as a complete profile of the possible fraudster to be developed.

Research questions

In order to achieve the objectives of this thesis, the current research sought to answer the following research questions which are discussed in detail in chapters two, three, and four.

- Question 1: What are the personality traits that affect an employee’s propensity to commit or engage in a fraudulent act in the workplace?
- Question 2: What are the demographic characteristics that affect an employee’s propensity to commit or engage in a fraudulent act in the workplace?
- Question 3: What are the organizational conditions that motivate or avert an employee to commit or engage in a fraudulent act in the workplace?
- Question 4: How the organization context intervenes in the relationship between personal attributes and an employee’s behavior?

1.2. Research methodology

The current thesis applied the positivism research philosophy, because this type of philosophy aims at understanding and explaining the causes for a phenomenon through the use of large data sets, providing recommendations for change (Hasan, 2016; Kincaid, 1998). In turn, positivism is applicable to this research that aims at exploring what motivates employees to commit or engage in fraud, answering the question of “why employees do bad things”, and testing hypotheses about patterns of relationship among variables.

Also, in this research, quantitative research is used as it is considered to be the most appropriate method to answer this thesis research questions. Moreover, as fraud is considered to be a really sensitive issue, the researcher needs to be independent from those being researched, and in turn the application of quantitative techniques and in specific the use of a questionnaire for data collection ensures this independence (Saunders et al., 2015). To analyze the data collected, multiple regression statistical analysis was applied. Details about the research context, and the methods applied for data collection and analysis are being discussed in detail in chapters five, and six.

1.3. Research contribution

The current thesis contributed to both fraud knowledge and practice in various ways, by investigating personal attributes, including personality traits and demographic characteristics, and organizational conditions as predictors of fraudulent behavior. In terms of academic contribution, this research adds to the growing body of accounting and management literature on the behavioral analysis of fraud by addressing the issue of “why employees do bad things.” By exploring employees’ personal factors and the organizational context within which they operate, this study uses three ethical dilemmas related to occupational fraud to ascertain what leads them to commit or engage in fraud and map the profile of a possible fraud perpetrator.

Moreover, this study is one of a few to apply an interdisciplinary research approach by adopting and collaborating theories having their origins in accounting and psychology. Therefore, it contributes to forensic accounting literature by confirming parts of the triadic reciprocity of social cognitive theory, providing empirical evidence that this model can be used in accounting with regard to the prediction of fraud perpetration.

Finally, this thesis findings might be useful for companies and management during their recruiting and selection processes. In specific, the empirical results provided by this study could be used to evaluate candidates' personal attributes, and in turn select and promote to responsible positions, individuals who are eager to eliminate the likelihood of unethical and fraudulent behavior in the workplace, develop and communicate an ethical organizational culture across the firm, and focus on specific culture sub-dimensions that might further encourage and promote other employees' ethical attitude.

1.4. PhD thesis structure

The rest of the thesis continues in chapter two by providing an overview of forensic accounting and fraud examination. This includes an explanation of the meaning of forensic accounting, a presentation of its history and main objectives, its differences related to auditing and fraud examination and the skills needed by a forensic accountant. In addition, in this theoretical chapter the concept and nature of fraud, the possible fraud schemes, the models developed to date explaining which are the causes that lead an individual to commit fraud, the fraud prevention and detection methods applied by firms, and the "red flags" that might indicate a possibility of fraud, are being described. Chapter two also presents a review of the literature on fraud prevention, detection, and deterrence, including studies published in accounting as well as in non-accounting journals.

Chapter three discusses the significance of psychology in fraud examination, and in turn it presents the major psychological theories that can impact an individual's tendency to fraud, providing in this was the basis for developing this thesis main propositions. Chapter four, provides an overview of corporate governance, including a presentation of the systems, principles, framework, pillars, key players, and interested parties. Other than these, the role of corporate governance in major fraud scandals in the USA, Europe, and Asia is being discussed, and the post-failures era is being presented. Moreover, the role of ethics and organizational culture in the success of the regulation issued in the aftermath of these corporate failures and in specific the role of ethics in auditors' judgement is being examined. Finally, a review of the literature related to auditors' ethics principles is being presented.

Chapter five describes the way the current study was conducted; its research objectives, questions, propositions, methodology framework, philosophy, approach, strategy, choice, and time horizons. Chapter six presents the techniques and procedures applied for the data

collection and the way these data were analyzed to produce interesting results regarding fraud prevention and deterrence. In chapter seven, the results and analyses of the data collected in the pursuit of answering the research questions and test the related hypotheses are being presented. Also, this chapter includes further analyses; at first a simultaneous analysis of personal attributes and culture in a combined model was conducted, in order to shed light in all aspects of fraud and not leave a lacuna in the examination of fraud, and then three additional analyses were conducted to identify the particular profile of an employee who is eager to commit financial statement fraud, be corrupted, and misappropriate company's assets. Chapter eight includes the conclusion, presents the main findings and contribution of this thesis, discusses this study's limitations, and offers some recommendations for future research.

1.5. Summary of chapter 1

Chapter one has introduced the aims and motivation of the current thesis, the gaps in knowledge and practice in the area of fraud examination and identification of the fraud perpetrator's profile, and how the current study sought to address these gaps. This chapter also provided a brief summary of the philosophy underpinning this research and the methods applied for data collection and analysis. Chapter one also explained the contribution of the current thesis as well as its structure. The next chapter provides an overview of the forensic accounting and fraud examination, being in turn the basis for the subsequent analysis of the current research.

2. Forensic accounting and fraud examination

Accounting as a social science interacts with society and its members. It serves not only as a means for financial markets, but also it is described as the “language of business”; people communicate through financial reports following relative standards and regulations (Bloomfield, 2008). However, as businesses are exposed to multiple risks, white-collar crimes are among the most severe ones. Recent high-profile corporate scandals have attracted considerable attention, bringing to the forefront, forensic accounting and fraud examination. Because fraud reduces net income on a dollar-for-dollar basis, the additional resources needed to restore the stolen funds are much more than the original amount of the fraud. According to the Association of Certified Fraud Examiners (2018), firms lose more than 5% of their total revenues annually because of fraud. Taking these facts into accounts, firms have been made alert to fraud incidents and forensic accountants and fraud specialists have become necessary and valuable assets for them.

This chapter is the first of the three that deals with the review of the literature. The current chapter attempts to ground the theoretical framework of forensic accounting and fraud investigation, providing the basis for the following analysis of this thesis.

2.1 Forensic accounting

This section reviews and explains the meaning of forensic accounting, gives in brief its history and its main objectives. In addition, it discusses the differences between forensic accounting, auditing and fraud examination and it further describes the skills needed by a forensic accountant.

2.1.1 Defining forensic accounting

Forensic accounting consists of two words; forensic and accounting. To get a better understanding of this concepts, it would be useful to define these two words separately. According to the American Institute of Certified Public Accountants (AICPA), accounting is the science of recording, classifying, and summarizing economic transactions and events in a logical way, in order to provide useful and understandable financial information to third parties for decision making. Nonetheless, forensic is a word used in courts of law, describing the examination and interpretation of evidence and facts in legal cases by forensic experts.

In turn, forensic accounting could be defined as the examination and investigation of business and financial events in a way that can support reasonable positions taken in court. In this context, Hopwood et al. (2012) define forensic accounting as “the application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets the standards required by courts of law”. Coenen (2005) considers that forensic accounting uses accounting concepts and methods in cases solving, but it also integrates “investigative intuition”. Crumbley (2009) also concludes that forensic accounting is the application of accounting skills for legal purposes, while Singleton and Singleton (2010) in a comprehensive view, defines forensic accounting as a fraud investigation that involves fraud prevention, antifraud controls assessment and non-financial data collection.

Nevertheless, there is no widely accepted definition of forensic accounting. To address this issue, the Association of Certified Fraud Examiners (ACFE) defined forensic accounting as the use of accounting knowledge combined with investigative skills “in litigation support and investigative accounting settings” (ACFE, 2020).

Having these in mind, it should be noticed that forensic accounting differs from traditional accounting. Accounting is called “the language of business” as it provides the means for communicating information to different groups of interested parties inside and outside the firm. There are many branches of accounting (e.g. financial accounting, managerial accounting, tax accounting, auditing, information systems), each one providing valuable information to creditors, investors, regulatory agencies, employees and stakeholders. Nonetheless, forensic accounting differs, as it provides investigative and litigation services (Hopwood et al., 2012). The latter identifies the expertise of a forensic accountant in a legal issue, while the former involves the investigative skills used to solve a case that may or may not end in court.

2.1.2 Brief history of forensic accounting

Singleton and Singleton (2010) argue that forensic accounting is among the oldest professions having its origins back to Ancient Egypt. In that era, forensic accountants were called the Pharaoh’s “eyes and ears” as they controlled the inventories of gold, grain and other assets. Another reference of the existence of forensic accountants can be traced in 1824 in Glasgow, Scotland. In an accountant’s circular, these experts testified in court providing lawful evidence (Ramaswamy, 2007). However, some researchers such as Thornhill (1995), argue

that forensic accounting is a new profession that just incorporates and applies ideas and auditing methods used centuries ago.

Given these thoughts, Ramaswamy (2007) provides a few cornerstones in the history of forensic accounting which is affected by technological, social and financial changes and like any other profession evolves and adapts to fit in the new challenging environment. The first publication in forensic accounting is of Maurice E. Paloubet titled “Forensic Accounting: It’s in today’s economy” in 1942, followed by that of Francis C. Dykman’s “Forensic Accounting: The Accountant as an Expert Witness” 40 years later, in 1982.

Nevertheless, the high-profile fraud scandals in early 2000’s; e.g. Enron, WorldCom, draw the attention of professionals, academics and regulators over the prevention and detection of fraud (Bekiaris and Papachristou, 2017), and increased the interest on the role of forensic accounting. Since then, regulation has been implied, such as the Sarbanes-Oxley Act (2003) in the United States, to prevent and detect fraudulent activities. However, the disclosure of other white-collar crimes during the following years, e.g. Madoff’s scandal in 2008, gave to firms the perception that law enforcements agencies experience difficulties in fraud detection. Thus, forensic accountants are more than essential for the firms. Moreover, the financial crisis with its attendant issues might provide incentives to employees, executives and owners to commit or engage in fraud; therefore, the presence of fraud experts is mandatory (Ramaswamy, 2007).

Few years ago, Huber (2012) who was wondering whether forensic accounting in the United States is becoming a profession, provided evidence in support of the view that its features are quite like public accounting. Since then, forensic accounting is growing and evolving rapidly, gaining recognition as a profession in many countries; e.g. United States, United Kingdom, Australia, Canada. However, as fraud evolved and new risks arise every day, forensic accounting adapts day-by-day.

2.1.3 Forensic accountants’ skills

Because fraud occurs in different areas, forensic accountants should have multiple skills in various areas (Hopwood et al., 2012). Digabriele (2008) identifies a set of skills required by forensic accountants to exercise professionalism and due care. Among them, deductive analysis ability, critical thinking, unstructured problem solving, investigative flexibility, analytical proficiency, oral and written communication, legal knowledge, and composure are the most important.

Similarly, McMullen and Sanchez (2010) conducted a survey of forensic professionals for their perceptions of the skills and competencies forensic accountants should hold. According to their results, the competencies needed by forensic accountants include accounting, analytical, communication, information technology, interviewing, problem solving business valuation skills and knowledge of specific regulation. Another study (Davis et al., 2010) concluded that forensic accountants should be analytical, detail-oriented, ethical-driven, insightful, persistent, and sceptical.

In the same line, Hopwood et al. (2012) and Singleton and Singleton (2010) summarize the necessary skill set an effective and efficient forensic accountant should possess. They argue that at least a basic level of knowledge in auditing and accounting is essential. These skills would provide them the needed knowledge to collect, analyse and interpret relevant information so that the evidence gained can be presented in court. Investigative skills, criminology and specific legal knowledge are also among the most important skills of a forensic accountant. Interviewing and even interrogation skills would probably lead them to useful evidence; psychology of criminals may drive them to the incentives that led to fraud; and, knowledge of laws and regulations would enable them to present in court only the evidence that meet legal standards. Nevertheless, all these skills and competencies are useless if not presented properly. Thus, oral and written communication skills are mandatory for forensic accountants so as to clearly convey their investigation findings in an understandable manner to a non-expert individual.

2.2 Fraud examination

This section reviews the concept and nature of fraud. First, it defines this multidimensional concept and describes the possible types of fraud. Then, it presents the models trying to explain the reasons that lead people to commit fraud and also the methods applied by firms in the fight against this severe issue. Finally, signs that indicate possible fraudulent activity, “red flags”, are being described.

2.2.1 Defining fraud

Fraud as a social issue that affects different people in society, has multiple meanings. As Singleton and Singleton (2010, p.40) point out “fraud means different things to different people under different circumstances”. Thus, fraud can be perceived as theft, embezzlement, intentional act for one’s own prosperity or even as a reaction to a situation of life or death.

As part of white-collar crime, fraud can be defined as a crime not involving violence, committed by means of deception, with the intention of financial gain (Picket and Picket, 2002). Ramamoorti and Olsen (2007) also describe fraud as “a human endeavour, involving deception, purposeful intent, intensity of desire, risk of apprehension, violation of trust and rationalisation”. In this line, many other authors (Hopwood et al., 2012; Albrecht et al., 2016; Silverstone and Sheetz, 2007) agree that fraud is an act that includes deceit and concealment, breaches trust bonds between interrelated parties, leads firms to significant financial and non-financial losses and even to bankruptcy and is not a result of a simple error, but it involves intentional attempts to illegally gain an advantage.

Although there are many formal definitions of fraud, the international professional body of fraud examiners, the Association of Certified Fraud Examiners (ACFE), defines occupation fraud and abuse as “the use of one’s occupation for personal gain through the deliberate misuse or theft of the employing organization’s resources or assets”. Other than employee fraud, the ACFE also defines financial statement fraud committed by firms, as “the deliberate misrepresentation of the financial condition of an enterprise accomplished through the intentional misstatement or omission of amounts or disclosures in the financial statements in order to deceive financial statement users”.

Fraud, financial crime and white-collar crime are not synonyms according to criminal law (Hopwood et al., 2012). However, as these terms involve the purposeful use of deception and concealment for illegal gain and under normal conditions also include breach of trust, for the purposes of this thesis they will be used interchangeably.

2.2.2 Types of fraud

Frauds can be classified in so many ways as are the respective researchers. Therefore, a fraudulent activity may be classified as internal or external, according to the perpetrator or even based on the victims. However, the most common way is to categorize frauds in those committed in favour of the organization and those committed against the organization

(Albrecht et al., 2016). In the latter, the victim is the firm, while in the former employees' and executives' fraudulent acts benefit the firm.

Frauds against the firm are intended to benefit only the perpetrator and harm the victim. The most common type of this category is employee embezzlement. In this case, employees deceive their employers by taking ownership of the firm's assets through their position power. This kind of fraud can be further divided to direct or indirect. With direct embezzlement the assets go to the perpetrator without the involvement of any intermediaries. It usually includes theft of cash, inventory, equipment, tools and other assets. Another more sophisticated method is phishing and spoofing, which occurs when employees establish non-existent companies and have their employers to pay for goods and services not actually delivered. On the other way, with indirect embezzlement, employees gain money by taking bribes and kickbacks from customers, suppliers, vendors, or their employer's competitors.

Another form of fraud to harm the firm is committed by vendors. In this case vendors overbill the goods provided or provide the goods agreed in lower quality. In turn, the firms to which the vendors sell goods or services become victims; purchasing goods in higher prices than agreed may lead to selling these goods more expensive and consequently reduce the firm's sales. On the other way, selling goods of lower quality may damage the firm's reputation.

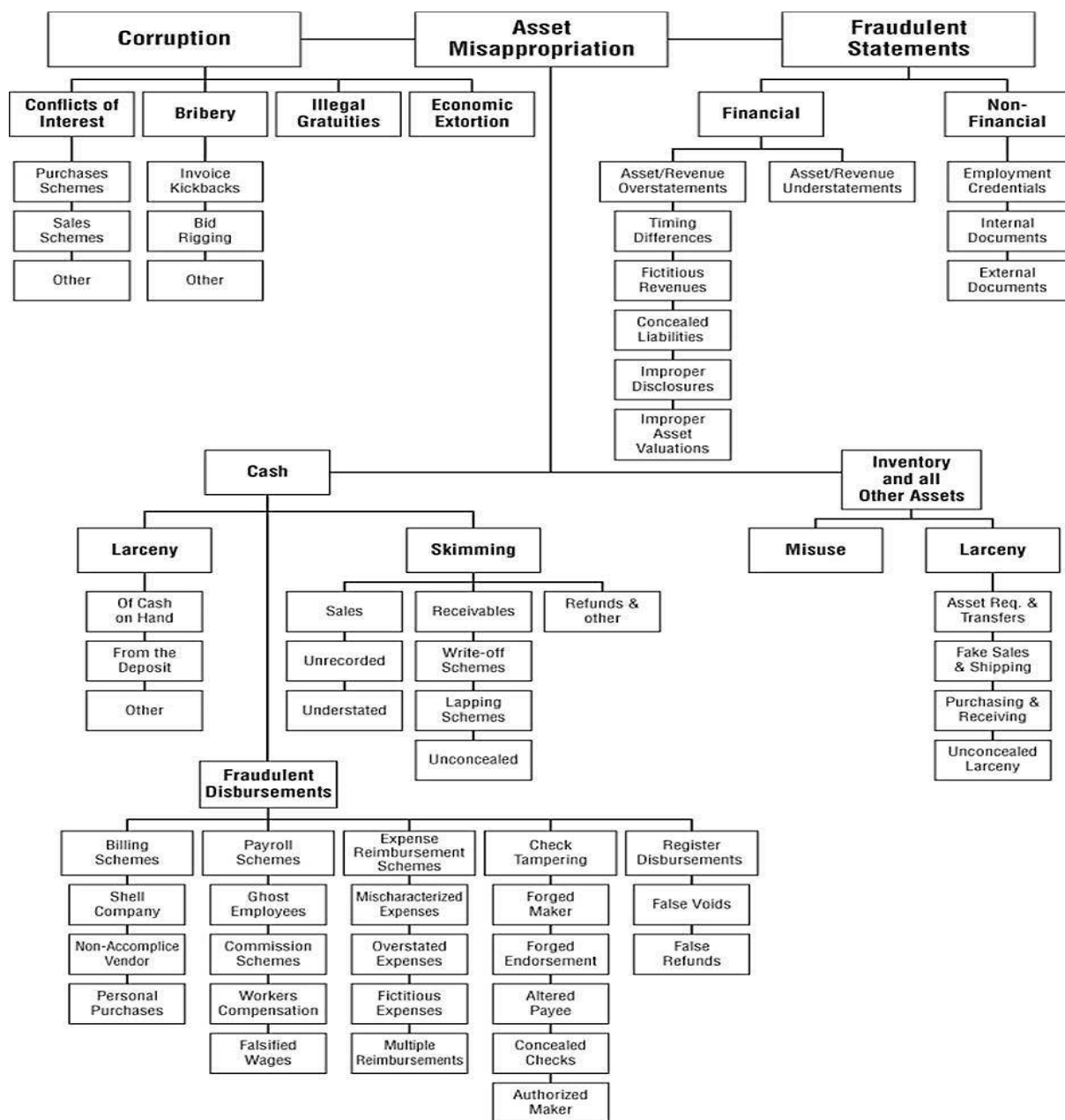
Customer fraud is another form of fraud the firms may experience. The risk of "bad customers", customers who either do not pay or pay too little for the goods or services received, harm the firm. For instance, a bank customer who pretends to be a wealthy businessman, deceives the bank manager and gets a loan of 800.000€, even though he had only 10.000€ in his bank account. Unfortunately, the so called "wealthy businessman" was just a fraudster who achieved to get a large amount of money using deception, without having the proper standards. Another type of fraud, according to Albrecht et al. (2016) taxonomy is management fraud. This kind of fraud differs from the previous types by nature and fraudsters' profile. It usually involves top management; e.g. executives, owners, who override the controls, have access to valuable information and assets and use their privileges to manipulate firm's financial statements. Well-known examples of management fraud include WorldCom, Enron, Parmalat, and Satyam. Given the consequences of these fraud cases, it is concluded that management frauds generate the most damage to firms and even lead them to bankruptcy.

Investments scams and consumer frauds are identified among the most common types of frauds. In these cases, worthless investments are sold to unsuspected victims; in some

instances, criminal activities may be hidden behind these investments. Ponzi schemes, identity theft, ransomware, telemarketing frauds are some examples of consumer frauds.

To provide a valuable means of fraud taxonomy, the ACFE developed a system of occupational fraud and abuse categorization. It includes three main categories; corruption, asset misappropriation, and financial statement fraud. Under these branches fall 49 different individual fraud schemes grouped by subcategories. This system is called “The Fraud Tree” (Figure 2.1).

Figure 2.1 The Fraud Tree



Source: Association of Certified Fraud Examiners (2016)

According to Transparency International Organization (2006), corruption is defined as “the abuse of entrusted power for private gain and can be classified as grand, petty, and political, depending on the amounts of money lost and the sector where it occurs”. It distorts the fabric of society and affects in a negative way various sectors of global economy. For instance, it may impact manufacturing in France, education in Uganda, church in Greece and parliament in Japan. Corruption schemes make up 38% of all frauds and resulted in an average loss to the victimized organizations of 250.000\$ (ACFE, 2018). Nevertheless, other than economic distortion, corruption also affects communities and societies. In particular, corruption creates barriers to the economic and social development in low- and middle-income countries by empowering poverty. In addition, corruption undermines security and human rights; e.g. in countries where judiciary is corrupted human rights are limited. In turn, people are less keen to be educated or express their opinion through elections, because these rights are considered to be privileged only for those being rich or having the power.

Corruption schemes involve people who work within a company and develop illegal relationships with third parties; e.g. a firm’s employee, who “works” with someone of the company’s external environment, such as government officials, or competitors. In this relationship, which is usually hidden from management and auditors, corruption involves bribes, illegal gratuities, economic distortion and conflict of interests.

Bribery can be defined as “the offering, giving, receiving, or soliciting anything of value to influence an official act or business decision” (Singleton and Singleton, 2010). It involves kickbacks and bid rigging. Kickbacks refer to undisclosed payments made by vendors to employees of the purchasing firm to accept the receipt of goods of inferior quality or even let them overbill the company. On the other hand, bid rigging refers to the actions of a firm’s employee to qualify a vendor’s offer in a bid process. Among the most well-known cases is that of Hewlett-Packard whose employees at its subsidiaries in Russia, Poland and Mexico were charged with bribing government officials to retain public contracts.

Illegal gratuities are similar to bribes as they also include offering and acceptance of valuable gifts. Although a gift may seem legal, it can impair someone’s opinion in future decisions. Thus, even if a gift is offered after a deal, it can also be considered illegal. Examples of this kind of corruption, include free vacation, an expensive gift or a special bottle of wine. However, accepting a gift of minor value, such as a pen, is not considered illegal (Bonsing and

Langsted, 2013). Therefore, most of the companies set a policy defining the maximum value of a gift considered to be legal.

The opposite of gratuity and bribery is called economic extortion. In this case, the firm's employee demands payment from a vendor to interfere in the decision-making process and support his offer. Refusal to pay the extortioner results in vendor's damage.

Last of the possible corruption schemes is conflict of interests. This type of corruption is defined as the undisclosed economic or personal interest of an employee, manager or executive in a transaction that is possible to impair his decision (Krambia-Kapardi and Tsolakis, 2011). A conflict of interest may be occurred during sales or purchasing of goods and services. Given the concepts of corruption and conflict of interests, it is concluded that a conflict of interests does not always lead to corruption, but a corruption does always include conflict of interests.

By far the most frequent fraud scheme is asset misappropriation. According to the ACFE (2018), asset misappropriation makes up 89% of all fraud cases and result in an average loss of 114.000\$ annually. It involves the theft or misuse of a firm's assets for personal gain (Pedneault et al., 2012). The main subcategories of asset misappropriation include cash and inventory and other assets. The former refers to the taking of money of the employer; the three methods applied for this purpose, include skimming, larceny and fraudulent disbursements. Skimming refers to a situation in which employees steal money from sales or receivables, before a book entry is made. Thus, these frauds do not leave any trail and are difficult to be detected. Larceny on the other hand, is the direct stealing of cash as this act happens after cash has been recorded in the accounting books. Therefore, the detection of this fraud is outright and, in most cases, immediate. To commit a larceny, an employee should have access to cash and also be truthful and above suspicion. Fraudulent disbursements involve the most sophisticated and complex fraud schemes. Compared to larceny, in these schemes the distribution of funds is made from the company in a legitimate account which proves to be fraudulent. Examples of fraudulent disbursements schemes include false claims for reimbursement or goods supposed to be provided, receiving of pay checks for ghost employees and so on.

Inventory and other assets fraudulent schemes do not refer to illegal cash withdrawal but involve the misuse and theft of a firm's assets. Misuse usually refers to the inappropriate use of firm's equipment for personal purposes; the use of company's computer for personal

business is among the most common types of misuse. This kind of fraud has to do mainly with the ethical culture of the firm and tone at the top. Nonetheless, even more severe and disastrous for a company is the larceny of its inventory. It is usually made by employees who have access to inventory and power to overcome the applied internal controls. In this type of fraud, perpetrators often conceal their acts by deleting the asset as destroyed or even by “creating” fictitious working orders.

Finally, the least common but the most costly fraud type is financial statement fraud. The intentional manipulation of financial statements results in the misinformation of stakeholders and those who are interested in the financial situation of a company. It involves two subcategories; financial and non-financial frauds. The latter includes employment credentials, internal and external documents, but it is insignificant in terms of frequency. In the former schemes, most of the cases relate to revenues and assets overstatement, while few relate to revenues and assets understatement. Among the schemes applied to commit this type of fraud; timing differences, fictitious revenues, concealed liabilities, improper disclosures and improper asset valuation, the first and the last were widely used in well-known fraud scandals. In Enron case, the revenues of its Special Purpose Entities from long-term agreements were recorded in the current year to present increased revenues and so a robust and profitable company (Petrick and Scherer, 2003). Also, in the WorldCom fraud scandal, leases of telephone lines were recorded as assets, while they were expenses (Kuhn and Sutton, 2010). Thus, expenses were understated, assets were overstated and as a result, WorldCom seemed to be a profitable company.

2.2.3 Fraud models

To understand how individuals commit fraud and to prevent, detect and respond to fraud schemes, antifraud specialists and forensic accountants should at first get aware of the causes that may lead a person to commit or engage in a fraudulent activity.

2.2.3.1 “The fraud triangle”

The first and so far, most useful fraud model is Donald Cressey’s (1953) “Fraud Triangle”. Interviewing inmates in the Illinois State Penitentiary at Joliet, Cressey concluded that convicts serving time in prison for embezzlement present common characteristics. Based on his observations he concluded that to commit a white-collar crime, three criteria should be

present; a non-shareable need (perceived pressure), awareness of the working environment and the opportunities existing to violate a position of trust and access valuable information and assets (perceived opportunity) and the ability to justify that this violation of trust does not constitute a crime (rationalization). These three elements, perceived pressure, perceived opportunity and rationalization are the corners of “Fraud Triangle” (Figure 2.2).

Figure 2.2 The fraud triangle



Perceived pressure or incentive relates to the personal issues of an individual that drive him to commit or engage in fraudulent activities. These motives can be either financial or non-financial. Financial incentives may include personal financial losses, need to meet stakeholders’ expectations, and inability to pay personal debt or even greed. Even though most of the pressures relate to financial needs, non-shareable financial problems may also lead an individual to fraud. For instance, a strong sense of ego, pride, drugs or gambling addiction are among the most common non-financial factors that motivate fraud perpetration. Also, factors such as job dissatisfaction, sense of underpayment and low job recognition by supervisors and managers are work-related incentives that push some people to commit fraud in order to get fair treatment with the employees of the same or other firm.

Other than perceived pressure, according to Cressey, to commit fraud, conceal it and not being detected, perceived opportunity should be also present. Opportunity lies to the perception that the likelihood of getting caught is remote and a control weakness exists. Lack of proper authorization procedure, inadequate segregation of duties, inexistent audit trail and lack of physical and logical controls over assets, records and databases are among the opportunities a possible fraudster could take advantage of, to commit fraud. Even though an adequate control framework is in place and works properly, opportunities might also exist. Controls may be bypassed by fraudsters if they are in a position of trust. Thus, prerequisite to

opportunity is that fraud perpetrators are in a trusted position, with perceived privileges and ability to overcome the firm's internal controls, having access to valuable information and assets.

The third element of "The Fraud Triangle" is rationalization; the justification of wrongdoing to eliminate the cognitive dissonance within the fraudster's psychology (Ramamoorti, 2008; Dorminey et al., 2012). As most of the perpetrators are first-time offenders and have a personal code of ethics, they desire to remain within their moral comfort zone and not being perceived as criminals. Thus, the only way is to consider their act as a special and unique occasion; in turn, this situation allows them not to view themselves as criminals. In many cases, fraudsters convince themselves that they will pay back their employers, "I am just borrowing the money, I will return it soon"; in other instances, they argue that they deserve it as reasonable compensation for their job-done, and in some others they claim that they do it for survival purposes, e.g. to get their medicine or undergo a surgery.

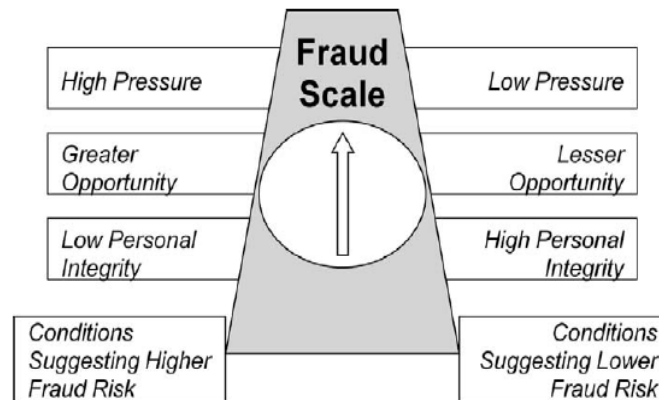
Although "The Fraud Triangle" provides an effective fraud related model that has broadly served as a useful and meaningful means to anti-fraud professionals and research in understanding and explaining the antecedents to fraud, the evolution of fraud schemes and their complexity has increased the need for more sophisticated models (Dorminey et al., 2012; Schuchter and Levi, 2015).

These additional models seek to integrate psychological and sociological factors, attempting to explain the intrinsic and extrinsic elements that drive a fraudster's behaviour and actions. Models in this research area include the Fraud Scale, M.I.C.E., the Fraud Diamond, the A-B-C Analysis of white-collar crime, the Meta-model of white-collar crime and the S.C.O.R.E model.

2.2.3.2 "The fraud scale"

Through an analysis of 212 fraud cases, Albrecht et al. (1984) developed the "Fraud Scale". This model relies on the Fraud Triangle, but instead of rationalization, personal integrity is the third element that combined with perceived pressure and perceived opportunity can reduce fraud risk (Figure 2.3).

Figure 2.3 The fraud scale



Source: Albrecht et al. (2016)

How does this scale work? If everything is neutral, the scale is in balance and so is the fraud risk. But, in case of high pressure and perceived opportunity, an individual's personal integrity can be reduced, resulting in great fraud risk. The opposite result is achieved when perceived incentive and opportunity are low.

The benefit of this model is that an individual's integrity may be affected by his own experiences. Thus, past events, decisions made under different situations and their respective consequences may influence one's attitude. Also, the working environment and the (un)ethical culture of a company does influence one's personality and the way he rationalizes or takes responsibility for his fraudulent acts.

2.2.3.3 The M.I.C.E.

Although the "Fraud Scale" modified the rationalization element of the "Fraud Triangle" by integrity, it still does not explain the reasons that wealthy and prominent members of society would commit fraud. Ramamoorti et al. (2009) conclude that the need to preserve and improve social status may be a motivating factor for many perpetrators; thus, the perceived pressure may derive also from one's financial needs.

In turn, the M.I.C.E. model, developed by Kranacher et al. (2011), expands the pressure side of the "Fraud Triangle". Other than non-shareable needs, perceived incentives include Money, Ideology, Coercion and Ego. The first and the last element of this acronym, are among the most common motivations appeared in well-known fraud cases, e.g. Enron, WordCom, and Madoff.

Ideology is probably the less frequent incentive; an individual justifies his fraudulent acts by his belief that in this way he achieves a perceived greater good. In other words, ideological motivators justify the means applied by a fraud perpetrator to achieve some perceived greater good which is consistent with his own beliefs. On the other hand, coercion occurs when an individual is engaged in a fraudulent act unwillingly. An example of this type of fraud, is supposed to have occurred in WorldCom case; Betty Vinson, a mid-level accountant, argued that she was forced to manipulate accounting entries (Pulliam, 2003).

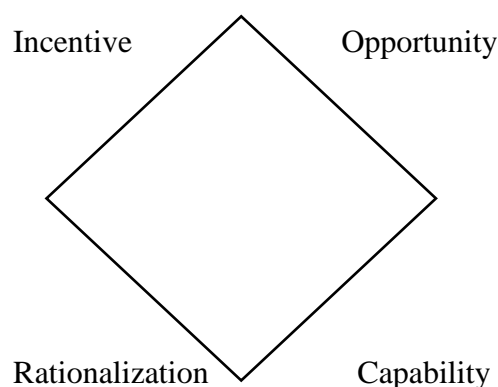
Although the M.I.C.E. model does not include all possible fraud motivators, it modifies the “Fraud Triangle’s” non-shareable financial pressures and provides fraud specialists and forensic accountants a broader framework within which to consider the fraud roots.

2.2.3.4 The fraud diamond

Expanding the “Fraud Triangle”, Wolfe and Hermanson (2004) added a fourth element to Cressey’s model, capability. In addition to perceived pressure, perceived opportunity and rationalization, the authors’ “Fraud Diamond” model considers perpetrator’s capability as a prerequisite in fraud occurrence. Thus, the “Fraud Diamond” (Figure 2.4) expands the notion of opportunity, because without the capabilities and traits to notice control weaknesses and bypass the internal controls applied by management, no fraud can occur and be concealed.

According to Wolfe and Hermanson (2004) “Opportunity opens the doorway to fraud, and incentive (pressure) and rationalization can draw a person toward it; but the person must have the capability to recognize the open doorway as an opportunity and to take advantage of it by walking through, not just once, but time and time again”.

Figure 2.4 The fraud diamond



In this context, anti-fraud professionals should also give consideration to personal attributes and capabilities, an individual's position and legitimate power within the firm and his associated access privileges. Ego, intelligence, knowledge, experience, confidence and creativity are among those competences that characterize well-known white-collar criminals (Dorminey et al., 2012). Therefore, capabilities affect the likelihood that an individual will be able to take advantage of the opportunities in an organization's control environment, commit fraud and then conceal it.

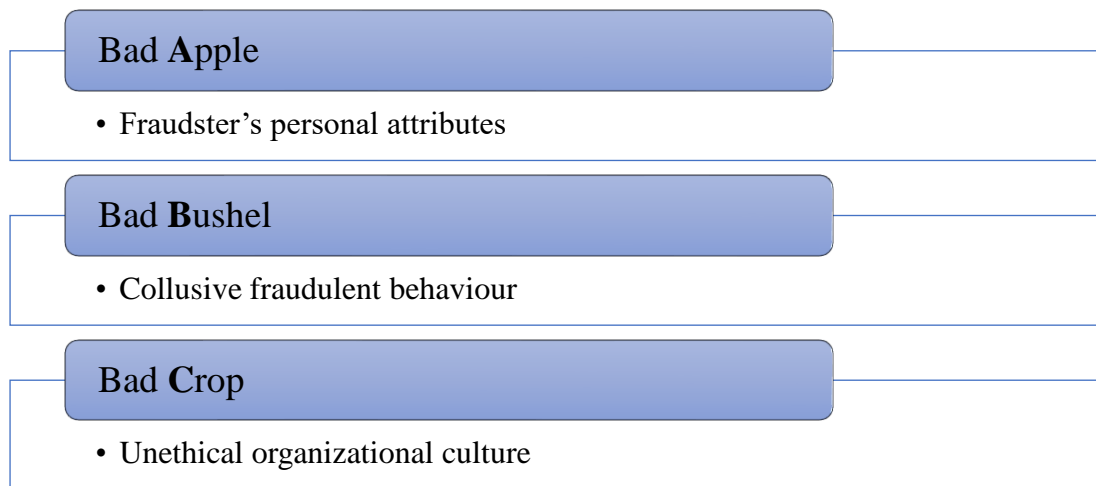
2.2.3.5 The A-B-C Analysis of white-collar crime

Beyond the aforementioned models that expanded Cressey's "Fraud Triangle", Ramamoorti et al. (2009) tried to shed light on a fraudster's motivations and state-of-mind before, during and after the fraud perpetration. Giving an interdisciplinary approach to this issue, they developed the A-B-C model for analysing the fraud occurrence in the context of individual and collusive perspective, and also the cultural and societal conditions.

The so-called A-B-C model involves the Bad Apple, the Bad Bushel, and the Bad Crop (Figure 2.5). The Bad Apple includes the personality traits and attributes of the white-collar offender; the Bad Bushel refers to the collusive fraud and the group dynamics, and the Bad Crop addresses the cultural and societal factors that empower fraud occurrence.

One of the contributions of this analysis is the inclusion of culture and societal norms in fraud occurrence (Dorminey et al., 2012). The Bad Crop implies an ethical breach in top management, affecting in turn whole organization's morality; unethical organizational culture enhances the possibility of fraud incidents and employees' notion that "the ends justify the means".

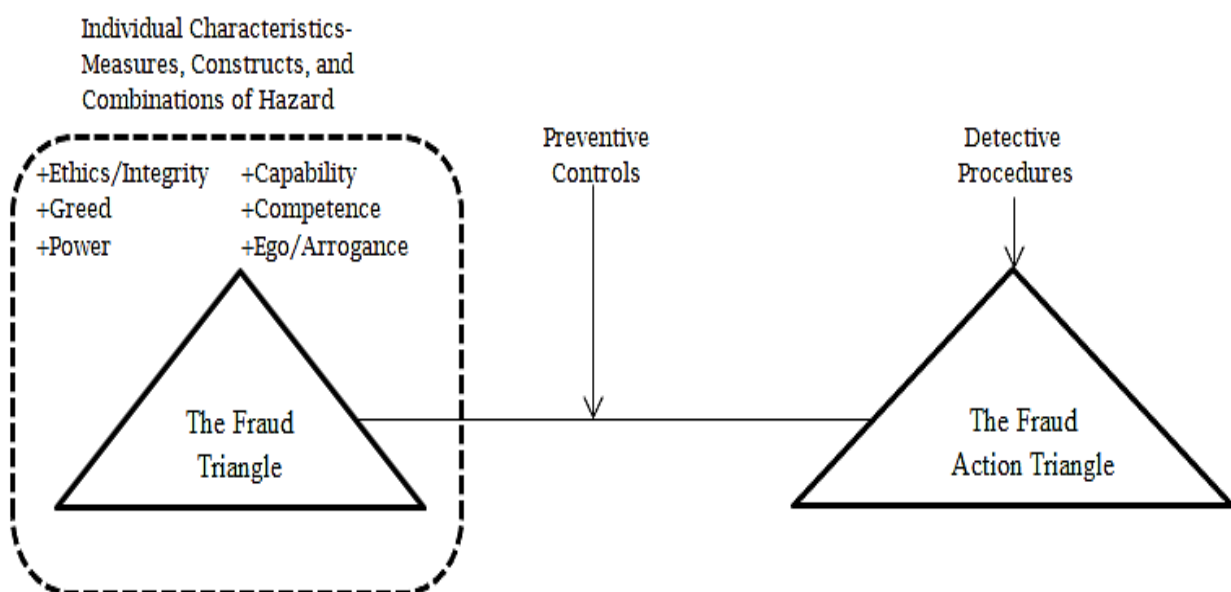
Figure 2.5 The A-B-C Analysis of white-collar crime



2.2.3.6 The Meta-model of white-collar crime

Given the so far described fraud models, Dorminey et al. (2012) developed a meta-model of white-collar crime. This model incorporates individual's characteristics, preventive and deterring controls, as well as detective procedures. Thus, it provides a framework for assessing and enhancing the individual anti-fraud efforts and the construction of a well-organized and ethics-driven control environment (Figure 2.6).

Figure 2.6 The Meta-model of white-collar crime



Source: Dorminey et al. (2012)

According to this framework, each anti-fraud measure affects fraud occurrence. For instance, controls reduce opportunities, still leaving the organization vulnerable to some extent; trusted individuals with enhanced privileges and perceived competences and skills, can overcome internal controls and gain access to valuable information and assets.

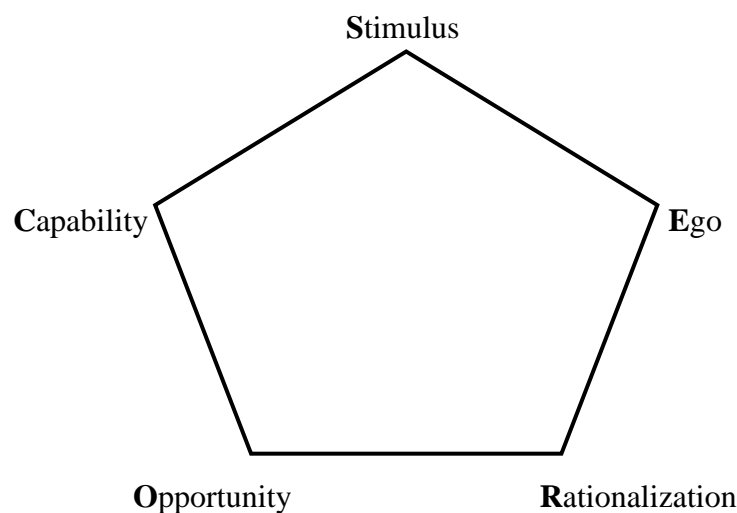
One of the model's significant contributions, is the conclusion that considerable attention has been given till now to the development of a robust internal control system, letting the working environment out of the anti-fraud measures. The creation of an ethical organizational culture may dissuade an individual to commit a fraud by simply considering the ethics of his decision; ethics addresses fraud rationalization and, to some cases, the pressure associated with fraud by considering the circumstances under which a behaviour may be regarded as right or wrong.

2.2.3.7 The S.C.O.R.E. model

Diving deeper in understanding the motives of a fraudster, Vouzinas (2019) expanded the "Fraud Diamond" model. In addition to pressure/stimulus, opportunity, rationalization, and capability, ego is a fifth element, synthesizing the so-called "S.C.O.R.E. model" (Figure 2.7).

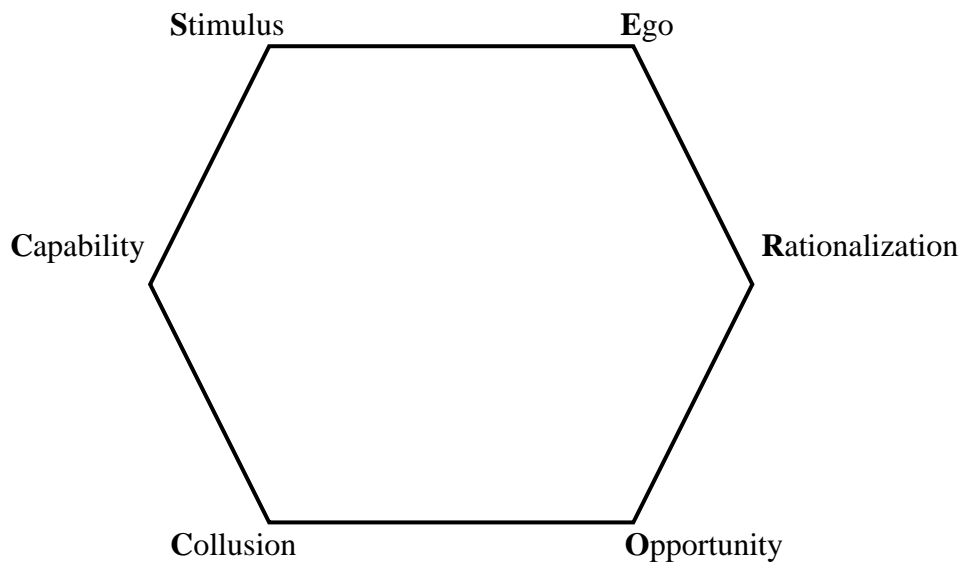
The result of the interaction between an individual's will and the means that his own conscientiousness will let him use to achieve his desires, relates to ego. Ego characterizes an individual who is self-confident, self-absorbed, success-oriented at all costs, and often narcissistic (Allan, 2003).

Figure 2.7 The S.C.O.R.E. model



Nevertheless, as the same author argues, the evolution of fraud schemes implies that fraud is not committed by one individual, but it is a collusive act, involving multiple internal or external interested parties. Once there is a collusion, fraud is much more difficult to be detected and its damages are more impactful. Therefore, where group-fraud exists, the S.C.O.R.E. model is modified and further expanded to S.C.C.O.R.E. model, including collusion, as its sixth element (Figure 2.8).

Figure 2.8 The S.C.C.O.R.E. model



2.2.4 Red flags

Despite the existence of various models to prevent, deter and detect fraud, still most frauds are being discovered by chance; 40% of all cases are initially detected through tips (ACFE, 2018). Thus, red flags are considered among the most important means that auditors and forensic specialists apply to detect fraud (Brazel et al., 2015).

Red flags are “the fingerprints of fraud” (Singleton and Singleton, 2010). Even though these signs do not necessarily indicate the presence of fraud, they often describe common conditions presented in fraudulent issues. Therefore, red flags indicate warning signs about certain organizational conditions; these signs differ in nature and are used by auditors and forensic accountants in mapping an organizational environment to figure out possible fraud risks and include them in their related fraud risk assessment (Albrecht et al., 2016).

In addition, research has concluded that the comparison of financial and non-financial elements can provide useful information regarding the possibility of fraud existence (Brazel et al., 2009; Dechow et al., 2011). Linked to the “Fraud Triangle”, pressure-related red flags may include high performance and earnings expectations, need for external financing and tight debt repayment agreements that may result in earnings manipulation and accounting irregularities (Armstrong et al., 2010; Efendi et al., 2007).

Regarding perceived opportunity, red flags include inadequate internal control environment, unethical working culture, and weak corporate governance; all these conditions enhance the likelihood of fraud occurrence. For instance, Beasley (1996) concludes that there is a negative relation between the number of independent Board members and a firm’s possibility to be involved in fraud. In the same line, Farber (2005) also finds that firms with more independent Board members, more financial experts on the audit committee, a Big-4 auditor and more frequent audit committee meetings are less keen to commit fraud.

Also, rationalization-related red flags, included signs of management’s propensity to justify and conceal its fraudulent behaviour. For instance, CEOs, CFOs and top management often turnover can be revealed as a potential fraud sign (Agrawal and Cooper, 2017; Dichev et al., 2013); during the seven-year fraud of HealthSouth, revealed in 2003, the company employed five CFOs.

Finally, the fraud literature has identified several red flags related to financial statement; rapid revenue growth, aggressive business strategies, accounting irregularities, abnormal difference between earnings and operational cash flows are among the most usual signs that indicate possible fraud occurrence (Brazel et al., 2009; Lee et al., 1999; Singleton and Singleton, 2010).

In summary, data related to possible fraudulent reporting can be obtained from various sources. However, even though the knowledge of red flags provides a framework to fraud examiners and auditors to improve their understanding and awareness of the conditions that favour the occurrence of fraud, still each one of these fraud experts has his own perceptions of the importance and relevance provided by these warning signs (Murcia et al., 2008). For instance, white-collar crime investigators consider red flags related to fraudulent financial reporting of greater significance than those related to the detection of asset misappropriation, whereas the opposite is true for internal auditors (Gullkvist and Jokipii, 2013).

2.3 Fraud-related research: A literature review

In this synthesis of the literature, we expand our review beyond the fraud triangle, to consider a broader range of factors that researchers may consider in an effort to provide a more accurate and complete view of fraud. To fulfil this objective, the review is based on the model of Dorminey et al. (2012), described in detail in section 2.2.3.6 (figure 2.6) before, and the studies included have been published in accounting as well as in non-accounting journals; e.g. psychology, sociology, criminology etc., from 2003 till now; that date was chosen as the starting time in our research, because since then the interest on fraud-related issues has been raised due to the preceding reveal of corporate failures in the early 2000s.

This review includes empirical fraud-related researches published in peer-reviewed journals in the English language. To identify such studies, an internet search using EBSCO, ProQuest, BSC, PsycINFO, IBSS and PsycARTICLES search engines was conducted using terms such as “fraud”, “economic crime” and “white-collar crime”¹. Literature review papers, theses, dissertations and working papers were excluded. The search resulted in 96 empirical studies; a list of these studies and their key findings are presented in Table 2.1.

Table 2.1 Fraud-related studies

Author (s)	Year	Journal¹	Title	Factor (s)	Key findings
<i>Incentives, opportunities, rationalization, and personal attributes</i>					
Rezaee	2005	CPA	Causes, consequences, and deterrence of financial statement fraud	incentives; personal attributes	Meet analysts' expectations, greedy and arrogance of executives are among the most important fraud incentives.
Gillett and Uddin	2005	AJPT	CFO Intentions of Fraudulent Financial Reporting	incentives	CFO need for achievement is not associated with fraudulent financial reporting intention.
Blickle et al	2006	AP	Some personality correlates of business white-collar crime	personal attributes	Hedonism and narcissism are positively related to fraudulent behavior.
Cohen et al.	2010	JBE	Corporate fraud and managers' behavior: Evidence from the press	personal attributes	Personality traits and opportunity are major fraud-risk factors
Murphy and Dacin	2011	JBE	Psychological pathways to fraud: Understanding and preventing fraud in organizations	personal attributes	Lack of awareness, intuition coupled with rationalization and reasoning are the three psychological pathways to fraud that are present when incentive and opportunity exist
Murphy	2012	AOS	Attitude, Machiavellianism, and the rationalization of	personal attributes	Individuals who misreport are higher in Machiavellianism. These individuals also

¹ Journals' abbreviations are being provided in Appendix 3.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			misreporting		feel negative emotions after their action.
Moore et al.	2012	PP	Why employees do bad things: Moral disengagement and unethical organizational behavior	personal attributes	The propensity to behave unethically is correlated with Machiavellianism and negatively related to moral disengagement.
Dellaportas	2013	AF	Conversations with inmate accountants: Motivation, opportunity, and the fraud triangle	incentive; opportunity; rationalization	Financial pressure appears to be the root cause for most of the fraudulent behaviors. If trusted employees are involved in fraudulent actions, there is no need for sophisticated techniques to defraud employer. The fraudsters do not accept criminal identity and report no criminal intent.
Johnson et al.	2013	AJPT	Auditor perceptions of client narcissism as a fraud attitude risk factor	personal attributes	Narcissism is perceived a significant fraud-risk factor by auditors.
Clor-Proell et al.	2015	JBE	The impact of budget goal difficulty and promotion	incentive	The interaction between promotion availability and budget goal difficulty affect an employee's fraudulent behavior.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			availability on employee fraud		
Schuchter and Levi	2015	AF	Beyond the fraud triangle: Swiss and Austrian elite fraudsters	incentive; opportunity; rationalization	Pressure and opportunity should be present to commit fraud. Instead of merely rationalization, a fraud-inhibiting inner voice before and a guilty conscience after the crime are identified.
Albrecht et al.	2015	JBE	The role of power in financial statement fraud schemes	personal attributes; power	Fraudsters' use their power to recruit others to participate in fraudulent acts.
Domino et al.	2015	JBE	Social cognitive theory: The antecedents and effects of ethical climate fit on organizational attitudes of corporate accounting professionals - A reflection of client narcissism and fraud attitude risk	personal attributes	Narcissism is a potential indicator of fraud risk.
Lee et al.	2015	JEP	Hormones and ethics: Understanding the biological	personal attributes; biological	Increased levels of testosterone and cortisol, two important hormones, affect

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			basis of unethical conduct	antecedents	unethical behavior. Also, cortisol and negative affect reduce as an individual cheats more and more.
Haß et al	2015	JCF	Tournament incentives and corporate fraud	incentives	Firms with larger tournament incentives, the gaps between CEO and the pay of lower ranked executives, are more likely to engage in fraudulent activities.
Hass et al.	2016	JBE	Equity incentives and corporate fraud in China	equity incentives	Managers' equity incentives in China, increase their propensity to commit fraud.
Zhao et al.	2016	FIP	Does the Dard Triad of personality predict corrupt intention? The mediating role of belief in good luck	personality traits	Dark triad of personality (Machiavellianism, narcissism, psychopathy) is positively related to corruption. Belief in good luck in penalty-avoidance may be one of the reasons explaining why individuals with Dard triad may engage in fraudulent activities regardless of the potential outcomes.
Van Akkeren and Buckby	2017	JBE	Perceptions on the causes of individual and fraudulent co-	personal attributes; incentives; IT;	Stain (a desire for greater status, wealth, and prestige), anomie (emotions of anger

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			offending: Views of forensic accountants	corporate governance	and frustration) and financial pressure result in fraudulent behavior. Also, addiction to alcohol, gambling and drugs is identified as non-financial fraud incentive. IT existence at all organizational levels increases opportunities. Lack of corporate governance mechanisms contribute to fraud occurrence.
Ugrin and Odom	2017	JFAR	Does viewing sacrificed integrity as a negotiable cost promote acceptance of fraud?	personal attributes	Integrity determined one's fraud attitude.
Donelson et al.	2017	AJPT	Internal control weaknesses and financial reporting fraud	internal controls	Lack of strong internal controls increases fraud opportunity.
Hermanson et al.	2017	JFAR	Unique characteristics of predator frauds	personal attributes	Predator fraudsters are less educated, are not in leadership positions and target small firms.
Sun et al.	2019	A&F	Chief financial officer demographic characteristics	demographics	When CFOs are young, males and have low education level, the fraud possibility

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			and fraudulent financial reporting in China		increases.
Kassem	2018	MAJ	Exploring external auditors' perceptions of the motivations behind management fraud in Egypt - a mixed methods approach	remuneration; bonuses	Getting remuneration or bonuses is perceived to be the most common management fraud incentive in Egypt.
Van Scotter and Roglio	2018	JBE	CEO bright and dark personality: Effects on ethical misconduct	personality traits	CEOs characterized by agreeableness and conscientiousness are less likely to commit fraud.
Harrison et al.	2018	JBE	The effects of Dark Triad on unethical behavior	personality traits	Narcissism motivate individuals to act unethical. Machiavellianism motivates individuals to act unethically and also take advantage of the opportunities that exist to deceive others. Psychopathy affects the way individual rationalize their fraudulent behavior.
Alalehto and Azarian	2018	JBE	When white collar criminals turn to fatal violence: The	personality traits	Narcissism and psychopathy are not among the personality traits that lead an

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			impact of narcissism and psychopathy		individual to commit fraud. However, the presence of these traits may increase the possibility that a white-collar crime turns violent.
Johnson et al.	2019	JBE	Who Follows the Unethical Leader? The Association Between Followers' Personal Characteristics and Intentions to Comply in Committing Organizational Fraud	personality traits	Self-sacrificing self-enhancement, a form of maladaptive narcissism, is positively related to fraudulent behavior, whistle proactivity is negatively related to fraudulent behavior.
<i>Fraud prevention and deterrence</i>					
Abbott et al	2004	AJPT	Audit committee characteristics and restatements	corporate governance	There is a negative relation between audit committee independence level and the occurrence of restatements. Also, negative relation was found between audit committee financial expertise and restatement.
Sharma	2004	AJPT	Board of Director characteristics, institutional	corporate governance	There is a negative relation between the number of Board independent directors

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			ownership, and fraud: Evidence from Australia		and the likelihood of fraud. Also, the percentage of independent institutional ownership is negatively related to fraud likelihood, whistle duality is positively related to fraud likelihood.
Farber	2005	TAR	Restoring Trust after Fraud: Does Corporate Governance Matter?	corporate governance	There is a negative relation between audit committee meetings, financial experts on the audit committee, the outside board members, and the likelihood of fraud occurrence. Also, duality is positively related to fraud.
Persons	2005	RAF	The Relation Between the New Corporate Governance Rules and the Likelihood of Financial Statement Fraud	corporate governance	When audit committee tenure is long and there is no duality, fraud likelihood is reduced. Also, when audit committee is comprised only of independent directors, then fraud likelihood is lower.
Rezaee	2005	CPA	Causes, consequences, and deterrence of financial statement fraud	corporate governance	A vigilant corporate governance structure and effective audits are negatively related to fraud occurrence.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
Carpenter and Reimers	2005	JBE	Unethical and Fraudulent Financial Reporting: Applying the Theory of Planned Behavior	education	Improving ethical instruction in schools and families, would have a positive impact on preventing fraudulent behavior.
Burns and Kedia	2006	JFE	The impact of performance-based compensation on misreporting	corporate governance; stock options	Stock options are among the strongest incentives for CEOs to misreport.
Erickson et al	2006	JAR	Is There a Link between Executive Equity Incentives and Accounting Fraud?	corporate governance; stock options	No relation between stock-based compensation and fraud likelihood.
Bierstaker et al	2006	MAJ	Accountants' perceptions regarding fraud detection and prevention methods	analytics	Digital analysis, discovery sampling and data mining are the most effective fraud prevention and deterrence means.
Dellaportas	2006	JBE	Making a Difference with a Discrete Course on Accounting Ethics	education	After an intervention based on a discrete and dedicated course on accounting ethics, accounting students could reason more ethically.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
Efendi et al	2007	JFE	Why do corporate managers misstate financial statements? The role of option compensation and other factors	corporate governance; stock options	There is a positive relation between CEO stock-based compensation, duality, and financial statement fraud likelihood.
Archambeault et al	2008	CAR	Audit Committee Incentive Compensation and Accounting Restatements	corporate governance; stock options	Long-term stock option grants increase the likelihood of financial reporting failure.
Rae and Subramaniam	2008	MAJ	Quality of internal control procedures: Antecedents and moderating effect on organisational justice and employee fraud	corporate governance; internal control	Internal control procedures quality is negatively related to employees' fraudulent behavior.
Mayhew and Murphy	2009	JBE	The Impact of Ethics Education on Reporting Behavior	education	Ethics education does not affect one's intention to misreport.
Jans et al.	2010	IJAIS	Internal fraud risk reduction: Results of a data mining case study	analytics	Using a multivariate latent class clustering algorithm approach is useful in assessing

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
					internal fraud risk and prevent fraud occurrence.
Lau	2010	JBE	A Step Forward: Ethics Education Matters!	education	Ethics education enhances students' ethical awareness and moral reasoning.
Law	2011	MAJ	Corporate governance and no fraud occurrence in organizations. Hong Kong evidence	corporate governance	Audit committee effectiveness, internal audit effectiveness, tone at the top, and ethical guidelines and policies are positively related to no fraud occurrence in firms.
Shan	2013	CGIR	Can internal governance mechanisms prevent asset appropriation? Examination of type I tunnelling in China	corporate governance	State ownership and the number of Board meetings are positively related to asset misappropriation and in specific to direct transfers.
Campbell et al.	2014	MAQ	Minimizing fraud during a boom business cycle	corporate governance	Good and robust internal controls are one of the best and most effective fraud-prevention methods.
Rodgers et al.	2015	JBE			Ethical behavioral control systems and ethical organizational context depress fraud commitment.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			control systems reducing the likelihood of fraud	organizational culture	
Liu et al.	2015	JBE	Managers' unethical fraudulent financial reporting: The effect of control strength and control framing	corporate governance	When framed for monitoring purposes, strong controls reduce fraud commitment, while when framed for coordinating purposes, strong controls increase fraud likelihood.
Domino et al.	2015	JBE	Social cognitive theory: The antecedents and effects of ethical climate fit on organizational attitudes of corporate accounting professionals - A reflection of client narcissism and fraud attitude risk	organizational climate	Better climate fit increases job satisfaction and reduces unethical and fraudulent behavior.
Kaptein	2015	JBE	The Effectiveness of Ethics Programs: The Role of Scope, Composition, and Sequence	education	Unethical and fraudulent behavior occurs less frequently in firms which have an ethics program than in firms which do not have an ethics program.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
Halbouni et al.	2016	MAJ	Corporate governance and information technology in fraud prevention and detection. Evidence from UAE	corporate governance; computer analytics	Corporate governance has a moderate role in preventing and detecting fraud. IT techniques provide the same results as other traditional fraud prevention and detection methods.
Murphy and Free	2016	BRA	Broadening the fraud triangle: Instrumental climate and fraud	organizational climate	Instrumental climate favors fraud occurrence.
Chen et al.	2016	JBE	Does the external monitoring effect of financial analysts deter corporate fraud in China?	external monitoring	Analysts coverage is positively related to fraud deterrence in emerging economies.
Karmann et al.	2016	JBE	Entrepreneurial orientation and corruption	organizational context	Risk orientation increases the possibility of fraudulent organizational behavior, while innovation orientation reduces the likelihood of corrupted behavior.
Reinstein and Taylor	2017	JBE	Fences as controls to reduce accountants' rationalization		Formal or informal social expectations for behavior can work as self-regulatory mechanisms to deter fraud commitment.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
Harris et al.	2017	JBE	Why bad things happen to good organizations: The link between governance and asset diversions in public charities	corporate governance	Board monitoring, tone at the top, auditing, and independence of key individuals, reduce fraud likelihood.
Miska et al.	2018	JBE	The moderating role of context in determining unethical managerial behavior: A case survey	organizational context	Moral Intensity and situational strength moderate the relationship between individual characteristics and unethical behavior.
Nasir et al	2018	ARJ	Corporate governance, board ethnicity and financial statement fraud: Evidence from Malaysia	corporate governance	Ethnicity and duality are positively related to financial statement fraud, whistle audit committee financial expertise and number of meetings are negatively related to financial statement fraud.
Hauser	2019	JBE	Fighting against corruption: Does anti-corruption training make any difference?	education	Training is positively related to the likelihood of rejecting justifications of corruption.
Wahid	2019	JBE	The effects and the mechanisms of Board Gender Diversity: Evidence	corporate governance	Firms with gender diverse board commit fewer financial reporting mistakes and engage in less fraud.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			from Financial Manipulation		
<i>Fraud detection</i>					
Tavakoli et al	2003	JBE	Culture and Whistleblowing An Empirical Study of Croatian and United States Managers Utilizing Hofstede's Cultural Dimensions	whistleblowing	Culture affects whistleblowing intentions; managers is more possible to blow the whistle based upon the cultural dimensions of power distance and masculinity.
Kaminski et al	2004	MAJ	Can financial ratios detect fraudulent financial reporting?	analytics; financial ratios	Financial ratios have a limited ability to detect fraudulent financial reporting.
Kaplan and Schultz	2007	JBE	Intentions to Report Questionable Acts: An Examination of the Influence of Anonymous Reporting Channel, Internal Audit Quality, and Setting	whistleblowing	The existence of an anonymous channel reduces the likelihood of reporting to non- anonymous channels.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
Liou and Yang	2008	IJAIM	Predicting business failure under the existence of fraudulent financial reporting	analytics; neural network model	The one-stage neural network model is more effective than discriminant analysis in fraud detection. Two-stage neural network model is even more effective than the one-stage approach.
Liou	2008	MAJ	Fraudulent financial reporting detection and business failure prediction models: a comparison	analytics; logistic regression; decision trees; neural networks	Logistic regression outperforms neural networks and decision trees in fraudulent financial reporting detection.
Hwang et al	2008	MAJ	Confucian culture and whistle-blowing by professional accountants: an exploratory study	whistleblowing	A general sense of morality in a firm encourages whistleblowing, while the fear of retaliation and of media coverage discourages whistleblowing in a Chinese society.
Holton	2009	DSS	Identifying disgruntled employee systems fraud risk through text mining: A simple solution for a multi-billion-dollar problem	analytics	Text mining through the use of a naïve Bayesian model can identify disgruntled communications to detect fraud.

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
Kaplan et al.	2009	AJPT	An Examination of the effects of procedural safeguards on intentions to anonymously report fraud	whistleblowing	Individuals are keener to report fraud under an internally administered hotline rather than an externally administered one.
Brazel et al	2009	JAR	Using Nonfinancial Measures to Assess Fraud Risk	analytics; non-financial measures	Non-financial measures can be effectively used by auditors to detect fraud.
Seifert et al.	2010	AOS	The influence of organizational justice on accountant whistleblowing	whistleblowing	Accountants' whistleblowing likelihood is increased when organizational whistleblowing context, consequences and related exchanges with superiors are perceived to be fair.
Krambia-Kapardis et al.	2010	MAJ	Neural networks: the panacea in fraud detection?	analytics	Artificial neural networks can be used to identify fraud-prone firms.
Glancy and Yadav	2011	DSS	A computational model for financial reporting fraud detection	analytics	A computational fraud detection model was developed for detecting fraud in financial reporting, through the use of a quantitative approach on textual data.
Zhou and Kapoor	2011	DSS	Detecting evolutionary financial statement fraud	analytics	Computer assisted automated fraud detection methods are more effective and

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
					efficient than traditional techniques.
Ravisankar et al.	2011	DSS	Detection of financial statement fraud and feature selection using data mining techniques	analytics	Probabilistic Neural Networks (PNN) is the most accurate data mining technique without feature selection. Genetic Programming (GP) and Probabilistic Neural Network outperformed all other techniques with feature selection.
Kaptein	2011	JBE	From inaction to external whistleblowing: The Influence of the ethical culture of organizations on employee responses to observed wrongdoing	whistleblowing; organizational culture	Several dimensions of organizational ethical culture were positively associated with reporting to management, calling an ethics hotline and intended confrontation.
Clements and Shawver	2011	JFSAB	Moral intensity and intentions of accounting professionals to whistleblowe internally	whistleblowing	Societal consensus is a factor that affects accountants' whistleblowing intentions.
Brink et al.	2013	AJPT	The effect of evidence strength and internal rewards on intentions to report fraud	whistleblowing	Employees are more likely to report fraud internally than to the SEC. When evidence is strong, the existence of

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			in the Dodd-Frank regulatory environment		internal rewards enhances fraud reporting likelihood, while when weak evidence exists, the presence of internal rewards decreases fraud reporting likelihood.
MacGregor and Stuebs	2014	JBE	The silent Samaritan syndrome: Why the Whistle Remains Unblown	whistleblowing	Community influences and personal attributes, such as awareness and moral competence, lead individuals not to blow the whistle.
Rodgers et al.	2015	JBE	Corporate social responsibility enhanced control systems reducing the likelihood of fraud	corporate governance; organizational culture	Ethical behavioral control systems and ethical organizational context enhance fraud detection.
Kaplan et al.	2015	BRA	An examination of the effects of procedural safeguards, managerial likeability, and type of fraudulent act on intentions to report fraud to a manager	whistleblowing	Managerial likeability and the type of fraud affect significantly reporting intentions to a manager (sign about how a manager will probably handle a fraud report).
Gao et al.	2015	JBE	Whistleblowing intentions of	whistleblowing	Whistleblowing intentions are higher

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			lower-level employees: The effect of reporting channel, bystanders, and wrongdoer power status		when the reporting channel is externally administered than when it is internally administered.
Kummer et al.	2015	MAJ	The effectiveness of fraud detection instruments in not-for-profit organizations	corporate governance; whistleblowing	Fraud control policies, whistle-blower policies and fraud risk registers are the most effective fraud detection measures.
Johansson and Carey	2016	JBE	Detecting fraud: The role of the anonymous reporting channel	whistleblowing	Anonymous reporting channels are effective in detecting fraud in Australia context.
Perols et al.	2017	TAR	Finding needles in a haystack: Using data analytics to improve fraud prediction	analytics	Observation Undersampling (OU) and Partitioning Variable Undersampling (PVU), improve fraud prediction and in turn detection performance by up to 10 percent.
Young	2017	BRA	Blow the whistle: Individual persuasion under perceived threat of retaliation	whistleblowing	Employees being under threat of retaliation may change their attitude towards whistleblowing.
Berger et al.	2017	AJPT	Hijacking the moral	whistleblowing	In certain contexts, reward incentives can

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			imperative: How financial incentives can discourage whistle-blower reporting		hinder whistle-blower reporting.
Rose et al.	2018	JBE	The effects of compensation structures and monetary rewards on managers' decisions to blow the whistle	whistleblowing	Large rewards for whistleblowing and compensation with restricted stock, enhance the likelihood that managers will blow the whistle.
Dong et al.	2018	JMIS	Leveraging financial social media data for corporate fraud detection	financial social media data	Unstructured financial social media data can be used to complement traditional fraud detection methods.
Andon et al.	2018	JBE	The impact of financial incentives and perceptions of seriousness on whistleblowing intention	whistleblowing	The intention to report fraud externally is higher when the level of perceived seriousness is high. A financial incentive encourages potential reporting.
Taylor and Curtis	2018	JBE	Mentoring: A path to prosocial behavior	whistleblowing	Effective mentoring increases the possibility of reporting fraudulent behavior.
Lee et al.	2018	JBE	Is a uniform approach to whistle-blowing regulation	whistleblowing	Anti-retaliation protection and monetary rewards encourage U.S. accountants to

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
			effective? Evidence from the United States and Germany		blow the whistle. However, this strategy in Germany is less effective. whistle-blowing regulation should not be uniformly transplanted without due consideration of the history and culture of a country.
Lee and Fargher	2018	AJPT	The role of the Audit Committee in their oversight of whistle-blowing	whistleblowing	Higher-quality audit committee is associated with the implementation of a stronger internal whistle-blowing system, which in turn reduces the likelihood of external relative to internal reporting.
Dastjerdi et al	2018	JAAR	Detecting manager’s fraud risk using text analysis: evidence from Iran	analytics	The convex optimization method (CVX) and least absolute shrinkage and selection operator regression method (LASSO) are both effective in detecting manager's high fraud risk index.
Latan et al.	2019	JBE	‘Whistleblowing Triangle’: Framework and Empirical Evidence	whistleblowing	Among the fraud triangle factors, financial incentives are the most

Table 2.1 (continued)

Author (s)	Year	Journal	Title	Factor (s)	Key findings
					important predictor of auditor's intention to blow the whistle in Indonesia.
Latan et al.	2019	JBE	To Blow or Not to Blow the Whistle: The Role of Rationalization in the Perceived Seriousness of Threats and Wrongdoing	whistleblowing	The greater the threat perceived by employees, the less possible is for them to blow the whistle. Also, the more serious the wrongdoing perceived by employees, the more possible is for them to blow the whistle.

Incentives, opportunities, rationalization, and personal attributes

As noted by Hogan et al. (2008), management incentives drive earnings management. Although some additional researchers argue that financial pressure appears to be the main purpose of fraudulent behaviors (Rezaee, 2005; Schuchter and Levi, 2015; Clor-Proell et al, 2015; Haß et al, 2015; van Akkeren and Buckby, 2017; Kassem, 2018; Dellaportas, 2013; Hass et al., 2016), Trompeter et al. (2013) provide contradictory evidence, supporting that management compensation is not related to aggressive accounting and fraudulent behaviour; in turn, they ask for additional variables, beyond the fraud triangle, explaining human motivations to better understand the real incentives behind fraudulent behaviour.

In this line, Schuchter and Levi (2015) argue that although pressure and opportunity should be present to commit fraud and that lack of robust internal controls increases the likelihood of fraud (Rae and Subramaniam, 2008; Donelson et al., 2017), a “fraud-inhibiting inner voice before and a guilty conscience after the crime” are present instead of just reasoning and rationalization.

Therefore, as major fraud-risk factors are considered to be one’s personality traits (Cohen et al., 2010). These intrinsic standards affect one’s behaviour and drive his/her actions. The dark triad of personality; Machiavellianism, narcissism, and psychopathy, is positively related to fraud (Zhao et al., 2016). Machiavellianism represents an individual who is manipulative and pitiless in the pursuit of his own goals, taking advantage of the existing opportunities to deceive others (Harrison et al., 2018). Thus, Machiavellianism is positively related to unethical and fraudulent behaviour (Murphy, 2012; Moore et al., 2012; Harrison et al., 2018), while on the contrary moral identity, empathy and cognitive moral development are negatively associated with the propensity to behave unethically (Moore et al., 2012).

Also, narcissist individuals may act unethically and get involved in fraudulent activities (Blickle et al, 2006; Hermanson et al., 2017; Johnson et al., 2013; Domino et al., 2015). A narcissus, is characterized by arrogance, shamelessness, and a strong sense of ego; in turn such an individual is more likely to have a strong desire for power, higher status, wealth and prestige, leading him to fraudulent acts (Van Akkeren and Buckby, 2017).

Psychopathy on the other hand, does not lead an individual to commit or engage in fraud, but affects the way he/she rationalize his/her acts and behaviour (Murphy and Dacin, 2011; Harrison et al., 2018). Being antisocial, aggressive, and irresponsible does not increase the likelihood of behaving unethically, but in some cases increases the possibility that a white-

collar crime involves violence (Alalehto and Azarian, 2018). Other personality traits that proved to affect one's attitude include agreeableness, conscientiousness, anomie, openness to experience, hedonism, and integrity (Blickle et al, 2006; Holtbrugge et al., 2015; Van Akkeren and Buckby, 2017; Ugrin and Odom, 2017; Van Scotter and Roglio, 2018).

Apart from personality traits, studies also conducted to reveal the demographic characteristics of a possible fraud perpetrator. Among these, gender, age and level of education were the most studied (Hermanson et al., 2017; Sun et al., 2017; Wahid, 2018). Also, Lee et al. (2015) provide evidence regarding the biological antecedents that affect one's behaviour; they conclude that the levels of testosterone and cortisol in one's organism are related to his/her unethical attitude.

Fraud prevention and deterrence

To eliminate opportunities and reduce the likelihood of fraud, a strong internal environment is of great importance (Hogan et al., 2008; Trompeter et al., 2012). In the area of fraud prevention and deterrence, the literature refers to the role of corporate governance, ethical organizational culture and ethical leadership, the application of computer analytics, and ethics education and training.

Corporate governance is a mechanism through which a firm coordinates its activities and monitors the related procedures, to improve its performance and comply with the existing law and regulations. Corporate governance involves the Board, Audit Committee, Internal Audit and Relations with interested parties. There is extensive accounting and non-accounting research exploring the relationship between corporate governance features effectiveness and fraud, as cited by Hogan et al. (2008) and Trompeter et al. (2013). Studies provide empirical evidence in favour of the argument that Audit Committee effectiveness, internal audit effectiveness, and ethical tone at the top are all related to the elimination of fraud occurrence in firms (Rezaee, 2005; Law, 2011; Harris et al., 2017). Also, frequency of Board meetings and independence of key individuals; e.g. internal audit, audit committee members, and CEO, reduce fraud likelihood (Abbott et al, 2004; Sharma, 2004; Farber, 2005; Shan, 2013; Harris et al., 2017). Moreover, stock-based compensation of the CEO and audit committee members is found to be among the strongest incentives for fraud occurrence (Burns and Kedia, 2006; Efendi et al, 2007; Archambeault et al, 2008), and in turn compensation structure is integral part of a vigilant corporate governance.

In addition, ethical organizational context depresses fraud commitment and enhances fraud deterrence (Rodgers et al., 2015; Domino et al, 2015). Ethical guidelines and policies communicated throughout the firm by management, enhance ethical employees' attitude, eliminating in turn their propensity to fraud; also, formal and informal social expectations for moral behaviour can work as self-regulatory mechanisms to deter fraud occurrence (Reinstein and Taylor, 2017; Law, 2011; Murphy and Free).

However, as fraud evolves and new fraud types appear involving technology, IT analytics is used also as preventive and deterring mechanisms. Krambia-Kapardis et al. (2010) argues that artificial intelligence can be used to identify fraud-prone organizations; neural networks through their mechanisms and relationships they develop, can identify the firm most keen to fraud. Other computer analytics techniques that improve fraud prediction and in turn fraud deterrence, include multivariate latent class clustering algorithm (Jan et al., 2010), text mining through naïve Bayes model (Holton, 2009), data mining and digital analysis (Bierstaker et al, 2006), and Observation Undersampling (OU) and Partitioning Variable Undersampling (PVU) (Perols et al., 2017).

Moreover, ethics education is considered among the means that improve individuals' ethical awareness and moral reasoning (Lau, 2010). Also, several studies (Carpenter and Reimers, 2005; Dellaportas, 2006; Kaptein, 2015; Hauser, 2019) provide empirical evidence in support of the view that ethics training and education in schools, families, and firms would reduce the likelihood that employees might commit or engage in fraudulent acts.

Fraud detection

In the area of anti-fraud measures and detection methods, research focuses on the role and effectiveness of whistleblowing and the application of IT analytics to identify fraud incidents.

In the wake of Sarbanes-Oxley Act (2002) in the USA after the corporate scandals and collapses of large firms; e.g. Enron, WorldCom, accounting research begun to explore the role of hotlines with regard to detecting fraudulent acts. Trompeter et al. (2014) provide an extensive review of accounting and non-accounting literature till 2010, concluding that anonymous reporting channels can be effective in detecting fraud (Kaplan and Schultz, 2007; Kaplan et al, 2009). In the same line, recent studies explore the factors that enhance one's whistleblowing intention. Societal consensus, personal attributes, managerial likeability,

organizational ethical culture, the type of fraud committed, effective internal monitoring environment, the perceived threat and significance of the wrongdoing, and signs of the way the firm will handle a fraud report, are some of the features that affect significantly reporting intentions (Seifert et al., 2010; Kaptein et al., 2011; Clements and Shawver, 2011; McGregor and Stuebs, 2014; Kaplan et al., 2015; Taylor and Curtis, 2018; Latan et al, 2019a; Latan et al., 2019b).

Moreover, anti-retaliation protection and monetary rewards enhance the likelihood that someone blows the whistle (Hwang et al, 2008; Lee et al., 2018; Rose et al., 2018; Young, 2017); nonetheless, when the size of fraud does not meet the minimum threshold for the incentive to report it (Bergel et al., 2017), or the values, norms, and culture of a country do not “approve” this technique; e.g. Germany (Lee et al., 2018), monetary rewards tend to hinder whistleblower reporting propensity. In addition, recent studies argue that the intention to report fraud externally is higher than reporting internally (Andon et al., 2018; Gao et al., 2015), contrary to previous studies (Kaplan et al., 2009; Brink et al., 2013) that presented internally-administered reporting channels as more effective than externally-administered ones; this change blinds the eye to how firms evaluate and handle reports and the way they handle the related whistleblowers.

Of great importance are considered to be computer-assisted automated fraud detection techniques (Zhou and Kapoor, 2011). Analysis of financial and non-financial data through textual methods, application of Probabilistic Neural Networks, Genetic Programming and other data mining techniques, and analysis of unstructured data through computer analytics methodologies, are believed to be more effective and efficient than traditional fraud detection methods (Liou and Yang, 2008; Liou, 2008; Holton, 2009; Brazel et al, 2009; Glancy and Yavad, 2011; Ravisankar, 2011; Perols et al, 2017; Dong et al., 2018; Dastjerdi et al, 2018).

2.4 Summary of chapter 2

In this chapter forensic accounting issues, including its definition, history, main objectives, and differences related to auditing and fraud examination were presented. Other than these, the concept and nature of fraud, the possible fraud schemes, the models developed to date explaining which are the causes that lead an individual to commit fraud, the fraud prevention and detection methods applied by firms, and the “red flags” that might indicate a possibility of fraud, were also described. Finally, in this chapter a review of the literature on

fraud prevention, detection, and deterrence, including studies published in accounting as well as in non-accounting journals, was presented. The next chapter (chapter three) discusses the role of psychology in fraud prevention and detection.

3. Psychological approach to fraud

Given the nature of fraud, it is obvious that to examine, prevent and detect fraud, specialists should understand in depth fraudster's behaviour. Psychology, in turn, is the science they have to apply. Colman (2003) describes psychology as the science of studying one's nature, functions and behaviour. In other words, psychology seeks to understand, interpret, predict and control human behaviour. Specifically, personality psychology studies humans, organizational psychology looks at organizational context that affects one's behaviour, social psychology focuses on group interactions and criminological psychology explores psychological issues related to criminal behaviour (Nolen-Hoeksema et al., 2014).

Thus, taking into account the importance of psychology in the examination of fraud, this chapter attempts to present briefly the theoretical framework of the major psychological theories that affect one's propensity to commit fraud, providing the basis for developing the thesis main hypotheses.

3.1. Psychoanalytic theory of personality

Freud's psychoanalytic theory of personality is primarily a theory of mind. Body is functioning as a mechanistic energy system in which the mind is the recipient of mental energetic forces from the body. However, mind is not passive, but it contains instinctual drives that interact with other motives, needs, and conflicts, to result in a particular behavior (Cervone and Pervin, 2010).

To understand in depth the human mind and its internal thoughts, Freud pays attention to the flow of thinking and the examination of the knowledge of mental phenomena that happen inside a human's mind. Being that the case, according to the psychoanalytic theory there are three levels of mental awareness; the conscious, the preconscious, and the unconscious level (Blatt and Auerbach, 2000). The conscious level incorporates thoughts that a person can identify at any given time and the preconscious level includes mental contents of which an individual can easily be aware of by attending to them. However, the third level is unconscious; at this level the mental contents are parts of the mind and in turn a person cannot become aware of them unless within special context. The latter is the most important and complex level, as it includes one's unconscious wishes, desires, and fears that motivate a person's behavior and acts (Schulein, 2003).

As noted, the basic premise of this theory is that behavior is a result of the interaction among motives, drives, needs, and conflicts that takes place inside the mind of an individual. This energy system is explained through the distinction among the id, the ego, and the superego (Graves, 1973; Blatt and Auerbach, 2000). The id is the original source of energy; it avoids pain and punishment and seeks for achievement, reward and pleasure. The id is unconscious, unknown, and does not comply with rules and norms; rather, it pursues satisfaction through action or even fantasy reward.

Contrary to the id, the superego is the inner representation of morality, expressing the ideal and ethical values of the external society (Hamalainen, 2009). Finally, the ego, contrary to the superego and the id, seeks reality (Kelen, 1990). In other words, whereas the id looks for pleasure and the superego for perfection, the ego tries to express and fulfill the wishes of the id based on the opportunities and threats existing in the real world, and the requirements of the superego.

To sum up, the id, the ego, and the superego incorporate the structure of the psychoanalytic theory of personality, that conflict one another. Drives in the id seek immediate satisfaction, which conflict with the ego's desires for further analysis to meet reality's constraints, and the superego's will for morality. Therefore, any given behavior is a result of compromise among these mental systems, with defense systems of ego playing a critical role; e.g. a fraudster usually rationalizes his unacceptable actions, caused by the desires of id, not to cover his activities, but to distort his motives and fulfill the superego's demand for morality.

3.2. Trait theories

Traits are broad predispositions that affect the way people behave, feel, or think in particular circumstances. For trait theorists, traits are considered to be an integral part of one's personality, influencing how an individual is likely to respond in an event (McCrae and Costa, 1995). However, according to trait theorists it does not mean that a person will act in the same way across different situations and cultures (Berge and De Raad, 1999; Church, 2000).

Therefore, trait terms involve consistency and distinctiveness (McCrae and Costa, 1995; Cervone and Pervin, 2010; Pervin, 1994). By the former, it is meant that a trait assumes a regularity in a person's behavior; the person is predisposed to apply a specific course of actions as described by the trait term. However, disposition does not mean that a person characterized by a particular trait will always act as described by that trait. For example, if an

auditor is characterized by high level of confidentiality, necessary trait according to auditors' code of ethics, does not mean that this person would act confidentially when instructed by law to act otherwise and reveal information about a client's fraudulent activities. By the connotation of distinctiveness, trait theorists refer to the features that people differ each other; researchers and personality psychologists are interested in traits for which there are great differences among individuals.

Personality traits are of practical value as they are used to describe, predict, and explain one's particular behavior (McCrae and Costa, 1995; Pervin, 1994). Traits, at first, summarize an individual's regular way of action, and in turn describe what a person regularly is like. Then, based on these behavioural patterns, it can be predicted how individuals characterized by particular traits are likely to behave in daily life, and other than just describing and predicting one's behavior, traits can also be used to explain a person's behavior. For example, a person who is characterized as being highly conscientious, is described as being reliable, organized, and self-disciplined, thus it is predicted to be less likely to commit fraud and in turn an ethical behavior adopted by himself can be explained through conscientiousness trait.

Among personality trait theorists, those of great importance are Gordon W. Allport, Raymond B. Cattell and Hans J. Eysenck, whose theories are analysed in the following paragraphs and are the basis for other trait theories; e.g. Big-Five Taxonomy (John, 1990; Costa and McCrae, 1992; McCrae and Costa, 2008).

The trait theory of Gordon W. Allport

According to Allport's theory, traits are the primary units of one's personality. They exist in a person's nervous system and depict generalized personality dispositions that influence one's acts and overall behavior across various situations and over time (Berge and De Raad, 1999). In other words, traits are considered to be a person's generalized tendencies that remain stable and consistent no matter of his environment and of external stimuli. Nonetheless, he does not argue that a trait is expressed the same way in all situations, but a trait expresses the way a person behaves in many situations.

Also, according to Allport (Allport and Allport, 1921; Cervone and Pervin, 2010), traits are distinguished among cardinal, central and secondary dispositions. The latter refer to traits that are least generalized and consistent and in turn are characterized as being of low importance. Central traits express the most common features of an individual's personality;

more than 50% of one's traits are central traits. Examples include honesty, kindness, generosity, friendliness, anxiety, and assertiveness. Finally, cardinal traits are the rarest type of traits and are so dominant that shape almost every aspect of one's attitude and behavior. For instance, Abraham Lincoln is characterized by his honesty, while Adolph Hitler is synonymous to evil and ruthlessness (Cervone and Pervin, 2010).

The trait theory of Raymond B. Cattell

A different approach to personality traits has been developed by Cattell (Table 3.1). According to him, traits are distinguished to surface and source traits (Cattell, 1965). The former refers to those personality features that can be observed and represent behavioral tendencies. However, the most important traits are source traits; those internal psychological structures that are not easily observed but influence the observable behavioral patterns (Berge and De Raar, 1999).

These 16 source traits are being categorized into three groups: ability traits, temperament traits and dynamic traits (Revelle, 2009). The latter involve the motives and incentives of an individual's behavior, the temperament traits refer to the emotional life and the stylistic quality of behavior, and the ability traits concern the skills, competencies and abilities that a person should possess to operate effectively.

Table 3.1 Cattell's personality traits

Trait	Description
Abstractedness	Imaginative vs Practical
Apprehension	Worried vs Confident
Dominance	Forceful vs submissive
Emotional Stability	Stable vs neurotic
Liveliness	Spontaneous vs restrained
Openness to Change	Flexible vs attached to the familiar
Perfectionism	Controlled vs undisciplined

Privateness	Discreet vs open
Reasoning	Abstract vs concrete
Rule-Consciousness	Conforming vs non-conforming
Self-Reliance	Self-sufficient vs group dependent
Sensitivity	Tender-hearted vs tough-minded
Social Boldness	Uninhibited vs shy
Tension	Inpatient vs relaxed
Vigilance	Suspicious vs trusting
Warmth	Outgoing vs reserved

The trait theory of Hans J. Eysenck

Following Cattell's 16 trait theory, Eysenck by using secondary factor analysis identified, at first, two major superfactors that are not correlated with each other; these are called superfactors because they represent a higher level of organization of traits compared to other initial trait factors (Figures 3.1 and 3.2). These two superfactors are introversion/extraversion and neuroticism (Jackson et al, 2000; Eysenck, 1990).

Introvert on the one hand characterizes a person who is sober, quiet, reserved, and task-oriented, while extraversion is identified to individuals who are sociable, person-oriented, active, and affectionate. Regarding the second superfactor, neuroticism, this trait characterizes individuals who are worrying, nervous, insecure, and emotional (Jackson et al, 2000; Gomez et al, 2002; Levine and Jackson, 2004). Further analysis is provided to the next paragraphs that describe the Big-5 Taxonomy (John, 1990; Costa and McCrae, 1992).

Figure 3.1 The hierarchical structure of extraversion

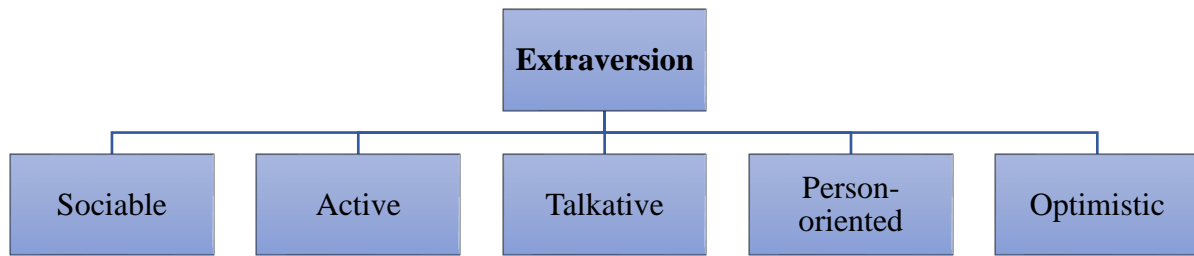
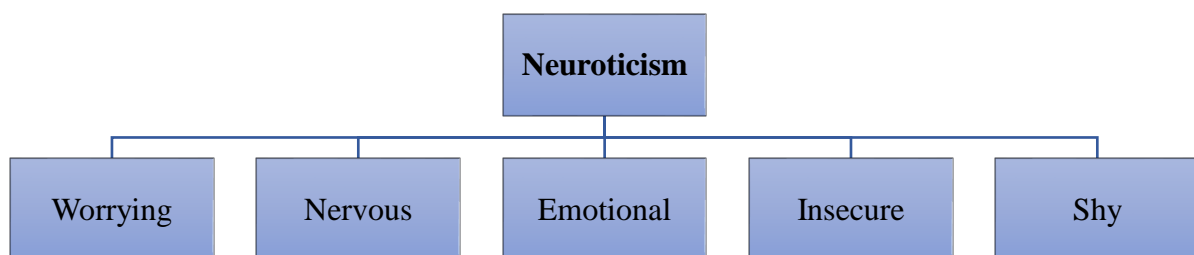
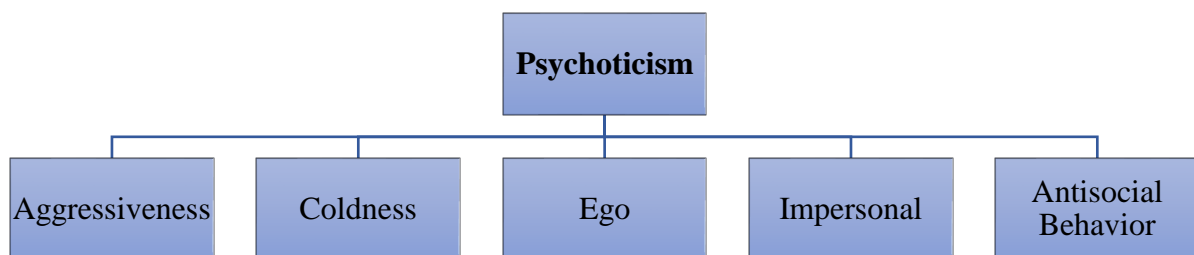


Figure 3.2 The hierarchical structure of neuroticism



After identifying and establishing these two superfactors, Eysenck added a third high-level trait, that of psychoticism (Levine and Jackson, 2004). This trait refers to aggressiveness, antisocial behavior, strong sense of ego, interpersonal coldness, and a lack of empathy (Figure 3.3).

Figure 3.3 The hierarchical structure of psychoticism



All these three superfactors, extraversion, neuroticism, and psychoticism, form Eysenck's model of personality structure, known as PEN model.

The Big-five taxonomy

Following Eysenck's PEN model of personality traits and early work of Cattell, a Big-Five model has been developed; each factor of this model encloses a wide range of many specific traits, as did Eysenck's superfactors (Wilt and Revelle, 2015). This model is called OCEAN (John, 1990), as it includes the terms of Openness (O), Conscientiousness (C), Extraversion (E), Agreeableness (A), and Neuroticism (N). In turn, it is obvious that Eysenck's superfactors referring to Neuroticism and Extraversion are included in Big-Five Model, while the third superfactor of Psychoticism seems to be related to low levels of Conscientiousness and Agreeableness (McCrae and Costa, 1995; Clark and Watson, 1999). Also, Cattell's 16 personality traits (Table 2) are included in Big-Five broad trait factors; e.g. trust is included in agreeableness, and imagination in openness to new experiences.

Openness to new experiences assesses the proactive seeking of experience and knowledge of the unfamiliar. This trait characterizes an individual who is curious, creative, imaginative, and has a broad variety of interests. In contrast, a person who is conventional, unanalytical, and has narrow interests has low level of openness, and in turn it is possible to adopt unethical and fraudulent behavior by just following others within the firm or even due to the power of his superiors (Novikova and Vorobyeva, 2019; Smith and Snell, 1996; Gramzow et al., 2004).

Conscientiousness evaluates a person's level of organization, motivation, and persistence to achieve a goal. This trait is identified to people who are organized, reliable, self-disciplined, punctual, and ambitious. However, an individual who has low conscientiousness is characterized as unreliable, lazy, careless, and negligent. Hence, a self-disciplined and reliable employee is considered to be less eager to commit fraud, due to the fact that he does not depend in great extent to others and in turn cannot be manipulative by them (Novikova and Vorobyeva, 2019; Smith and Snell, 1996; Gramzow et al., 2004).

Extraversion assesses one's propensity and quantity of interpersonal relations and characterizes an individual who is optimistic, keen to talk to others, sociable, and person oriented. On the other hand, a person who is quiet, reserved, and more task-oriented is someone with low score in this trait. This trait could lead an employee to fraud, as his care for people often guides his acts, and thus under a situation in which the needs of a person would be against ethics and proper behavior, it is possible a extravert employee to adopt unethical and fraudulent behavior (Novikova and Vorobyeva, 2019; Smith and Snell, 1996; Gramzow et al., 2004).

Agreeableness is another trait that assesses one's quality of interpersonal orientation along a continuum ranging from compassion to antagonism. It is high in persons characterized as soft-hearted, helpful, trusting, and forgiving, while it is not identified to persons who are cynical, rude, ruthless, and manipulative. Therefore, an employee who is not forgiving, helpful, and trusting, may apply any means to achieve his personal objectives, by adopting the notion "the end justifies the means" (Novikova and Vorobyeva, 2019; Smith and Snell, 1996; Gramzow et al., 2004).

Neuroticism is the last Big-Five trait factor that refers to the assessment of a person's emotional stability, trying to recognize individuals who are keen to psychological distress and ideas out of reality. A person is characterized as neurotic or emotionally unstable, if he shows signs of worry, insecurity, and inadequacy. Nonetheless, a calm, relaxed, emotionally stable, and secure individual has a low level of neuroticism. Given the characteristics of a neurotic employee, it is obvious that such a person cannot easily manage pressure and in turn the sense of insecurity makes him vulnerable to fraudulent acts (Novikova and Vorobyeva, 2019; Smith and Snell, 1996; Gramzow et al., 2004).

In this OCEAN model, a sixth trait factor, was identified; honesty/humility (Ashton and Lee, 2004). This trait refers to a person's tendency to be honest, fair, not greedy, and sincere (Lee et al., 2005). Although this trait has not yet been incorporated into theory or practice it seems to be of great significance. Imagine for example an intelligent, sociable, organized, skilled, extrovert and interpersonally agreeable Chief Executive Officer and another with the same characteristics who is lying about the firm's performance and is using unethical means to achieve his goals. While these two seem to be similar in OCEAN model, they differ in honesty.

3.3. Behaviorism

In contrast with trait theories, in the behaviorist perspective, individuals are machinelike (Cervone and Pervin, 2010). As Skinner, one of behaviorism's greatest theorists, mentions "we have discovered more about how the living organism works and are better able to see its machinelike properties" (Skinner, 1953, p.47). In this view, behaviorists assume that persons are collections of machine-like mechanisms, and as so they are trying to figure out how these mechanisms operate, behave, learn, and react to environmental conditions.

Thinking people as machines being programmed to operate and behave in a specific way, defines the philosophical view of determinism. According to this philosophy, an event is

caused by a previous event. Thus, applying this point of view to human behavior, behaviorists argue that people act as they do because of prior events and conditions that lead them to that behavior, and not as a result of “free will” (Baum, 1995; Skinner, 1971).

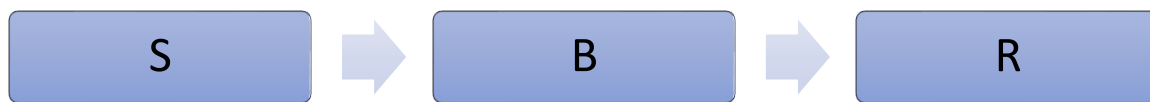
In turn, behaviorists argue that environmental factors affect people’s behavior (Boghossian, 2006). To rationalize this idea, they support that as persons are physical objects in a physical universe, they act as they do as a result of the forces in the environment they act upon. Therefore, to the behaviorists, there is no need to explore one’s behavior in terms of his feelings, personality traits, biological and individual characteristics, or skills (Ertmer and Newby, 2013). Even though they recognize their existence, they argue that all these factors, including behavior and actions, are being generated by the environmental conditions in which people operate.

In behaviorism two are the main theories that explain human actions; classical and operant conditioning (Cervone and Pervin, 2010). According to classical conditioning, Pavlov is its founder, an external stimulus that at first does not affect an individual, eventually turns out to be a strong influencer on his behavior. It influences one’s behavior as this stimulus becomes related to other stimulus that all together do affect one’s actions. This process in which the person learns to respond to that stimulus that was neutral at first, is called conditioning; also, through classical conditioning, someone can learn to avoid a particular stimulus that is harmful – conditioned withdrawal (Ruiz, 1995).

Following this notion but arguing that people can control the stimuli that affect their behavior through the manipulation of rewards and punishments in their environment, Skinner developed operant conditioning or radical behavior theory (Baum, 1995). In this approach, environmental factors do not force the individual to behave in a specific way. However, in the Skinnerian analysis of behavior, it is the reinforcing events of an action that increase or reduce the likelihood that a particular behavior will be adopted or rejected in the future. Therefore, the basic premise of this approach is that individuals learn by reinforcements (Ruiz, 1995; Ertmer and Newby, 2013); if a reward follows an act then someone is possible to adopt this behavior and act the same way in the future, whistle if a punishment is a result of an act then an aversive stimulus is generated decreasing the likelihood of that act occurring again. in other words, this theory relies on a three-element model, in which situational conditions (S) shape the occasion for a specific behavior (B), and its results (R) form and control it. Thus, behavior is generated

by the environmental stimuli that precede it and controlled by the reinforcing stimuli that follow it.

Figure 3.4 Conceptual scheme of radical behaviorism



To sum up, in behaviorism there is no free will (Skinner, 1971); it is the environment that causes a behavior. Even if people feel that they make free choices, their decisions and actions are being controlled through positive and negative reinforcers that lead them to a particular course of action. That being the case, an obvious advantage of behaviorism is its ability to define behavior clearly using observable and measurable individuals' behavioral changes. Nevertheless, this approach provides a partial view of human behavior as factors like emotions, personality traits, genetic characteristics, and competencies are not considered.

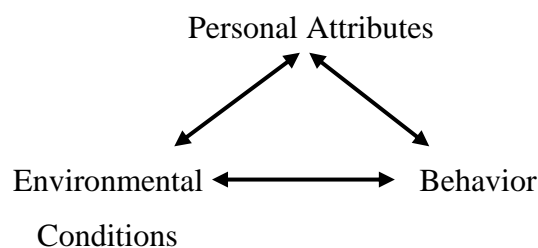
3.4. Social cognitive theory

So, should human behavior be explained by inner forces or external stimuli? As discussed before, all theories identify that both internal and external factors affect one's behavior. Nevertheless, these theories do not give the same level of importance to those factors (Pervin and Lewis, 1978). For example, Freud argues that inner forces affect the way individuals behave, Eysenck expresses the view that personality trait superfactors can describe, predict and explain one's behavior, while Skinner and other behaviorists present humans as being controlled by environmental conditions.

Recognizing that individuals interact to their environment and at the same time use their inner cognitive forces to communicate with others, Bandura (1986) developed the Social Cognitive Theory (Cervone and Shoda, 1999). Rejecting the view that individuals are driven solely by inner forces or external stimuli, this theory explains human behavior in terms of a model of triadic reciprocity; cognitive and other personal attributes, environmental context and behavior all operate as interacting determinants of one another (Bandura, 1986; Caprara et al, 2013; Bandura, 1999; Torre and Durning, 2015). In this view, even if people are being affected by external conditions, they choose how to behave and react under certain circumstances, by using their personality and cognitive factors.

So far, several studies have examined human behavior in terms of one-sided determinism; in turn, behavior was viewed as being influenced solely by environmental and social conditions (Engdahl, 2009) or by internal dispositions (Caprara et al., 2010; Van Scotter and Roglio, 2018; Turner, 2014). However, social cognitive theory explains human behavior through a bidirectional causation. In this model, personal attributes involving cognitive, biological and personality traits, behavioral attitude and environmental events all operate as interacting determinants that affect each other (Figure 3.5).

Figure 3.5 Triadic reciprocity of social cognitive theory



In this triadic causation and interaction, there is no fixed pattern or specific dynamics among these determinants (Bandura, 1999; Cervone and Pervin, 2010; Cervone, 1997). Nonetheless, the contribution of each feature on the others, depends primarily on the activities, situational context, sociostructural conditions, risks, threats and opportunities. Of all the different causations in this triadic model, the interaction between behavior and environmental context has received the most considerate attention. As most of the behavioristic and ethological theories argue, in daily transactions, environmental events affect behavior and in turn behavior alters environmental context. However, this bidirectional relation between behavior and environment is influenced also by thought and cognition, as individuals' reactions are shaped and controlled not only by their immediate affects, but also by their one judgements of possible outcomes of their actions. For example, a fraudster will continue or even worse escalate his/her fraudulent behavior, when even though immediately punished for his/her behavior, he/she expects that he/she will gain what he/she seeks. But the same momentary punishment will serve as a restraint, when the fraudster expects that the persistence on his/her fraudulent activities will be ineffective.

Each of the three interactants in the triadic social cognitive model; personal attributes, environmental events, and behavior, operate as a significant and necessary constituent in the reciprocal bidirectional system of causation (Cervone and Pervin, 2010; Bandura, 1986). The

personal determinant, other than biological traits, concludes self-beliefs of efficacy, quality of analytical thinking, self-regulation and affective self-reactions. The properties of the organizational environments, the level of organizational culture, the values it prescribes and its responsiveness to individuals' behavioral patterns constitute the environmental determinant. The actions of human beings describe the behavioral determinant. Therefore, acting under a specific environmental context does not presume that human beings would behave in a fraudulent way, as they would also consider where their actions are likely to lead and which are their possible benefits, if any.

As already mentioned before, in social cognitive theory, individuals are neither solely driven by inner personal characteristics nor automatically shaped by environmental conditions. Nonetheless, they are active contributors to their behavior and personal motivation through a model of interacting features; in other words, people control their behavior and develop their reactions within several fundamental capabilities, including symbolizing, vicarious, forethought, self-regulatory, and self-reflective capability (Bandura, 1986).

Symbolizing capability

“Symbols serve as vehicles of thought” (Bandura, 1986; 1999). The ability to represent actions and their possible outcomes in symbolic form provides people with a tool for understanding in depth the environmental context within which they function and also shape and manage conditions and reactions that touch virtually their lives.

Through symbols, individuals create and transform experiences into internal models of proper behavior, useful for future use. Drawing to their knowledge and other skills, and using their symbolizing capability, people rather than directly suffer the consequences of their actions, they test their reactions and behavior in thought (Bandura, 2006). Also, the flexibility provided by symbolization serves as a means of novelty and creation of ideas out-of-the box.

However, to argue that using cognitive symbolization people would always rationalize their actions objectively is false. Rationality depends on reasoning skills; in turn, making wrong judgements and not considering all the possible outcomes, positive and negative, of their actions, may lead people to faulty course of actions. Therefore, symbolizing capability through cognitive and knowledge can be either a source of human accomplishment as well as human failing.

For example, an employee who is thinking of stealing cash from his company, first uses his symbolizing capability to imagine the way he will commit this fraud and then to bear in mind the possible consequences of his action. Through his knowledge and other skills, he develops a plan to steal the money and after that conceal his activity not to get caught. Through this process, he also considers the possible risks, positive and negative outcomes, and then proceeds to his fraudulent act. If during this process the possible fraudster takes into account only the positive outcomes; gain of money, and not the negative ones; the likelihood of getting caught and the possible impact, go to prison, he will fail to rationalize his decision objectively and take the “right” decision.

Vicarious capability

Rather than symbolize the possible outcomes of an act, people may substitute this capability by learning either through experiencing the effects of their own acts or through social modelling (Bandura, 1986; Tuschke et al., 2014). Most of the psychological theories argue that learning can occur only through the experiencing of the direct effects of one’s actions. However, if skills and knowledge had to be developed and shaped through this process, a culture could never change its social practices, a firm could never develop novel ideas and adapt to new demands and individuals would remain stable, with no imagination and will to new experiences. Through this trial-and-error experiences system, mistakes would produce costly or even fatal impacts. In addition, time, resources and mobility constraints also impose several difficulties on the process of gaining new knowledge and skills through direct experience (Cervone and Pervin, 2010).

Given these severe limits, fortunately, social modeling can be used in place of trial-and-error learning process. In turn, people can learn vicariously by observing others’ behavior and the consequences they experience (Bandura, 1999; Kim and Miner, 2007). The ability to learn by observation enables individuals to generate and regulate related behavioral patterns without having to form them through trial-and-error process (Ahrens and Cloutier, 2019). Thus, an employee for example can learn to behave (un) ethically by observing other employees and managers behavior of the organization within he works and the outcomes of their behavior. For instance, given that this employee works in a firm where there are no ethical values and managers do whatever it takes to achieve business objectives, even fraudulent acts, and being rewarded for this behavior, it is likely that this employee would adopt this unethical and even worse fraudulent behavior. On the other hand, if the actions taken by a firm after a fraud is

being detected are severe, e.g. penalties, prison sentences, it would probably avert other employees from similar behavior.

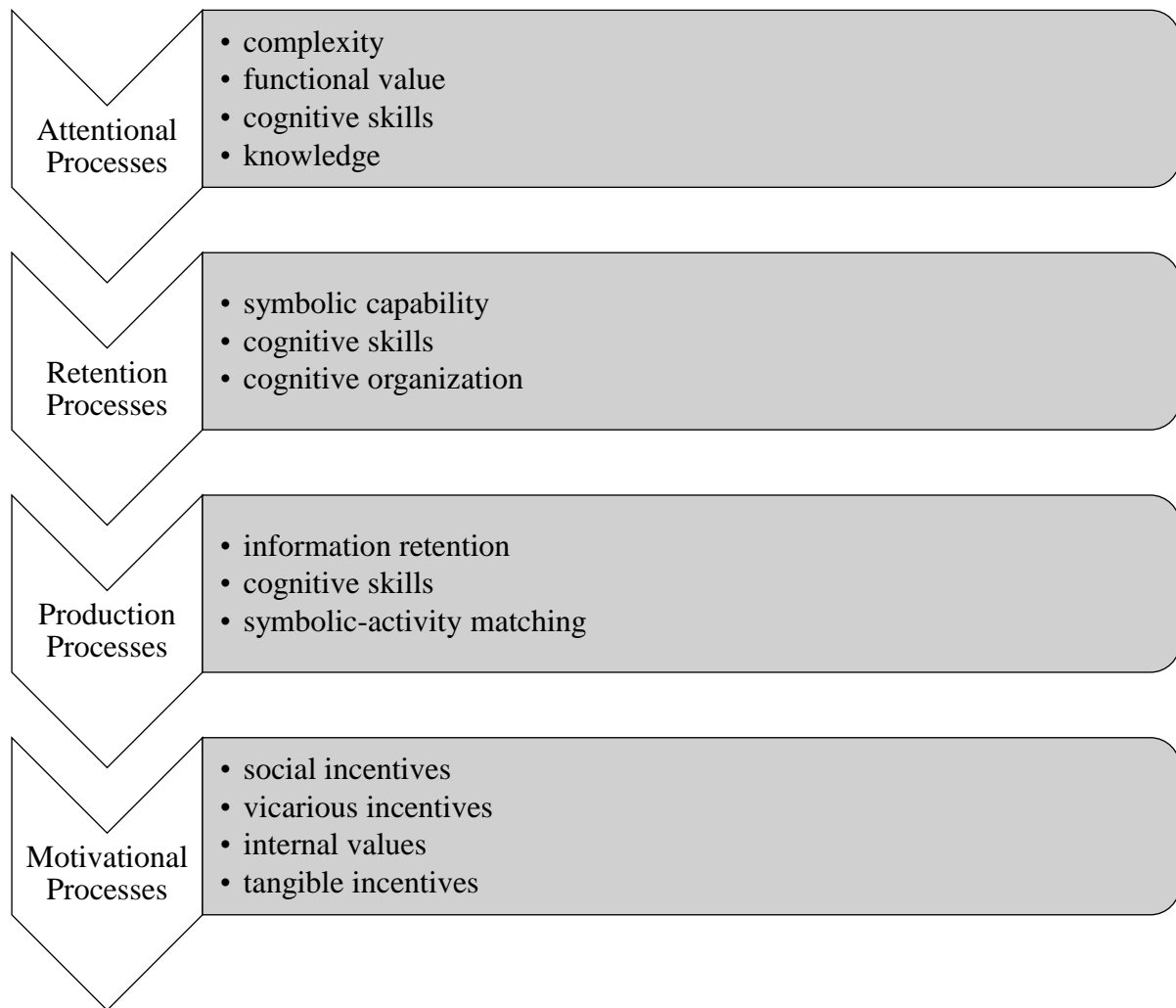
Observation learning modelling operates mainly through informative function (Bandura, 1999; Jimenez et al., 2020). In turn, providing a model of thought and action is among the most effective ways to convey information about behavior, values, morality and knowledge. In this process, which is presented in Figure 3.6, observational learning is governed by attentional, retention, production, and motivation sub-processes (Bandura, 1986; 1999).

Attentional processes determine what people choose to observe among numerous modelling influences and what information they reject. Selective attention, in turn, is important as during this sub-process an individual chooses which characteristics and patterns are accepted. To make this selection, cognitive skills, perpetual capabilities, complexity, and functional value are some of the factors affecting what is included in the social modelling context.

The second sub-process governing observational learning refers to the retention of knowledge and information gathered by modelled activities once happened. In order observers to be benefited by the previous behavior of others, the modelled behavior should be transformed to symbols to remain in permanent memory. The third component of observation learning process concerns the transformation of symbols to actions. Through the use of people knowledge and skills, appropriate behavioural production is achieved by matching each symbolic conception with the specific activity.

The fourth sub-process in modelling involves motivation. Individuals do not perform whatever they learn; thus, social cognitive theory separates performance and acquisition. Enactment is primarily affected by direct, vicarious and self-produced incentives. For example, an individual is more likely to adopt a modelled behavior if it will result in valued outcomes than if it will result to punishment. Moreover, individuals are influenced by the successes of others who are close to them, transforming those into models. Imagine for instance that a manager who manipulates a firm's financial statements is getting high bonuses and being undetected; fellows would probably adopt this behavior even if fraudulent. However, apart from these incentives, self-produced motivators also play a crucial role in modelling. People are likely to perform actions that they find self-satisfying and avert those that personally reject; e.g. if being moral and acting ethically is an action that for an employee is really satisfying will make him reject any fraudulent activity.

Figure 3.6 Sub-processes governing observational learning modelling



Forethought capability

Another individual characteristic is the forethought capability; the capacity to bring desired outcomes on present activities. Through this process, people shape and regulate their current action to fit to an anticipated future (Bandura, 1986; 2006). In other words, individuals set goals, anticipate the possible outcomes of their prospective actions, and plan them accordingly to meet the desired consequences and avoid the negative ones.

Also, forethought capability is a motivator for people behavior. As people make plans, set priorities and structure their actions in a relevant way to achieve their goals, a forethought perspective drives their actions providing coherence and specific direction.

As vicarious capability is based on symbolic activity, so does forethought capability. Representing future events and their possible outcomes at the present, individuals are motivated and regulate their behavior accordingly.

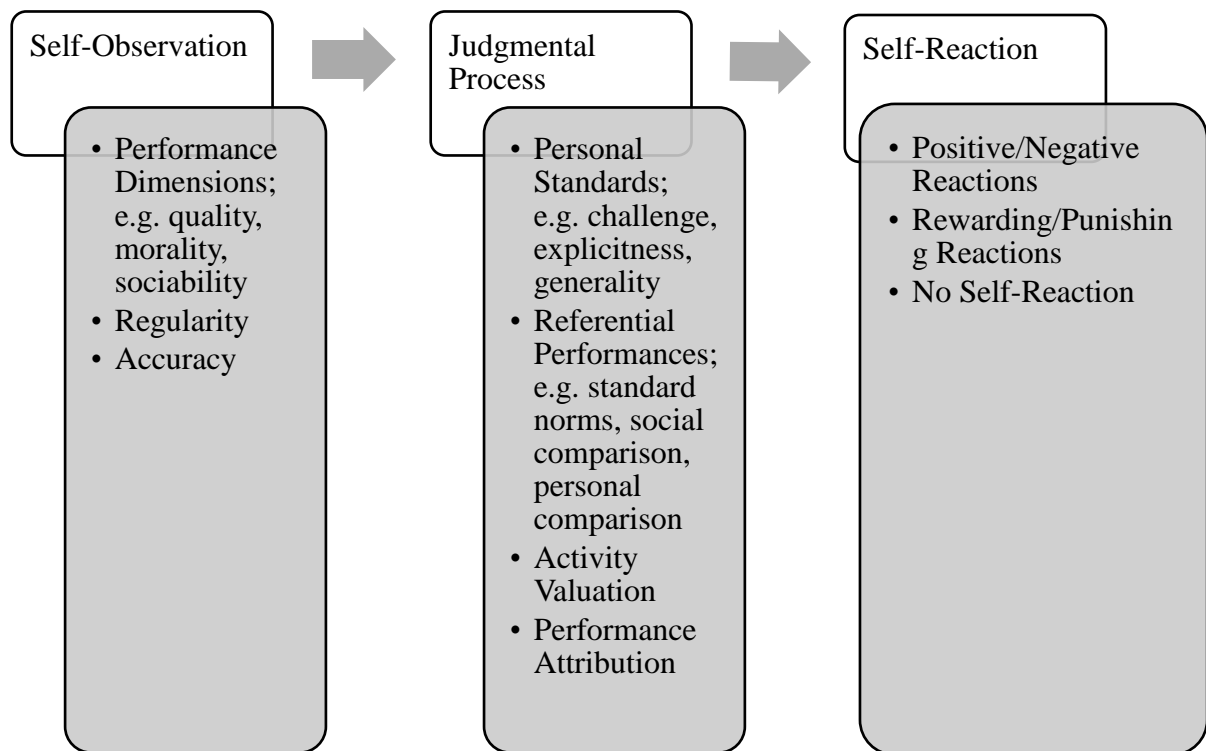
People tend to adopt courses of action that they believe that would have positive outcomes and reject those that are likely to lead them to unrewarding and negative consequences. That said, does not mean that people automatically follow this behavior. Nonetheless, outcome expectations motivate individuals who in turn shape and regulate their attitude accordingly. However, external outcomes are not the sole source of influencers to human behavior; observing successes and failures of others and comparison of positive outcomes through social comparison processes may also affect the way people behave and act.

Self-regulatory capability

As already discussed in previous sections, people do not adopt automatically a behavior based on outcome expectations. Rather, individuals shape and regulate their actions based on their internal standards and self-sanctions.

The self-regulation function enables human beings to critically judge the possible outcomes, and motivate their proper actions (Gailliot et al., 2008; Cervone, 1996). To operate properly, this mechanism uses three psychological sub-processes (Bandura, 1986) involving self-observation, judgmental and self-reaction (Figure 3.7).

Figure 3.7 Self-regulation sub-processes



Observing one's behavior is the first step to make something motivate it. Through self-monitoring, people observe the environmental context in which particular actions take place, the consequences they generate and other performance dimensions such as their quality, morality and novelty. However, being a passive observer of one's pattern of behavior does not constitute a robust basis for self-reactions.

To self-direct their reactions, individuals have to critically judge the observed courses of action. Personal standards, social and personal comparison, valuation of the activity and personal or external locus are among the most crucial factors affecting self-motivation and self-directedness (Cervone, 1996; Baumeister and Heatherton, 1996). After individuals develop their self-regulatory capabilities, they form their reactions accordingly (Bandura, 2006). That being the case, they behave either to satisfy themselves; e.g. ego, self-pride, or to gain external rewards and avoid punishments.

Self-reflective capability

As discussed before, individuals are not passive observers of others behavior adopting it, but they critically judge others and shape and regulate their own reactions. Other than that,

people are also self-examiners of their own behavior; in social cognitive theory, individuals verify the accuracy and adequacy of their thoughts and actions through self-reflecting means (Bandura, 1986; 2006). In other words, individuals shape their ideas, act upon them and afterwards they judge them via the outcomes produced to improve them if necessary.

The verification process is conducted via four modes (Bandura, 1986); enactive, vicarious, persuasory, and logical. Enactive verification relies on how well one's thoughts match with the results they produce. Vicarious mode of verification relies on observing the outcomes spawned to other people having similar ideas. Persuasive verification is conducted by taking into account the opinion of specialists on specific thoughts not easily confirmed through empirical experiments. Finally, in logical verification, individuals check the validity of their thoughts by gathering from knowledge what is already known and what are the possible consequences.

Among the self-referent thoughts, perceived self-efficacy is considered to affect the most individuals' behavior (Ozyilmaz et al., 2018; Schunk, 1989). What people believe of their own capabilities, influence their incentives and the way they act; unless individuals think that they can achieve a desired outcome by their own abilities, they would have little or no motivation to act upon it. To develop their self-efficacy beliefs, people draw power by previous successes, vicarious experiences, social persuasion, physical status and emotional stability. Moreover, personal attributes, personality traits, situational, and social factors also do affect self-efficacy perceptions (Bandura, 1997).

To sum up, social cognitive theory acknowledges the severe role of various factors in human behavior, rejecting the sole impact of personal attributes or of environmental conditions on people behavior. In other words, experiences deriving from past events, psychological traits, and biological attributes, determine the way individuals behave. That being the case, this theory supports the view that personal attributes, environmental conditions and behavior all interact bi-directionally one another.

3.5. Summary of chapter 3

In this chapter, the significance of psychology in fraud examination was presented. The major psychological theories that can influence a human's behavior, and in turn his propensity to commit or engage in fraudulent acts, were analysed. The next chapter (chapter 4) discusses corporate governance mechanisms, their role in major fraud scandals in the USA, Europe, and

Asia, and the role of ethics and organizational culture in the success of the regulation issued in the aftermath of corporate failures to prevent future fraud incidents.

4. Organizational culture and fraud detection

Even though it is human beings who commit fraud, and in turn analyzing the inner forces that may affect a human's behavior is salient, so is also the examination of the organizational context within individuals work. Ethical culture refers to the conditions prevailing in firm that guide compliance with ethical expectations and policies, and in turn the promotion of an ethical internal environment is significant.

Hence, this chapter provides an overview of corporate governance mechanisms and discusses their role in major corporate failures in the USA, Europe, and Asia. In addition, how ethics and organizational culture contribute on the success of the regulation issued in the aftermath of these scandals are being presented. Finally, literature on auditors' ethics principles is being reviewed.

4.1 Defining corporate governance

Within a company several individuals operate and in turn, a corporation is defined by five discrete characteristics: a legal personality, centralized or decentralized management, transferable shares, liability of the shareholders, and ownership (Hansmann and Kraakman, 2001). These characteristics shape the framework for a firm to be productive, and the absence of conflicts among these interrelated parties helps the firm to fulfil its objectives, maximize its value (Hart, 1995).

However, the separation of control and ownership, and the lack of effective monitoring mechanisms, increase the danger that managers, who are not major shareholders and in turn do not bear a major benefit of the wealth produced of their decisions, will pursue their own goals by diverting corporate resources from shareholders (Aktas et al, 2016; Hart, 1995; Fama and Jensen, 1983). Hence, the existence of a robust corporate governance structure is significant to check and balance managerial behaviour and ensure that the interests of shareholders are being promoted.

According to Shleifer and Vishny (1997) corporate governance "deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment". Indeed, corporate governance involves the application of internal and external procedures by firms, to ensure that managers run firms effectively, so as to provide an acceptable return to shareholders and satisfy social expectations (Letza et al., 2004).

That being the case, governance is a term that includes leadership, management, decision-making, supervision, regulation and organization, as does organizational culture (Llopis et al., 2007; Licht et al., 2005). In other words, governance is about developing an organizational context within which ethics, cohesive policies, consistent management and moral decisions exist to make the organization thrive and improve its performance. It aims at assuring that the organization produces good results, avoiding at the same time undesirable actions that may generate disastrous consequences (West, 2009). Therefore, governance is a strong asset for organizations as it develops a pathway to the future and ensures that day-to-day management is aligned with organization's objectives.

Corporate governance is this form of regulation. The term "corporate governance" has been used first, to my knowledge, by Richard Eells, to describe "the structure and functioning of the corporate policy" (Eells, 1960, p.106). Since then, corporate governance is a controversial issue, gaining considerable attention in the wake of corporate scandals and the publication of large fraud cases (Agrawal and Chadha, 2005; Rezaee, 2005).

However, to adopt a sole definition for corporate governance seems complicated as this term incorporates numerous economic and legal phenomena, each one of which has its own specifications and depicts the view of its creator (Keasey et al., 1998); for example for economists corporate governance has to do with conflicts of interest within a firm and how to minimize them, while for managers corporate governance has to do with financial performance and means that should apply to make employees work effectively and efficiently.

To that end, a widely used definition developed by the Organization for Economic Co-operation and Development (OECD, 2004, p.11), refers to corporate governance as "a set of relationships between a company's management, its board, its shareholders and other stakeholders, to provide the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined".

Analysing this definition, compliance, ethics, and accountability, are the three keywords. Nowadays, firms are expected not only to achieve their objectives by any means, but also develop and maintain a moral culture, a working environment that promotes ethical behavior and contributes on the society. This is indeed the true meaning and role of corporate governance (Child and Rodrigues, 2004).

4.2. Good corporate governance

Although, as discussed previously, having a corporate governance in place is of critical importance, this does not mean that it is also good corporate governance. A good corporate governance should motivate the Board and management to pursue objectives by providing proper and value-added incentives that are simultaneously aligned with the firm's and shareholders' interests (Child and Rodrigues, 2004). Also, good governance should provide effective monitoring, minimizing the company's internal and external risks and reducing the opportunities for malpractices and even fraudulent acts.

In other words, good governance sets the foundations for the transparent, effective, and decent operation of a firm, the enhancement of accountability, the prevention, deterrence and detection of fraudulent acts, the safeguarding of shareholders' interests, and the compliance with applicable laws and regulations. Therefore, the existence of a good corporate governance structure is not just a way of regulating and putting restrictions to a firm's conduct, but it is about developing an ethical organizational culture, characterized by morality, integrity, and trust, within which employees, executives, and owners, all operate to achieve firm's goals, without applying fraudulent or unethical means (Child and Rodrigues, 2004; West, 2009).

At this point, it is interesting to reveal the reasons that made corporate governance to attract attention recently, even though its importance has been well-known for many decades. First and foremost, the wave of corporate and accounting scandals and failures has greatly shaken public's opinion of business internal environment and investors' confidence in the integrity and confidentiality of financial reporting (Rezaee, 2005). The corporate failure of prominent companies such as Enron and WorldCom in the USA, Parmalat in Europe, and Satyam recently in Asia, in combination with the financial crisis of 2008, have all generated a continuous crisis of trust.

Another reason that adds value to corporate governance, is the globalization and market integration. During the last decade, takeovers, new ownership structures, and a tendency towards the integration and deregulation of capital markets create new challenges and risk for firms and regulators (Aktas et al, 2016). Thus, the objectives of regulation seem to need improvement to keep the pace of these new conditions. Apart from these situations, even though the rapid technological advances and recent application of artificial intelligence and big data methods in business increase the firm's effectiveness and efficiency, they also create new

risks and reveal new opportunities for fraudulent acts and malpractices in favor or against the company.

To date, several studies have been conducted related to corporate governance and its internal mechanisms. Among them, the meta-analysis of Lin and Hwang (2010) regarding the relationship of corporate governance structure and audit quality, the meta-analysis of Siddiqui (2015) with regard to the impact of corporate governance on a firm's performance, and the meta-analysis of Mutlu et al. (2018) concerning the corporate governance in China, are of considerable interest.

To sum up, corporate governance is a vibrant research area with multiple social and financial implications. Thus, good and ethical corporate governance should become a priority for firms around the world, as it will help in strengthening its existing structures and promoting moral behavior; in turn, corporate governance is not about achieving goals by applying any means to justify your acts, but is about promoting ethical organizational culture, fairness, accountability, trust, and transparency.

To get a better understanding of how corporate governance mechanisms operate, it is essential to analyze in detail the existing corporate governance systems applied worldwide, the related corporate governance principles, and the corporate governance framework that involves the main pillars, the key actors, and the primary stakeholders of corporate governance.

4.3. Corporate governance systems

A corporate governance system is presented as a country-specific framework of institutional, cultural, and legal factors that shape the courses of action taken by stakeholders; e.g. shareholders, creditors, suppliers, customers, and managers, to affect the managerial decision-making (Weimer and Pape, 1999).

Among others, Mayer (1997) and Cuervo (2002) identify three systems of corporate governance: (1) the Anglo-Saxon system (Australia, Canada, the UK, the USA), (2) the Continental European system (Austria, Belgium, Denmark, France, Finland, Germany, Italy, Norway, Spain, Sweden, Switzerland, the Netherlands), and (3) the Japanese (Japan).

Another taxonomy is also used, categorizing the aforementioned corporate governance systems as “market oriented” or “network oriented” (Moerland, 1995). The market-oriented systems are characterized by the existence of an active external market for corporate control

which is used as a means of influence by shareholders to bias managerial decision-making. This type of systems is mainly applied in the Anglo-Saxon countries. On the other hand, in the network-oriented systems that prevail in Germanic countries, Latin countries and Japan, specific groups, e.g. banks, families, or employees, substantially affect managerial decision-making through networks of tight relationships. For example, in Italy family serves as a major group of influence, while in Germany banks and employees are indeed influential.

The Anglo-Saxon system

In the Anglo-Saxon countries (Australia, Canada, the UK, and the USA) shareholders significantly influence the managerial decision-making. Roughly put, the firm is perceived to be the means for shareholders wealth, as the managerial directors operate and take decision for the benefit of shareholders (Letza et al., 2004). That being the case, the law in these countries protects all shareholders, providing even to the small one equal access to information so as those investors not to be exploited by dominant shareholders. In turn, ownership is diffuse and in the General Assembly of shareholders, the principle “one share, one vote” applies (Aguilera and Jackson, 2003), promoting in this way an organizational culture of transparency, equality, and independence.

Another distinct characteristic of the Anglo-Saxon countries is the existence of the one-tier board of directors. According to this type, executive and supervisory responsibilities of the Board are concentrated in one legal entity. However, the Board consists of executive and non-executive members. The latter, who are outside experts and often serve as executive Board members in other firms, are accountable for the management of the firm, and are expected to exercise their responsibilities with due care, integrity, and loyalty, bearing in mind simultaneously shareholders’ interests (Cuervo, 2002; Weimer and Pape, 1999). On the other hand, executive members, are inside the company and are the decision-makers. Their compensation is linked to the firm’s performance, as a means of pressure to achieve the company’s objectives and further improve its financial performance. However, this relationship between the executives’ remuneration and firm’s performance conceals significance risks, because to achieve better compensation, executives may apply fraudulent and unethical methods, serving the notion “the ends justify the means”.

In addition, the market liquidity and the existence of an active external market for corporate control, prevail in the Anglo-Saxon countries (Cuervo, 2002; Roe, 1993). Mergers,

leveraged buy-outs, tender offers, and proxy fights are among the most frequently used takeover techniques. Although this continuous change of shareholders and mergers and acquisitions, often operate as mechanisms to achieve goals and improve a firm's performance, the time horizon of economic relationships and investments is limited.

Finally, this system of corporate governance is characterized by a strong defense system for the protection of the shareholders' ownership rights over the rights of debtholders (Cuervo, 2002; Aguilera and Jackson, 2003). Securities and Exchange Commission has in place policies and mechanisms defending many of the shareholders' rights, providing the necessary legal protection of shareholders and creating a secure environment.

The Continental European system

The Continental European corporate governance or large-control system is characterized by highly concentrated ownership. Large companies, families and banks are the major shareholders, and in turn the control is exercised by them (Bhasa, 2004; Roe, 1993; Enriques and Volpin, 2007). Also, the Board is controlled by internal and external directors who are associated with the large shareholders. Thus, even the management of the company is exercised by those shareholders.

Another distinct characteristic of this corporate governance system that differentiates it from that of the Anglo-Saxon countries is that the capital markets are relatively illiquid with a limited ability of control, and there is no active market for control (Cuervo, 2002; Enriques and Volpin, 2007). Therefore, the time horizon of economic relationships and investments is long, and in turn close interpersonal trust relationships among the managers can be developed. Furthermore, in this system banks maintain and preserve long lender-borrower relationships and long ownership of a firm's shares (Cuervo, 2002; Weimer and Pape, 1999). Thus, banks play a central role in corporate governance through equity stakes, bankers' position as members of the Boards of firms and proxies given to them by small investors.

That being the case, the existence of large shareholders, the development of specific business groups and pyramidal structures, the separation between ownership and control, and the adoption of managerial defensive measures that introduce barriers into the market for corporate control, undermine the effectiveness of the Continental European corporate governance system (Enriques and Volpin, 2007).

The Japanese system

In the Japanese system, the cultural dimension is dominant in corporate governance; “family” and “consensus” are the features affecting mostly a firm’s corporate governance mechanisms (Aguilera and Jackson, 2003; Yoshikawa et al., 2007). In Japan, the institutional concept of firms prevails, with the so-called “keiretsu” being in place. These large inter-corporate networks include companies with inter-related business scope that share the same name and logo and organize relationships among financial institutions (Weimer and Pape, 1999).

Another characteristic of the Japanese firms is the complexity of the board system (Yoshikawa et al., 2007; Aguilera and Jackson, 2003). It includes the Board, the office of representative directors, and the office of auditors; all of them have different accountabilities (Weimer and Pape, 1999; Cuervo, 2002). Nevertheless, it is often observed the existence of an informal sub-structure of the Board that in turn is similar to the one-tier Board structure in the Anglo-Saxon countries, where inside and outside directors are elected and discharged by the General Assembly of shareholders.

In addition, as in the European Continental system, large banks are important stakeholders. The Japanese banks and in specific city banks are strong influencers on firms’ decision-making, as they are core and integral part of keiretsu (Yoshikawa et al., 2007). Banks in Japan develop robust and close ties with their customers and they often are shareholders in members of the keiretsu. Also, banks exercise control and supervise the firms and finance their debts if needed (Aguilera and Jackson, 2003). In turn, there is no external market for control and the risk of hostile takeovers is limited, as no one can doubt the power and stability of banks.

Finally, in Japan stakeholders seem to have a commitment for long-term and stable relationships that lead companies to long-term investments (Aguilera and Jackson, 2003). Therefore, the highly institutional concept of the firm, the dominant sense of family and consensus and the salient role of city banks, open the door to long-term relationships based on mutual trust and the development of an ethical organizational culture in which integrity and transparency are present.

4.4. Corporate governance principles

Given the structure and specific characteristics of each corporate governance system, the OECD developed in 1999 the “Principles of Corporate Governance”. Since then, these principles have been amended considering the continuously changing business conditions. The most updated version was developed in 2015; it is a collaborative work between G20 and OECD -G20/OECD Principles of Corporate Governance-.

This document, divided into six distinct chapters, includes best practices of corporate governance, and does not constitute an obligatory directive. Rather than this, it provides the basis upon which each country can develop its own corporate governance code, reflecting its own business and cultural conditions, and promoting financial stability, efficiency, and growth.

The Principles are presented in six key areas, as follows:

1. Ensuring the basis for an effective corporate governance framework

In this chapter, the salient role of corporate governance in promoting transparency, integrity, and well-functioning in markets and transactions, and efficient allocation of limited resources, are being presented. Also, great importance is given to new laws and regulations that affect corporate governance practices; the legal and regulatory requirements should be in line with law and the responsibilities for supervision, implementation, and enforcement among the authorities are clearly articulated to serve the public interest (OECD, 2015, p.13-17).

2. The rights and equitable treatment of shareholders and key ownership functions

This chapter refers to the role of corporate governance in protecting and facilitating the exercise of shareholders’ rights and ensuring that all shareholders, even minority ones, have the same rights and are being treated equally. Among other rights, shareholders have the right to convey or transfer shares, participate effectively and vote in general shareholders meeting, and have access to firm’s material information timely and regularly (OECD, 2015, p.19-29).

3. Institutional investors, stock markets, and other intermediaries

This chapter presents the role of corporate governance in providing salient and value-added motives throughout the investment chain. Also, considerable attention is given to the disclosure and management of material conflicts of interest that may either affect the exercise of ownership rights by institutional investors or impair the integrity and reliability of the

analysis provided by proxy advisors, brokers, rating agencies and other intermediaries (OECD, 2015, p.31-36).

4. The role of stakeholders in corporate governance

This chapter refers to the role of corporate governance in recognizing the rights of stakeholders and promoting active collaboration between companies and stakeholders. Also, great significance is given to the direct communication among stakeholders, the Board, and public authorities; stakeholders should report unethical and illegal activities committed by corporate officers, so as to secure the firm's continuity and reputation (OECD, 2015, p.37-39).

5. Disclosure and transparency

This chapter refers to the role of corporate governance in ensuring that all material issues regarding the company are being disclosed accurately and on time. Disclosure should include, among other matters, the operating and financial performance of the firm, the firm's objectives, major share ownership, information about Board members and executives, related party transactions, predictable risk factors, and any material issues relevant to employees and other stakeholders that can influence the performance of a firm (OECD, 2015, p.41-49).

6. The responsibilities of the Board

This chapter refers to the role of corporate governance in ensuring that the Board exercises its duties with due diligence, applies and promotes ethical culture across the company, act for the interest of the company, and treat all shareholders fairly. Among its main responsibilities, the Board is accountable for reviewing and guiding corporate strategy, monitoring the effectiveness and efficiency of the firm's governance practices, managing potential conflicts of interest, ensuring the integrity and reliability of the firm's financial reporting, and ensuring that appropriate internal controls are in place and work effectively to prevent and detect any fraudulent or unethical act (OECD, 2015, p.51-61).

4.5. Corporate governance framework

Following the corporate governance principles, the firms operate in numerous and multicultural environments which affect their decisions, ethical behavior, and relationships

developed with third parties. To that end, corporate governance framework includes four pillars, four key players and a number of related parties (Figure 4.1).

Figure 4.1 OECD corporate governance framework



4.5.1. Corporate governance pillars

According to the literature (Drew and Kendrick, 2005; Mostovicz et al., 2011; Drew et al., 2006), there are many factors identified as pillars of corporate governance and corporate responsibility. However, the main pillars of a good corporate governance include accountability, fairness, reliability, and transparency (OECD, 2015). These pillars are necessary for the development of an ethical organizational culture and the improvement of a firm's performance.

Accountability

This term refers to the responsibility of a firm to explain and justify its acts. In other words, the Board should rationalize its decisions to all stakeholders and be willing to explain the way those decision will improve the firm's performance and have been made to support the interests of them.

Fairness

Fairness refers to the unbiased application of independence and objectivity during the decision-making process. The Board should treat all stakeholders equally, support the interests of all of them in the same way and intensity, even of the minority ones, and resolve any conflict of interests raised.

Reliability

This term refers to the ethical and responsible decision-making by managers and executives. Having in place an organizational culture in which responsibility among its members is dominant, improves the overall responsibility of the firm, which influences in turn its performance, its reputation, and its relationships with related parties.

Transparency

This term refers to the will and obligation of a company to present accurate, integral, and true financial and non-financial features related to its performance. Also, transparency involves the timely communication to all stakeholders of any material misstatements or information that would be possible to affect their decisions.

4.5.2. Corporate governance key players

The four key players in a corporate governance framework applied within a firm, include the Board, the Audit Committee, the Internal Audit, and the External Audit (Farber, 2005). All these cornerstones relate each other bidirectionally to promote an ethical organizational culture and achieve the firm's objectives, but still remain independent.

The Board

The Board is the supreme decision-making mechanism in a company. It is responsible to safeguard and maximize shareholders' wealth, oversee the firm's performance, and monitor managerial decisions. The Board involves executive and non-executive members; executive directors, as describes in previous sections, have responsibilities in daily activities, whistle non-executive directors are outside the firm and are expected to monitor and oversee management

and executive directors. In addition, the Board sets the tone at the top promoting an ethical or unethical organizational culture (Bamber et al, 2010; Grove et al, 2011).

Audit Committee

The Audit Committee has a salient role in the financial reporting system as it is responsible for monitoring and overseeing financial reporting process, internal and external auditors, and risk management. In other words, the Audit Committee is promoting and ensuring the reliability of a firm's financial reports. Among other characteristics, independence and expertise are the most prominent features audit committee members should possess to improve its effectiveness (Abbott et al, 2004; Badolato et al, 2014).

Internal Audit

Internal audit is an independent function that is integral part of a company. Its role is to assess the internal controls of the firm, provide recommendations for improvement, and evaluate the risk management process for any weaknesses. As opportunity for fraud is often because of lack of a robust and efficient internal control system (Bell and Carcello, 2000; Donelson et al, 2017), internal audit has a significant role in detecting these gaps and propose relative solutions considering their cost, likelihood, and impact to the company.

External Audit

Even if external audit is one of the four cornerstones of corporate governance (Fang et al, 2018), external auditors are only responsible for ensuring that a firm's financial statements are free from any material misstatement. In other words, external audit is a function outside a company which assesses its financial reporting to identify any material misstatements that would misinform interested parties over the financial performance of a company.

4.5.3. Related parties

As describes in previous section of this thesis, corporate governance should protect and recognize the rights of third parties. More specifically, stakeholders, including shareholders, employees, customers, suppliers, regulatory authorities, government etc., should have access to relevant information if they participate in the corporate governance process, be able to communicate their concerns and suspects about illegal or unethical behaviors to the Board, and

also be encouraged to become active participants in the corporate governance process (OECD, 2015, p.45).

For example, employees could participate through a representative in the Board to express employees' views on a firm's objectives and long-term strategy. In this way, employees feel integral part of a firm and the commitment created functions as a deterrent for unethical or fraudulent behavior in the workplace.

4.6. Corporate governance and corporate failures

Several corporate and accounting scandals have greatly shaken public's opinion of business internal environment and investors' confidence in the integrity and confidentiality of financial reporting (Farber, 2005; Melis, 2005). The corporate failure of prominent companies such as Enron, and WorldCom in the United States of America, Parmalat in Italy, and Satyam in Japan, has led to a continuous crisis of trust (Agrawal and Chadha, 2005).

Internal environment plays significant role in business circle of life and its ethics. Tone at the top sets the procedures and standards for ethical behavior; the Board and its Committees members are obliged via their actions and characteristics to cultivate ethical culture to the entire organization (Persons, 2005).

This section examines the stories of the most prominent corporate failures in the USA, Europe, and Asia. Following the examination of the reasons that led these companies to fraudulent acts and even to bankruptcy, the responses taken by governments and regulatory authorities to prevent similar phenomena in the future are being presented.

4.6.1. Corporate failures in the USA

The American market and in turn the business world has been stunned and shaken by the successive reveals of corporate scandals in 2000s. The most prominent corporate scandal was Enron's case. Since then, Enron is a company synonymous to fraud, corruption, and dishonesty. However, Enron was not the only firm that ended up to a corporate scandal; other cases include WorldCom, Tyco, Adelphia, Waste Management, and Xerox. That being the case, in the following paragraphs these scandals will be analyzed to identify the reasons that led these well-known firm to fraudulent acts.

Enron

Enron was a large US energy, commodities, and services company that got bankrupt in 2001. The company's policy involved aggressive trading, and in turn the organizational culture within the firm was competitive, focusing on closing as many cash-generating contracts as possible quickly.

Extending its gas trading model to other markets, even outside the US borders, stretched the limits of its accounting, and in turn the company decided to adopt the mark-to-market accounting methodology. According to this approach, as long as a long-term contract was signed, the present value of future inflows of that contract were recognized as revenues and the present value of the expected costs as expenses. Unrealized gains and losses were then required to be recognized when they occurred. Therefore, by applying mark-to-market accounting approach, Enron was estimating the market value of its future contracts (Benston and Hartgraves, 2002; Arnold and de Lange, 2004; Reinstein and McMillan, 2004; Healy and Palepu, 2003).

When Enron faced competition in the energy-trading business, the firm's profits started to shrink rapidly. In turn, to respond to the growing pressure of shareholders, the firm's executives took advantage of the mark-to-market accounting approach, recognizing unrealized future gains from some contracts, inflating this way the company's current profits. In addition, the troubled operations of the company were transferred to its off-balance-sheet special purpose entities (SPEs). By transferring debt and toxic assets to SPEs, Enron's financial statements presented less losses than they were (Benston and Hartgraves, 2002; Unerman and O'Dwyer, 2004).

Other than the executives of the company, to Enron's fraudulent acts, salient was the role of Arthur Andersen, its auditor and consultant (Benston and Hartgraves, 2002; Reinstein and McMillan, 2004). That being the case, it is clear enough that rather than lack of expertise and knowledge, the major issues in Enron's audits arose from the conflict of interests the auditors faced to treat the company as an audit client, a consulting client, or both. In this case, audit committee is also responsible for not being skeptical about several transactions, requiring the proper disclosures of these transactions, and challenging important transactions that were motivated by accounting objectives.

To sum up, despite the doubtful accounting practices applied by Enron's executives, the major problem that led this firm to fraudulent acts and eventually to bankruptcy, is the lack

of good corporate governance and in turn the development of an unethical organizational culture within which transparency, integrity, and accountability did not exist.

Other scandals: WorldCom, Tyco, Adelphia, Waste Management, and Xerox

Even though Enron has been the most prominent corporate scandal in the USA, it was neither the largest nor the only one. Only six months after Enron got officially bankrupt, the business world experienced another fraud scandal, that of WorldCom, one of the largest telecommunication company in the USA (Akhigbe et al., 2005; Unerman and O'Dwyer, 2004). WorldCom accounting was not as complex as Enron's; in fact, by applying deceptive accounting the firm improperly reported regular expenses as investment, and as a result its financial situation looked better than it really was. These irregularities were not revealed by its Board or its external auditor; as in the case of Enron, Arthur Andersen was again the external auditor of WorldCom. This scandal was the largest in the American history with the firm's finance chief being the creator.

Another interesting fraud scandal was that of Tyco, one of the largest companies in electrical components and under-sea telecom systems. In this scandal the fraud was not committed to conceal the actual financial position of the company, but to keep secret private loans taken from the company by its CEO and CFO. These loans were not approved by company's appropriate committee and the shareholders were not informed of them. Therefore, after the reveal of this fraud, both the CEO and CFO were accused of falsifying financial records, corruption, conspiracy, and larceny.

Adelphia, one of the largest providers of cable services, got also bankrupt after disclosing that it had hide billions of dollars of debt, through falsifying its financial statements. By applying complex accounting methods, the company covered its debt by using the books of off-balance-sheet subsidiary firms (Johnson and Rudolph, 2007; Barlaup et al., 2009). Once again, the auditor, Deloitte in this case, did not manage to reveal the fraud in the company's financial statements.

Another scandal of massive corporate fraud was committed by Waste Management, the largest American trash hauler. In this case, the company's top executives, by applying improper accounting techniques, such improper amortization, and improper capitalization of expenses, falsified the firm's financial statements. Also in this case the external auditor, once again Arthur Andersen, did not do its job properly, and even though it gave unqualified audits asking

from the company's executives to follow the proposed plan to get the firm's books in order, they did not communicate their plan to the Audit Committee as they had to.

Another considerable fraud scandal in the USA was the case of Xerox, the largest photocopying and printing company. The company, just 3 days after the reveal of WorldCom scandal, admitted having improperly overstated its revenues by almost \$2 billion during a period of five years. By applying a series of accounting tricks, such as posting revenues before being made, the company manipulated its earnings to mislead investors and enrich top executives (Seipp et al., 2011). Once again, the external auditor of the company, KPMG this time, did not reveal the fraudulent acts of the firm.

To sum up, given the American scandals described before, it is concluded that there was variety in the types of fraudulent acts and irregularities. Human greed, inefficient monitoring system, absence of effective audit mechanisms, lack of internal controls, unethical business environment, and incompetent management were among the factors that contributed to the occurrence of the aforementioned scandals.

4.6.2 Corporate failures in Europe

Although after the collapse of Enron the business world was shaken by this corporate scandal and the problems that revealed its corporate governance mechanisms, organizational culture, and controls, many Europeans still remained to believe that corporate scandals are an American issue and had nothing to do with Europe. However, the motives and opportunities to commit fraud are not limited to any geographic region, industry, or corporate governance system. Human beings behave unethically and then rationalize their acts, no matter of the society, country, and company within they operate daily. In turn, Europe also felt the consequences of Enron's and other US firms' bankruptcies in economy, but to be convinced still needed its own fraud scandal. That being the case, the fraudulent behavior at Parmalat was revealed in 2003 to show that fraud does not have borders.

Parmalat

The Parmalat, a family-owned company in Italy, was one of the largest dairy food firms. Its scandal has been presented by the Securities and Exchange Commission (2003) as "one of largest and most brazen corporate financial frauds in history". It was equally widespread and

large to US prominent scandals and that is the reason that the Parmalat case has been also described as the “European Enron”.

Although fraudulent presentation of financial statements is the most evident issue, the Parmalat scandal was primarily a corporate governance failure. The major problem in Parmalat was the falsification of accounts which allowed the company to conceal its true financial results. Thus, Parmalat did not violate the adopted accounting standards, but by using shell companies generated fake incomes, overstating in turn its profits (Melis, 2005; Buchanan and Yang, 2005). Also, some executives of the company applied “cut and paste” forgery; for example, a document with Bank of America letterhead was scanned and added to a document confirming that Bonlat, a Cayman Island subsidiary company, held an account containing more than \$5 billion with the bank. When discovered, this proved to be the largest cash and investment confirmation fraud ever had taken place.

When this scandal was fully revealed, Parmalat presented some common features that characterize companies that commit fraud. Among them, rapid growth, application of complex and questionable accounting practices, political connections, complex corporate structure, lack of robust corporate governance mechanisms, and dominant shareholders are the most frequent.

4.6.3. Corporate failures in Asia

As said before, fraud has no borders and is not limited to any geographic area, economy, or religion. Following the corporate failures in the USA and Europe, it was the Asia’s time to experience a large fraud scandal in 2009.

Satyam

Satyam, meaning “truth” in ancient Indian language, was the fourth largest company in India and the best governed company, ironically, in 2007. However, from being the best IT services firm, characterized as the “crown jewel”, it ended up being synonymous to fraud and nowadays is characterized as “Asia’s Enron” (Basilico et al., 2012; Brown et al., 2014).

The Satyam corporate scandal is a classic case of lack of corporate governance, unethical organizational culture, and personal greed for money, success, and prestige compelled by its CEO and Chairman. In this case, Satyam’s CEO by using his own computer created fake bank accounts, falsified them, and in turn inflated the company’s balance-sheet.

In addition, fictitious salary accounts, fake customer identities, and invoices against them were created to inflate the firm's revenues (Brown et al., 2014). As the former CEO and Chairman also admitted, the Board did not have any knowledge of this situation.

As in other fraud cases in America and Europe, the auditor role was salient. In this case the auditor of the company was PricewaterhouseCoppers (PwC) since 2000. This means that for 9 years, the auditor did not reveal the fraudulent acts of Satyam; suspiciously though, questions have been raised regarding whether PwC has concealed the fraud, due to its high audit fees, twice of what other audit firms would have charged.

To sum up, as described before, also in this corporate scandal, among the factors that contributed to fraud occurrence have been identified the lack of robust corporate governance, the inefficient external audit, shareholders' expectations, and personal greed of corporate executives.

4.7. The post-corporate failures era

The fraud cases presented before, show that executives and top management were looking to conduct business in line with the letter of law, avoiding the meaning behind the lines.

Responses to these corporate scandals were quite different in the USA, Europe, and Asia in the post-scandals' era (Coffee, 2005). In the USA, there was a feeling of failure, the involved executives were "crucified" by the media, and stakeholders' pressure to the government to find a solution was tremendous. Thus, to restore the investors' trust and create an environment of security in the market, the US government immediately enacted the Sarbanes-Oxley Act (Harp et al., 2014); a federal law that sets tight requirements regarding the Board, management, audit committees of the US public firms, and also public accounting firms.

Contrary to this immediate response by the US government, in Europe, after a short period of silence and no action, the European Union established a lenient Action Plan. This initiative included a set of basic principles of corporate governance that operated as guidelines for Member States to develop and reform their own codes in line with this Action Plan. In other words, the European Commission did not adopt a strict "one-size-fits-all" approach after the rise of the fraud scandals, but instead it developed a general guidance, respecting diversity and uniqueness of its Member State.

JEP In line with the European Union approach, in Asia and more specifically in India where the Satyam scandal arose, immediately after this fraud case, the Ministry of Corporate Affairs issued voluntary guidelines for corporate governance. Other than this response, the Securities and Exchange Board of India (SEBI) amended the Listing Agreement to include specific provisions regarding the role of Audit Committee, and that of Chief Executive Officer (CEO) and Chief Financial Officer (CFO), and also developed the SEBI regulation providing guidelines for the disclosure of material events, suspected or committed fraud.

4.8. The role of ethics and corporate culture in the success of corporate governance regulation

As discussed in the previous sections, a series of new laws and rules has been introduced after the wave of corporate scandals and the collapse of large companies around the world. These regulations aimed at restoring the public's trust on the one hand and preventing similar phenomena in the future on the other. However, policymakers seem to focus their efforts and promote actions regarding only the first objective, namely restoring public trust, and do not give the proper attention to achieve the prevention of corporate scandals and failures in the future.

The proper meaning of rules is the development of an ethical culture across the company that encourages and promotes moral behavior and prevents fraudulent acts, contrary to the common belief that what makes a rule effective is its voluntary or mandatory nature (Park, 2018; Cuomo et al., 2016). In other words, regulation itself is not enough to ensure that firms will not fail in the future, as indeed depicted in the case of Satyam in India which was analyzed before.

Even though regulation is needed to assess a company's compliance, it is impossible to legislate human behavior. As it is human beings who commit fraud, the problem is how to enforce people to good and ethical behavior. The existence of codes of ethics or conduct, by its own, is not possible to lead people to an ethical attitude; in turn, the role of top executives and management is salient in implementing, monitoring, and promoting through their actions the application and adoption of these codes. As the Board sets the tone for the company, the more managers behave ethically, the more possible they are to influence employees' behavior in the workplace and establish an ethical culture across all levels of the firm. In other words, top executives act as role models for other employees, and in turn their ethical actions, ethical

leadership, and ethical attitude overall, affect other actions, promoting and gradually developing an ethical culture by their example.

Therefore, ethics may act as the link between corporate governance regulation and its effective application. However, ethics is not a novelty in the area of corporate governance. The existence of voluntary codes is an example of ethics; these codes do not demand from any company to comply, instead they provide useful recommendation for the management to achieve the firm's objectives and put in place a strategy without applying any doubtful or illegal means. This is also the reason that codes around the world, include common principles the refer to integrity, accountability, transparency, fairness, and respect.

To describe an ethical work environment, studies adopt either the concepts of "ethical culture" or "ethical climate." The latter includes "the prevailing perceptions of typical organizational practices and procedures that have ethical content" or "those aspects of work climate that determine what constitutes ethical behavior at work" (Victor and Cullen, 1988). On the other hand, ethical culture is defined as "the shared values, norms, and beliefs about ethics that are upheld in an organization and which can promote ethical conduct" (Huhtala et al., 2015, p.400). Therefore, ethical culture refers to the conditions prevailing in firm that guide compliance with ethical expectations and policies, whistle ethical climate refers to the perceptions of what seems to be ethical behavior in the workplace (Huhtala et al., 2016). In other words, climate is a surface demonstration of culture that does not explore the organizational causes that lead employees to specific courses of (Schein, 1990).

Although few scientists (Denison, 1996) argue that ethical culture is synonymous to ethical climate, other studies (Trevino et al., 1998; Kaptein, 2011) provide evidence in support of the view that ethical culture is a more thorough means for fully understanding the factors influencing employees' behaviors in the workplace. In turn, as the objective of this study is to examine in depth the reasons that lead an employee to fraud, it is used the concept of "ethical culture".

To sum up, even though companies worldwide have the objective to gain profit, and in turn they all apply profit-driven strategies, it is also equally important to apply and communicate across the company an ethical and transparent culture to achieve long-term success. Ethics is not incompatible with profit (Ghosh et al., 2011); ethics refers to the means that managers and employees will use to achieve the firm's objectives and maximize its profits.

4.9. The role of ethics in auditors' judgement

Apart from creating an ethical organizational culture there is no doubt that the role of auditors in preventing and detecting fraud is salient. As described in previous sections, auditors played a critical role in fraud scandals, being also responsible for not detection firms' fraudulent acts.

As Andrew Ceresney, previous Director of US Securities and Exchange Commission's Division of Enforcement, has mentioned, auditors function as "critical gatekeepers in the area of issuer reporting and disclosure" (Ceresney, 2016), because their opinion over the fairness and reliability of a company's financial statements, affect investors, shareholders, and other stakeholders behavior. Therefore, it is important for auditors to exercise independence, due care, professional behavior, and confidentiality during their assignments.

As corporate failures around the world have raised considerable criticism to auditing professionals regarding their role in these scandals and incompetence to reveal them timely (Ye et al., 2011)., to regain and preserve public confidence, auditors should act ethically in compliance with an accepted code of ethics. Ethics is the cornerstone of auditing profession representing and enhancing its ideology and professional status. The most widespread and accepted code of ethics was issued by the International Ethics Standard Board for Accountants (IESBA), International Federation of Accountants (IFAC) ethics body. In the following section, it is presented a review of the literature about ethics in auditing. This synthesis of the literature includes empirical studies related to auditors' ethical principles as applied by the IFAC code of ethics, in the post-regulation era in the USA and Europe, published on leading academic journals.

Independence

Auditors serving as the "public watchdogs" ensuring the integrity and fair representation of firms' financial reporting, are required to act independently, being objective throughout their audit assignments. DeAngelo (1981) argued that audit quality involves both revealing and properly reporting a misrepresentation; in turn, auditors' independence affects audit quality.

As mentioned before, the day after corporate scandals found regulators in the USA and Europe to issue policies and regulations to regain public trust over the firms' financial reporting

and auditors' integrity. Considerable attention was particularly given to the provision of non-audit services (NAS) by audit firms to their clients, and the audit firm rotation; table 2 summarizes the prior research examining the impact of these factors on auditors' independence.

Regarding NAS, both the SOX Act in the USA and Regulation (537/2014 issued by the EC in Europe restricted the ability of auditors to provide numerous services to their clients and exercising both assurance and consulting role. In support of these regulations, studies in the USA (David and Hollie, 2008), Europe (Basioulis et al., 2008, Quick and Warming-Rasmussen, 2009; Campa and Donnelly, 2016), and Australia (Ye et al., 2011) find significant negative relationship between NAS provision and auditors' independence. However, contradictory studies are also provided in the US (Robinson, 2008; Brody et al., 2014; Lennox, 2016; Gipper et al., 2020; Kuang et al., 2020) and Europe (Hope and Langli, 2010; Dobler, 2014; Ianniello, 2012) arguing that that auditor's independence and audit quality are not impaired by the provision of NAS.

Another contradictory issue refers to the mandatory audit firm rotation and its relationship to auditors' independence. Research related to this debate does not provide evidence in support or against the implementation of limited audit firm tenure, even if the EC has adopted this view requiring mandatory audit firm rotation after 10 years tenure. Bauer et al. (2015) provide evidence in favour of mandatory audit firm rotation, arguing that auditors' long tenure is negatively related to their objectivity. In this line, other studies in the USA (Herds and Lavelle, 2015; Bhattacharjee and Brown, 2018) and in Europe (Svanberg and Ohman, 2015; 2017) provide similar results. However, evidence against mandatory audit firm rotation is also provided, supporting the view that audit firm rotation does not influence auditors' independence, and in turn such a rotation should not be mandatory but voluntary (Bamber and Iver, 2007; Ruiz-Barbadillo et al., 2009; Aschauer and Quick, 2017; Garcia-Blandon et al., 2020).

Due professional care

Other than independence, the corporate and related audit failures raised doubts about the exercise of due care of auditors during their assignments. Professional scepticism is salient for auditing profession, demanding from auditors to be competent and follow respective regulation, but still be reflective, looking beyond the obvious (Glover and Prawitt, 2014). To that end, Nelson (2009) defines the "neutral" and "presumptive doubt" perspectives of

scepticism. The “neutral” view implies that an auditor should not hypothesize that management assertions are either honest or dishonest, while the “presumptive doubt” view indicates that an auditor should assume that “some level of carelessness, incompetence, or dishonesty exist on the part of financial issuers” (Clover and Prawitt, 2014).

That being the case, many studies (Payne and Ramsey, 2005; Popova, 2012; Carpenter and Reimers, 2013) link “presumptive doubt” aspect of scepticism to fraud risk assessment. These studies suggest that professional scepticism and due care throughout the audit engagement, from planning to reporting step, are critical success factor for identifying possible fraud risks and red flags existing in the company that require their attention. However, rather than professional scepticism value in auditing, of great importance is its measurement. In this line, Hurtt (2010) at first and Robinson et al. (2018) later, developed scales to measure professional scepticism.

Professional behavior

Other than being independent and exercise due care during their audit engagements, auditors should also exercise professionalism. Characterized as the epitome of trust, integrity, and honesty, auditors should behave in a professional way, not seeking to please their client by reducing the audit quality, showing less professional behavior than required.

Research is limited regarding the factors that affect auditors’ professional behavior. Among the few of the kind, Hotteginde et (2017) examine the role of gender in professionalism; they concluded that male auditors are more eager to behave in such a manner discrediting auditing profession, while their female colleagues are likely to commit disciplinary offences relating to audit quality. Other than gender, Suddaby et al. (2009) provide evidence that changes in the content of audit assignments and services provided by auditors do not compromise their professional behavior; auditors adjust to new context, following ethical values and exercising professionalism throughout the engagement.

Confidentiality

Trust is a cornerstone in auditor-auditee relationship, and in turn auditors should not disclose any information gained during an audit assignment without proper permission or use it for personal gain. However, IESBA states that once illegal acts are being identified by auditors, they should directly report them to the appropriate authorities.

This policy would probably improve the reliability of financial reporting, but would be detrimental for the trust bonds between auditors and their clients. In addition, the disclosure of confidential information by auditors may lead them to be accused and be subject to a lawsuit; even if the lawsuit is without a merit, the time and resources spent by auditors to defend it are valuable (Eickemeyer and Love, 2014).

Despite the critical importance of confidentiality, to my knowledge, to date there are no empirical studies exploring auditors' confidentiality issues. Table 4.1 summarizes the studies about auditors' ethical principles and the factors affecting them; key findings are also presented. Through a research of the literature in leading academic journals, 29 studies were identified since the application of corporate governance regulation in the USA and Europe in the era following the wave of fraud scandals.

Table 4.1 Auditors' ethics principles related studies

Author (s)	Year	Journal²	Title	Ethics principle	Key findings
<i>Auditors' Independence</i>					
Bamber and Iyer	2007	AJPT	Auditors' identification with their clients and its effect on auditors' objectivity	independence	The more the tenure of an auditor, the greater his objectivity.
Basioudis et al.	2008	Ab	Audit fees, non-audit fees and auditor going-concern reporting decisions in the United Kingdom	independence	NAS fees and going-concern modified audit opinions are negatively related.
David and Hollie	2008	BRA	The impact of non-audit service fee levels on investors' perception of auditor independence	independence	NAS fees are negative relate to auditors' independence.
Robinson	2008	AJPT	Auditor independence and auditor-provided tax service: Evidence from going-concern audit opinions prior to bankruptcy filings	independence	No significant relation NAS fees and going-concern audit opinion.
Quick and Warming-Rasmussen	2009	IJA	Auditor independence and the provision of non-audit services: Perceptions by German investors	independence	NAS provision is negatively related to auditor independence.

² Journals' abbreviations are being provide in Appendix 3.

Table 4.2 (continued)

Author (s)	Year	Journal	Title	Ethics principle	Key findings
Ruiz-Barbadillo et al.	2009	AJPT	Does mandatory audit firm rotation enhance auditor independence? Evidence from Spain	independence	Mandatory rotation does not affect auditors' independence.
Ye et al.	2011	AJPT	Threats to auditor independence: The impact of relationship and economic bonds	independence	There is a negative relationship between NAS and going-concern audit opinion.
Ianniello	2012	IJA	Non-audit services and auditor independence in the 2007 Italian regulatory environment	independence	No significant relationship between NAS and auditors' opinions.
Dobler	2014	MAJ	Auditor-provided non-audit services in listed and private family firms	independence	There is no relationship between NAS provision and auditors' independence.
Brody et al.	2014	MAJ	The impact of audit reforms on objectivity during the performance of non-audit services	independence	Auditors can maintain their objectivity when providing NAS.
Svanberg and Ohman	2015	BAR	Auditors' identification with their clients: Effects on audit quality	independence	Client identification is negatively related to auditors' independence.
Hedra and Lavelle	2015	AH	Client identification and client commitment in a privately held	independence	Client identification is negatively associated with auditors' independence.

Table 4.2 (continued)

Author (s)	Year	Journal	Title	Ethics principle	Key findings
			client setting: Unique constructs with opposite effects on auditor objectivity		
Campa and Donnelly	2016	ABR	Non-audit services provided to audit clients, independence of mind and independence in appearance: latest evidence from large UK listed companies	independence	Auditor independence is affected by NAS fees.
Lennox	2016	TAR	A model and literature review of professional skepticism in auditing	independence	The provision of tax services does not compromise auditors' independence and audit quality.
Svanberg and Ohman	2017	BRA	Does charismatic client leadership constrain auditor objectivity?	independence	There is a negative relationship between client identification and auditors' objectivity.
Aschauer and Quick	2017	IJA	Mandatory audit firm rotation and prohibition of audit firm-provided tax services: Evidence from investment consultants' perceptions	independence	Audit firm rotation does not impair objectivity.

Table 4.2 (continued)

Author (s)	Year	Journal	Title	Ethics principle	Key findings
Bhattacharjee and Brown	2018	TAR	The impact of management alumni affiliation and persuasion tactics on auditors' internal control judgments	independence	There is a positive relationship between social client identification and auditors' objectivity.
Kuang et al.	2020	AJPT	Mandatory audit partner rotations and audit quality in the United States	independence	There is no relation between mandatory audit partner rotation and improved audit quality.
Gipper et al.	2020	TAR	On the economics of mandatory audit partner rotation and tenure: Evidence from PCAOB data	independence	There is no relation between mandatory audit partner rotation and improved audit quality.
Garcia-Blandon et al.	2020	JIFMA	Audit firm tenure and audit quality: A cross-European study	independence	Long audit firm tenure does not compromise audit quality.
<i>Auditors' due care</i>					
Payne and Ramsey	2005	MAJ	Fraud risk assessments and auditors' professional skepticism	due care	Auditors predisposed to low fraud risk assessment were not sceptical enough.
Hurt	2010	AJPT	Development of a scale to measure professional skepticism	due care	A 30-item scale to measure trait professional scepticism was developed.
Popova	2012	MAJ	Exploration of skepticism, client-specific experiences, and audit	due care	There is a positive relationship between auditors' fraud judgments and scepticism;

Table 4.2 (continued)

Author (s)	Year	Journal	Title	Ethics principle	Key findings
			judgments		the more skepticals the auditors are the more sensitive to fraud evidence they are during the evaluation of these evidence.
Carpenter and Reimers	2013	BRA	Professional skepticism: The effects of a partner's influence and the level of fraud indicators on auditors' fraud judgments and actions	due care	Skepticism plays a significant role on the identification of fraud risks and the selection of the relevant audit procedures.
Bhattacharjee and Brown	2018	TAR	The impact of management alumni affiliation and persuasion tactics on auditors' internal control judgments	due care	There is a positive relationship between social client identification and auditors' skepticism.
Robinson et al.	2018	AJPT	Disentangling the trait and state components of professional skepticism: Specifying a process for state scale development	due care	A scale to measure state professional scepticism was developed.
Brasel et al.	2019	AH	The effect of fraud risk assessment frequency and fraud inquiry timing on auditors' skeptical judgments and actions	due care	Skepticism is improved through repeated risk assessments and timely fraud inquiries of operational-level employees.

Table 4.2 (continued)

Author (s)	Year	Journal	Title	Ethics principle	Key findings
Stevens et al.	2019	IJA	Professional skepticism: The combined effect of partner style and team identity salience	due care	In case of high team identity salience and supportive partner style, auditors' skepticism is high.
<i>Professional behavior</i>					
Subbady at al.	2009	AOS	The organizational context of professionalism in accounting	professional behavior	Auditors adjust their behavior to the changes of the of their work, still maintain high level of professionalism.
Hottegindre et al.	2017	IJA	Male and female fuditors: An ethical divide?	professional behavior	Male auditors are more eager to behave in a way discredited for the accounting profession, whistle female fellows are keen to commit disciplinary offences relating to audit quality.

4.10 Summary of chapter 4

In this chapter, corporate governance mechanisms were described and their role in major fraud scandals in the USA, Europe, and Asia was analysed. In addition, the role of ethics and organizational culture in the success of the regulation issued in the aftermath of major corporate failures was presented, providing a detailed analysis of the literature on auditors' ethics principles. To that end, despite the differences among the corporate governance systems, effective and robust corporate governance structure and ethical organizational culture are recognized as being critical factors that influence an employee's behavior within his working place. The next chapter (chapter 5) presented the research methodology; research objectives, questions, hypotheses, methodology framework, philosophy, approach, strategy, choice, and time horizons, applied in this study.

5. Research methodology

Research methodology is defined as “the study of methods that raises all sort of philosophical questions about what is possible for researchers to know” (Fisher, 2010, p.50). It also refers to the theory of the way a research should be undertaken and how specific research questions should be answered (Saunders et al., 2015). This process, in turn, includes strategies and techniques that should be applied for sampling, data collection, data analysis, and interpretation of the results (Teddlie and Tashakkori, 2009). Therefore, this chapter describes the way the current study was conducted; its research objectives, questions, hypotheses, methodology framework, philosophy, approach, strategy, choice, and time horizons are being presented and explained.

5.1. Research objectives, questions, and hypotheses development

Research objectives and questions

The current study aims to help management increase the likelihood of preventing fraudulent acts in the workplace, by addressing the issue of “why employees do bad things”. In addition, this research aims to help also forensic accountants, fraud examiners, and auditors to detect fraud. In order to achieve this, this research examines what motivates employees to commit or engage in fraud. In particular, it examines how personal attributes, including personality traits and demographics, and organizational (un) ethical context may affects an employee’s propensity to fraud. Moreover, this study also investigates the moderating role of organizational conditions on the relationship between employees’ attributes and their tendency to commit or engage in fraud.

In order to achieve the research aims, the current study is trying to address the following research questions:

- Question 1: What are the personality traits that affect an employee’s propensity to commit or engage in a fraudulent act in the workplace?
- Question 2: What are the demographic characteristics that affect an employee’s propensity to commit or engage in a fraudulent act in the workplace?

- Question 3: What are the organizational conditions that motivate or avert an employee to commit or engage in a fraudulent act in the workplace?
- Question 4: How the organization context intervenes in the relationship between personal attributes and an employee's behavior?

Hypotheses development

Although in the early work of Sutherland (1940), personality is not linked to fraud, recent studies (Trompeter et al., 2013; Holtbrugge et al., 2015) provide evidence that personal attributes influence one's fraudulent and unethical behavior. In addition, the wave of high-profile corporate scandals involving high-status businessmen, e.g. Bernard Madoff, Bernard Ebbers, and Kenneth Lay, grew academics and professionals research interest. However, as noticed by Kish-Gephart et al. (2010), studies so far concentrate on the examination of the impact of organizational context on employees' behavior, rather than the identification of the personal attributes that motivate a fraudulent behavior; there are only four studies that investigate the role of personality traits on motivating a fraudulent or unethical behavior (Ragatz and Fremouw, 2010).

The way people behave, and their beliefs are influenced by their self-regulation and self-efficacy competencies (Bandura, 1999), as described in previous chapters. Even though several personality traits have been identified, the most accepted and well-known model is the so-called "Big-5 Taxonomy" (Costa and McCrae, 1992), proved to be reliable and cross-culture generalizable means of evaluating personality (Arterberry et al., 2014; McCrae and Costa, 1997).

Regarding conscientiousness, studies provide empirical evidence that it is negatively related to productive working behavior (Bolton et al., 2010), ethical leadership (Kalshoven et al., 2011), and individuals' aversion to fraud (Turner, 2014). Hence, the more conscientious the employees are, the less possible is to engage in unethical and fraudulent acts. However, on the other hand, there are studies with opposite findings, providing evidence that high levels of conscientiousness have no (Gonzalez and Kopp, 2017) or positive (Blickle et al., 2006) impact on individuals' propensity to commit fraud. Although, the results of prior studies are contradictory, this research hypothesized that employees who are responsible, hard-working, and determined, are less likely to commit or engage in fraud. Thus, it is hypothesized that:

Hypothesis 1a: *Employees with high levels of conscientiousness are less likely to commit or engage in fraud.*

Regarding agreeableness, studies conducted so far, conclude that individuals with low level of agreeableness are more eager to counterproductive behavior in the workplace, working deviance (Bolton et al., 2010; Berry et al., 2007), fraud commitment, and unethical leadership (Kalshoven et al., 2011; Alalehto, 2003; Turner, 2014). Therefore, based on previous studies and SCT, it is hypothesized that:

Hypothesis 1b: *Employees with high levels of agreeableness are less likely to commit or engage in fraud.*

Regarding extraversion, previous studies found that it is related to individuals propensity to commit fraud, and theft (Alalehto, 2003; Bolton et al .2010). Additional evidence is provided as extraversion seems to be associated with narcissism (Holtzman et al., 2010). Narcissism motivates people to act unethically for personal gain (Rijsenbilt and Commandeur, 2013; Harrison et al., 2018), and in turn is found to be among the most observed characteristics of fraud perpetrators in the corporate scandals analyzed before (Cohen et al., 2010). Hence, it is hypothesized that:

Hypothesis 1c: *Employees with high levels of extraversion are more likely to commit or engage in fraud.*

Regarding neuroticism, studies provide evidence that individuals with low level of emotional stability other than being anti-social and aggressive in the workplace (Jones et al., 2011), they are also eager to fraud perpetration (Alalehto, 2003), organizational and personal deviance (Berry et al., 2007; Hastings and O' Neil, 2009). That being the case, and given that neuroticism is related to low self-esteem and self-efficacy (Judge et al., 2002), leading people to have low confidence in their own abilities (Bandura, 1986), it is hypothesized that:

Hypothesis 1d: *Employees with high levels of neuroticism are more likely to commit or engage in fraud.*

Finally, regarding the last Big-5 trait, openness to experience, research so far provide contradictory results. Although to the meta-analysis of Berry et al. (2007), it is found that no relation exists between this trait and (un)ethical behavior, other studies provide evidence on both sides; Bolton et al. (2010) find that openness to experience is positively related to production deviance, while Holtbrugge et al. (2015) find that high level of openness avert an individual to be involved in corporate misdeeds. Following these results and considering the components of openness to experience, it is hypothesized that:

Hypothesis 1e: *Employees with high levels of openness to experience are less likely to commit or engage in fraud.*

Other than personality traits, demographic characteristics play a crucial role in the prediction of fraudulent behavior. Gender, age, and level of education are considered to be the most researched factors in behavioral ethics studies (O' Fallon and Butterfield, 2005; Craft, 2013). However, so far, the findings are contradictory, requiring in turn more research (Kish-Gephart et al., 2010).

According to SCT, the cultural gender conceptions that humans learn and adopt from infancy affect their decisions and acts. Sex-typed behavior is shaped via vicarious learning processes, and interactive activities (Bandura, 1986). To date, business ethics researchers provide conflicting findings; there are studies concluding that women act more ethically than men and are less eager to commit fraud (Valentine and Rittenburg, 2007; Guidice et al., 2009; Bucciol et al., 2013; Holtbrugge et al., 2015), studies supporting that men are less eager to engage in unethical acts than women (Hopkins et al., 2008; Sweeney et al., 2010), and studies supporting the view that gender does not affect one's (un) ethical behavior (Elango et al., 2010; Street and Street, 2006). That being the case, even though the gender impact on human's behavior is still questioned, considering the females' aversion to risk (Harris et al., 2006; Francis et al., 2015), it is hypothesized that:

Hypothesis 2a: *Male employees are more likely to commit or engage in fraud than their female colleagues.*

Another demographic characteristic of considerable attention is age. According to SCT, people over the years adopt new standards and adapt their existing ones; self-regulatory

mechanisms that guide their acts, in turn, are been enhanced by increasing age (Bandura, 1991). To date, research provides inconsistent findings regarding the impact of age on individuals' (un) ethical behavior (Craft, 2013). Although some studies find that increased age is positively related to greater ethical intentions and decisions (Elango et al., 2010; Valentine and Rittenburg, 2007), other studies (Holtbrugge et al., 2015; Kish-Gephard et al., 2010) provide the opposite results or conclude that age does not affect people behavior. Following SCT's considerations about age, it can be hypothesized that:

Hypothesis 2b: *Older employees are less likely to commit or engage in fraud.*

Other than gender and age, the level of education is another factor that may affect an individual's tendency to fraud. According to SCT, education reflects the sense of self-efficacy, and in turn people of higher education tend to believe more in their abilities. Wolfe and Hermanson (2004), as has been presented earlier in this thesis, argue that to commit fraud an individual should be highly skilled. In the same line, Hermanson et al. (2017) provide empirical evidence that educational level is positively related to fraud perpetration. Following this notion and SCT's position that self-efficacy is associated with the level of education, it is hypothesized that:

Hypothesis 2c: *Employees with high levels of education are more likely to commit or engage in fraud.*

According to SCT, in addition to personal attributes, environmental conditions play also a vital role on individuals' ethical behavior (Bandura, 1986). Organizational culture, structure, and virtuousness influence employees' ethical attitude, encouraging them to behave ethically and refrain from fraudulent acts (Kaptein, 2017).

To date, studies provide empirical evidence that a strong ethical culture is linked to lower levels of unethical behavior (Kaptein, 2011), enhancement of organizational innovativeness (Riivari et al., 2012), stronger ethical intent and organizational citizenship (Ruiz-Palomino and Martinez-Canas, 2014), higher levels of ethical leadership (Huhtala et al., 2013), increased intention to report unethical behavior (Kaptein, 2011), and lower levels of workplace delinquency (de Vries and van Gelder, 2015). In addition, many studies support the

notion that ethical working environment is a prerequisite for the prevention and detection of fraud in the workplace (Kaptein, 2011; Brink et al., 2013; ACFE, 2018).

Hence, also following the argument that “as the level of ethical culture of an organization raises, so does its employees’ ethical behavior” (Ethics Resource Centre, 2010), it is hypothesized that:

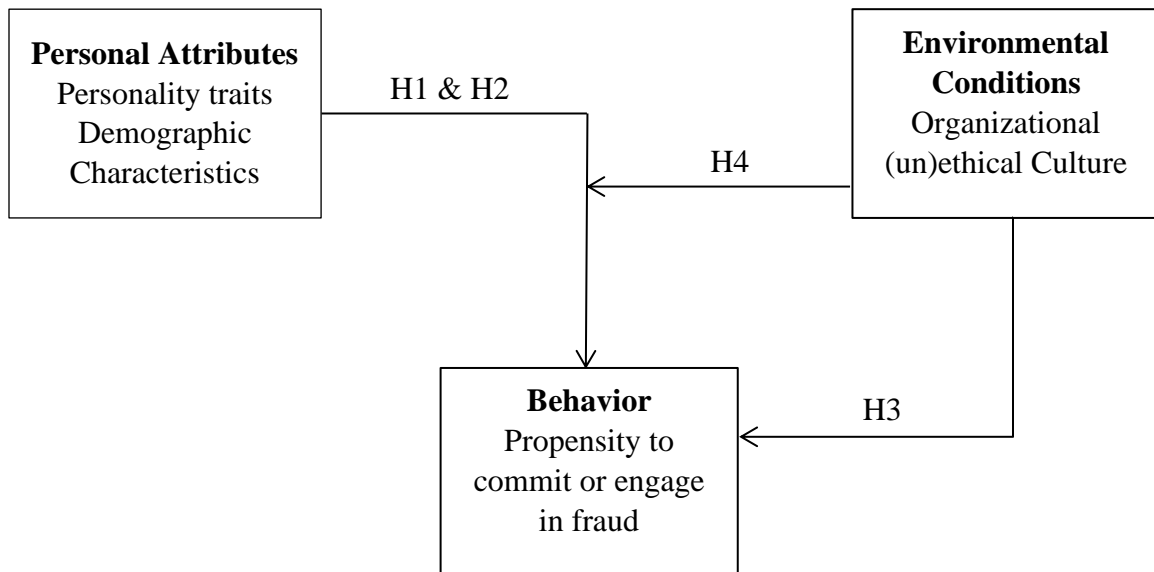
Hypothesis 3: *Employees working in an environment with high levels of ethical organizational culture are less likely to commit or engage in fraud.*

From the perspective of SCT, personal attributes and environmental conditions both influence individuals’ ethical behavior (Bandura, 1986). However, in this triadic reciprocity model, it is also argued that the organizational context may affect the relationship between personal attributes and an individual’s behavior, by intervening in this process. In specific, self-efficacy and self-regulation functions require internal standards that are grounded in extrinsic motivators, which in turn may moderate the impact of personal characteristics on an individual’s behavior (Bandura, 1986).

So far, only Holtbrugge et al. (2015) have examined the moderating role of culture on the relationship between personal attributes and ethical conduct, concluding that a control-oriented culture affects extraversion and conscientiousness linkage with a human’s behavior. Hence, considering the SCT’s provisions regarding the bidirectional interacting relationships between environmental context, personal attributes, and behavior, it is hypothesized that:

Hypothesis 4: *Organizational culture intervenes in the relationship between personal attributes and employees’ propensity to commit or engage in fraud.*

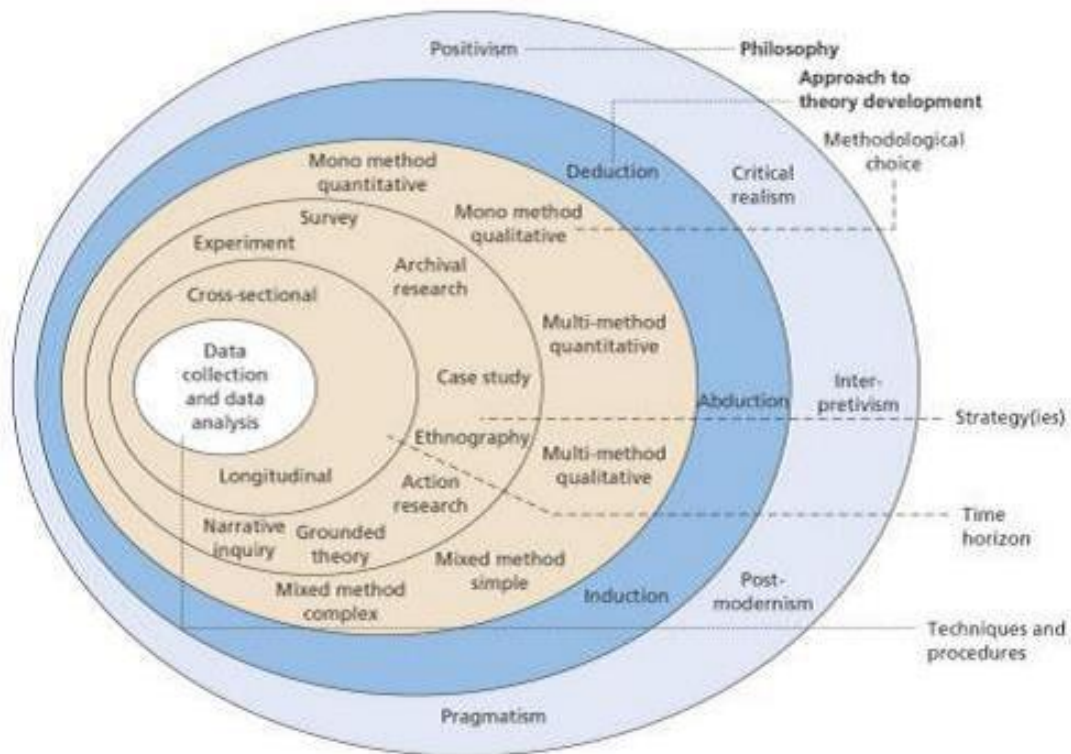
Figure 5.1 Research model



5.2. Research methodology framework

To answer a research, it is not enough just to collect data through a questionnaire or an interview and then analyze them providing results. Although this is the central point of a study and in turn the last stage of a research, a researcher at first has to design and explain his choices.

Figure 5.2 The Research onion



Source: Saunders et al. (2015, p. 124)

As depicted in the “research onion” Figure 5.2 above, a research should be conducted in layers; one has to move from the outer layer to the inner one. The outer layer presents the philosophy of the research, while the inner one refers to the specific techniques applied by the researcher to collect and analyze his data.

Other than Saunders et al. (2015) research onion that includes 6 layers; philosophy, approach, methodological choice, strategy, time horizon, and techniques and procedures, Sekaran and Bougie (2010) have also developed their research process involving 11 stages; observation, preliminary data gathering, definition of the problem, theoretical framework, generation of hypothesis, scientific research design, data collection, analysis and interpretation, deduction, report writing, report presentation, and managerial decision-making, and Crotty (1998) with 4 components; epistemological framework, theoretical perspective, methodological design, and data collection and data analysis methods. Although the differences in research process, all seem to agree that to provide reasonable and justifiable results, a researcher has to explore and explain the stages he followed to conclude to his findings. That

being the case, in this study to justify the data collected and its results, the research onion methodology framework (Saunders et al., 2015) is being applied.

5.3. Research philosophy

Among the existing research philosophies³, the current study applied positivism, since this type of philosophy aims primarily to explore the cause-effect relationships for a phenomenon (Hasan, 2016; Kincaid, 1998; Saunders et al, 2015), providing recommendations for change. Hence, positivism is applicable to this research that aims at exploring what motivates employees to commit or engage in fraud, answering the question of “why employees do bad things”, and testing hypotheses about patterns of relationship between selected data as formed in earlier section of this chapter.

Positivism, is a research philosophy that has been used extensively in social sciences, and, since the early work of Auguste Comte, supports the idea that “the social world exists externally and its properties should be measured through objective methods, rather than being inferred subjectively through sensation, reflection or intuition” (Easterby-Smith et al., 2008). It aims at predicting and explaining the causality of certain phenomena, by obtaining objective facts of the social world through the use of large data sets and the application of quantitative measurements and statistical techniques to analyze them (Hasan, 2016; Kincaid, 1998).

That being the case, positivism is based on several assumptions (Weber, 2004; Perry et al, 1999; Chua, 2019). First of all, positivists advocate an empirical realist ontology, supporting the view that the world is composed of measurable, observable, and quantifiable phenomena which are going to be explained and discovered by individuals. Moreover, positivists argue that a phenomenon can be measured and quantified solely through observation or experimentation, with no guidance of any theoretical framework. In addition, positivists apply deductive and inductive research approach to develop their scientific predictions and explanations and also make use of several quantitative research techniques, such as structural equation modelling and regression analyses. Finally, the view that an event, defined as the “dependent variable” is a function of preceding events, defined as “independent variables”, which explain changes in the former, is dominant in positivism, making causal and effect relation the main etiology of this philosophy.

³ Positivism, realism, realism, interpretivism, postmodernism, and pragmatism, are the existing research philosophies.

5.4. Approach to theory development

The selection of the research approach depends on how and when theory was used in the research. Based on this, there are three research approaches; deductive, inductive, and abductive approach (Saunders et al., 2015).

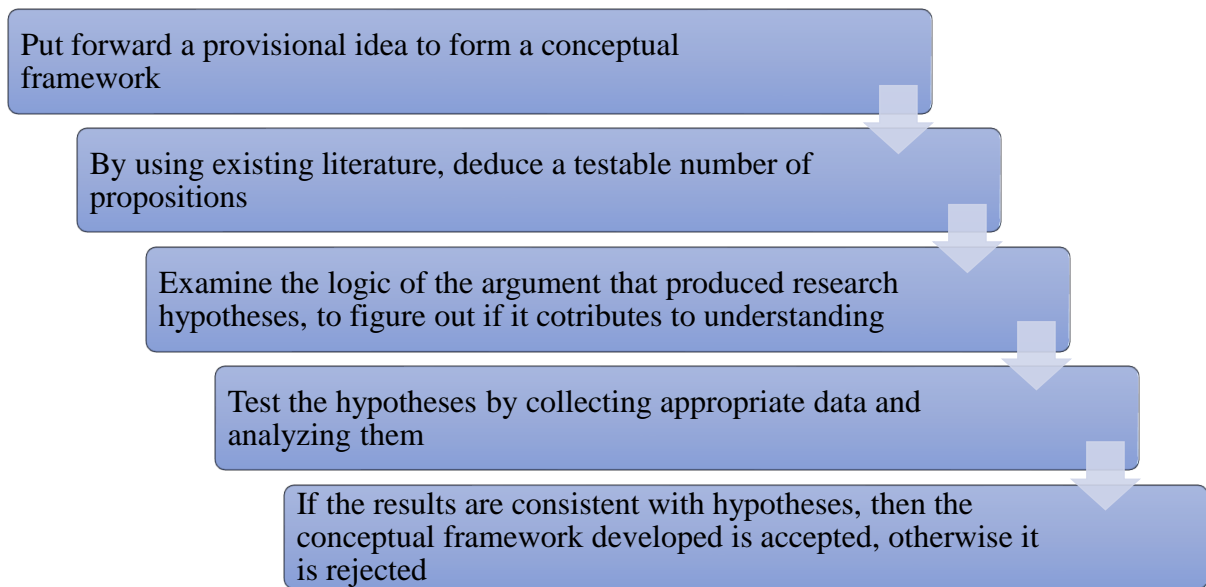
In the deductive approach, at first theory is developed from the prior literature along with the hypotheses, and then a research strategy is designed to test these hypotheses (Saunders et al., 2015; Bryman, 2012). Studies adopting the deductive approach, aim at verifying or falsifying their theory by following a series of logical steps from the general to specific knowledge. Data collection, in turn, is used to assess hypotheses developed based on an existing theory.

On the other hand, in the inductive approach, at first data are being collected and then a theory is developed based on the data analysis (Saunders et al., 2015; Bryman, 2012). Studies adopting the inductive approach, aim at generating a theory, and in turn data collection is used to investigate an issue, identify patterns, and develop a new conceptual framework.

The last approach is the abductive approach, in which at first data are being collected, then a theory is developed based on the patterns identified, and afterwards this theory is being tested through additional data collection (Saunders et al., 2015). Studies adopting the abductive approach, aim at developing a new theory or modifying an existing one and then verifying or falsifying it. hence, data collection is used to explore an issue, identify patterns, develop a new conceptual framework, and then test this through additional data collection.

In this study, the deductive approach has been applied. Based on existing literature a conceptual framework has been developed along with several hypotheses to explore the causal relationships among personal attributes, organizational culture and employees' fraudulent behavior, and then these hypotheses have been tested to verify or reject the initial conceptual framework. To do so, the six sequential steps of a deductive approach have been followed (Blaikie, 2010). In specific, these are depicted in Figure 5.3. This approach was selected among others, because contrary to the inductive and abductive approaches, the deduction is considered to be the most scientific approach to an issue, involving the development of a theory and its test through a series of hypotheses, allowing in turn the prediction and control of this issue (Saunders et al., 2015).

Figure 5.3 Steps of deductive approach



5.5. Methodological choice

There are three different methodological choices that a researcher can make based on the nature of his data; quantitative, qualitative, and mixed method (Bryman, 2012; Saunders et al., 2015). Quantitative research explores relationships between variables that are measured numerically and are being analyzed through statistical and graphical techniques. It often uses probability sampling techniques and controls to ensure generalizability and validity of the study. In quantitative approach, the researcher is considered to be independent from respondents. It can either use a single data collection technique, known as mono method quantitative study, or more than just one technique, known as multi-method quantitative study.

On the other hand, qualitative research aims at exploring participants' meanings and the relationships among them. Data collection is non-standardized and it often uses non-probability sampling techniques. In qualitative approach, the researcher's role is of great significance, as to gain cognitive access to participants' data, he has to build rapport with them. It can either use a single data collection technique, known as mono method qualitative study, or more than just one technique, known as multi-method qualitative study (Bryman, 2012; Saunders et al., 2015).

Other than these, in mixed methods research, qualitative and quantitative techniques are applied combined, ranging from simple to complex forms (Saunders et al., 2015). In the

current study, quantitative research is used as it is considered to be the most appropriate method to answer this thesis research questions. In addition, as fraud is considered to be a really sensitive issue, the researcher needs to be independent from those being researched, and in turn the application of quantitative techniques and in specific by using a questionnaire for data collection this independence is ensured.

5.6. Research strategy

Research strategy concerns the method of data collection and analysis adopted by a researcher (Saunders et al., 2015). The choice of a specific research strategy depends on the research objective, its related questions, the existing knowledge, the time and resources restrictions, and the philosophical underpinnings. That being the case, there are various strategies including experiment, survey, archival research, case study, ethnography, action research, grounded theory, and narrative inquiry; their main purpose is presented in Table 5.1.

Table 5.1 Research strategies

Research strategy	Main purpose
Experiment	It is an approach that studies the probability of a change in an independent variable resulting a change to another variable, known as dependent, through an experiment.
Survey	It is an approach that tends to be applied for descriptive and exploratory research, and is highly used to explore how a population thinks or behaves in relation to a particular issue.
Archival research	It is an approach that refers to the study of various documents, e.g. emails, letters, notes, contracts, etc., and other data sources such as media and reports, to gain through knowledge over an issue and reveal the related facts.
Case study	It is an approach that aims at the thorough understanding of the dynamics of a topic within a defined setting or context. A case can refer to a firm, person, event, association, etc.

Ethnography	It is a qualitative research strategy applied to study the culture or social world of a group.
Action research	It is a repetitious process of inquiry which aims at providing practical solutions to real organizational problems via a collaborative and participative approach.
Grounded theory	Is a methodological approach that aims at providing theoretical explanations of processes and social interactions within different contexts.
Narrative inquiry	Is an approach in which data are being collected not as bits, but as complete stories provided by responders.

The current study chose to apply the survey strategy for numerous reasons. First, the survey strategy allows the collection of a great amount of data in a highly standardized, efficient and economical way. Second, it is often used to answer “who”, “where”, “what”, “how many”, and “how much” questions, and in turn it is frequently applied in descriptive and exploratory research. In addition, data collected through a survey strategy keep the researcher independent from responders and also these data can be used to reveal reasons for particular relationships between variables and test of related hypotheses (Saunders et al., 2015). Hence, survey is the most appropriate research strategy to fulfill the objectives of this study and answer its research questions.

5.7. Time horizon

Time plays a critical role in business and so does also in academic research. Two time-horizons are considered in research; cross-sectional and longitudinal (Bryman, 2012; Saunders et al., 2015). The former is considered to be a “snapshot”, involving the study of an issue at a specific time. Cross-sectional studies are less time consuming, often apply the survey strategy, and in some instances can also be used to examine relationships in case studies.

On the other hand, a longitudinal study aims at examining a series of snapshots, representing events over a given period. In other words, this kind of studies seeks to examine the change and development of an issue over time.

Hence, the current study lies in the cross-sectional time horizon due to the fact that it is less time consuming, and in turn the researcher contacted the respondents once for data collection.

5.8. Summary of chapter 5

In line with this study objectives, the researcher reviewed the research onion and “peeled” each of the layers seeking to answer his research questions. After the identification of research objectives and questions, the research hypotheses were developed based on social cognitive theory and prior literature. In addition, applying the critical realism philosophy, deductive research approach, and survey research strategy in a cross-sectional time horizon, the researcher set the foundations for the procedures necessary for data collection and analysis. The next chapter (chapter 6) elaborates on the methodology of this research and further discusses, in a more practical sense, the procedures and techniques applied for data collection and analysis.

6. Data collection and analysis

To conclude in meaningful findings and recommendations, a researcher has to collect the appropriate data and then analyze them. Hence, in this chapter, it is presented the techniques and procedures applied for the data collection and the way these data have been analyzed to produce interesting results regarding fraud prevention.

6.1. Procedure for data collection

In this section, the techniques and procedures applied in data collection are being presented.

6.1.1. Population, sample, and sampling technique

The current study was conducted in Greece, and in turn the population constituted by employees working in the private sector. Snowball sampling technique was used to select the sample of the current study. Snowball sampling is a non-probabilistic technique in which the participants are volunteered to be part of the research rather than being chosen.

Given that fraud is a sensitive issue that individuals are not willing to talk about, and hence it is considered to be difficult to identify a desired number of participants, snowball sampling technique is the most appropriate method (Saunders et al., 2015). The main problem of this technique was to make the initial contact; once this contact was made, then the desired number of participants was achieved, and the final sample of this study was 214 employees working in private firms in Greece.

To deal with the possibility of the development of a homogeneous sample, a significant problem of this sampling technique, after the initial contacts; these involved academics, employees and executives working in private firms in Greece, the director of the Hellenic Institute of Internal Auditors, and the director of the Hellenic Association of Certified Fraud Examiners, a link to the web-based questionnaire was uploaded on social media, such as LinkedIn and Facebook, and employees were asked to complete it and then forward the link to their own contacts. This is explained in more detail in the section below.

6.1.2. Access to participants

A three-stage strategy was applied to gain access to data. At first, existing personal contacts were contacted through email or their LinkedIn accounts and asked to fill the online questionnaire. Then, they were asked to identify any other contacts who would be interested in participating in the current research. Second, new contacts were developed through LinkedIn, Facebook, and Twitter; these new contacts were asked also to fill in the online questionnaire. Third, a link to the web-based questionnaire was uploaded on social networks and employees were asked to complete the questionnaire provided and to forward the link to their own contacts.

In the current research, ten were the initial personal contacts who were contacted through email and via their LinkedIn accounts; these personal contacts were two academics, four employees and two executives working in private firms in Greece, and two directors of accounting and fraud professional associations.

Existing personal contacts were at first contacted through email and LinkedIn to seek their desire to participate in the current study. LinkedIn is the largest professional network with more than 350 million members in more than 220 countries worldwide. Its mission is to connect professionals to share their knowledge, and help them to gain access to jobs, updates, and people. It provides access to their professional profiles, including their companies, qualifications, education, years of experience, etc., and also to their own contacts with the option to send them messages or even invitation to connect with them.

Knowing that fraud investigation and in specific the examination of fraudster's profile is an extremely sensitive issue in nature, a letter of introduction (Appendix 1) was sent out to all participant as part of the questionnaire. This letter confirmed the identity of the researcher, the institution he represents, the research purpose, and a promise of confidentiality and anonymity. The access to the questionnaire lasted almost two months; it was initially posted on social media on 8th November 2018, followed by a reminder three weeks later.

6.1.3. Nature and sources of data

The purpose of data collection is to obtain information that would be relevant and provide the basis for beginning to explore and address the research problem (Crowther and Lancaster, 2009) which has been stated in previous section. In turn, data is the raw material

needed for solving a problem and making recommendations and decisions. Hence, data collection process should be carefully designed and managed by a researcher to overcome data deficiencies or irrelevancy.

Although no data collection method is considered to be superior to other (Saunders et al, 2015), the researcher's choice of a method depends on numerous factors. Among these factors, the most affecting include the research objective, researcher's skills and expertise, and cost and time constraints (Crowther and Lancaster, 2009). These factors were considered in the data collection process of this study.

Data comes in a variety of forms; they can be categorized either as primary or secondary and quantitative or qualitative (Saunders et al., 2015; Bryman, 2012). The latter classification has been discussed in detail earlier in this chapter. Therefore, regarding the former, primary is defined as the data that the researcher collects on first-hand information and can be collected through questionnaires, interviews, surveys, panels, observations, and focus groups. On the other hand, the secondary data include information that has been made available by someone else, other than the researcher. Hence, these data are not being produced for a specific research, but for other purposes. Sources of secondary data include, but are not limited to, organizational databases, journals, books, newspapers, corporate webpages, reports, media accounts, and government publications (Saunders et al., 2015).

For the purpose of this study, to address the issue of fraud and answer the research questions presented earlier in this thesis, a set of data were collected which is primary in nature, quantitative, and were gathered through the use of a structured questionnaire administered to employees working in private firms in Greece.

6.1.4. Research instrument

This study has adopted the survey strategy, and in turn to collect the necessary data a questionnaire has been used; the questionnaire has been presented as the most effective and suitable instrument for data gathering in business and management research when the survey strategy is being adopted (Saunders et al., 2015).

The questionnaire was self-administered through the internet, as with this method it is enhanced quantitative data analysis and also greater number of responders can be achieved with limited cost. As mentioned before, a link with the online questionnaire was uploaded on

social media, asking only employees working in private firms in Greece to participate. The questionnaire was provided in English and Greek; it was translated from English to Greek by the research team, following a back-translation procedure conducted by a third bilingual researcher (Brislin, 1993).

The survey questionnaire included four sections. The first section included nine close-type questions asking responders to provide information regarding their gender, age, level of education, working experience, working industry, whether their company is listed or not, tenure in the firm, position in firm's hierarchy pyramid, and annual compensation. The second section included 32 statements that refer to the culture of the firm within which employees work. The third section included 44 statements that refer to the personality traits of employees. Finally, the last section included 3 ethical dilemmas related to the three types of occupational fraud; corruption, asset misappropriation, and financial statement fraud.

Response formats related to closed-ended questions included checklists (e.g. questions in section 1), and Likert scales (e.g. statements in sections 2 and 3, and questions in section 4). The use of closed questions facilitates the processing of the data collected, as they are pre-coded and in turn coding errors and time required for analysis is reduced (Bourque and Clark, 2011). Also, the use of closed questions provide the researcher the ability to explore only the patterns for which he is interested in; if open questions were used in such a sensitive issue as fraud investigation, the possibility of collecting a large amount of irrelevant data would be increased (Saunders et al., 2015).

At the end of the questionnaire, participants were thanked for their time and collaboration in the current study. The contact details of the researcher and the institution he represents were provided once again in case participants has any questions or doubts about the questionnaire or the current research. A copy of the questionnaire is provided in Appendix 2.

6.1.5. Research variables

A variable describes an observation which may take different values. The objective of this study is to find relationships between independent and dependent variables. That being the case, the dependent is the outcome variable, also known as consequent. On the other hand, the input variables, also known as antecedents, are the causes that result in a specific outcome (Bryman, 2012; Saunders et al., 2015).

The identification of the variables of this research has been made through the theoretical framework of social cognitive theory which has been discussed in previous chapter. From this framework, eight models can be developed to show the relationships between the dependent and independent variables with the view to testing the hypotheses and in turn answering the study's research questions. Table 6.1 presents the two sets of variables and the way they relate each other.

Other than the independent and dependent variables, in this study also other variables have been chosen; these background variables have been controlled for their possible impact on this study's model. Experience, position, industry, and annual salary have been selected based on prior literature and social cognitive theory. As individuals are getting older, it is less possible for them to engage in fraudulent or unethical acts (Hermanson et al., 2017; Krambia-Kapardis and Zopiatis, 2008) and given the bond between experience and age, it is likely that the former influences the likelihood of an individual's propensity to commit or engage in fraud (Zahra et al., 2015). In the same line, previous studies have provided empirical evidence showing that an employee's position in the organizational hierarchy is positively associated with aggressiveness and exploitativeness through the exercise of power over others (Cislak et al., 2018).

In addition, "knowing that a firm operates in a given industry may be a good way to predict the likelihood of that firm engaging in illegal behavior" (Baucus and Near, 1991). Hence, considering that different rules, investment strategies, environmental conditions, and regulations apply to each industry creating either favorable or unfavorable conditions for fraud (Zehra et al., 2005) this study has also controlled for industry effects. Other than these, income has been found to be a significant factor in an individual's tendency to corruption, bribe, and fraud (Mocan 2008; Timifeyev 2015), indicating in turn that annual salary may be another factor that affects an employee's propensity to fraud because of financial pressure or other deficiencies (Cressey 1953).

Table 6.1 Research variables

Model	Independent variables	Dependent variables
1	experience; industry; position; annual salary	employees' propensity to fraud

2	experience; industry; position; annual salary; gender; age; education; conscientiousness; agreeableness; extraversion; neuroticism; openness	employees' propensity to fraud
3	experience; industry; position; annual salary; culture	employees' propensity to fraud
4	experience; industry; position; annual salary; clarity; congruency of supervisors; congruency of management; feasibility; supportability; transparency; discussability; sanctionability	employees' propensity to fraud
5	experience; industry; position; annual salary; gender; age; education; conscientiousness; agreeableness; extraversion; neuroticism; openness; culture	employees' propensity to fraud
6	experience; industry; position; annual salary; gender; age; education; conscientiousness; agreeableness; extraversion; neuroticism; openness; clarity; congruency of supervisors; congruency of management; feasibility; supportability; transparency; discussability; sanctionability	employees' propensity to fraud
7	culture	the relationship between personal attributes; demographics and personality traits, and employees' propensity to fraud

8	congruency of supervisors; congruency of management; feasibility; supportability; transparency; discussability; sanctionability	the relationship between personal attributes; demographics and personality traits, and employees' propensity to fraud
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6.1.6. Measurement scales

In the current study, the scales of measurement of the variables to be included in the statistical analysis was taken seriously, as they determine the type of statistical test to be applied on the data (Bryman, 2012; Gaither and Glorfeld, 1985). There are two kind of scales; category and continuous scale. The former is further divided to two other types; nominal and ordinal scale. On the other hand, continuous scale is also divided to two other types; interval and ration scale. Continuous scales allow for the use of parametric statistical tests which are considered to be more powerful contrary to the non-parametric ones, and can make use of numerical data that make them more suitable for statistical analysis (MacDonald, 1999; Gibbons and Chakraborti, 2011, p. 5). However, non-parametric techniques are less “fussy” and are considered more suitable when data collected are on nominal and ordinal scales (Beck, 1965; Sawilowsky, 1990).

That being the case, in this research, besides the demographic and control variables that have been obtained in nominal scale, all other variables have been in ordinal and interval scaling applying the Likert-scale. In specific, for gender, male participants were coded with “1” and females with “2.” For age, five clusters were provided and coded from 1 to 5 respectively (<26; 26-35; 36-45; 46-55; >55). For level of education responders holding a high school degree were coded with “1;” a bachelor’s degree with “2;” a master’s degree with “3;” and a doctoral degree with “4.” In addition, for industry, each sector was coded from “1” to “16”; for tenure four clusters were provided and coded from 1 to 4 respectively (<1; 1-5; 6-10; >10); for position responders being employees were coded with “1”, being managers with “2”, and being executives/owners with “3”; for annual salary three clusters were provided and coded from 1 to 3 respectively (<20.000; 20.000-40.000; >40.000).

Other than demographic and control variables, personality traits were assessed using the Big Five Inventory (BFI) (John et al., 1991; John et al., 2008), which has been proven being a reliable and valid means of assessing personality across different cultures and industries

(Furnham, 1996; Taggar and Parkinson, 2007; Arterberry et al., 2014). The BFI includes 44 items, 16 of which are reversed, reducing acquiescence response bias (Herche and Engelland, 1996): nine items measure conscientiousness (e.g., “I am someone who does a thorough job”); eight items measure agreeableness (e.g., “I am someone who is considerate and kind to almost everyone”); eight of the scale’s items measure extraversion (e.g. “I am someone who is outgoing, sociable”); eight items measure neuroticism (e.g., “I am someone who remains calm in tense situations”); and 10 items measure openness to new experience (e.g., “I am someone who values artistic, aesthetic experiences”). The response Likert scale ranged from 1 (disagree strongly) to 5 (agree strongly).

In addition, organizational culture and its sub-dimensions were measured using the 32-item Corporate Ethical Virtues (CEV) scale (DeBode et al., 2013); this scale is a shortened version of the original Kaptein’s (2008) CEV-58 Model and has recently received evidence of validity and reliability (Huhtala et al., 2018). The CEV-32 scale includes 32 items relating four statements to each of the eight sub-dimensions. The eight sub-dimensions are clarity (e.g., “The organization makes it sufficiently clear to me how I should conduct myself appropriately towards others within the organization”); congruency of supervisors (e.g., “My supervisor sets a good example in terms of ethical behavior”); congruency of management (e.g., “The Board and (senior) management would never authorize unethical or illegal conduct to meet business goals”); feasibility (e.g., “I am not asked to do things that conflict with my conscience in my immediate working environment”); supportability (e.g., “In my immediate working environment, a mutual relationship of trust prevails between employees and management”); transparency (e.g., “in my immediate working environment, adequate checks are carried out to detect violations and unethical conduct”); discussability (e.g., “In my immediate working environment, there is adequate opportunity to discuss unethical conduct”); and sanctionability (e.g., “If I reported unethical conduct to management, I believe those involved would be disciplined fairly, regardless of their position”). The response Likert scale ranged from 1 (disagree strongly) to 6 (agree strongly).

Finally, employees’ propensity to commit or engage in fraud has been measured through an experimental vignette methodology. The use of an ethical vignette, a short description of a situation asking people to make a decision, is a reliable means of identifying humans’ behavior and investigating the reasons that led them to this decision (Alexander and Becker, 1978; Aguinis and Bradley, 2014). Therefore, in this study participants have been provided with three different scenarios (e.g., “You are the accountant at a company. You notice

that the firm manipulates its financial statements by overstating its assets and total revenues for the last five years. You report it to your supervisor and the chief accountant, and he admits his acts. The scheme is perfectly concealed; internal auditors have expressed themselves very satisfied with company's internal controls and external auditors have expresses an unmodified opinion over the financial statements. Thus, there is no way this act to be revealed. Your boss offers you a large amount of money not to report anything. There is no chance of you being caught") relative to the three types of occupational fraud and then they have been asked to decide how possible is for them to get involved in such a situation. The response on the Likert scale ranged from 1 (not at all) to 4 (to a great extent).

6.1.7. Pilot testing

Prior to pilot testing, two accounting and finance academics with experience in audit and fraud education and research, and two psychology academics with experience in positive psychology and ethics education and research, were asked to provide their comments regarding the representativeness and suitability of the research questions and the ethical dilemmas. This process helped in establishing validity and reliability of the data and enabled amendments needed before the pilot testing. The feedback provided by the reviewers has led to the addition of one research question regarding responders' working industry. Also, based on their comments and suggestions, in scenario 2 in section 4 the initial involvement of responder's child has changed to the phrase "one of your family members", because they found it more suitable and representative.

After these changes, the questionnaire was pilot tested prior to being sent to responders by five employees and three managers working in private firms in Greece to ensure that the structure, wording, questions, and statements of the questionnaire were clear enough, were leaving no doubts, and were understandable. The pilot testing included questions such as "were the instructions clear enough", "which, if any, questions or statements were ambiguous", "how much time did you take to fill in the questionnaire", "in your opinion were there any major omissions regarding the research purpose", and any other suggestions or comments. The feedback received was positive from all participants, and in turn no other additions or changes were necessary to be made before sending the questionnaire to responders.

6.1.8. Questionnaire administration and retrieval

A link related to the web-based research questionnaire has been uploaded on the social media by the researcher on 8th November 2018 and answers have been accepted for two months. A reminder message was also posted three weeks from the first date released, asking all participants to forward the link to their own contacts to raise responses. The last response has been received on 27th December 2018. In total, 243 responses have been received; however, because of incomplete or inaccurate information, the final sample was reduced to 214.

6.2. Data analysis

Data collected during the first stage of a research, to provide useful results and make meaning, should be collated, analysed, and interpreted. Hence, in this section of the thesis, the procedures and techniques applied to analyse the collected data, are being described.

6.2.1. Data preparation

Before analysed, quantitative data should be edited, screened for deficiencies, coded, transformed, and keyed into a database (Saunders et al., 2015; Bourque and Clark, 2011). In this study, an initial inspection of the participants' responses was made by the researcher to check the validity and proper completeness of each questionnaire. Then, a code book was developed, including the names of the variables of the questionnaire, their related statistical packages for social science (SPSS) variable names, and the coding guidelines. This type of codebook helped the researcher to keep track of all the variables and how they were defined in the SPSS data file. Afterwards, the data were entered into the SPSS and a final check for errors was applied; search for illegitimate codes, missing data, and illogical relationships were among the methods applied (Saunders et al., 2015; Bourque and Clark, 2011).

6.2.2. Data analysis

Following data preparation process, quantitative data analysis includes preliminary analyses that summarize the data and aim at providing a better understanding of the data set, and specific statistical techniques to investigate possible relationships among variables and test research hypotheses (Easterby-Smith et al., 2012).

Preliminary analyses may contain descriptive statistics, graphs to describe and explore the data, processes of manipulating missing data, and processes for checking the reliability of the scales applied. On the other hand, there are a number of different statistical techniques that can be applied to explore relationships among variables, including Pearson, Spearman, or Partial correlation, multiple or logistic regression, and factor analysis. In the current study, both types of analysis have been applied; preliminary analysis include descriptive statistical analysis and check of scales' reliability and validity, whistle among the various statistical techniques to examine relationships among variables, Pearson correlation and multiple regression have been applied.

6.2.2.1. Descriptive statistical analysis

Once the researcher was sure that no errors existed in the data set, the descriptive analysis of all the variables was performed. A descriptive analysis of the data was of particular importance in this study; with this type of analysis, the researcher described the characteristics of his sample, checked for any violations of the assumptions needed to be in place by statistical techniques, and then he decided the means of statistical analysis he would apply (Bourque and Clark, 2011). In this study the descriptive statistics of all the variables, include the mean, standard deviation, and range of scores; high and low scores.

6.2.2.2. Reliability of scales

Regarding the reliability of the questionnaire, the method of Cronbach's α was applied; this method estimates the average of all the correlation coefficients of the items within the questionnaire. If Cronbach alpha is less than 0,6 it is a sign of questionnaire's unsatisfactory internal consistency, whistle a Cronbach alpha coefficient more than 0,7 is ideal (DeVellis, 2012). Other than this, it is important, if a scale contains items which are negatively worded, these to be reversed before checking the reliability of the particular scale (Saunders et al., 2015).

In the current study, the Cronbach's α of the BFI scale was 0.719, ensuring that it is a reliable scale for this research. The item reliability of each trait was $\alpha=0.756$ for conscientiousness, $\alpha=0.649$ for agreeableness, $\alpha=0.720$ for extraversion, $\alpha=0.821$ for neuroticism and $\alpha=0.744$ for openness to experience.

In addition, the Cronbach's α of 32-CEV model scale was 0.972, providing strong evidence of its reliability for this research. The item reliability of each sub-dimension was $\alpha=0.844$ for clarity; $\alpha=0.945$ for congruency of supervisors; $\alpha=0.945$ for congruency of management; $\alpha=0.889$ for feasibility; $\alpha=0.884$ for supportability; $\alpha=0.856$ for transparency; $\alpha=0.902$ for discussability; and $\alpha=0.869$ for sanctionability.

Table 6.2 Reliability of scales

Scale	Cronbach's α	Reliability
Big-Five Inventory	0.719	Ideal
32-CEV Model	0.972	Ideal

Table 6.3 Item reliability of scales

Item	Cronbach's α	Reliability
<i>Personality traits (BFI items)</i>		
conscientiousness	0.756	Ideal
agreeableness	0.649	Adequate
extraversion	0.720	Ideal
neuroticism	0.821	Ideal
openness to experience	0.744	Ideal
<i>Organizational culture (32-CEV model items)</i>		
clarity	0.844	Ideal
congruency of supervisors	0.945	Ideal
congruency of management	0.945	Ideal
feasibility	0.889	Ideal
supportability	0.884	Ideal

transparency	0.856	Ideal
discussability	0.902	Ideal
sanctionability	0.869	Ideal

6.2.2.3. Correlation

Correlation is a term that describes the strength of a relationship among variables; a high correlation means that two or more variables have a strong relationship, while on the other hand, a low correlation means that the variables are hardly linked (Bryman, 2012; Pallant, 2016). Correlation analysis, in turn, is the process of examining the strength of that relationship with available statistical data.

The most widely used type of correlation coefficient, also applied in the current study by the researcher, is the Pearson product-moment correlation coefficient (r). This analysis assumes that the two variables being analysed are measured on interval or continuous scales, meaning they are measured on a range of values. Correlation coefficients range from -1.00 to +1.00; a value of -1.00 represents a perfect negative correlation, meaning that as the value of one variable increases, the other decreases, while a value of +1.00 represents a perfect positive relationship, meaning that as the value of one variable increases, so does the other too.

Correlation analysis provides the researcher with information regarding the existence or not of a specific relationship between two variables, allowing him to predict the likelihood of a result among the sample studied. However, correlation is not synonymous to causation; for example, the existence of a strong negative correlation between neuroticism and employees' fraudulent behavior, does not necessarily mean that the more emotional stable is an employee the less probable is for him to commit or engage in a fraudulent act.

6.2.2.4. Regression analysis

Regression analysis is a statistical technique applied to investigate a relationship between one dependent variable and a number of explanatory factors, known as independent variables or predictors (Pallant, 2016; Greene, 2012). Multiple regression can be applied to address various research questions. In specific, it can be used to provide information about how well a set of variables can predict a particular result, how each variable contributes on the

model as a whole, and also for controlling for an additional variable when examining the predictive ability of a model (Greene, 2012).

There are numerous different types of multiple regression analyses that a researcher can apply; among them, the main types are standard, hierarchical, and stepwise regression analysis (Pallant, 2016). Standard multiple regression is the most widely used type of analysis. In this type of analysis, all the independent variables are entered simultaneously into the model and is used to assess each independent variable's predictive power on the dependent variable. In hierarchical regression, the independent variables are entered into the model in a specific order defined by the researcher based on theory. It is used to assess the contribution of each independent variable added each time on the power of the predictive model, after the previous variables have been controlled for. Finally, the stepwise regression is similar to the hierarchical, but in this case instead of the researcher, it is the statistical program that chooses from a list of independent variables, provided by the researcher, which variables will be entered and in which order into the model based on several statistical criteria (Greene, 2012).

In this study, the researcher has applied the standard multiple regression analysis to test his hypotheses and explore the interrelationships among several variables. This type of analysis has been selected by the researcher among others, because it is considered to be the most appropriate to answer this thesis research questions and provide useful information regarding the way personal attributes and culture affect an employee's fraudulent behavior.

The researcher used eight models to explore the impact of independent and control variables on employees' fraudulent behavior, that was the dependent variable of this study. In the first model the impact of control variables was examined, which proved to be of no-significance, in the second model the impact of personal attributes including demographics and personality traits was examined, in the third model the impact of culture was examined, in the fourth model the organizational conditions were investigated in depth, by exploring the impact of the eight sub-dimensions of organizational culture, in the fifth model the impact of personal attributes and organizational culture combined were examined, in the sixth model the impact of the sub-dimensions of culture in conjunction with personal attributes was examined, and in seventh and eighth models the moderating role of culture and its sub-dimensions on the relationship between personal attributes and employees' fraudulent behavior was explored.

6.3. Research ethics

Ethical issues emerge during all stages of a research (Bourque and Clark, 2011); design and planning of the study, access to organizations and individuals, data collection, analysis and management, presentation of the results. Hence, many academies and associations; e.g. Association of Business Schools, British Academy of Management, Economic and Social Research Council (ESRC), American Psychological Association, etc., have developed related codes of ethics addressing ethical concerns and providing general ethical principles that should be followed in a study. These general principles are being presented in Figure 6.1 (Saunders et al., 2015; Easterby-Smith et al., 2012).

Figure 6.1 General ethical research principles



To ensure the non-violation of ethical codes for researchers in management and social sciences, the above general ethical principled (Figure 6.1) have been followed. First, participants were not coerced into taking part in the research, rather their participation was voluntary. In addition, all of them were informed about the research objectives, and they were

provided information regarding the institution of the researcher and his contact information. Other than these, to ensure anonymity and confidentiality, the participants' names were not required and no other personal information that could lead to them was needed. Furthermore, regarding the data security, the data collected were stored on an external hard drive that belongs to the researcher and no other person had access to these data. Finally, the researcher has ensured all participants that no misleading or false information would be presented, and all the outcomes provided in this thesis are correct and true.

6.4. Summary of chapter 6

In this chapter of the study, the procedures followed by the researcher to obtain the data for this research were presented. The research questionnaire was described in detail and the scales of measurement of each variable and their respective reliability was also discussed. In addition, the appropriate procedures for data analysis and research ethics were also presented. To that end, all processes were adequately followed, and the results of this study are being presented and explained in the next chapter (chapter 7).

7. Results

This chapter presents the results and analyses of the data collected in the pursuit of answering the research questions and test the related hypotheses. The results and analyses in this chapter are being presented following the aims of this thesis; in turn, the chapter contains five sections. The first section presents the demographic characteristics of the research participants. The second section refers to the impact of personality traits; conscientiousness, agreeableness, extraversion, neuroticism, openness to experience, on employees' propensity to fraud, answering this study first research question. The third section refers to the impact of gender, age, and educational level on employees' propensity to fraud, answering this study second research question. The fourth section refers to the impact of organizational culture on employees' propensity to fraud, answering this study third research question; other than this, dive deeper in a firm's organizational conditions, the impact of sub-dimensions of culture – clarity, congruency of supervisors, congruency of management, feasibility, supportability, transparency, discussability, sanctionability – on employees' propensity to fraud is also examined. Finally, in the last section, it is presented the moderating role of culture and its sub-dimensions to the relationship between personal attributes and fraudulent behavior, answering this study fourth research question.

7.1. Demographic information of responders

Analysis of the demographic characteristics of this study responders contributes on better understanding whether the participants provide objective and fair enough information regarding their fraud propensity. Table 7.1 presents the demographic details of this research participants.

Table 7.1 Demographic details of responders

	Frequency	Percent	Valid percent
<i>Gender</i>			
Male	122	56.7	57.0
Female	92	42.8	43.0

Total	214	99.5	100.0
System	1	0.5	
Total	215	100.0	

Age

<26	17	7.9	7.9
26-35	104	48.4	48.6
36-45	59	27.4	27.6
46-55	26	12.1	12.1
>55	8	3.7	3.7
Total	214	99.5	100.00
System	1	0.5	
Total	215	100.0	

Education

High School	14	6.5	6.5
Bachelor	57	26.5	26.6
Master	127	59.1	59.3
Doctoral	16	7.4	7.5
Total	214	99.5	100.0
System	1	0.5	
Total	215	100.0	

Experience

<1	13	6.0	6.1
1-5	47	21.9	22.0
6-10	52	24.2	24.3

>10	102	47.4	47.7
Total	214	99.5	100.0
System	1	0.5	
Total	215	100.0	

Tenure

<1	41	19.1	19.2
1-5	86	40.0	40.2
6-10	37	17.2	17.3
>10	50	23.3	23.4
Total	214	99.5	100.0
System	1	0.5	
Total	215	100.0	

Position

Employee	132	61.4	61.7
Manager/Supervisor	51	23.7	23.8
Owner/Executive	31	14.4	14.5
Total	214	99.5	100.0
System	1	0.5	
Total	215	100.0	

Annual Salary

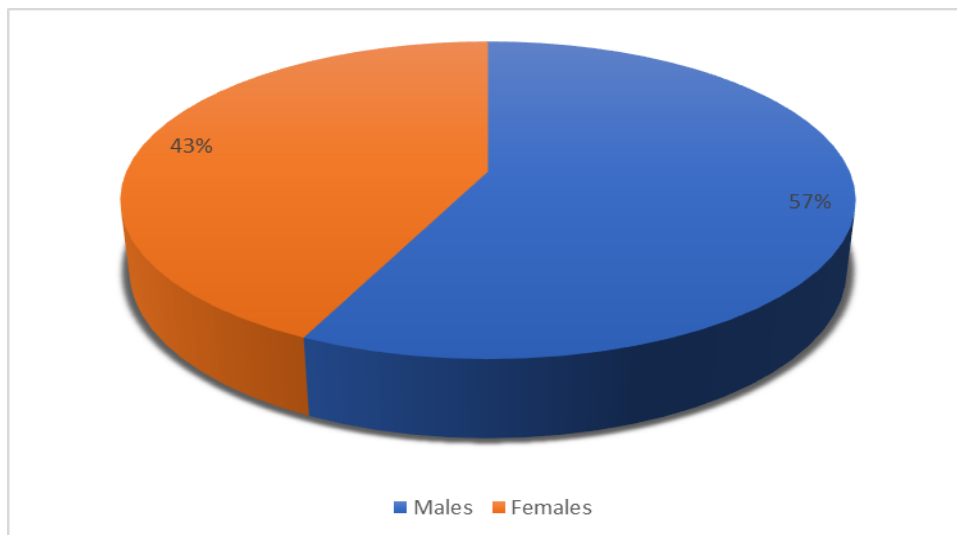
<20.000	130	60.5	60.7
20.000-40.000	57	26.5	26.6
>40.000	27	12.6	12.6
Total	214	99.5	100.0

System	1	0.5
Total	215	100.0

7.1.1. Gender

In terms of gender, the analysis reveals that 122 of the research participants (57%) were males, while 92 (43%) were females. Given that the general ratio males to females in Greece is 49:51, the research sample is considered to be representative of the population. Figure 7.1 shows percentage distribution of gender among the responders.

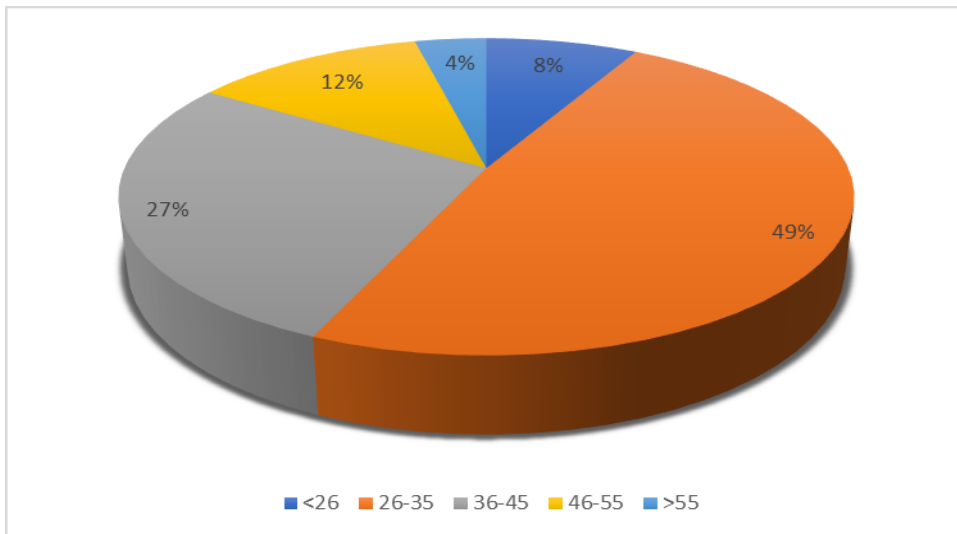
Figure 7.1 Distribution of gender among responders



7.1.2. Age

In terms of age, the analysis reveals that most of the research participants; 104 (48.6%), were between 26-35 years old, followed by those being between 36-45 years old; 59 (27.6%), those being between 46-55 years old; 26 (12.1%), those being less than 26 years old; 17 (7.9%), and finally those being more than 55 years old; 8 (3.7%). Given that circa 76% of the participants were between 36-55 years old, it is considered that the research sample is representative of the working population in Greece as the 85.44% of employees in this country are between 30-64 years old (Hellenic Statistical Authority, 2018). Figure 7.2 shows percentage distribution of age among the responders.

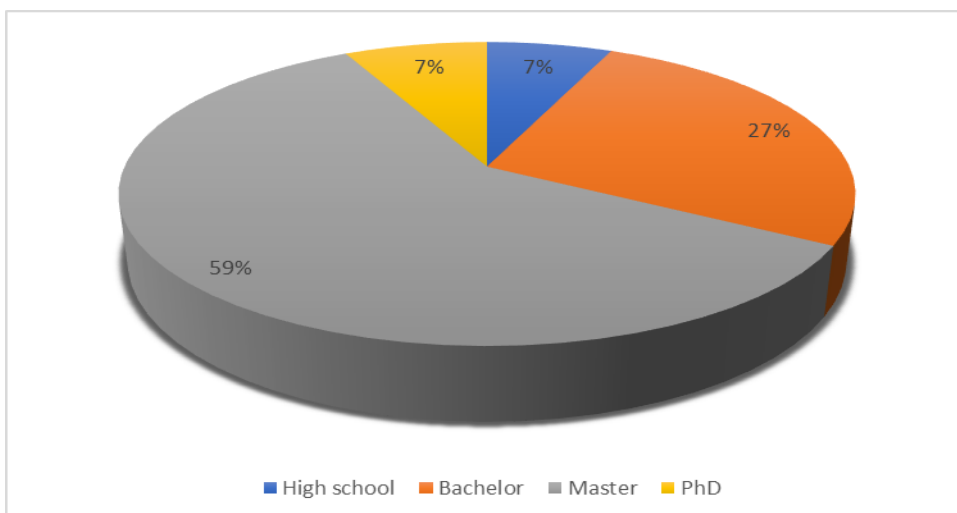
Figure 7.2 Distribution of age among responders



7.1.3. Level of education

In terms of education, the analysis reveals that most of the research participants; 127 (59.3%), hold a Master's degree, followed by those holding a Bachelor's degree; 57 (26.6%), those holding a PhD degree; 16 (7.5%), and finally those holding a High School degree; 14 (6.5%). Given that 93.5% of the participants hold an advanced degree, it is considered that the research sample is appropriate for this research, because as discussed in previous chapters, to commit fraud and conceal his acts, an employee should be highly skilled and educated. Figure 7.3 shows percentage distribution of education among the responders.

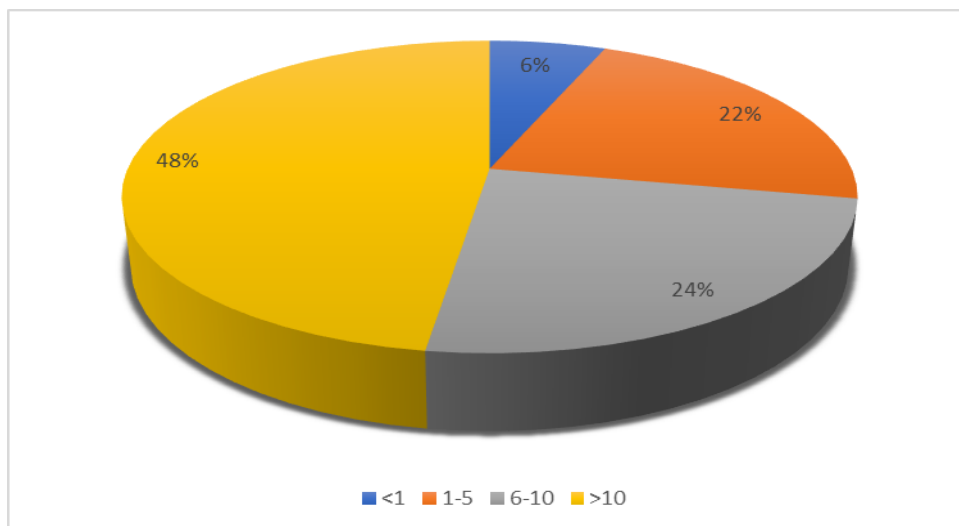
Figure 7.3 Distribution of education among responders



7.1.4. Experience

In terms of working experience, the analysis reveals that most of the research participants; 102 (47.7%), had more than 10 years working experience, followed by those who had 6-10 years working experience; 52 (24.3%), those who had 1-5 years working experience; 47 (22.0%), and finally those who had less than 1 year working experience; 13 (6.1%). Given that almost 94% of the participants had more than 1 year working experience, it is considered that the research sample is appropriate for this research, as the participants have enough experience to judge objectively their organizational conditions and is also probable to have experienced similar dilemmas as those provided to them in this study. Figure 7.4 shows percentage distribution of working experience among the responders.

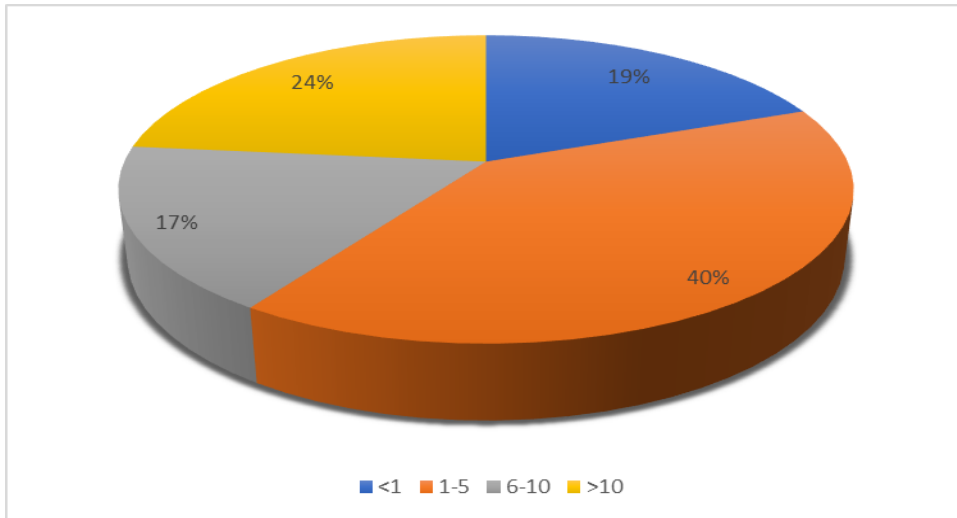
Figure 7.4 Distribution of working experience among responders



7.1.5. Tenure

In terms of tenure, the analysis reveals that most of the research participants; 86 (40.2%), were at the same company between 1-5 years, followed by those being more than 10 years; 50 (23.4%), those being less than 1 year; 41 (19.2%), and finally those being between 6-10 years; 37 (17.3%). That being the case, it is considered that the research sample is representative of the working population as it represents all tenure scales in adequate frequency. Figure 7.5 shows percentage distribution of tenure among the responders.

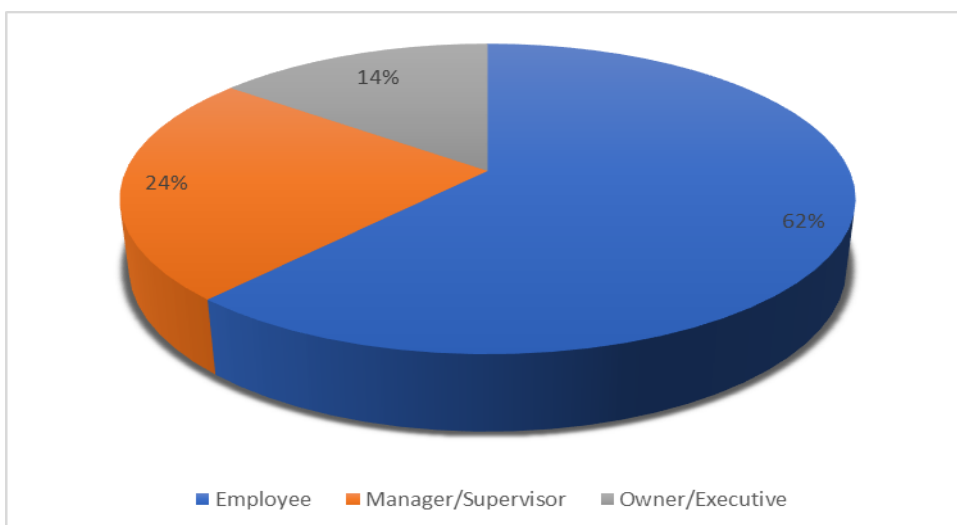
Figure 7.5 Distribution of tenure among responders



7.1.6. Position

In terms of position, the analysis reveals that most of the research participants; 132 (61.7%), were employees, followed by those being managers or supervisors; 51 (23.8%), and finally those being owners or executives; 31 (14.5%). That being the case, although the majority of the research participants were employees, it is considered that the research sample is representative of the working population as it represents all hierarchy levels in adequate frequency. Figure 7.6 shows percentage distribution of position among the responders.

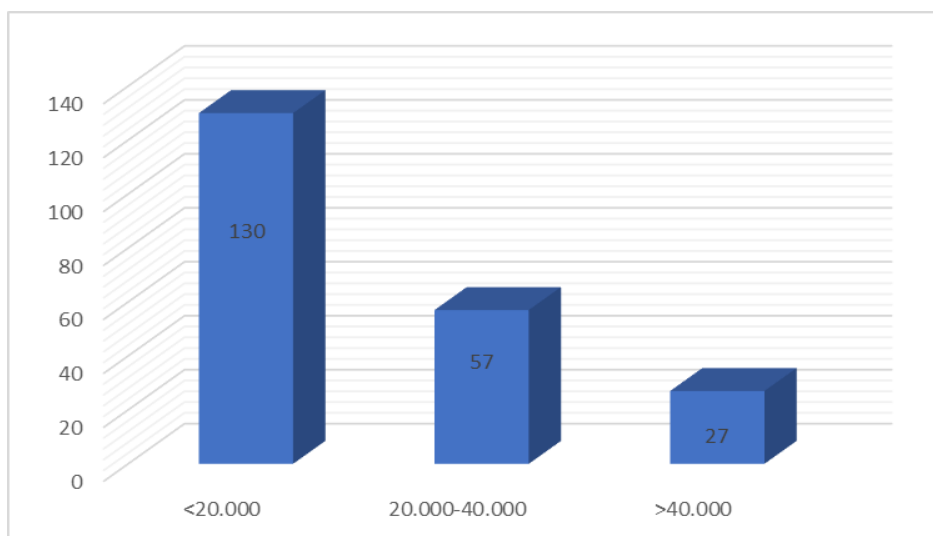
Figure 7.6 Distribution of position among responders



7.1.7. Annual salary

In terms of annual salary, the analysis reveals that most of the research participants; 130 (60.7%), gained less than 20.000 euros annually, followed by those gaining between 20.000-40.000 euros annually; 57 (26.6%), and finally those gaining more than 40.000 euros annually; 27 (12.6%). That being the case, it is considered that the research sample is representative of the working population as it represents salary scales in adequate frequency. Figure 7.7 shows distribution of annual salary among the responders.

Figure 7.7 Distribution of annual salary among responders



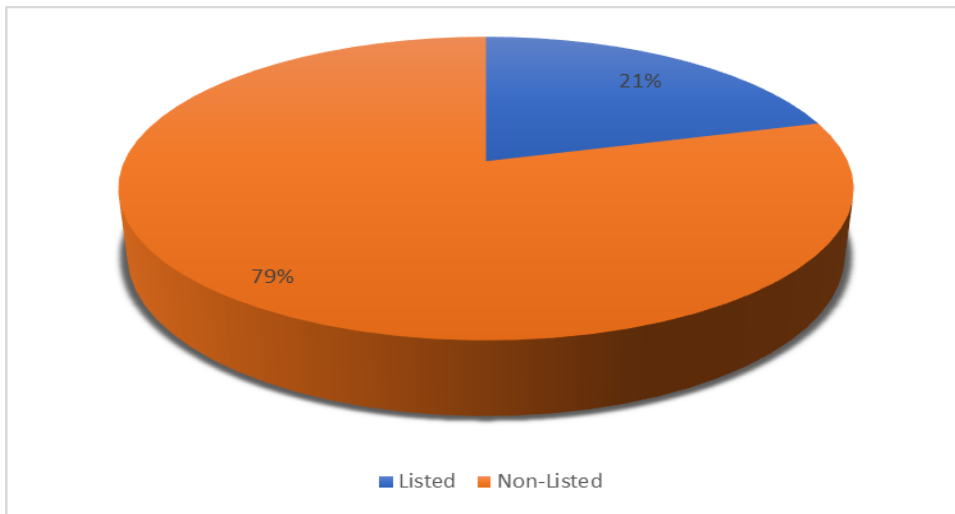
7.1.8. Industry

In terms of industry, the analysis reveals that most of the research participants; 169 (79.0%), worked in non-listed firms, while 44 of them (20.6%) worked in listed companies. In addition, the majority of responders worked in banking (25.2%) or other sector (26.6%), while only 1 participant worked in publication (0.5%). Table 7.2 presents the distribution of industry among the responders and figure 7.8 shows distribution of listed and non-listed companies among the responders.

Table 7.2 Distribution of industry among responders

	Frequency	Percent	Valid percent
Banking	54	25.1	25.2
Manufacturing	11	5.1	5.1
Healthcare	13	6.0	6.1
Trade	9	4.2	4.2
Insurance	5	2.3	2.3
Education	20	9.3	9.3
Energy	4	1.9	1.9
Industrial	12	5.6	5.6
Technology	9	4.2	4.2
Telecommunication	5	2.3	2.3
Food and Hospitality	3	1.4	1.4
Agriculture and Fishing	4	1.9	1.9
Transportation	7	3.3	3.3
Publication	1	0.5	0.5
Other	57	26.5	26.6
Total	214	99.5	100.0
System	1	0.5	
Total	215	100.0	

Figure 7.8 Distribution of listed and non-listed companies among responders



7.2. Test of hypotheses

In this section, the results of the data analysis regarding the research hypotheses developed in previous chapters are being presented. Each sub-section refers to a different preposition associated with the respective research questions.

7.2.1. Test of hypotheses 1 & 2

In this section it is presented the results of the data analysis regarding the impact of personal attributes, including personality traits; conscientiousness, agreeableness, extraversion, neuroticism, and openness, and demographics; gender, age, and education, on employees' propensity to commit or engage in fraud.

Research question 1: What are the personality traits that affect an employee's propensity to commit or engage in a fraudulent act in the workplace?

Research question 2: What are the demographic characteristics that affect an employee's propensity to commit or engage in a fraudulent act in the workplace?

The hypotheses developed based on social cognitive theory and prior literature are the following:

Hypothesis 1a: *Employees with high levels of conscientiousness are less likely to commit or engage in fraud.*

Hypothesis 1b: *Employees with high levels of agreeableness are less likely to commit or engage in fraud*

Hypothesis 1c: *Employees with high levels of extraversion are more likely to commit or engage in fraud*

Hypothesis 1d: *Employees with high levels of neuroticism are more likely to commit or engage in fraud.*

Hypothesis 1e: *Employees with high levels of openness to experience are less likely to commit or engage in fraud.*

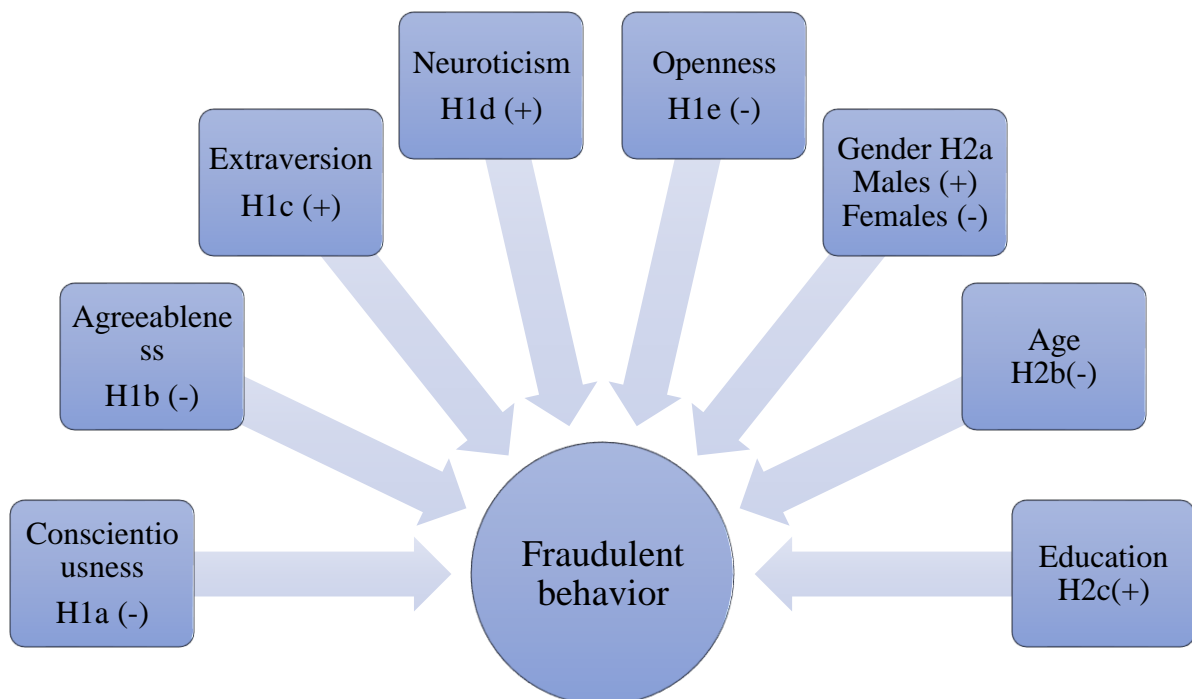
Hypothesis 2a: *Male employees are more likely to commit or engage in fraud than their female colleagues.*

Hypothesis 2b: *Older employees are less likely to commit or engage in fraud.*

Hypothesis 2c: *Employees with high levels of education are more likely to commit or engage in fraud.*

The research propositions regarding the relationship between personality traits and employees' fraudulent behavior are presented in Figure 7.9.

Figure 7.9 Hypotheses regarding the relationship between personality traits and employees' fraudulent behavior



7.2.1.1. Descriptive statistics

In Table 7.3, the descriptive statistics of the research sample are being presented. Based on these results, it is obvious that there are no extreme values in the study sample. This is also concluded by Kurtosis values; no value below 0, indicating that there are not many cases in the extremes and in turn the data distribution is not flat.

Table 7.3 Descriptive statistics

Variable	Min.	Max.	Mean	Std. Deviation	Skewness	Kurtosis
Behavior	1.00	4.00	1.61	0.81	1.45	1.35
Conscientiousness	2.22	5.00	4.07	0.50	-0.59	0.63
Agreeableness	2.11	5.00	3.80	0.47	-0.47	0.65
Extraversion	2.00	4.88	3.52	0.54	0.07	0.12
Neuroticism	1.00	4.75	2.56	0.73	0.17	0.04
Openness	1.50	4.80	3.60	0.53	-0.59	1.11
Gender	1.00	2.00	1.43	0.50	-	-
Age	1.00	5.00	2.55	0.94	0.70	0.17
Education	1.00	4.00	2.68	0.71	-0.57	0.29

Among the descriptive statistics, the mean of “behavior”, the dependent variable of this model, is 1.61. This means that most of the responders are not eager to commit or engage in fraud; this result is less than 2.48 of the study of Turner (2014). Regarding the independent variables of this model, some interesting results are being provided. The mean of “conscientiousness” is 4.07 which means that most of the responders are characterized as being highly conscious. This result is more than the 3.33 of Turner’s (2014) study, but close to the 4.15 result of Blickle et al. (2006). Moreover, the mean of “agreeableness” is 3.80, showing that responders tend to be helpful and forgiving; this result is same to that of Turner (2014). In addition, the mean of “extraversion” is 3.52, showing that most of the participants tend to be talkative and sociable; this result is close to the 3.17 mean of Turner’s study. Furthermore, the

mean of “neuroticism” is 2.56, showing that most of the participants are emotional stable; this result is close to the 2.92 mean of Turner’s study and the 2.09 mean of Blickle et al (2006). Finally, the mean of “openness” is 3.60, showing that most of the responders are eager to new ideas and are open-minded; this result is close to the 3.44 of Turner’s study.

Given the descriptive statistics of this model, the values of most of the variables are similar to prior studies (Turner, 2014; Blickle et al., 2006). Between our results and the study of Turner (2014), differences are being found in view of “behavior” and “conscientiousness”. These differences may result from the use of undergraduate student in Turner’s study instead of employees that were used in the present study, or even from cultural differences of participants, as the two studies have been conducted to different countries.

7.2.1.2. Correlation analysis

In Table 7.4, the results of Pearson correlation between the personal attributes variables; the independent variables, the control variables, and fraudulent behavior; the dependent variable, are being presented.

An examination of the correlation matrix below, reveals very high correlation between all personality traits variables. In specific, the inter correlations between conscientiousness, agreeableness, neuroticism, and openness to experience to the dependent variable; employees’ propensity to fraud, are highly significant at the 0.01 confidence level. In addition, extraversion is related to fraudulent behavior significantly at the 0.05 confidence level.

Other than personality traits, regarding the demographic characteristics, the correlation matrix below, reveals a correlation only between gender and behavior. In specific, the inter correlation between gender and the dependent variable; employees’ propensity to fraud, is significant at the 0.05 confidence level. The other two demographic variables; age and education, even though they were found negatively related to fraudulent behavior, these relationships were not found to be significant enough ($p < 0.05$). Among the control variables; experience, industry, position, and salary, none was found to be significantly inter correlated to fraudulent behavior.

Table 7.4 Pearson correlation

	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Dependent variable</i>													
1. Behavior	1												
<i>Independent variables</i>													
2. Conscientiousness	-.363**	1											
3. Agreeableness	.325**	.446**	1										
4. Extraversion	-.148**	.398**	.223**	1									
5. Neuroticism	.197**	-.477**	-.487**	-.212**	1								
6. Openness	-.349**	.354**	.248**	.511**	-.243**	1							
7. Gender	-.174*	.117	.037	.175*	.110	.148*	1						
8. Age	-.047	.000	.030	-.034	-.079	.006	-.159*	1					
9. Education	-.060	.088	.012	.051	-.089	.042	.022	-.049	1				
<i>Control variables</i>													
10. Experience	-.093	.045	-.030	.087	-.073	.084	-.113	.625**	.009	1			

11. Industry	.047	-.031	-.012	.066	.058	-.091	.034	-.003	-.059	.104	1		
12. Position	-.004	.064	.015	.057	-.084	.159*	-.277**	.434**	.058	.363**	-.070	1	
13. Salary	-.035	.017	-.024	.017	-.170*	.121	-.249**	.493**	.147*	.412**	-.169*	.605**	1

*p<0.05, **p<0.01, ***p<0.001

7.2.1.3. Regression analysis

To further examine the interrelationship among independent and dependent variables, multiple regression has been applied. In Table 7.5, the results of regression analysis between the independent variables referring to the personal attributes variables; personality traits, and demographic characteristics, the control variables, and fraudulent behavior; the dependent variable, are being presented.

Table 7.5 Personal attributes (IVs) as determinants of fraudulent behavior (DV)

	Unstandardized coefficients		Standardized coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
Conscientiousness	-0.391	0.127	-0.239**	0.615	1.627
Agreeableness	-0.359	0.127	-0.209**	0.678	1.475
Extraversion	0.228	0.112	0.152*	0.660	1.516
Neuroticism	-0.060	0.086	-0.054	0.623	1.606
Openness	-0.437	0.116	-0.283***	0.662	1.511
Gender	-0.192	0.110	-0.117	0.830	1.204
Age	-0.009	0.074	-0.010	0.509	1.966
Education	-0.038	0.072	-0.033	0.946	1.057
Experience	-0.089	0.069	-0.105	0.560	1.785
Industry	0.002	0.009	0.017	0.914	1.094
Position	0.089	0.089	0.081	0.569	1.756
Salary	-0.041	0.099	-0.036	0.502	1.992

*p<0.05, **p<0.01, ***p<0.001

An examination of the coefficients among variables above, reveals very high interrelationship between some personality traits variables and fraudulent behavior. In specific,

the interrelationships between conscientiousness and employees' propensity to fraud is extremely highly significant at the 0.001 confidence level. In addition, agreeableness, and openness to experience are highly significant related to fraudulent behavior at the 0.01 confidence level. Other than these, extraversion is related to fraudulent behavior significantly at the 0.05 confidence level, while neuroticism is found not to be significantly related to fraudulent behavior.

Regarding demographic characteristics; gender, age, and level of education, although gender is found to be related to employees' fraudulent behavior at the 0.10 confidence level, it is not considered significant enough for this study ($p < 0.05$). On the other hand, age and education, even though they were found negatively related to fraudulent behavior, the relationships were not significant enough ($p < 0.05$). Among the control variables; experience, industry, position, and salary, none was found to be significantly interrelated to fraudulent behavior.

Regarding Hypothesis 1a, in which a negative relation between conscientiousness and employees' fraudulent tendency was hypothesized, the study's results corroborated that employees with high levels of conscientiousness are less likely to commit or engage in fraud. In line with Hypothesis 1b, employees with high level of agreeableness proved to have significantly negative attitude towards fraud. Hypothesis 1c was also corroborated, as employees with high levels of extraversion were found to be significantly related to fraudulent behavior. Contrary to these hypotheses, 1d was rejected, as neuroticism was found to be insignificantly negatively related to fraud propensity, respectively. Finally, in Hypothesis 1e openness to experience was expected to be negatively related to fraud propensity; this expectation was corroborated, providing empirical evidence that employees with high imaginative and creative skills are less eager to commit or engage in fraud.

As far as it concerns, hypotheses 2a, 2b, and 2c that refer to the impact of demographic characteristics on employees' propensity to fraud, these hypotheses were rejected, as gender, age, and education were found to be insignificantly ($p < 0.05$) negatively related to fraudulent behavior.

Table 7.6 Hypotheses 1 and 2 results

Hypothesis	Independent variable	Expected impact	Observed impact	Significance	Result
1a	Conscientiousness	-	-	Yes	Corroboration
1b	Agreeableness	-	-	Yes	Corroboration
1c	Extraversion	+	+	Yes	Corroboration
1d	Neuroticism	+	-	No	Rejection
1e	Openness	-	-	Yes	Corroboration
2a	Gender	Males (+)	+	No	Rejection
		Females (-)	-		
2b	Age	-	-	No	Rejection
2c	Education	+	-	No	Rejection

7.2.1.4. Model assessment

To evaluate this model, the values of R^2 , and ANOVA are being considered. Given that R^2 is 0.254; better than other studies (Holtbrugge et al., 2015; Lee et al., 2005; Kalshoven et al., 2011), and that ANOVA value is statistically highly significant (Sig.=.000; this means $p < 0.01$), it is concluded that the results of this model are respectable and adequate enough. Tables 7.7 and 7.8 present the model summary and ANOVA test.

Table 7.7 Model summary

R	R^2	Adj. R^2	Std. Error	R^2 Change	F Change	df1	df2	Sig. F Change
0.504	0.254	0.210	0.724	0.254	5.707	12	201	.000

Table 7.8 ANOVA test

	Sum of squares	df	Mean square	F	Sig.
Regression	35.918	12	2.993	5.707	0.000
Residual	105.418	201	0.524		
Total	141.336	213			

In addition, to check the existence of multicollinearity among variables, Tolerance and Variance inflation factor (VIF) values were examined. Tolerance value depicts how much of the variability of a specific independent variable is not explained by any other independent variable in the model; all variables' tolerance value is more than 0.10 (Pallant, 2016). In the same line, the other value provided by VIF; the inverse of the tolerance value, is less than 10 (Pallant, 2016). Hence, no issue of multicollinearity is presented among this model variables.

7.1.2.5. Summary

Further analyzing the results presented in Table 12 above, the following conclusions can be extracted:

1. There is a significant negative ($p < 0.01$) impact of conscientiousness on employees' propensity to commit or engage in fraudulent acts. In specific, the less conscientious an employee is, the more possible is to commit fraud.
2. There is a significant negative ($p < 0.01$) impact of agreeableness on employees' propensity to commit or engage in fraudulent acts. In specific, the less agreeable an employee is, the more possible is to commit fraud.
3. There is a significant positive ($p < 0.05$) impact of extraversion on employees' propensity to commit or engage in fraudulent acts. In specific, the more extrovert an employee is, the more possible is to commit fraud.
4. There is a positive impact of neuroticism on employees' propensity to commit or engage in fraudulent acts. However, this impact is not significant enough ($p < 0.05$), and in turn it cannot be concluded that an emotional stable employee is less keen to commit fraud.

5. There is a significant negative ($p < 0.001$) impact of openness on employees' propensity to commit or engage in fraudulent acts. In specific, the more open-minded an employee is, the less possible is to commit fraud.

6. There is a negative ($p < 0.10$) impact of gender on employees' propensity to commit or engage in fraudulent acts. However, this impact is not considered significant enough ($p < 0.05$) to be included in the final fraudster's profile.

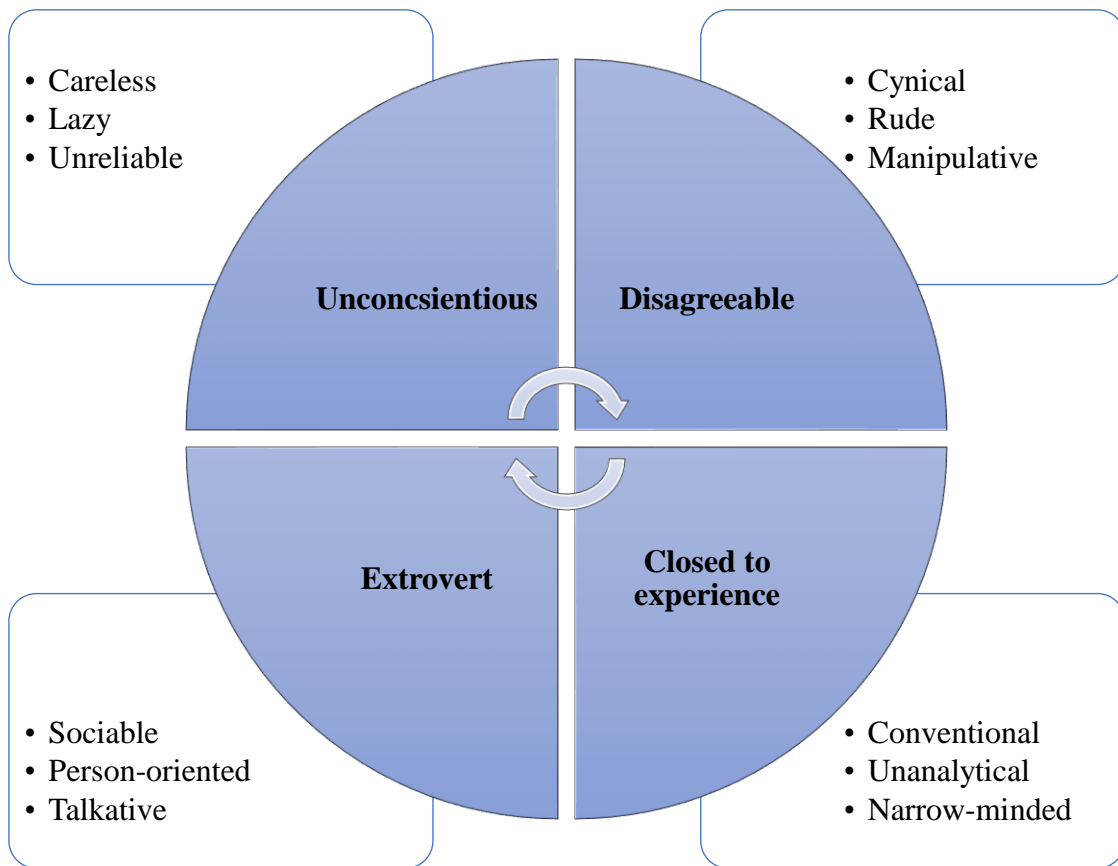
7. There is a negative impact of age and education on employees' propensity to commit or engage in fraudulent act. However, neither the effect of age nor of level of education is significant enough ($p < 0.05$) to conclude that an employee who is younger or highly educated is more likely to commit fraud.

8. There is a negative impact of experience and salary on employees' propensity to commit or engage in fraudulent acts. However, neither the effect of experience nor of salary is significant enough ($p < 0.05$) to conclude that an employee who is highly experienced or gains much money is less likely to commit fraud.

9. There is a positive impact of industry and position on employees' propensity to commit or engage in fraudulent acts. However, neither the effect of industry nor of position is significant enough ($p < 0.05$) to conclude that these factors influence an employee's fraudulent behavior.

Testing the hypotheses 1 and 2, regarding the personality traits and demographic characteristics of an employee, and following the conclusions presented before, the personality profile of a possible fraud perpetrator is depicted in Figure 7.10 below.

Figure 7.10 Personality profile of fraud perpetrator



7.2.2. Test of hypothesis 3

In this section it is presented the results of the data analysis regarding the impact of culture on employees' propensity to commit or engage in fraud. Further results regarding the impact of specific sub-dimensions of culture; clarity, congruency of supervisors, congruency of management, feasibility, supportability, transparency, discussability, and sanctionability, on employees' propensity to commit or engage in fraud, are also being provided.

Research question 3: What are the organizational conditions that motivate or avert an employee to commit or engage in a fraudulent act in the workplace?

The hypothesis developed based on social cognitive theory and prior literature is the following:

Hypothesis 3: *Employees working in an environment with high levels of ethical organizational culture are less likely to commit or engage in fraud.*

7.2.2.1. Descriptive statistics

In Table 7.9, the descriptive statistics of the research sample are being presented. The statistics of “behavior” have been discussed in previous section. Regarding “culture”, the mean is 4.19, showing that most of the responders consider their working environment as being highly ethical. This result is close to the 4.24 of Kaptein (2011) and the 4.28 mean of Kangas et al. (2014).

Table 7.9 Descriptive statistics

Variable	Min.	Max.	Mean	Std. Deviation
Behavior	1.00	4.00	1.61	0.81
Culture	1.50	6.00	4.19	1.04

7.2.2.2. Correlation analysis

In Table 7.10, the results of Pearson correlation between culture; the independent variable, the control variables, and fraudulent behavior; the dependent variable, are being presented.

An examination of the correlation matrix below, reveals very high correlation between culture and fraudulent behavior. In specific, the inter correlation between culture and employees’ propensity to fraud, is highly significant at the 0.001 confidence level. Among the control variables; experience, industry, position, and salary, none was found to be significantly inter correlated to fraudulent behavior.

Table 7.10 Pearson correlation

	1	2	3	4	5	6
<i>Dependent variable</i>						
1. Behavior	1					
<i>Independent variable</i>						

2. Culture	-.423**	1				
<i>Control variables</i>						
3. Experience	-.093	-.021	1			
4. Industry	.047	-.027	.104	1		
5. Position	-.004	.100	.363**	-.070	1	
6. Salary	-.035	.020	.412**	-.169*	.605**	1

*p<0.05, **p<0.01, ***p<0.001

7.2.2.3. Regression analysis

To further examine the interrelationship among independent and dependent variables, multiple regression has been applied. In Table 7.11, the results of regression analysis between the independent variable referring to culture and fraudulent behavior; the dependent variable, are being presented.

Table 7.11 Organizational culture (IV) as determinant of fraudulent behavior (DV)

	Unstandardized coefficients		Standardized coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
Culture	-.342	.049	-.435***	.985	1.016
Experience	-.114	.060	-.135	.779	1.283
Industry	.007	.009	.052	.935	1.070
Position	.120	.088	.109	.609	1.641
Salary	-.032	.095	-.028	.565	1.769

*p<0.05, **p<0.01, ***p<0.001

An examination of the coefficients among variables above, reveals very high interrelationship between culture and fraudulent behavior. In specific, the interrelationship

between organizational culture and employees' propensity to fraud is extremely highly significant at the 0.001 confidence level. Among the control variables; experience, industry, position, and salary, none was found to be significantly interrelated to fraudulent behavior.

That being the case, in Hypothesis 3 employees working in an environment with high levels of ethical organizational culture were expected to be less likely to commit or engage in fraud. The study's results corroborated this hypothesis, as the existence of ethical culture in a company has significant negative effect on fraud propensity.

Table 7.12 Hypothesis 3 results

Hypothesis	Independent variable	Expected impact	Observed impact	Significance	Result
3	Culture	-	-	Yes	Corroboration

7.2.2.4. Model assessment

To evaluate this model, the values of R^2 , and ANOVA are being considered. Given that R^2 is 0.199, close to or better than other similar studies (Kaptein, 2011; Riivari et al., 2012) and that ANOVA value is statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough. Tables 7.13 and 7.14 present the model summary and ANOVA test.

Table 7.13 Model summary

R	R²	Adj. R²	Std. Error	R² Change	F Change	df1	df2	Sig. F Change
.446	.199	.180	.738	.199	10.356	5	208	.000

Table 7.14 ANOVA test

	Sum of squares	df	Mean square	F	Sig.
Regression	28.171	5	5.634	10.356	.000

Residual	113.165	208	.544
Total	141.336	213	

In addition, to check the existence of multicollinearity among variables, Tolerance and Variance inflation factor (VIF) values were examined. Tolerance value depicts how much of the variability of a specific independent variable is not explained by any other independent variable in the model; all variables' tolerance value is more than 0.10 (Pallant, 2016). In the same line, the other value provided by VIF; the inverse of the tolerance value, is less than 10 (Pallant, 2016). Hence, no issue of multicollinearity is presented among this model variables.

7.2.2.5. Further analysis

Culture was found to significantly affect an employee's tendency to fraud. However, it is really important to explore the sub-dimensions of culture that have significant impact on this particular aversion to fraud. Hence, in this section, it is presented the results regarding the impact of clarity, congruency of supervisors, congruency of management, feasibility, supportability, transparency, discussability, and sanctionability, on employees' propensity to commit or engage in fraud.

In Table 7.15 below, the descriptive statistics of culture sub-dimensions are being presented. The statistics of "behavior" have been discussed in previous section. Regarding "clarity" the mean is 4.76, showing that most of the responders work in firms where ethical standards are clearly defined. This result is close to the 4.3 of Kaptein (2011) and the 4.8 of Kangas et al (2014). Moreover, the mean of "congruency of management" is 4.25 which means that within participants' firms, senior managers are being viewed as ethical role models. This result is similar to the studies of Kaptein (2011); the mean was 4.3, and of Kangas et al. (2014); the mean was 4.7. In addition, the mean of "congruency of supervisors" is 4.11, showing that within participants' firms, direct supervisors are being viewed as ethical role models. This result is close to the 4.6 of Kaptein (2011) and the 4.3 of Kangas et al (2014). Regarding, "feasibility", the mean of this study is 4.44, showing that employees are capable of behaving ethically within their firms with no pressure to act otherwise. Similar are the results of Kapten (2011); the mean of this variable was 4.4, and of Kangas et al (2014); the mean of this variable was 4.5. Furthermore, the mean of "supportability" is 3.92, showing that responders' firms are committed to behave ethically. This result is similar to the 4.0 mean of Kangas et al. (2014)

and close to the 4.3 of Kaptein (2011). In addition, the mean of “transparency” is 4.01, meaning that within responders’ firms, unethical behavior is visible. This result is close to the 3.9 of Kangas et al. (2014) and the 3.7 of Kaptein (2011). Moreover, regarding “discussability”, the mean in this study is 4.11, which means that responders’ firms are open to discuss ethical issues and dilemmas with their employees. This result is close to the 4.3 of Kangas et al. (2014), but less than the 4.6 of Kaptein (2011). Finally, the mean of “sanctionability” is 3.95, showing that responders’ firms reinforce ethical behavior. This result is close to the 4.0 of Kangas et al. (2014) and the 3.7 of Kaptein (2011).

Given the descriptive statistics of this model, the values of most of the variables are similar to prior studies (Kaptein, 2011; Kangas et al., 2014). The slight differences among variables may result from the cultural differences of participants, as the three studies have been conducted to different countries.

Table 7.15 Descriptive statistics

Variable	Min.	Max.	Mean	Std. Deviation
Behavior	1.00	4.00	1.61	0.81
Clarity	1.50	6.00	4.76	1.03
Congruency of supervisors	1.00	6.00	4.25	1.39
Congruency of management	1.00	6.00	4.11	1.34
Feasibility	1.00	6.00	4.44	1.22
Supportability	1.00	6.00	3.92	1.21
Transparency	1.00	6.00	4.01	1.19
Discussability	1.00	6.00	4.11	1.25
Sanctionability	1.00	6.00	3.95	1.25

In Table 7.16, the results of Pearson correlation between clarity, congruency of supervisors, congruency of management, feasibility, supportability, transparency, discussability, and sanctionability; the independent variable, the control variables, and fraudulent behavior; the dependent variable, are being presented.

An examination of the correlation matrix below, reveals very high correlations among most of the variables. In specific, the inter correlations between clarity, congruency of supervisors, congruency of management, feasibility, supportability, transparency, discussability, and sanctionability, and employees' propensity to fraud, are highly significant at the 0.001 confidence level. Among the control variables; experience, industry, position, and salary, none was found to be significantly inter correlated to fraudulent behavior.

Table 7.16 Pearson correlation

	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Dependent variable</i>													
1. Behavior	1												
<i>Independent variables</i>													
2. Clarity	-.303***	1											
3. Cong. of supervisors	-.298***	.541***	1										
4. Cong. of management	-.483***	.605***	.661***	1									
5. Feasibility	-.461***	.552***	.584***	.751***	1								
6. Supportability	-.300***	.591***	.667***	.717***	.686***	1							
7. Transparency	-.386***	.563***	.620***	.651***	.633***	.652***	1						
8. Discussability	-.296***	.599***	.633***	.698***	.674***	.717***	.733***	1					
9. Sanctionability	-.297***	.613***	.644***	.688***	.687***	.719***	.707***	.812***	1				
<i>Control variables</i>													
10. Experience	-.093	.032	-.047	-.014	.049	-.065	-.026	-.058	.000	1			

11. Industry	.047	.026	-.113	-.021	-.013	-.020	-.022	-.003	.005	.104	1		
12. Position	-.004	.062	.129	.141*	.102	.042	.023	.061	.094	.363***	-.070	1	
13. Salary	-.035	-.071	.042	.060	.095	-.012	-.013	-.021	.032	.412***	-.169*	.605***	1

*p<0.05, **p<0.01, ***p<0.001

To further examine the interrelationships among independent and dependent variables, multiple regression has been applied. In Table 7.17, the results of regression analysis between the independent variables referring to culture sub-dimensions and fraudulent behavior; the dependent variable, are being presented.

Table 7.17 Culture sub-dimensions (IVs) as determinants of fraudulent behavior (DV)

	Unstandardized coefficients		Standardized coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
Clarity	-.018	.064	-.023	.513	1.951
Cong. of supervisors	.014	.052	.023	.431	2.322
Cong. of management	-.261	.064	-.430***	.305	3.274
Feasibility	-.186	.066	-.280**	.351	2.846
Supportability	.097	.068	.145	.332	3.012
Transparency	-.142	.065	-.207*	.381	2.626
Discussability	.087	.075	.133	.262	3.823
Sanctionability	.074	.074	.113	.267	3.743
Experience	-.101	.057	-.119	.754	1.327
Industry	.008	.008	.057	.915	1.093
Position	.117	.084	.106	.590	1.695
Salary	.009	.091	.007	.542	1.846

*p<0.05, **p<0.01, ***p<0.001

An examination of the coefficients among variables above, reveals very high interrelationship between some of organizational culture sub-dimensions and fraudulent behavior. In specific, the interrelationship between congruency of management and employees' propensity to fraud is extremely highly significant at the 0.001 confidence level. Also, the interrelationship between feasibility and employees' propensity to fraud is highly significant

at the 0.01 confidence level, whistle that of transparency and employees' propensity to fraud, is significant at the 0.05 confidence interval. Among the other culture sub-dimensions variables and control variables, none was found to be significantly interrelated to fraudulent behavior.

That being the case, given that Hypothesis 3 in which employees working in an environment with high levels of ethical organizational culture were expected to be less likely to commit or engage in fraud, was corroborated before, it could be also concluded that among culture dimensions those affecting the most an employee's aversion to fraud are congruency of supervisors, congruency of management, and transparency.

To evaluate the model applied for further analysis of organizational culture, the values of R^2 , and ANOVA are being considered. Given that R^2 is 0.313, better than other studies (de Vries and Van Gelder, 2015), and that ANOVA value is statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough. Tables 7.18 and 7.19 present the model summary and ANOVA test.

Table 7.18 Model summary

R	R²	Adj. R²	Std. Error	R² Change	F Change	df1	df2	Sig. F Change
.559	.313	.272	.695	.313	7.628	12	201	.000

Table 7.19 ANOVA test

	Sum of squares	df	Mean square	F	Sig.
Regression	44.226	12	3.686	7.628	.000
Residual	97.110	201	.483		
Total	141.336	213			

In addition, to check the existence of multicollinearity among variables, Tolerance and Variance inflation factor (VIF) values were examined. Tolerance value depicts how much of the variability of a specific independent variable is not explained by any other independent variable in the model; all variables' tolerance value is more than 0.10 (Pallant, 2016). In the

same line, the other value provided by VIF; the inverse of the tolerance value, is less than 10 (Pallant, 2016). Hence, no issue of multicollinearity is presented among this model variables.

7.2.2.6. Summary

Further analyzing the results presented in Tables 18 and 24 above, the following conclusions can be extracted:

1. There is a significant negative ($p < 0.001$) impact of culture on employees' propensity to commit or engage in fraudulent acts. In specific, the more ethical the culture of the company within which an employee is working, the less possible is to commit fraud.

2. There is a significant negative ($p < 0.001$) impact of congruency of management on employees' propensity to commit or engage in fraudulent acts. In specific, the more the managers comply with firm's procedures and regulation, the less possible is an employee to commit fraud.

3. There is a significant negative ($p < 0.01$) impact of feasibility on employees' propensity to commit or engage in fraudulent acts. In specific, the more feasible the company is, the less possible is an employee to commit fraud.

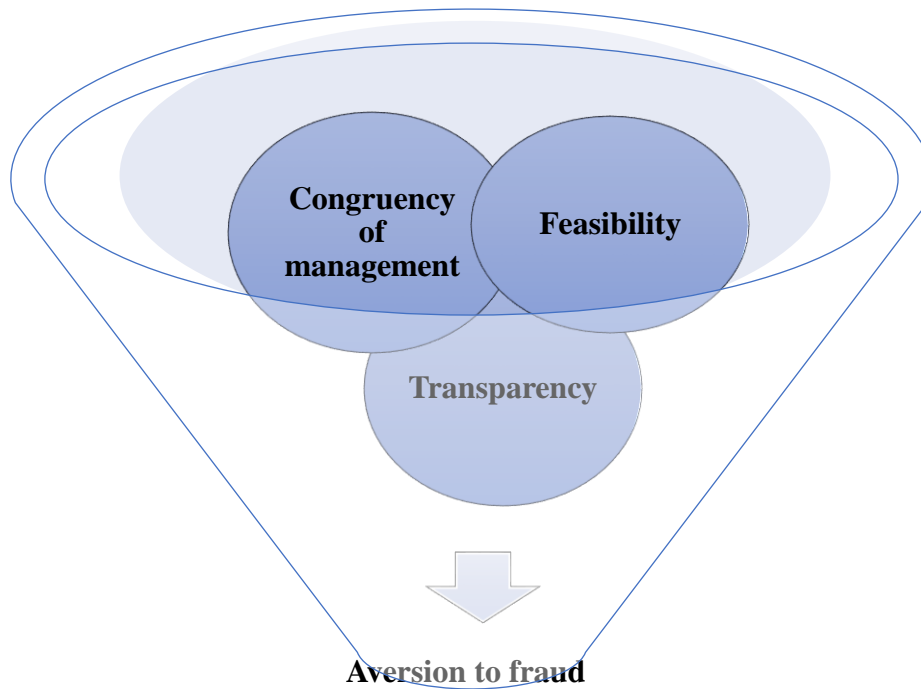
4. There is a significant negative ($p < 0.05$) impact of transparency on employees' propensity to commit or engage in fraudulent acts. In specific, the more transparent is a company, the less possible is an employee to commit fraud.

5. There is a negative impact clarity on employees' propensity to commit or engage in fraudulent act. However, this effect is not significant enough ($p < 0.05$) to conclude that within a company where clarity is a dominant characteristic, an employee is less likely to commit fraud.

6. There is a positive impact of supportability, discussability, and sanctionability, on employees' propensity to commit or engage in fraudulent acts. However, none of these cultural dimensions had a significant enough impact on fraudulent behavior ($p < 0.05$) to conclude that these factors affect an employee's attitude.

Testing the hypothesis 3 regarding ethical organizational culture, and further analyzing the effects of its sub-dimensions, the impact of culture on fraudulent behavior is depicted in Figure 7.11 below.

Figure 7.11 Ethical organizational culture and aversion to fraud



7.2.3. Test of hypothesis 4

In this section it is presented the results of the data analysis regarding the impact of culture on the relationship between personal attributes and employees' propensity to commit or engage in fraud.

Research question 4: How the organization context intervenes in the relationship between personal attributes and an employee's behavior?

The hypothesis developed based on social cognitive theory and prior literature is the following:

Hypothesis 4: *Organizational culture intervenes in the relationship between personal attributes and employees' propensity to commit or engage in fraud.*

7.2.3.1. Correlation analysis

In Table 7.20, the results of Pearson correlation among all variables are being presented. An examination of the correlation matrix below, reveals very high correlation between variables. In specific, the inter correlation between culture and the relationship between

openness and fraudulent behavior is extremely highly significant at the 0.001 confidence level. In addition, culture found to affect the relationships between agreeableness, and conscientiousness with fraudulent behavior significantly at the 0.01 confidence level. Finally, the inter correlation between organizational culture and the relationship between gender and fraudulent behavior was found to be significant at the 0.05 confidence level. Among other variables, culture had no significant impact on their relationship to fraudulent behavior.

Table 7.20 Pearson correlation

	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Dependent variable</i>													
1. Behavior	1												
<i>Independent variables</i>													
2. Culture x Conscientiousness	.192**	1											
3. Culture x Agreeableness	.183**	.646***	1										
4. Culture x Extraversion	.120	.423***	.306***	1									
5. Culture x Neuroticism	-.120	-.617***	-.615***	-.154*	1								
6. Culture x Openness	.388***	.464***	.388***	.569***	.464***	1							
7. Culture x Gender	.143*	.187**	.108	.318***	-.037	.243***	1						
8. Culture x Age	.018	-.054	.018	-.008	-.009	.013	-.171*	1					
9. Culture x Education	.012	.178**	.157*	.118	-.156*	.050	-.072	.064	1				
<i>Control variables</i>													
10. Experience	-.093	-.004	.004	-.035	.005	.004	-.068	.055	-.095	1			

11. Industry	.047	-.092	-.087	-.012	.011	.019	-.072	-.013	-.017	.104	1		
12. Position	-.004	-.032	-.085	-.048	.071	.072	-.082	.094	-.079	.363***	-.070	1	
13. Salary	-.035	.040	-.002	-.090	.009	-.034	-.108	.013	-.028	.412***	-.169*	.605***	1

*p<0.05, **p<0.01, ***p<0.001

7.2.3.2. Regression analysis

To further examine the moderating role of culture on the relationship between personal attributes, involving personality traits and demographic characteristics, and employees' propensity to fraud, multiple regression has been applied. In Table 7.21, the results of regression analysis between the independent variables, the control variables, and fraudulent behavior; the dependent variable, are being presented.

Table 7.21 Personal attributes (IVs) as determinants of and fraudulent behavior (DV) controlled by culture

	Unstand. coefficients		Stand. coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
Culture x Conscientiousness	.056	.127	.437	.417	2.396
Culture x Agreeableness	.095	.134	.711	.486	2.059
Culture x Extraversion	-.255	.110	-2.326*	.587	1.703
Culture x Neuroticism	.041	.081	.508	.513	1.949
Culture x Openness	.631	.118	5.329***	.577	1.733
Culture x Gender	.143	.113	.089	.836	1.197
Culture x Age	.028	.050	.036	.944	1.060
Culture x Education	-.004	.071	-.004	.927	1.078
Experience	-.098	.198	-.115	.772	1.296
Industry	.009	.061	.069	.910	1.099
Position	-.016	.009	-.014	.582	1.717
Salary	.044	.092	.038	.547	1.829

*p<0.05, **p<0.01, ***p<0.001

An examination of the coefficients among variables above, reveals some very high interrelationships. In specific, the interrelationships between culture and the relationship between openness and employees' propensity to fraud is extremely highly significant at the 0.001 confidence level. In addition, culture is found to intervene significantly in the relationship between extraversion and fraudulent behavior at the 0.05 confidence level.

That being the case, in Hypothesis 3 it was proposed that organizational culture intervenes in the relationship between personal attributes and employees' propensity to commit or engage in fraud. The study's results corroborated in part this hypothesis, as culture significantly affected only the relationships between extraversion and openness with fraudulent behavior. Hence, the results of this hypothesis are presented in Table 7.22.

Table 7.22 Hypotheses 4 results

Independent variable	Dependent variable	Expected impact	Observed impact	Significance	Result
Culture	Conscientiousness & Fraudulent Behavior	+	+	No	Rejection
Culture	Agreeableness & Fraudulent Behavior	+	+	No	Rejection
Culture	Extraversion & Fraudulent Behavior	-	-	Yes	Corroboration
Culture	Neuroticism & Fraudulent Behavior	-	+	No	Rejection
Culture	Openness & Fraudulent Behavior	+	+	Yes	Corroboration
Culture	Gender & Fraudulent Behavior	-	+	No	Rejection
Culture	Age & Fraudulent Behavior	-	+	No	Rejection

Culture	Education & Fraudulent Behavior	-	-	No	Rejection
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7.2.3.3. Model assessment

To evaluate this model, the values of R^2 , and ANOVA are being considered. Given that R^2 is 0.191, similar to other studies (Holtbrugge et al., 2015), and that ANOVA value is statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough. Tables 7.23 and 7.24 present the model summary and ANOVA test.

Table 7.23 Model summary

R	R^2	Adj. R^2	Std. Error	R^2 Change	F Change	df1	df2	Sig. F Change
.436	.191	.142	.754	.191	3.942	12	201	.000

Table 7.24 ANOVA test

	Sum of squares	df	Mean square	F	Sig.
Regression	26.925	12	2.244	3.942	.000
Residual	114.411	201	.569		
Total	141.336	213			

In addition, to check the existence of multicollinearity among variables, Tolerance and Variance inflation factor (VIF) values were examined. Tolerance value depicts how much of the variability of a specific independent variable is not explained by any other independent variable in the model; all variables' tolerance value is more than 0.10 (Pallant, 2016). In the same line, the other value provided by VIF; the inverse of the tolerance value, is less than 10 (Pallant, 2016). Hence, no issue of multicollinearity is presented among this model variables.

7.2.3.4. Summary

Further analyzing the results presented in Table 23 above, the following conclusions can be extracted:

1. There is a significant positive ($p < 0.001$) impact of culture on the relationship between openness to experience and employees' propensity to commit or engage in fraudulent acts. In specific, according to this study's results, the existence of an ethical organizational culture seems to further affect an employee who is open-minded, creative, and analytical in order not to commit fraud.

2. There is a significant negative ($p < 0.01$) impact of culture on the relationship between extraversion and employees' propensity to commit or engage in fraudulent acts. This means that, the existence of an ethical organizational culture affects an employee who is sociable, talkative, and person-oriented, in order not to commit fraud.

3. There is a positive impact of culture on the relationship between conscientiousness and employees' propensity to commit or engage in fraudulent acts. However, this impact is not considered significant enough ($p < 0.05$), to conclude that the existence of an ethical organizational culture further enhances the conscientious employee's aversion to fraud.

4. There is a positive impact of culture on the relationship between agreeableness and employees' propensity to commit or engage in fraudulent acts. However, this impact is not significant enough ($p < 0.05$), and in turn it cannot be concluded that the existence of an ethical organizational culture further enhances the conscientious employee's aversion to fraud.

5. There is a positive impact of culture on the relationship between neuroticism and on employees' propensity to commit or engage in fraudulent acts. However, this impact is not considered significant enough ($p < 0.05$).

6. There is a positive impact of culture on the relationships between gender and age with employees' propensity to commit or engage in fraudulent acts. However, these impacts are not considered significant enough ($p < 0.05$).

7. There is a negative impact of culture on the relationship between education and employees' propensity to commit or engage in fraudulent act. However, this impact is not considered significant enough ($p < 0.05$).

7.3. Additional analyses

According to the results of this study and testing the research hypotheses, it was concluded that the possible fraud perpetrator is characterized as unconscientious, disagreeable, extrovert, and close to experience. Also, the existence of an ethical culture within a company was found to be of considerable significance as a means of fraud prevention and deterrence. However, the results of this study have explored the impact of personal attributes, involving personality traits and demographic characteristics, and organizational conditions on employees' fraud propensity separately. Hence, it still remains these factors to be examined simultaneously in a model in order to shed light in all aspects of fraud and not leave a lacuna in the examination of fraud.

In addition, even though the identification of the profile of a possible fraud perpetrator is important, it still remains of great importance the identification of the particular profile related to each fraud type. In other words, the identification of the particular personal characteristics that affect an employee to commit financial statement fraud, be corrupted, and misappropriate company's assets. Therefore, in the following two sections the results of these additional analyses are being presented.

7.3.1. Simultaneous analysis of culture and personal attributes

In this section, it is presented the results of the data analysis regarding the impact of culture and personal attributes simultaneously on employees' propensity to commit or engage in fraud.

To examine the interrelationship among independent and dependent variables, multiple regression has been applied. In Table 7.25, the results of regression analysis between the independent variables referring to the personal attributes variables; personality traits, demographic characteristics, and culture, the control variables, and fraudulent behavior; the dependent variable, are being presented.

Table 7.25 Personal attributes and culture (IVs) as determinants of fraudulent behavior (DV), when examined simultaneously

	Unstandardized coefficients		Standardized coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
Conscientiousness	-.321	.122	-.196**	.606	1.650
Agreeableness	-.236	.123	-.137	.649	1.541
Extraversion	.206	.107	.138	.659	1.519
Neuroticism	-.105	.082	-.094	.615	1.627
Openness	-.367	.111	-.237***	.651	1.537
Gender	-.220	.104	-.134	.828	1.208
Age	-.030	.071	-.035	.507	1.974
Education	-.040	.068	-.034	.946	1.057
Culture	-.249	.051	-.316***	.784	1.275
Experience	-.093	.065	-.109	.560	1.785
Industry	.002	.008	.018	.914	1.094
Position	.129	.085	.116	.564	1.772
Salary	-.059	.094	-.052	.501	1.996

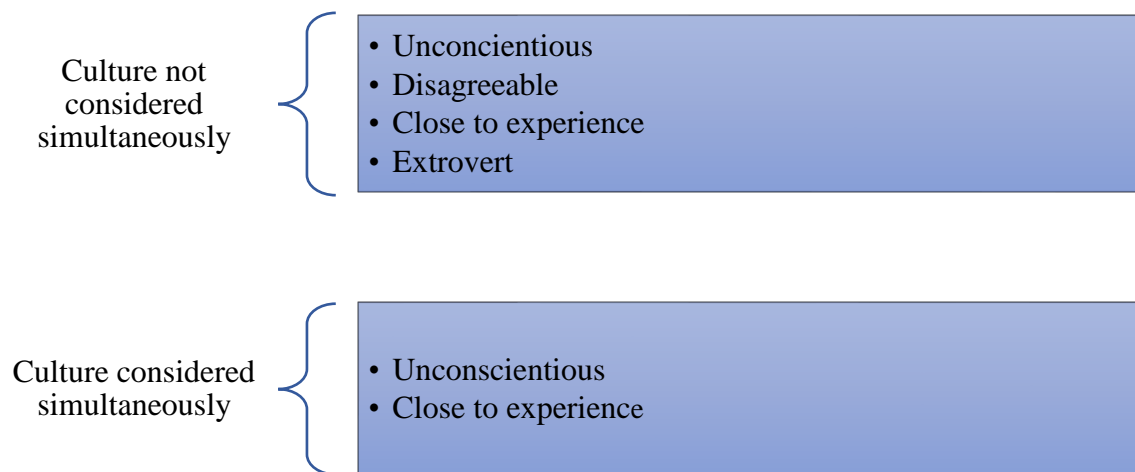
*p<0.05, **p<0.01, ***p<0.001

An examination of the coefficients among variables above, reveals very high interrelationship between some independent variables and fraudulent behavior. In specific, the interrelationships between conscientiousness and employees' propensity to fraud is highly significant at the 0.01 confidence level. In addition, openness to experience is extremely highly significant related to fraudulent behavior at the 0.001 confidence level. Other than these, gender is related to fraudulent behavior significantly at the 0.05 confidence level, whistle the other personality traits and demographic characteristics are not considered significant enough

($p < 0.05$). Finally, culture is found to be extremely highly significant at the 0.001 confidence level.

That being the case, it seems that not all personal characteristics identified in previous analyses remained stable in this analysis. In particular, although extraversion and agreeableness were found significant factors when the effect of personal attributes was controlled separately from culture, these traits were not found significant enough in this model when culture was included. On the other hand, conscientiousness and openness to experience remained stable, proving their robustness. Therefore, the personality traits that characterize a possible fraudster when personal attributes and organizational culture are being explored simultaneously are depicted in Figure 7.12.

Figure 7.12 Personality profile of possible fraudster



To evaluate this model, the values of R^2 , and ANOVA are being considered. Given that R^2 is 0.332, better than other studies (Holtbrugge et al., 2015; Lee et al., 2005; de Vries and Van Gelder, 2015; Kalshoven et al., 2011), and that ANOVA value is statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough. Tables 7.26 and 7.27 present the model summary and ANOVA test.

Table 7.26 Model summary

R	R²	Adj. R²	Std. Error	R² Change	F Change	df1	df2	Sig. F Change
.577	.332	.289	.687	.332	7.662	13	200	.000

Table 7.27 ANOVA test

	Sum of squares	df	Mean square	F	Sig.
Regression	46.986	13	3.614	7.662	.000
Residual	94.349	200	.472		
Total	141.336	213			

In addition, to check the existence of multicollinearity among variables, Tolerance and Variance inflation factor (VIF) values were examined. Tolerance value depicts how much of the variability of a specific independent variable is not explained by any other independent variable in the model; all variables' tolerance value is more than 0.10 (Pallant, 2016). In the same line, the other value provided by VIF; the inverse of the tolerance value, is less than 10 (Pallant, 2016). Hence, no issue of multicollinearity is presented among this model variables.

7.3.2. Corrupted employee's profile

Other than examining the characteristics of a possible fraud perpetrator, in this section, it is presented the results of the data analysis regarding the impact of culture and personal attributes simultaneously on employees' propensity to be corruption.

To examine the interrelationships among independent and dependent variables, multiple regression has been applied. In Table 7.28, the results of regression analysis between the independent variables referring to the personal attributes variables; personality traits, demographic characteristics, and culture, the control variables, and propensity to corruption; the dependent variable, are being presented.

Table 7.28 Personal attributes and culture (IVs) as determinants of employees' propensity to corruption (DV)

	Unstandardized coefficients		Standardized coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
Conscientiousness	-.186	.170	-.089	.606	1.650
Agreeableness	-.326	.172	-.148	.649	1.541
Extraversion	.353	.149	.185*	.659	1.519
Neuroticism	-.077	.114	-.054	.615	1.627
Openness	-.212	.154	-.107	.651	1.537
Gender	-.279	.145	-.133	.828	1.208
Age	.004	.098	.004	.507	1.974
Education	-.020	.095	-.013	.946	1.057
Culture	-.308	.072	-.306***	.784	1.275
Experience	-.078	.091	-.072	.560	1.785
Industry	.003	.011	.020	.914	1.094
Position	.177	.119	.125	.564	1.772
Salary	-.156	.131	-.106	.501	1.996

*p<0.05, **p<0.01, ***p<0.001

An examination of the coefficients among variables above, reveals only few interrelationships between independent variables and propensity to corruption. In specific, regarding the personality traits, only the interrelationships between extraversion and employees' propensity to corruption is highly significant at the 0.05 confidence level. However, all other variables referring to personal attributes; conscientiousness, agreeableness, neuroticism, openness, gender, age, and education, are not significantly related to corrupting behavior. Other than these, culture is found to be extremely highly significant at the 0.001

confidence level, providing additional evidence that within an ethical working environment, employees are less eager to be corrupted.

That being the case, it seems that not all personal characteristics identified in previous analyses are similar. In particular, although conscientiousness and openness to experience were found significant factors when culture and personal attributes were examined simultaneously for their impact on employees' propensity to fraud, in this additional analysis regarding the factors affecting employees' propensity to corruption, they were not found significant enough ($p < 0.05$). On the other hand, extraversion was found to have a positive effect on employees' tendency to corruption, providing evidence that an employee who is sociable, talkative, and group-dependent, is more eager to be corrupted.

To evaluate this model, the values of R^2 , and ANOVA are being considered. Given that R^2 is 0.452, better than other similar studies (Holtbrugge et al., 2015; Lee et al., 2005; de Vries and Van Gelder, 2015; Kalshoven et al., 2011) and that ANOVA value is statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough. Tables 7.29 and 7.30 present the model summary and ANOVA test.

Table 7.29 Model summary

R	R²	Adj. R²	Std. Error	R² Change	F Change	df1	df2	Sig. F Change
.452	.205	.153	.958	.205	3.960	13	200	.000

Table 7.30 ANOVA test

	Sum of squares	df	Mean square	F	Sig.
Regression	47.254	13	3.635	3.960	.000
Residual	183.592	200	.918		
Total	141.336	213			

In addition, to check the existence of multicollinearity among variables, Tolerance and Variance inflation factor (VIF) values were examined. Tolerance value depicts how much of the variability of a specific independent variable is not explained by any other independent variable in the model; all variables' tolerance value is more than 0.10 (Pallant, 2016). In the same line, the other value provided by VIF; the inverse of the tolerance value, is less than 10 (Pallant, 2016). Hence, no issue of multicollinearity is presented among this model variables.

7.3.3. Financial statement fraudster's profile

Other than examining the characteristics of a possible fraud perpetrator, and the profile of a corrupted employee, in this section, it is presented the results of the data analysis regarding the impact of culture and personal attributes simultaneously on employees' propensity to commit financial statement fraud, the most disastrous type of fraud (Bekiaris and Papachristou, 2017).

To examine the interrelationships among independent and dependent variables, multiple regression has been applied. In Table 7.31, the results of regression analysis between the independent variables referring to the personal attributes variables; personality traits, demographic characteristics, and culture, the control variables, and propensity to financial statement fraud; the dependent variable, are being presented.

Table 7.31 Personal attributes and culture (IVs) as determinants of employees' propensity to financial statement fraud (DV)

	Unstandardized coefficients		Standardized coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
Conscientiousness	-.367	.150	-.194*	.606	1.650
Agreeableness	-.194	.152	-.098	.649	1.541
Extraversion	.212	.132	.123	.659	1.519
Neuroticism	-.112	.101	-.087	.615	1.627
Openness	-.431	.137	-.242**	.651	1.537

Gender	-.175	.129	-.092	.828	1.208
Age	-.053	.087	-.053	.507	1.974
Education	-.015	.084	-.012	.946	1.057
Culture	-.202	.063	-.223**	.784	1.275
Experience	-.100	.081	-.102	.560	1.785
Industry	-.001	.010	-.006	.914	1.094
Position	.174	.105	.136	.564	1.772
Salary	-.109	.116	-.082	.501	1.996

*p<0.05, **p<0.01, ***p<0.001

An examination of the coefficients among variables above, reveals some interrelationships between independent variables and employees' propensity to financial statement fraud. In specific, regarding the personality traits, the interrelationship between openness to experience and employees' propensity to financial statement fraud is highly significant at the 0.01 confidence level. In addition, the interrelationship between conscientiousness and employees' propensity to financial statement fraud is also highly significant at the 0.05 confidence level. However, all other variables referring to personal attributes; agreeableness, neuroticism, extraversion, gender, age, and education, are not significantly related to tendency to financial statement fraud. Other than these, culture is found to be highly significant at the 0.01 confidence level, providing additional evidence that within an ethical working environment, employees are less eager to commit financial statement fraud.

That being the case, it seems that not all personal characteristics identified in previous analyses are similar. In particular, although extraversion was found a significant factor affecting employees' propensity to corruption, the effect of this trait was not found significant enough ($p < 0.05$) regarding employees' propensity to financial statement fraud. However, conscientiousness and openness to experience, as in case of their relationship to fraud propensity even though not in so high significance, were found significant enough factors in employees' tendency to financial statement fraud.

To evaluate this model, the values of R^2 , and ANOVA are being considered. Given that R^2 is 0.235, close to other similar studies (Holtbrugge et al., 2015; Lee et al., 2005; de Vries

and Van Gelder, 2015; Kalshoven et al., 2011) and that ANOVA value is statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough. Tables 7.32 and 7.33 present the model summary and ANOVA test.

Table 7.32 Model summary

R	R²	Adj. R²	Std. Error	R² Change	F Change	df1	df2	Sig. F Change
.485	.235	.186	.849	.235	4.733	13	200	.000

Table 7.33 ANOVA test

	Sum of squares	df	Mean square	F	Sig.
Regression	44.313	13	3.409	4.733	.000
Residual	144.029	200	.720		
Total	141.336	213			

In addition, to check the existence of multicollinearity among variables, Tolerance and Variance inflation factor (VIF) values were examined. Tolerance value depicts how much of the variability of a specific independent variable is not explained by any other independent variable in the model; all variables' tolerance value is more than 0.10 (Pallant, 2016). In the same line, the other value provided by VIF; the inverse of the tolerance value, is less than 10 (Pallant, 2016). Hence, no issue of multicollinearity is presented among this model variables.

7.3.4. Profile of an employee eager to commit asset misappropriation

Other than examining the characteristics of a possible fraud perpetrator, the profile of a corrupted employee, and the profile of a possible financial statement fraudster, in this section, it is presented the results of the data analysis regarding the impact of culture and personal attributes simultaneously on employees' propensity to commit asset misappropriation, the most frequent type of fraud (Bekiaris and Papachristou, 2017)

To examine the interrelationships among independent and dependent variables, multiple regression has been applied. In Table 7.34, the results of regression analysis between the independent variables referring to the personal attributes variables; personality traits, demographic characteristics, and culture, the control variables, and propensity to asset misappropriation; the dependent variable, are being presented.

Table 7.34 Personal attributes and culture (IVs) as determinants of employees' propensity to asset misappropriation (DV)

	Unstandardized coefficients		Standardized coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
Conscientiousness	-.399	.132	-.220**	.606	1.650
Agreeableness	-.168	.134	-.088	.649	1.541
Extraversion	.036	.116	.022	.659	1.519
Neuroticism	-.116	.089	-.094	.615	1.627
Openness	-.475	.120	-.278***	.651	1.537
Gender	-.202	.113	-.111	.828	1.208
Age	-.070	.077	-.072	.507	1.974
Education	-.105	.074	-.082	.946	1.057
Culture	-.224	.056	-.257***	.784	1.275
Experience	-.091	.071	-.097	.560	1.785
Industry	.006	.009	.042	.914	1.094
Position	.047	.093	.039	.564	1.772
Salary	.092	.102	.073	.501	1.996

*p<0.05, **p<0.01, ***p<0.001

An examination of the coefficients among variables above, reveals some interrelationships between independent variables and employees' propensity to asset misappropriation. In specific, regarding the personality traits, the interrelationship between openness to experience and employees' propensity to financial statement fraud is extremely highly significant at the 0.001 confidence level. In addition, the interrelationship between conscientiousness and employees' propensity to financial statement fraud is also highly significant at the 0.01 confidence level. However, all other variables referring to personal attributes; agreeableness, neuroticism, extraversion, gender, age, and education, are not significantly related to tendency to financial statement fraud. Other than these, culture is found to be extremely highly significant at the 0.001 confidence level, providing additional evidence that within an ethical working environment, employees are less eager to commit asset misappropriation.

That being the case, similar to the profile of a fraudster and the profile of a financial statement fraudster, conscientiousness and openness to experience, were found significant enough factors in employees' tendency to commit asset misappropriation. Thus, extraversion that was found to be a significant impact factor in case of employees' propensity to corruption, is not considered significant enough ($p < 0.05$) also in this type of fraud.

To evaluate this model, the values of R^2 , and ANOVA are being considered. Given that R^2 is 0.355, close to or better than other similar studies (Holtbrugge et al., 2015; Lee et al., 2005; de Vries and Van Gelder, 2015; Kalshoven et al., 2011), and that ANOVA value is statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough. Tables 7.35 and 7.36 present the model summary and ANOVA test.

Table 7.35 Model summary

R	R²	Adj. R²	Std. Error	R² Change	F Change	df1	df2	Sig. F Change
.596	.355	.313	.747	.355	8.462	13	200	.000

Table 7.36 ANOVA test

	Sum of squares	df	Mean square	F	Sig.
Regression	61.402	13	4.723	8.462	.000
Residual	111.630	200	.558		
Total	141.336	213			

In addition, to check the existence of multicollinearity among variables, Tolerance and Variance inflation factor (VIF) values were examined. Tolerance value depicts how much of the variability of a specific independent variable is not explained by any other independent variable in the model; all variables' tolerance value is more than 0.10 (Pallant, 2016). In the same line, the other value provided by VIF; the inverse of the tolerance value, is less than 10 (Pallant, 2016). Hence, no issue of multicollinearity is presented among this model variables.

7.3.5. Summary of additional analyses

Further analyzing the results presented in Tables 27, 30, 33, and 36 above, the following conclusions can be extracted:

1. When the effects of demographic characteristics and personality traits on employees' propensity to commit fraud is examined simultaneously with the impact of culture, the personality profile of a possible fraud perpetrator is different than that identified previously, when only the effects of personal attributes were investigated. Although the initial fraudster's profile identified conscientiousness, agreeableness, openness, and extraversion as significant factors, the additional analysis and simultaneous inclusion of culture in the research model, identified only conscientiousness and openness as significant facts that affect one's behavior.

2. The analysis of an employee's profile in view of his tendency to be corrupted, revealed that extraversion has a significant positive ($p < 0.05$) effect on an employee's behavior. In specific, an employee who is talkative, sociable, and group-dependent, is more likely to be corrupted.

3. The analysis of an employee's profile in view of his tendency to commit financial statement fraud, revealed that conscientiousness and openness are negatively related to this particular tendency to this type of fraud. Although being unconscientious and close to

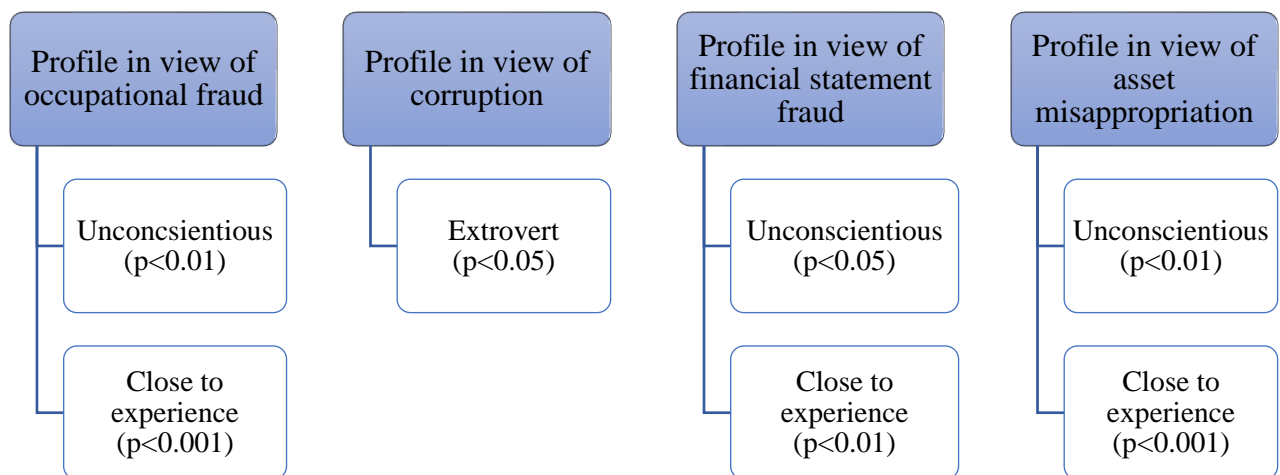
experience were also identified as traits that characterized a fraudster, their significance in this case is not so high.

4. The analysis of an employee’s profile in view of his tendency to commit asset misappropriation, revealed that conscientiousness and openness are negatively related to this particular tendency to this type of fraud. The significance of these traits is identical to that identified in case of fraud analysis, revealing that as expected, most of the people are likely to commit this type of fraud.

5. In all additional analyses, the existence of an ethical organizational culture was significantly negatively related to employees’ propensity to commit any type of occupational fraud.

6. The possible profiles of a fraud perpetrator, in view of each particular type of fraud, when the impact of personal attributes on employees’ behavior is examined simultaneously with the effect of culture, are depicted in Figure 7.13.

Figure 7.13 Profiles of fraud perpetrator in view of each type of occupational fraud



7.4 Summary of chapter 7

In this chapter of the study, the results of the thesis were presented and explained in detail. The next chapter (chapter 8) presents the main findings and contribution of this thesis, discusses its limitations, and offers some recommendations for future research.

8. Conclusion

Since the beginning of the 21st century, high-profile corporate failures have shaken the business world all over the world. Large firms, previously characterized as dominant in their area, collapsed and many of them got bankrupt; among them Enron, WorldCom, Satyam, and Parmalat are the most well-known corporate scandals. Hence, the interest among academics and accounting professionals about fraud research was increased, and forensic accounting became quickly an emerging and challenging area of research.

Even though regulation was issued in the aftermath of the corporate failures to strengthen firms' internal controls, and in turn eliminate the opportunities for fraud, still corporate scandals revealed, such as the Bernard Madoff case, Lehman Brothers, and Siemens. That being the case, another critical aspect of fraud prevention was disclosed. As Ramamoorti (2008) argued "it is human beings who commit fraud" and in turn the corporate governance rules that have been developed, and the new professional paths that have been identified and created to prevent, detect, and reduce fraud incidents cannot legislate individuals' personality and ethics. Hence, it is important to delve into the psychology of individuals to understand the inner motives that lead them to commit fraudulent acts (Harrison et al., 2018).

Although personality was not considered to be a significant factor affecting white-collar crimes (Sutherland, 1940; Blickle et al., 2006), recent studies revealed its importance (Trompeter et al., 2013; Holtbrugge et al., 2015) by providing empirical evidence that personality matters in economic crimes. To date, research has been focused on the examination of the impact of organizational conditions and in particular of corporate governance structure on individuals' fraudulent behavior, leaving a lacuna in the study of the inner forces that might affect an individual in decision-making and lead him to unethical and fraudulent acts (Kish-Gephart et al., 2010; Ragatz and Fremouw, 2010; Mele et al., 2017).

However, other than the examination of personality traits that may lead an individual to commit fraud, it still remains unexplored how the conditions existing in a firm that guide compliance with ethical expectations influence one's behavior. Firms are social entities and, in such entities, employees interact and behave in accordance with rules, codes, and norms (Solomon, 2004). Hence, it is impossible for a company to exist and operate without employees, and thus, the firm's ethical environment determines an individual's virtues and vice

versa (Solomon, 1992), making ethical organizational culture an integral part of fraud prevention and detection (Ramamoorti, 2008).

Based on these considerations, the current thesis aims at helping management to increase the likelihood of preventing fraudulent acts within a firm, by addressing the issue of “why employees do bad things”. Moreover, this study aims at helping forensic accountants, fraud examiners, and auditors to detect fraud. In order to achieve this, this study explores what motivates employees to commit or engage in fraudulent acts, trying in this way, to identify the possible profile of a fraud perpetrator. In particular, it investigates the impact of an employee’s personal attributes, including personality traits and demographic characteristics, on his propensity to commit fraud. Other than this, it is also explored how the existence of an organizational (un) ethical context may affect an employee’s propensity to fraud. Moreover, this study also examines the moderating role of organizational conditions on the relationship between employees’ attributes and their tendency to commit or engage in fraud, in order to be developed a complete profile of the possible fraudster.

Therefore, to achieve its objectives, this thesis sought to answer the following research questions.

- Question 1: What are the personality traits that affect an employee’s propensity to commit or engage in a fraudulent act in the workplace?
- Question 2: What are the demographic characteristics that affect an employee’s propensity to commit or engage in a fraudulent act in the workplace?
- Question 3: What are the organizational conditions that motivate or avert an employee to commit or engage in a fraudulent act in the workplace?
- Question 4: How the organization context intervenes in the relationship between personal attributes and an employee’s behavior?

To address these issues, deductive and quantitative research methodology has been applied. The research has followed four stages of analysis; each one is discussed in the subsequent sections of this chapter.

8.1. First stage of the study

In the first stage of the research, the impact of personality traits and demographic characteristics of employees on their intention to commit or engage in fraudulent acts was

explored. To assess personality traits, the Big-Five Inventory (BFI) model was applied (John et al., 1991; John et al., 2008). This model was adopted instead of others; e.g. the Dark triad or HEXACO, as it has been proved to be a reliable and valid method of assessing an individual's personality across different cultures and industries (Furnham, 1996; Taggar and Parkinson, 2007; Arterberry et al., 2014). In specific, by using 44 statements, 16 of which were inverted to reduce acquiescence response bias, employees' levels of conscientiousness, agreeableness, extraversion, neuroticism, and openness to experience were assessed.

Moreover, in this stage, among numerous demographic characteristics, by studying prior literature and based on the theoretical framework of social cognitive theory, gender, age, and level of education, were selected to be included in this research. Although these characteristics were identified as the most researched individual factors in behavioral ethics (O' Fallon and Butterfield, 2005; Craft, 2013), still the results provided are contradictory in the view of their impact on one's behavior.

Other than these, in the first stage of the research, the control variables of the research models were selected. According to prior literature and the theoretical framework of social cognitive theory, four variables were chosen among others to be the background variables that would be controlled for their possible impact on this study's models; experience, position, industry, and annual salary.

Finally, in this stage the ethical dilemmas that would be used to assess an employee's propensity to commit fraud were developed. In specific, based on the three types of occupational fraud; asset misappropriation, corruption, and financial statement fraud, three relative ethical vignettes were created. The use of experimental vignette methodology was selected instead of other behavioral measures; e.g. the six-item scale of Umphress et al. (2010), as it is considered to be a reliable means of identifying one's behavior and exploring the reasons that lead him to specific acts (Loo, 2002).

For the multiple-item scale in this study, the participants rated each item using a five-point Likert scale, where 1 = disagree strongly and 5 = agree strongly. For ethical dilemmas, the participants rated their propensity to engage in each of the three provided vignettes using a four-point Likert scale, where 1 = not at all and 4 = to a great extent, and their final propensity score was calculated as the average of the three scores.

The research was conducted in Greece and the sample was 214 employees working in firms in the private sector. Given that the value of R^2 in this model was 0.254, better than

other studies (Holtbrugge et al., 2015; Lee et al., 2005; Kalshoven et al., 2011), and that ANOVA value was found to be statistically highly significant (Sig.=.000; this means $p < 0.01$), it is concluded that the results of this model were respectable and adequate enough.

In detail, the results of this model showed that there was a significant negative ($p < 0.01$) impact of conscientiousness, agreeableness ($p < 0.01$), and openness to experience ($p < 0.001$) on employees' propensity to fraud, while on the other hand, extraversion was a positively related trait ($p < 0.05$). In other words, an employee who is characterized as unconscientious; e.g. careless, unreliable, disagreeable; e.g. cynical, rude, close to experience; e.g. narrow-minded, conventional, and extrovert; talkative, sociable, was found to be a typical example of a possible fraud perpetrator. Moreover, none of the demographic and control variables were found to have a significant enough ($p < 0.05$) on employees' fraudulent behavior.

The results of this model are different than previous similar study that was conducted by Turner (2014). Contrary to the results of the current study, Turner's research concluded that only agreeableness ($p < 0.001$) and conscientiousness ($p < 0.01$) are significant negatively related to fraudulent behavior. However, Turner's study was conducted in Germany and accounting undergraduate students were used as participants. Hence, these two factors may be the reasons for these differences between the two studies.

8.2. Second stage of the study

In the second stage of the research, the impact of organizational culture on employees' intention to commit or engage in fraudulent acts was explored. To assess the existence of an (un) ethical culture within a company, the 32-item Corporate Ethical Virtues (CEV) scale was applied (DeBode et al., 2013). This scale is a shortened version of the Kaptein's (2008) original CEV-58 Model and has received evidence of validity and reliability (Huhtala et al., 2018). The Cronbach's α of the scale was 0.972, providing strong evidence of its reliability for this study.

In specific, by using 32 items, the organization's levels of clarity, congruency of supervisors, congruency of management, feasibility, supportability, transparency, discussability, and sanctionability were assessed. This scale was adopted for evaluating a firm's ethical culture, contrary to other scales; e.g. Quinn and Spreitzer's (1991) framework, as this model has been found to be a reliable means in assessing organizational culture across different countries and industries (Kangas et al., 2017; Huhtala et al., 2015). Moreover, to assess an employee's propensity to fraud, the same ethical vignettes have been used as in the first model.

For the multiple-item scale in this model, the participants rated each item using a six-point Likert scale, where 1 = disagree strongly and 6 = agree strongly. For ethical dilemmas, the participants rated their propensity to engage in each of the three provided vignettes using a four-point Likert scale, where 1 = not at all and 4 = to a great extent, and their final propensity score was calculated as the average of the three scores.

The research was conducted in Greece and the sample was 214 employees working in firms in the private sector. Given that the value of R^2 in this model was 0.199, close to or better than other similar studies (Kaptein, 2011; Riivari et al., 2012), and that ANOVA value was found to be statistically highly significant (Sig.=.000; this means $p < 0.01$), it is concluded that the results of this model were respectable and adequate enough.

In addition, taking into account that culture was found to affect negatively ($p < 0.001$) employees' propensity to fraud, and in turn employees working within an ethical environment avert fraudulent acts, further analysis was applied in this stage of the research. In specific, which of the eight sub-dimensions of organizational culture affect significantly fraudulent behavior was explored. Hence, in this second model the impact of clarity, congruency of supervisors, congruency of management, feasibility, supportability, transparency, discussability, and sanctionability, on employees' propensity to commit or engage in fraud was investigated.

Given that the value of R^2 in this model was 0.313, better than other similar studies (de Vries and Van Gelder, 2015), and that ANOVA value was found to be statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that also the results of this second model are respectable and adequate enough.

In detail, the results of this model showed that among the sub-dimensions of organizational culture, congruency of management ($p < 0.001$), feasibility ($p < 0.01$), and transparency ($p < 0.05$), negatively affect employees' propensity to fraud. Moreover, none of the control variables; experience, position, industry, and annual salary, were found to have a significant enough ($p < 0.05$) on employees' fraudulent behavior in both models applied during the second stage of the study.

8.3. Third stage of the study

In the third stage of the research, the moderating role of organizational culture on the relationship between personal attributes and employees' intention to commit or engage in fraudulent acts was explored. In other words, in this stage a research model exploring in what extent culture intervenes in the relationship between demographics and fraudulent behavior was developed; gender-behavior, age-behavior, education-behavior, and correlation between personality traits and fraudulent behavior; conscientiousness-behavior, agreeableness-behavior, extraversion-behavior, neuroticism-behavior, and openness to experience-behavior.

Given that the value of R^2 in this model was 0.191, similar to other studies (Holtbrugge et al., 2015), and that ANOVA value was found to be statistically highly significant (Sig.=.000; this means $p<0.001$), it is concluded that the results of this model are respectable and adequate enough.

In detail, the results of this model showed that culture has a significant positive ($p<0.001$) intervening role on the relationship between openness to experience and employees' propensity to commit or engage in fraudulent acts. In other words, the existence of an ethical organizational culture was found to further affect an employee who is open-minded, creative, and analytical in order not to commit fraud. Moreover, according to this research model, culture was found to intervene negatively ($p<0.01$) also on the relationship between extraversion and employees' propensity to commit or engage in fraudulent acts, providing in this way empirical evidence that the existence of an ethical organizational culture within a company affects an employee who is sociable, talkative, and person-oriented, in order not to commit fraud.

8.4. Fourth stage of the study

In the fourth stage of the study, four additional analyses were performed. The first one examined the impact of personal attributes; demographics and personality traits, and organizational culture simultaneously on employees' propensity to commit fraud. Given that the value of the R^2 in this model was 0.332, better than other studies (Holtbrugge et al., 2015; Lee et al., 2005; de Vries and Van Gelder, 2015; Kalshoven et al., 2011), and that ANOVA value was found to be statistically highly significant (Sig.=.000; this means $p<0.001$), it is concluded that the results of this model are respectable and adequate enough. That being the case, although the initial profile of a possible fraud perpetrator as found in the first stage of the research, identified conscientiousness, agreeableness, openness, and extraversion as significant

factors, the additional analysis and simultaneous inclusion of culture in the research model, identified only conscientiousness and openness as significant facts that affect one's behavior.

Moreover, even though the identification of the profile of a possible fraud perpetrator is important, it still remains of great importance the identification of the particular profile related to each fraud type. Hence, in the fourth stage of the study, the other three analyses performed, aimed at mapping the particular personal characteristics that affect an employee to commit financial statement fraud, be corrupted, and misappropriate company's assets.

To that end, in view of an employee's propensity to commit financial statement fraud, conscientiousness ($p < 0.05$) and openness to experience ($p < 0.01$) were found to be negatively related to the tendency to this particular type of fraud. Given that the value of R^2 in this model was 0.452, better than other similar studies (Holtbrugge et al., 2015; Lee et al., 2005; de Vries and Van Gelder, 2015; Kalshoven et al., 2011) and that ANOVA value was found to be statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough.

With regard to an employee's tendency to corruption, the analysis revealed that extraversion has a significant positive ($p < 0.05$) impact on an employee's behavior. Given that the value of R^2 in this model was 0.235, close to other similar studies (Holtbrugge et al., 2015; Lee et al., 2005; de Vries and Van Gelder, 2015; Kalshoven et al., 2011) and that ANOVA value was found to be statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough.

In addition, regarding an employee's propensity to commit asset misappropriation, this additional analysis revealed that conscientiousness ($p < 0.01$) and openness to experience ($p < 0.001$) are negatively related to this particular tendency to this type of fraud. Given that the value of R^2 in this model was 0.355, close to or better than other similar studies (Holtbrugge et al., 2015; Lee et al., 2005; de Vries and Van Gelder, 2015; Kalshoven et al., 2011), and that ANOVA value was found to be statistically highly significant (Sig.=.000; this means $p < 0.001$), it is concluded that the results of this model are respectable and adequate enough.

Finally, it is worth noticing that in all the additional analyses, the existence of an ethical culture within a company was significantly negatively related to employees' propensity to commit any type of occupational fraud, providing additional evidence in support of the significance of ethical organizational culture in fraud prevention and deterrence.

8.5. Discussion of research findings

Considering this thesis results provided throughout the four stages of the research, forensic accounting and psychology theoretical frameworks, and prior fraud-related and ethics-related literature, interesting conclusions could be revealed. According to the first stage analysis, the possible fraud perpetrator is characterized by unconscientiousness, disagreeableness, extraversion, and closure to experience.

With regard to conscientiousness, as hypothesized in the current study, statistically significant support was found for the view that low level of conscientiousness is associated with high propensity an employee to commit fraud, which concurred with hypothesized associations as espoused in prior literature of Turner (2014). However, other studies have found opposite results (Blickle et al., 2006), concluding that conscientiousness is positively linked to fraud. The difference in this relationship between this study's results and that of Blickle et al. (2006) could be explained by the fact that in their research, Blickle et al. (2006) studied the fraud on behalf of the company and not on behalf of the employees as in the current thesis.

In addition, regarding agreeableness, as hypothesized in the current study, low level of agreeableness is associated with high propensity an employee to commit fraud, which concurred with the results of prior literature (Alalehto, 2003; Turner, 2014). Moreover, in view of extraversion, as hypothesized in the current study, the more extrovert an employee is, the higher is the likelihood that he would commit fraud, finding that is in line with prior literature (Alalehto, 2003; Bolton et al., 2010). Furthermore, with regard to openness to experience, as hypothesized in the current study, statistically negative relation was found between this trait and an employee's intention to commit fraud. This finding is in the same line with the study of Holtbrugge et al. (2015), providing additional evidence in support of the view that an open-minded employee is less eager to commit fraud.

With regard to the second and third stage of the current thesis, it is concluded that culture plays a significant role in averting employees from fraudulent acts. Also, culture was found to partially moderate the relationship between specific personal attributes and fraudulent behavior, providing additional evidence that working within an ethical company makes employees less eager to commit fraud; similar results were provided by Holtbrugge et al. (2015) who explored the role of culture in German context. Moreover, by investigating the sub-dimensions of an ethical culture that affect behavior, this study concludes that firms should emphasize in developing an ethical culture by focusing on ethical tone at their highest levels

and especially on congruency of management to norms and law, feasibility, and transparency. In this way, Board members and managers would serve as ethical behavior role models, inspiring employees and encouraging fraud reporting.

Other than these, based on the results of additional analyses conducted during the fourth stage of the study, when culture is included in the research model, personality profile of the possible fraud perpetrator changes. In specific, although without considering simultaneously organizational culture and personal attributes the possible fraud perpetrator is characterized by unconscientiousness, disagreeableness, extraversion, and closure to experience, as presented before, when culture and personal attributes are being explored simultaneously, only the impact of conscientiousness and openness to experience remain significant. This finding could be explained by the weight of impact of culture on the other personality traits. The combined research model has been also applied only by Holtbrugge et al. (2015) who concluded that only openness to experience is significantly negatively related to fraud propensity. However, no other research has been conducted to data, and in turn the comparison is limited.

In addition, studying the profile of a fraud perpetrator with regard to each type of occupational fraud, the characteristics of an employee who is eager to be corrupted differ than those characterize an employee who is keen to commit financial statement fraud or misappropriate company's assets. In specific, although unconscientiousness and closure to experience characterize an employee who is eager to commit financial statement fraud as well as misappropriate the company's assets, in case of corruption the possible fraudster is characterized only by extraversion. This finding could be explained by the notion that an extravert person is in general characterized as being sociable and talkative, and in turn this kind of person could come closer to others, accept gifts, and be corrupted. No research has been conducted to date regarding the personality traits that affect an employee's propensity to different types of fraud, and thus the comparison of this thesis results with other studies is not possible.

Finally, with regard to the impact of gender, age, and level of employees' education, although based on social cognitive theory these factors might affect an individual's fraudulent behavior, the results of the current thesis provided different results; in all research analyses, none of these demographic characteristics was identified as being a significant factor affecting an employee's propensity to fraud. In view of gender, the findings of the current study are in line with those of Elango et al. (2010) who also support the view that gender does not affect

one's fraudulent behavior, but are contradictory to other studies that found gender to be a significant factor (Valentine and Rirrenburg, 2007; Holtbrugge et al., 2015). Moreover, regarding age, the findings of the current study are in line with those of Holtbrugge et al. (2015) who also conclude that age does not affect one's fraudulent behavior, but are contradictory to other studies that found age to be a significant factor (Valentine and Rirrenburg, 2007; Elango et al., 2010). Last but not least, with regard to education, the findings of the current study are contradictory to those provided by Hermanson et al. (2017).

To sum up, the findings of the current thesis are interesting enough and provide a basis for discussion over the profile of a possible fraud perpetrator. However, as noted before, the limited number of relevant studies, does not provide ample opportunities for further and detailed discussion

8.6. Research contribution

The current study contributed to both knowledge and practice in the area of forensic accounting and fraud examination in various ways. First of all, this research was one of a few to investigate the personality profile of a possible fraud perpetrator. The findings of this study in this area could help management focus on employees' personality traits during the recruiting and selection process and also internal auditors, forensic accountants and other professionals in this area when assessing the risk of fraud in a company. In this way, the current study sheds light on a significant fraud factor, personality profile, that was ignored so far by firms in fraud risk assessments.

Furthermore, the organizational causes that undermine and guide an employee's conformance with ethical organizational guidance, were also explored by the current thesis. In particular, it was the first time that the impact of ethical work environment on an employee's propensity to commit or engage in fraud was explored. Ethical culture was chosen instead of ethical climate to describe an ethical work environment because climate is considered to refer to the perceptions of which practices and procedures applied by a firm have an ethical content, whistle culture refers to the existing conditions within a firm that guide compliance with ethical expectations.

Other than these, the way each sub-dimension of organizational culture affects an employee's fraudulent behavior was also examined. The current study was the first to explore this aspect of fraudulent behavior and thus it added to the current body of knowledge in this

research area as well as provided additional practice guidance to management that might help them properly evaluate, encourage, and communicate an ethical organizational culture across different departments and levels within the firm.

Moreover, this thesis also examined the moderating role of culture in the relationship between personal attributes, involving personality traits and demographic characteristics, and fraudulent behavior. It was the first time that the way culture intervenes in the relationship between personal attributes and an employee's propensity to fraud was explored. Hence, in this way additional knowledge was provided in this research area.

In addition, the current thesis was one of a few that used an interdisciplinary approach to the study of fraud, by combining theories and models from accounting and psychology. In specific, this thesis developed a research model based on the meta-model of white-collar crime (Dorminey et al., 2012) and the social cognitive theory (Bandura, 1986). The application of social cognitive theory in business ethics is in its infancy with just few studies to involve personal characteristics and organizational conditions in their behavioural analyses (Holtbrugge et al., 2015; Andreoli and Lefkowitz, 2009). Therefore, this is the first study that applies social cognitive theory in the analysis of fraudulent behavior and in turn it contributes to organizational behavior and fraud literature by confirming parts of the triadic reciprocity of this theoretical framework and providing empirical evidence that this theory can be used in the prediction and prevention of fraud perpetration.

Furthermore, understanding in depth the individual-organization relationship is crucial, as studying individual attributes or organizational culture separately leaves a lacuna in the social process through which individuals' behaviors are influenced by an organizational (un) ethical culture and vice versa. In other words, a narrow focus on either employees or the organization disregards the organization's identity and psychology, with severe effects on fraud outcomes and the effectiveness of management's fraud prevention policies (Hershcovis et al., 2007; Holtbrugge et al., 2015; Davis and Pesch, 2013). Thus, by simultaneously exploring employees' personal factors and the organizational context within which they operate, this study fills in this gap providing additional knowledge and practical guidance, and also presenting how the profile of a fraud perpetrator may change when culture is present.

Finally, the current study examined the issue of fraud in a context that has hardly been explored before in prior literature. Most of prior studies in this area were focusing on large economies; e.g. Germany, the USA, whilst hardly any study explored fraud in the Greek

context. There were huge gaps in the literature in areas related to the nature and likelihood of fraud in Greece, the profile of a possible fraudster, the organizational conditions that may lead or avert an employee to commit fraud, and whether the significance of the factors that may influence one's behavior remains stable whatever type of occupational fraud is committed; corruption, asset misappropriation, and financial statement fraud. These gaps identified, were filled in and explored by the current study, as the aim of this thesis was to "map" the psychological profile of a fraud perpetrator, identify the sub-dimensions of organizational culture that influence employees' fraudulent attitudes, and explore the moderating effects of culture on the relationships between employees' personal attributes and fraudulent behavior.

8.7. Research limitations

The current study was the first to explore in an interdisciplinary way, by combining accounting and psychology theories, the causes that lead an employee to commit or engage in a fraudulent act in the Greek context. However, like any other study, the current research has some limitations. First of all, the current study pertains to the fact that the collected data may have been subject to bias as a result of respondents' possible intention to present themselves in a favorable way, regardless of their real tendencies to fraud. To eliminate this incidence, the personality test applied in this research included many reversed items and also ethical vignettes have been used to assess one's behavior, a measure that is considered to be a reliable and objective was of assessing a human's attitude.

Moreover, this research explored employees' fraud propensity and not real attitude. Even though propensity is considered to provide same results to actual behavior (Bandura, 1999; Harrison et al., 2018) in most of the cases, it still does not constitute one's real way of action but remains his thought of action. Other than these, another limitation of this study is the generalizability of its results. Although the sample size for this study is considerably adequate, the collection of data within the same cultural background might be a restricting factor in the generalizability of the results. This issue could have been reduced if the research had adopted a cross-country or cross-cultural approach; this could be an impetus for future research.

Finally, a fourth limitation is that the scarcity of studies in the area that was explored by the current thesis did not allow for a detailed discussion of the current study's findings with other research findings. There is no study in Greece with regard to the profile of a fraud

perpetrator or the way organizational culture might affect an employee's fraudulent behavior, whistle, in other countries also there is a limited number of quite similar studies. Therefore, comparison and discussion of research findings is limited.

8.8. Recommendations for future research

The current thesis identified some gaps in prior literature that warrants future research. First of all, future studies should replicate the same research ideal but in other countries to investigate the impacts of nationality and cultural diversity on the profile of a possible fraud perpetrator, and whether the personality traits affecting an employee's fraudulent behavior would differ. Moreover, future studies could examine how social conditions or political and economic instability may moderate the profile of a fraud perpetrator and whether these factors also intervene in the relationship between personal attributes and employees' behavior. Finally, given that the current thesis explores the moderating role of culture on the relationship between personal attributes and fraudulent behavior, future studies could investigate the moderating role of other factors, such internal controls framework, internal audit quality, and corporate governance quality, on this relationship.

References

- Abbott, L., Parker, S., & Peters, G. (2004). Audit committee characteristics and restatements. *Auditing: A Journal of Practice & Theory*, 23(1), 69-87.
- Agrawal, A., & Chadha, S. (2005). Corporate governance and accounting scandals. *The Journal of Law & Economics*, 48(2), 371-406.
- Agrawal, A., & Cooper, T. (2017). Corporate governance consequences of accounting scandals: Evidence from top management, CFO and auditor turnover. *Quarterly Journal of Finance*, 7(1), 1-41.
- Aguilera, R., & Jackson, G. (2003). The cross-national diversity of corporate governance: Dimensions and determinants. *The Academy of Management Review*, 28(3), 447-465.
- Aguinis, H., & Bradley, K. (2014). Best practice recommendations for designing and implementing experimental vignette methodology studies. *Organizational Research Methods*, 17(4), 351-371.
- Ahrens, A., & Cloutier, D. (2019). Acting for good reasons: Integrating virtue theory and social cognitive theory. *Social and Personality Psychology Compass*, 13, 1-12.
- Akhigbe, A., Martin, A., & Whyte, A. (2005). Contagion effects of the world's largest bankruptcy: the case of WorldCom. *The Quarterly Review of Economics and Finance*, 45, 48-64.
- Aktas, N., Croci, E., & Simsir, S. (2016). Corporate governance and takeover outcomes. *Corporate Governance: An International Review*, 24(3), 242-252.
- Alalehto, T. (2003). Economic crime: Does personality matter? *International Journal of Offender Therapy and Comparative Criminology*, 47(3), 335-355.
- Alalehto, T., & Azarian, R. (2018). When white collar criminals turn to fatal violence: The impact of narcissism and psychopathy. *Journal of Investigative Psychology and Offender Profiling*, 15, 215-226.
- Albrecht, C., Holland, D., Malagueno, R., Dolan, S., & Tzafrir, S. (2015). The role of power in financial statement fraud schemes. *Journal of Business Ethics*, 131, 803-813.

- Albrecht, W., Albrecht, C., Albrecht, C., & Zimbelman, M. (2016). *Fraud examination*. Boston: Cengage Learning.
- Albrecht, W., Howe, K., & Romney, M. (1984). *Deterring fraud: The internal auditor's perspective*. London: Altamonte Springs.
- Alexander, C., & Becker, H. (1978). The use of vignettes in survey research. *Public Opinion Quarterly*, 93-104.
- Allan, R. (2003). Fraud-the human face of fraud: understanding the suspect is vital to any investigation. *CA Magazine-Chartered Accountant*, 136(4), 39-40.
- Allport, F., & Allport, G. (1921). Personality traits: Their classification and measurement. *Journal of Abnormal and Social Psychology*, 16, 1-40.
- Andon, P., Free, C., Monroe, C., & Turner, M. (2018). The impact of financial incentives and perceptions of seriousness on whistleblowing intention. *Journal of Business Ethics*, 151, 165-178.
- Andreoli, N., & Lefkowitz, J. (2009). Individual and organizational antecedents of misconduct in organizations. *Journal of Business Ethics*, 85(3), 309-332.
- Aquino, K., Freeman, D., Reed, A., Lim, V., & Felps, W. (2009). Testing a social-cognitive model of moral behavior: The interactive influence of situations and moral identity centrality. *Journal of Personality and Social Psychology*, 97(1), 123-141.
- Archabeault, D., Dezoort, T., & Hermanson, D. (2008). Audit committee incentive compensations and accounting restatements. *Contemporary Accounting Research*, 25(4), 965-992.
- Armstrong, C., Jagolinger, A., & Larcker, D. (2010). Chief executive officer equity incentives and accounting irregularities. *Journal of Accounting Research*, 48(2), 225-271.
- Arnold, B., & de Lange, P. (2004). Enron: an examination of agency problems. *Critical Perspectives on Accounting*, 15, 751-765.
- Arterberry, B., Martens, M., Cadigan, J., & Rohrer, D. (2014). Application of generalizability theory to the Big five inventory. *Personality and Individual Differences*, 69, 98-103.

- Aschauer, E., & Quick, R. (2017). Mandatory audit firm rotation and prohibition of audit firm-provided tax services: Evidence from investment consultants' perceptions. *International Journal of Auditing*, 22, 131-149.
- Ashton, M., & Lee, K. (2005). Honesty-humility, the Big five, and the Five-factor model. *Journal of Personality*, 73(5), 1321-1354.
- Association of Certified Fraud Examiners (ACFE). (2016). *Report to the nations on occupational fraud and abuse*.
- Association of Certified Fraud Examiners (ACFE). (2018). *Report to the nations on occupational fraud and abuse*.
- Association of Certified Fraud Examiners (ACFE). (2020). *Forensic accountant*. Retrieved October 14, 2019, from <https://www.acfe.com/forensic-accountant.aspx>
- Badolato, P., Donelson, D., & Ege, M. (2014). Audit committee financial expertise and earnings management: The role of status. *Journal of Accounting and Economics*, 58(2-3), 208-230.
- Bamber, E., & Iyer, V. (2007). Auditors' identification with their clients and its effect on auditors' objectivity. *Auditing: A Journal of Practice & Theory*, 26(2), 1-24.
- Bamber, L., Jiang, J., & Wang, I. (2010). What's my style? The influence of top managers on voluntary corporate financial disclosure. *The Accounting Review*, 85(4), 1131-1162.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1991). Social cognitive theory of moral thought and action. In W. Kurtines, & J. Gewirtz, *Handbook of moral behavior and development* (Vol. 1, pp. 45-103). Hillsdale: NJ: Erlbaum.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (1999). A social cognitive theory of personality. In L. Pervin, & O. John, *Handbook of personality* (pp. 154-196). New York: Guilford Publications.
- Bandura, A. (1999). A social cognitive theory of personality. In L. Pervin, & O. John, *Handbook of personality* (2nd ed., pp. 154-196). New York: Guilford Publications.

- Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science*, 1(2), 164-180.
- Barlaup, K., Drønen, H., & Stuart, I. (2009). Restoring trust in auditing: ethical discernment and the Adelphia scandal. *Managerial Auditing Journal* , 24(2), 183-203.
- Basilico, E., Grove, H., & Patelli, L. (2012). Asia's Enron: Satyam (Sanskrit word for truth). *Journal of Forensic & Investigative Accounting*, 4(2), 142-175.
- Basioudis, I., Papakonstantinou, E., & Geiger, M. (2008). Audit fees, non-audit fees and auditor going-concern reporting decisions in the United Kingdom. *Abacus*, 44(3), 284-309.
- Baucus, M., & Near, J. (1991). Can illegal corporate behavior be predicted? An event history analysis. *Academy of Management Journal*, 34, 9-36.
- Baum, W. (1995). Radical behaviorism and the concept of agency. *Behaviorology*, 3, 93-106.
- Baumeister, R., & Heatherton, T. (1996). Self-regulation failure: An overview . *Psychological Inquiry*, 7(1), 1-15.
- Beasley, M. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review*, 71(4), 443-465.
- Beck, R. (1965). Nonparametric statistics in marketing research . *Journal of Farm Economics*, 47(5), 1520-1523.
- Bekiaris, M., & Papachristou, G. (2017). Corporate and accounting fraud: Types, causes and fraudster's business profile. *Corporate Ownership and Control* , 15, 467-475.
- Bell, T., & Carcello, J. (2000). A decision aid for assessing the likelihood of fraudulent financial reporting. *Auditing: A Journal of Practice & Theory* , 19(1), 169-184.
- Benston, G., & Hartgraves, A. (2002). Enron: what happened and what we can learn from it. *Journal of Accounting and Public Policy* , 21, 105-127.
- Berge, M., & De Raad, B. (1999). Taxonomies of situations from a trait psychological perspective. A Review. *European Journal of Personality* , 13, 337-360.
- Berger, L., Perreault, S., & Wainberg, J. (2017). Hijacking the moral imperative: How financial incentives can discourage whistleblower reporting. *Auditing: A Journal of Practice & Theory*, 36(3), 1-14.

- Berry, C., Ones, D., & Sackett, P. (2007). Interpersonal deviance, organizational deviance, and their common correlates: A review and meta-analysis. *Journal of Applied Psychology*, 92(2), 410-424.
- Bhasa, M. (2004). Global corporate governance: Debates and challenges. *Corporate Governance: An International Review*, 4(2), 5-17.
- Bhattacharjee, S., & Brown, J. (2018). The impact of management alumni affiliation and persuasion tactics on auditors' internal control judgments. *The Accounting Review*, 93(2), 97-115.
- Bierstaker, J., Brody, R., & Pacini, C. (2006). Accountants' perceptions regarding fraud detection and prevention methods. *Managerial Auditing Journal*, 21(5), 520-535.
- Blaikie, N. (2010). *Designing social research*. Cambridge: Polity Press.
- Blatt, S., & Aurbach, J. (2000). Psychoanalytic models of the mind and their contributions to personality research. *European Journal of Personality*, 14, 429-447.
- Blickle, G., Schlegel, A., Fassbender, P., & Klein, U. (2006). Some personality correlates of business white-collar crime. *Applied Psychology*, 55(2), 220-233.
- Bloomfield, R. (2008). Discussion of "annual report readability, current earnings, and earnings persistence". *Journal of Accounting and Economics*, 45(2-3), 248-252.
- Boghossian, P. (2006). Behaviorism, constructivism, and socratic pedagogy. *Educational Philosophy and Theory*, 38(6), 713-722.
- Bolton, L., Becker, L., & Barber, L. (2010). Big five trait predictors of differential counterproductive work behavior dimensions. *Personality and Individual Differences*, 49(5), 537-541.
- Bonsing, S., & Langsted, L. (2013). "Undue" gifts for public employees: An administrative and criminal law analysis. *European Journal of Crime, Law and Criminal Justice*, 163-184.
- Bourque, L., & Clark, V. (2011). *Processing data: The survey example*. Newbury Park: SAGE Publications.

- Brasel, K., Hatfield, R., Nickell, E., & Parsons, L. (2019). The effect of fraud risk assessment frequency and fraud inquiry timing on auditors' skeptical judgments and actions. *Accounting Horizons*, 33(1), 1-15.
- Brazel, J., Jones, K., & Zimbelman, M. (2009). Using nonfinancial measures to assess fraud risk. *Journal of Accounting Research*, 47(5), 1135-1166.
- Brazel, J., Jones, K., Thayer, J., & Warne, R. (2015). Understanding investor perceptions of financial statement fraud and their use of red flags: Evidence from the field. *Review of Accounting Studies*, 20, 1373-1406.
- Brink, A., Lowe, D., & Victoravich, L. (2013). The effect of evidence strength and internal rewards on intentions to report fraud in the Dodd-Frank regulatory environment. *AUDITING: A Journal of Practice & Theory*, 32(3).
- Brislin, R. (1993). *Understanding culture's influence on behavior*. Fort Worth, TX: Harcourt Brace Publishers.
- Brody, R., Haynes, C., & White, C. (2014). The impact of audit reforms on objectivity during the performance of non-audit services. *Managerial Auditing Journal*, 29(3), 222-236.
- Brody, R., Melendy, S., & Perri, F. (2012). Commentary from the American accounting association's 2011 annual meeting panel on emerging issues in fraud research. *Accounting Horizons*, 26(3), 513-531.
- Brown, V., Daugherty, B., & Persellin, J. (2014). Satyam fraud: A case study of India's Enron. *Issues in Accounting Education*, 29(3), 419-442.
- Bryman, A. (2012). *Social research methods*. Oxford: Oxford University Press.
- Buccioli, A., Landini, F., & Piovesan, M. (2013). Unethical behavior in the field: Demographic characteristics and beliefs of the cheater. *Journal of Economic Behavior & Organization*, 93, 248-257.
- Buchanan, B., & Yang, T. (2005). The benefits and costs of controlling shareholders: the rise and fall of Parmalat. *Research in International Business and Finance*, 19, 27-52.
- Burns, N., & Kedia, S. (2006). The impact of performance-base compensation on misreporting. *Journal of Financial Economics*, 79, 35-67.

- Campa, D., & Donnelly, R. (2016). Non-audit services provided to audit clients, independence of mind and independence in appearance: latest evidence from large UK listed companies. *Accounting and Business Research*, 46(4), 422-449.
- Campbell, L., Butler, J., & Raiborn, C. (2014). Minimizing fraud during a boom business cycle. *Management Accounting Quarterly*, 16(1), 1-12.
- Caprara, G., Vecchione, M., Barbaranelli, C., & Alessandri, G. (2013). Emotional stability and affective self-regulatory efficacy beliefs: Proofs of integration between trait theory and social cognitive theory. *European Journal of Personality*, 27, 145-154.
- Carpenter, T., & Reimers, J. (2005). Unethical and fraudulent financial reporting: Applying the theory of planned behavior. *Journal of Business Ethics*, 60, 115-129.
- Cattell, R. (1965). *The scientific analysis of personality*. Baltimore: Penguin.
- Ceresney, A. (2016, September 22). *U.S. Securities and Exchange Commission*. Retrieved from <https://www.sec.gov/news/speech/ceresley-enforcement-focus-on-auditors-and-auditing.html>
- Cervone, D. (1996). People who fail at self-regulation: What should we think of them, and how?. *Psychological Inquiry*, 7(1), 40-46.
- Cervone, D. (1997). Social-cognitive mechanisms and personality coherence: Self-knowledge, situational beliefs, and cross-situational coherence in perceived self-efficacy. *Psychological Science*, 8, 43-50.
- Cervone, D., & Pervin, L. (2010). *Personality. Theory and research*. Hoboken: John Wiley & Sons, Inc.
- Cervone, D., & Shoda, Y. (1999). Beyond traits in the study of personality coherence. *Current Directions in Psychological Science*, 8(1), 27-32.
- Chen, J., Cumming, D., Hou, W., & Lee, E. (2016). Does the external monitoring effect of financial analysts deter corporate fraud in China? *Journal of Business Ethics*, 134, 727-742.
- Child, J., & Rodrigues, S. (2004). Repairing the breach of trust in corporate governance. *Corporate Governance: An International Review*, 12(2), 144-152.

- Chua, W. (2019). Radical developments in accounting thought? Reflections on positivism, the impact of rankings and research diversity. *Behavioral Research in Accounting*, 31(1), 3-20.
- Church, A. (2000). Culture and personality: Toward an integrated cultural trait psychology. *Journal of Personality*, 68(4), 651-703.
- Cislak, A., Cichocka, A., Wojcik, A., & Frankowska, N. (2018). Power corrupts, but control does not: What stands behind the effects of holding high positions. *Personality and Social Psychology Bulletin*, 44(6), 944-957.
- Clark, L., & Watson, D. (1999). Temperament: An organizing paradigm for trait psychology. In O. John, R. Robins, & L. Pervin, *Handbook of personality: Theory and research* (pp. 399-423). New York: Guilford Press.
- Clements, L., & Shawver, T. (2011). Moral intensity and intentions of accounting professionals to whistleblow internally. *Journal of Forensic Studies in Accounting and Business*, 3(1), 67-82.
- Clor-Proell, S., & Kaplan, S. (2015). The impact of budget goal difficulty and promotion availability on employee fraud. *Journal of Business Ethics*, 131, 773-790.
- Coenen, T. (2005). Forensic accounting: A new twist on bean counting. *Wisconsin Law Journal*.
- Coffee, J. (2005). A theory of corporate scandals: Why the USA and Europe differ. *Oxford Review of Economic Policy*, 21(2), 198-211.
- Cohen, J., Ding, Y., Lesage, C., & Stolowy, H. (2010). Corporate fraud and managers' behavior: Evidence from the press. *Journal of Business Ethics*, 95, 271-315.
- Colman, A. (2003). Beyond rationality: Rigor without mortis in game theory. *Behavioral and Brain Sciences*, 26(2), 180-192.
- Costa, P., & McCrae, R. (1992). *Revised NEO personality inventory (NEO PI-R) and NEO Five-factor inventory (NEO-FFI)*. Odessa: Psychological Assessment Resources.
- Craft, J. (2013). A review of the empirical ethical decision-making literature: 2004-2011. *Journal of Business Ethics*, 117(2), 221-259.

- Cressey, D. (1953). *Other people's money: A study in the social psychology of embezzlement*. Belmont, CA: Wadsworth Publishing.
- Crotty, M. (1998). *The foundations of social research. Meaning and perspective in the research process*. London: SAGE Publications .
- Crowther, D., & Lancaster, G. (2009). *Research methods: A concise introduction to research in management and business consultancy*. Abingdon: Taylor & Francis.
- Crumbley, D. (2009). So what is forensic accounting? *The ABO Reporter Fall*.
- Cuervo, A. (2002). Corporate governance mechanisms: a plea for less code of good governance and more market control. *Corporate Governance, 10*(2), 84-93.
- Cuomo, F., Mallin, C., & Zattoni, A. (2016). Corporate governance codes: a review and research agenda. *Corporate Governance: An International Review, 24*(3), 222-241.
- Dastjerdi , A., Foroghi , D., & Kiani , G. (2018). Detecting manager's fraud risk using text analysis: evidence from Iran. *Journal of Applied Accounting Research , 20*(2), 154-171.
- David, S., & Hollie, D. (2008). The impact of nonaudit service fee levels on investors' perception of auditor independence. *Behavioral Research in Accounting, 20*(1), 31-44.
- Davis, C., Farrell, R., & Ogilby, S. (2010). Characteristics and skills of the forensic accountant. *American Institute of Certified Public Accountants, 11-26*.
- Davis, J., & Pesch, H. (2013). Fraud dynamics and controls in organizations. *Accounting, Organizations and Society, 38*(6-7), 469-483.
- de Vries, R., & van Gelder, J.-L. (2015). Explaining workplace delinquency: The role of honesty–humility, ethical culture, and employee surveillance. *Personality and Individual Differences, 86*, 112-116.
- DeBode, J., Armenakis, A., Feild, H., & Walker, A. (2013). Assessing ethical organizational culture: Refinement of a scale. *The Journal of Applied Behavioral Science, 49*(4), 460-484.
- Dechow, P., Larson, G., Ge, W., Larson, C., & Sloan, R. (2011). Predicting material accounting misstatements. *Contemporary Accounting Research, 28*, 17-82.
- Dellaportas, S. (2006). Making a difference with a discrete course on accounting ethics. *Journal of Business Ethics, 65*, 391-404.

- Dellaportas, S. (2013). Conversations with inmate accountants: Motivation, opportunity and the fraud triangle. *Accounting Forum*, 37, 29-39.
- Denison, D. (1996). What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. *The Academy of Management Review*, 21(3), 619-654.
- Detert, J., Treviño, L., & Sweitzer, V. (2008). Moral disengagement in ethical decision making: A study of antecedents and outcomes. *Journal of Applied Psychology*, 93(2), 374-391.
- DeVellis, R. (2012). *Scale development. Theory and applications*. North Carolina: SAGE Publishing.
- Dichev, I., Graham, J., Harvey, C., & Rajgopal, S. (2013). Earnings quality: Evidence from the field. *Journal of Accounting and Economics*, 56, 1-33.
- Digabriele, J. (2008). An empirical investigation of the relevant skills of forensic accountants. *Journal of Education for Business*, 83(6), 331-338.
- Dobler, M. (2014). Auditor-provided non-audit services in listed and private family firms . *Managerial Auditing Journal* , 29(5), 427-454.
- Domino, M., Wingreen, S., & Blanton, J. (2015). Social cognitive theory: The antecedents and effects of ethical climate fit on organizational attitudes of corporate accounting professionals—A reflection of client narcissism and fraud attitude risk. *Journal of Business Ethics*, 131(2), 453-467.
- Donelson, D., Ege, M., & McInnis, J. (2017). Internal control weaknesses and financial reporting fraud. *Auditing: A Journal of Practice & Theory*, 36(3), 45-69.
- Dong, W., Liao, S., & Zhang, Z. (2018). Leveraging financial social media data for corporate fraud detection. *Journal of Management Information Systems* , 35(2), 461-487.
- Dorminey, J., Fleming, S., Kranacher, M.-J., & Riley, R. (2012). The evolution of fraud theory. *Issues in Accounting Education*, 27(2), 555-579.
- Drew, S., & Kendrick, T. (2005). Risk management: The five pillars of corporate governance. *Journal of General Management*, 31(2), 19-36.
- Drew, S., Kelly, P., & Kendrick, T. (2006). CLASS: Five elements of corporate governance to manage strategic risk. *Business Horizons*, 49, 127-138.

- Easterby-Smith, M., Thorpe, R., & Jackson, P. (2008). *Management Research*. London: SAGE Publications.
- Efendi, J., Srivastava, A., & Swanson, E. (2007). Why do corporate managers misstate financial statements? The role of option compensation and other factors. *Journal of Financial Economics*, 85, 667-708.
- Elango, B., Paul, K., Kundu, S., & Paudel, S. (2010). Organizational ethics, individual ethics, and ethical intentions in international decision-making. *Journal of Business Ethics*, 97(4), 543-561.
- Ells, R. (1960). *The meaning of modern business: An introduction to the philosophy of large corporate enterprise*. New York: Columbia University Press.
- Engdahl, O. (2009). Economic crime as hiding behavior. *American Journal of Economics and Sociology*, 68(3), 747-773.
- Enriques, L., & Volpin, P. (2007). Corporate governance reforms in continental Europe. *Journal of Economic Perspectives*, 21(1), 117-140.
- Erickson, M., Hanlon, M., & Maydew, E. (2006). Is there a link between executive equity incentives and accounting fraud? *Journal of Accounting Research*, 44(1), 113-143.
- Ertmer, P., & Newby, T. (1993). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, 6(4), 50-72.
- Ethics Resource Center. (2010). *The importance of ethical culture: Increasing trust and driving down risks*. Arlington: Ethics Resource Center (ERC).
- Eweje, G., & Brunton, M. (2010). Ethical perceptions of business students in a New Zealand university: do gender, age and work experience matter? *Business Ethics: A European Review*, 19(1), 95-111.
- Eysenck, H. (1990). Biological dimensions of personality. In L. Pervin, *Handbook of personality: Theory and research* (pp. 244-276). New York: Guilford Press.
- Fama, E., & Jensen, M. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26(2), 301-325.

- Fang, L., Pittman, J., Zhang, Y., & Zhao, Y. (2018). Accounting standard precision, corporate governance, and accounting restatements. *Working paper*, Available at: <http://dx.doi.org/10.2139/ssrn.3125008>.
- Farber, D. (2005). Restoring trust after fraud: Does corporate governance matter? *The Accounting Review*, 80(2), 539-561.
- Fisher, C. (2010). *Researching and writing a dissertation: An essential guide for business students*. Harlow: Pearson Education Limited.
- Francis, B., Hasan, I., Park, J., & Wu, Q. (2015). Gender differences in financial reporting decision making: Evidence from accounting conservatism. *Contemporary Accounting Research*, 32(3), 1285-1318.
- Furnham, A. (1996). The big five versus the big four: the relationship between the Myers-Briggs type indicator (MBTI) and NEO-PI five factor model of personality. *Personality and Individual Differences*, 21(2), 303-307.
- Gabbioneta, C., Greenwood, R., Mazzola, P., & Minoja, M. (2013). The influence of the institutional context on corporate illegality. *Accounting, Organizations and Society*, 38(6-7), 484-504.
- Gailliot, M., Mead, N., & Baumeister, R. (2008). Self-regulation. In O. John, R. Robins, & L. Pervin, *Handbook of personality: Theory and research* (pp. 472-491). New York: Guilford Press.
- Gaither, N., & Glorfeld, L. (1985). An evaluation of the use of tests of significance in organizational behavior research. *The Academy of Management Review*, 10(4), 787-793.
- Gao, J., Greenberg, R., & Wong-On-Wing, B. (2015). Whistleblowing intentions of lower-level employees: The effect of reporting channel, bystanders, and wrongdoer power status. *Journal of Business Ethics*, 126, 85-99.
- Garcia-Blandon, J., Argilés-Bosch, J., & Ravenda, D. (2020). Audit firm tenure and audit quality: A crossEuropean study. *Journal of International Financial Management and Accounting*, 31, 35-64.

- Ghosh, D., Ghosh, D., & Zaher, A. (2011). Business, ethics, and profit: Are they compatible under corporate governance in our global economy? *Global Finance Journal*, 22(1), 72-79.
- Gibbons, J., & Chakraborti, S. (2011). *Nonparametric statistical inference*. Taylor and Francis Group, LLC .
- Gillett, P., & Uddin, N. (2005). CFO intentions of fraudulent financial reporting. *Auditing: A Journal of Practice & Theory*, 24(1), 55-75.
- Gipper , B., Hail, L., & Leuz, C. (2020). On the economics of mandatory audit partner rotation and tenure: Evidence from PCAOB data. *The Accounting Review*.
- Glancy, F., & Yadav, S. (2011). A computational model for financial reposting fraud detection. *Decision Support Systems*, 50, 595-601.
- Goldberg, L. (1971). A historical survey of personality scales and inventories. In P. McReynolds, *Advances in psychological assessment* (pp. 293-336). Palo Alto, CA: Science and Behavior Books.
- Goldberg, L. (1990). An alternative "description of personality": The Big-five factor structure. *Journal of Personality and Social Psychology*, 59(6), 1216-1229.
- Gomez, R., Gomez, A., & Cooper, A. (2002). Neuroticism and extraversion as predictors of negative and positive emotional information processing: Comparing Eysenck's, Gray's, and Newman's theories. *European Journal of Personality* , 16, 333-350.
- Gonzalez, G., & Kopp, L. (2017). The use of personality traits to predict propensity to commit fraud. *Journal of Forensic & Investigative Accounting*, 9(3), 979-1005.
- Gramzow, R., Zedikides, C., Panter, A., Sathy, V., Harris, J., & Insko, C. (2004). Patterns of self-regulation and the Big five. *European Journal of Personality*, 18, 367-385.
- Graves, J. (1973). Psychoanalytic theory - A critique. *Perspectives in psychiatric care*, 114-120.
- Greene, W. (2012). *Econometric analysis*. London: Pearson.
- Grove, H., Patelli, L., Victoravich, L., & Xu, P. (2011). Corporate governance and performance in the wake of the financial crisis: Evidence from US commercial banks. *Corporate Governance: An International Review*, 19(5), 418-436.

- Guidice, R., Alder, S., & Phelan, S. (2009). Competitive bluffing: An examination of a common practice and its relationship with performance. *Journal of Business Ethics*, 87(4), 535-553.
- Gullkvist, B., & Jokipii, A. (2013). Perceived importance of red flags across fraud types. *Critical Perspectives on Accounting*, 24, 44-61.
- Halbouni, S., Obeid, N., & Garbou, A. (2016). Corporate governance and information technology in fraud prevention and detection. Evidence from the UAE . *Managerial Auditing Journal*, 31(6/7), 589-628.
- Hamalainen, O. (2009). The relationship of the inner and the outer in psychoanalysis. *The International Journal of Psychoanalysis*, 90(6), 1277-1297.
- Hansmann, H., & Kraakman, R. (2012). Reflections on the end of history for corporate law. In A. Rasheed, & T. Yoshikawa, *The convergence of corporate governance* (pp. 32-48). London: Palgrave Macmillan.
- Harp, N., Myring, M., & Shortridge, R. (2014). Do variations in the strength of corporate governance still matter? A comparison of the pre- and post-regulation environment. *Journal of Business Ethics*, 122(3), 361-373.
- Harris, C., & Jenkins, M. (2006). Gender differences in risk assessment: Why do women take fewer risks than men? *Judgment and Decision Making*, 1(1), 48-63.
- Harris, E., Petrovits, C., & Yetman, M. (2017). Why bad things happen to good organizations: The link between governance and asset diversions in public charities. *Journal of Business Ethics*, 146, 149-166.
- Harrison, A., Summers, J., & Mennecke, B. (2018). The effects of the dark triad on unethical behavior. *Journal of Business Ethics*, 153(1), 53-77.
- Hart, O. (1995). Corporate governance: Some theory and implications. *The Economic Journal*, 105(430), 678-689.
- Hasan, N. (2016). Positivism: to what extent does it aid our understanding of the contemporary social world? *Quality & Quantity*, 50, 317-325.
- Hass, L., Tarsalewska, M., & Zhan, F. (2016). Equity incentives and corporate fraud in China. *Journal of Business Ethics*, 138, 723-742.

- Hastings, S., & O'Neill, T. (2009). Predicting workplace deviance using broad versus narrow personality variables. *Personality and Individual Differences, 47*(4), 289-293.
- Hauser, C. (2019). Fighting against corruption: Does anti-corruption training make any difference? *Journal of Business Ethics.*
- Haß, L., Muller, M., & Vergauwe, S. (2015). Tournament incentives and corporate fraud. *Journal of Corporate Finance, 34*, 251-267.
- Healy, P., & Palepu, K. (2003). The fall of Enron. *Journal of Economic Perspectives, 17*(2), 3-26.
- Hedra, D., & Lavelle, J. (2015). Client identification and client commitment in a privately held client setting: Unique constructs with opposite effects on auditor objectivity. *Accounting Horizons, 29*(3), 577-601.
- Hellenic Statistical Authority. (2018). Retrieved from <https://www.statistics.gr/en/statistics/-/publication/SJO03/>
- Herche, J., & Engelland, B. (1996). Reversed-polarity items and scale unidimensionality. *Journal of the Academy of Marketing Science, 24*, 366-374.
- Hermanson, D., Justice, S., Ramamoorti, S., & Riley, R. (2017). Unique characteristics of predator frauds. *Journal of Forensic Accounting Research, 2*(1), 31-48.
- Hershcovis, M., Turner, N., Barling, J., Arnold, K., Dupré, K., Inness, M., Sivanathan, N. (2007). Predicting workplace aggression: a meta-analysis. *Journal of Applied Psychology, 92*, 228-238.
- Holtbrügge, D., Baron, A., & Friedmann, C. (2015). Personal attributes, organizational conditions, and ethical attitudes: A social cognitive approach. *Business Ethics: A European Review, 24*(3), 264-281.
- Holton, C. (2009). Identifying disgruntled employee systems fraud risk through text mining: A simple solution for a multi-billion dollar problem. *Decision Support Systems, 46*, 853-864.
- Hopkins, W., Hopkins, S., & Mitchell, B. (2008). Ethical consistency in managerial decisions. *Ethics & Behavior, 18*(1), 26-43.

- Hopwood, W., Leiner, J., & Young, G. (2012). *Forensic accounting and fraud examination, Second edition*. New York: McGraw-Hill.
- Hottegindre, G., Loison, M.-C., & Farjaudon, A.-L. (2017). Male and female auditors: An ethical divide?. *International Journal of Auditing*, 21, 131-149.
- Huber, W. (2012). Is forensic accounting in the United States becoming a profession?. *Journal of forensic and investigative accounting*, 4(1), 255-284.
- Huhtala, M., Kangas, M., Kaptein, M., & Feldt, T. (2018). The shortened corporate ethical virtues scale: Measurement invariance and mean differences across two occupational groups. *Business Ethics: A European Review*, 27(3), 238-247.
- Huhtala, M., Kangas, M., Lämsä, A.-M., & Feldt, T. (2013). Ethical managers in ethical organisations? The leadership-culture connection among Finnish managers. *Leadership & Organization Development Journal*, 34(3), 250-270.
- Huhtala, M., Kaptein, M., & Feldt, T. (2016). How perceived changes in the ethical culture of organizations influence the well-being of managers: a two-year longitudinal study. *European Journal of Work and Organizational Psychology*, 25(3), 335-352.
- Huhtala, M., Tolvanen, A., Mauno, S., & Feldt, T. (2015). The associations between ethical organizational culture, burnout, and engagement: A multilevel study. *Journal of Business and Psychology*, 30(2), 399-414.
- Hurtt, R. (2010). Developmene of a scale to measure professional skepticism. *Auditing: A Journal of Practice & Theory*, 29(1), 149-171.
- Hwang, D., Staley, B., Chen, Y., & Lan, J. (2008). Confucian culture and whistle-blowing by professional accountants: An exploratory study . *Managerial Auditing Journal*, 23(5), 504-526.
- Ianniello, G. (2012). Non-audit services and auditor independence in the 2007 Italian regulatory environment. *International Journal of Auditing*, 16, 147-164.
- Jackson, C., Furnham, A., Forde, L., & Cotter, T. (2000). The structure of the Eysenck personality profiler. *British Journal of Psychology*, 91, 223-239.

- Jans, M., Lybaert, N., & Vanhoof, K. (2010). Internal fraud risk reduction: Results of a data mining case study. *International Journal of Accounting Information Systems*, 11, 17-41.
- Jiménez, A., Bayraktar, S., & Puche-Regaliza, J. (2020). Corruption and private participation infrastructure projects: The influence of vicarious experience and national animosity. *Canadian Journal of Administrative Sciences*, 1-15.
- Johansson, E., & Carey, P. (2016). Detecting fraud: The role of the anonymous reporting channel. *Journal of Business Ethics*, 139, 391-409.
- John, O. (1990). The "Big five" factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. Pervin, *Handbook of personality: Theory and research* (pp. 66-100). New York: Guilford Press.
- John, O., Donahue, E., & Kentle, R. (1991). *The Big five inventory--Versions 4a and 54*. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.
- John, O., Naumann, L., & Soto, C. (2008). Paradigm shift to the integrative big-five trait taxonomy: History, measurement, and conceptual issues. In O. John, R. Robins, & L. Pervin, *Handbook of personality: Theory and research*. New York, NY: Guildford Press.
- Johnson, E., Kidwell, L., Lowe, J., & Reckers, P. (2019). Who follows the unethical leader? The association between followers' personal characteristics and intentions to comply in committing organizational fraud. *Journal of Business Ethics*, 154, 181-193.
- Johnson, E., Kuhn, J., Apostolou, B., & Hassell, J. (2013). Auditor perceptions of client narcissism as a fraud attitude risk factor. *Auditing: A Journal of Practice & Theory*, 32(1), 203-219.
- Johnson, L., & Rudolph, H. (2007). The lessons of Adelphia's cash fraud. *The Journal of Corporate Accounting & Finance*, 19(1), 19-24.
- Jones, S., Miller, J., & Lynam, D. (2011). Personality, antisocial behavior, and aggression: A meta-analytic review. *Journal of Criminal Justice*, 39(4), 329-337.

- Judge, T., Erez, A., Bono, J., & Thoresen, C. (2002). Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct? *Journal of Personality and Social Psychology, 83*(3), 693-710.
- Kalshoven, K., Den Hartog, D., & De Hoogh, A. (2011). Ethical leader behavior and Big five factors of personality. *Journal of Business Ethics, 100*(2), 349-366.
- Kaminski, K., Wetzel, T., & Guan, L. (2004). Can financial ratios detect fraudulent financial reporting? *Managerial Auditing Journal, 19*(1), 15-28.
- Kangas, M., Feldt, T., & Huhtala, M. (2014). The corporate ethical virtues scale: Factorial invariance across organizational samples. *Journal of Business Ethics, 124*, 161-171.
- Kangas, M., Muotka, J., Huhtala, M., Mäkikangas, A., & Feldt, T. (2017). Is the ethical culture of the organization associated with sickness absence? A multilevel analysis in a public sector organization. *Journal of Business Ethics, 140*(1), 131-145.
- Kaplan, S., & Schultz, J. (2007). Intentions to report questionable acts: An examination of the influence of anonymous reporting channel, internal audit quality, and setting. *Journal of Business Ethics, 71*, 109-124.
- Kaplan, S., Pany, K., Samuels, J., & Zhang, J. (2009). An examination of the effects of procedural safeguards on intentions to anonymously report fraud. *Auditing: A Journal of Practice & Theory, 28*(2), 273-288.
- Kaplan, S., Pope, K., & Samuels, J. (2015). An examination of the effects of managerial procedural safeguards, managerial likeability, and type of fraudulent act on intentions to report fraud to a manager. *Behavioral Research in Accounting, 27*(2), 77-94.
- Kaptein, M. (2008). Developing and testing a measure for the ethical culture of organizations: the corporate ethical virtues model. *Journal of Organizational Behavior, 29*(7), 923-947.
- Kaptein, M. (2011). From inaction to external whistleblowing: The influence of the ethical culture of organizations on employee responses to observed wrongdoing. *Journal of Business Ethics, 98*(3), 513-530.
- Kaptein, M. (2011). Understanding unethical behavior by unraveling ethical culture. *Human Relations, 64*(6), 843-869.

- Kaptein, M. (2015). The effectiveness of ethics programs: The role of scope, composition, and sequence. *Journal of Business Ethics*, *132*, 415-431.
- Kaptein, M. (2017). When organizations are too good: Applying Aristotle's doctrine of the mean to the corporate ethical virtues model. *Business Ethics: A European Review*, *26*, 300-311.
- Karmann, T., Mauer, R., Flatten, T., & Brettel, M. (2016). Entrepreneurial orientation and corruption. *Journal of Business Ethics*, *133*, 223-234.
- Kassem, R. (2018). Exploring external auditors' perceptions of the motivations behind management fraud in Egypt – a mixed methods approach. *Managerial Auditing Journal*, *33*(1), 16-34.
- Kassem, R., & Higson, A. (2016). External auditors and corporate corruption: Implications for external audit regulators. *Current Issues in Auditing*, *10*(1), 1-10.
- Keasey, K., Thompson, S., & Wright, M. (1998). Corporate governance, economic, management, and financial issues. *Managerial Auditing Journal*, *13*(6), 390-391.
- Kelen, J. (1990). Ambiguity in the ego: The basis of the self in American psychoanalytic theory. *British Journal of Psychotherapy*, *7*(1), 50-65.
- Kim, Y., & Kogan, A. (2014). Development of an anomaly detection model for a bank's transitory account system. *Journal of Information Systems*, *28*(1), 145-165.
- Kincaid, H. (1998). *Positivism in the social sciences*. London: Routledge.
- Kish-Gephart, J., Harrison, D., & Treviño, L. (2010). Bad apples, bad cases, and bad barrels: Meta-analytic evidence about sources of unethical decisions at work. *Journal of Applied Psychology*, *95*(1), 1-31.
- Krambia-Kapardis, M., & Papastergiou, K. (2016). Fraud victimization in Greece: Room for improvement in prevention and detection. *Journal of Financial Crime*, *23*(2), 481-500.
- Krambia-Kapardis, M., & Tsolakis, C. (2011). *Economic crime in businesses: Prevention, detection, investigation*. Athens: Kritiki (in Greek).
- Krambia-Kapardis, M., & Zopiatis, A. (2008). Uncharted territory: Investigating individual business ethics in Cyprus. *Business Ethics: A European Review*, *17*(2), 138-148.

- Krambia-Kapardis, M., Christodoulou, C., & Agathocleous, M. (2010). Neural networks: The panacea in fraud detection?. *Managerial Auditing Journal*, 25(7), 659-678.
- Kranacher, M., Riley Jr, R., & Wells, J. (2011). *Forensic accounting and fraud examination*. New York: John Wiley & Sons.
- Kuang, H., Li, H., Sherwood, M., & Whited, R. (2020). Mandatory audit partner rotations and audit quality in the United States. *Auditing: A Journal of Practice & Theory*.
- Kuhn, J., & Sutton, S. (2010). Continuous auditing in ERP system environments: The current state and future directions. *Journal of Information Systems*, 24(1), 91-112.
- Kummer, F., Singh, K., & Best, P. (2015). The effectiveness of fraud detection instruments in not-for-profit organizations. *Managerial Auditing Journal*, 30(4/5), 435-455.
- Latan, H., Chiappetta Jabbour, C., & Lopes de Sousa Jabbour, A. (2019). To blow or not to blow the whistle: The role of rationalization in the perceived seriousness of threats and wrongdoing. *Journal of Business Ethics*.
- Latan, H., Chiappetta Jabbour, C., & Lopes de Sousa Jabbour, A. (2019). 'Whistleblowing triangle': Framework and empirical evidence. *Journal of Business Ethics*, 160, 189-204.
- Lau, C. (2010). A step forward: Ethics education matters!. *Journal of Business Ethics*, 92, 565-584.
- Law, P. (2011). Corporate governance and no fraud occurrence in organizations. Hong Kong evidence. *Managerial Auditing Journal*, 26(6), 501-518.
- Lee, G., & Fargher, N. (2018). The role of the audit committee in their oversight of whistleblowing. *Auditing: A Journal of Practice & Theory*, 37(1), 167-189.
- Lee, G., Pittroff, E., & Turner, M. (2018). Is a uniform approach to whistle-blowing regulation effective? Evidence from the United States and Germany. *Journal of Business Ethics*.
- Lee, J., Gino, F., Jin, E., & Rice, L. (2015). Hormones and ethics: Understanding the biological basis of unethical conduct. *Journal of Experimental Psychology: General*, 144(5), 891-897.
- Lee, K., Ashton, M., & Shin, K.-H. (2005). Personality correlates of workplace anti-social behavior. *Applied Psychology*, 54(1), 81-98.

- Lee, T., Ingram, R., & Howard, T. (1999). The difference between earnings and operating cash flow as an indicator of financial reporting fraud. *Contemporary Accounting Research*, 16(4), 749-786.
- Lennox, C. (2016). Did the PCAOB's restrictions on auditors' tax services improve audit quality? *The Accounting Review*, 91(5), 1493-1512.
- Letza, S., Sun, X., & Kirkbride, J. (2004). Shareholding versus stakeholding: A critical review of corporate governance. *Corporate Governance*, 12(3), 242-262.
- Levine, S., & Jackson, C. (2004). Eysenck's theory of crime revisited: Factors or primary scales?. *Legal and Criminological Psychology*, 9, 135-152.
- Licht, A., Goldschmidt, C., & Schwartz, S. (2005). Culture, law, and corporate governance. *International Review of Law and Economics*, 25, 229-255.
- Lin, J., & Hwang, M. (2010). Audit quality, corporate governance, and earnings management: A meta-analysis. *International Journal of Auditing*, 14, 57-77.
- Liou, F. (2008). Fraudulent financial reporting detection and business failure prediction models: a comparison. *Managerial Auditing Journal*, 23(7), 650-662.
- Liou, F., & Yang, C. (2008). Predicting business failure under the existence of fraudulent financial reporting. *International Journal of Accounting and Information Management*, 16(1), 74-86.
- Liu, X., Wright, A., & Wu, Y. (2015). Managers' unethical fraudulent financial reporting: The effect of control strength and control framing. *Journal of Business Ethics*, 129, 295-310.
- Llopis, J., Gonzalez, M., & Gasco, J. (2007). Corporate governance and organisational culture: The role of ethics officers. *International Journal of Disclosure and Governance*, 4, 96-105.
- Lokanan, M. (2015). Challenges to the fraud triangle: Questions on its usefulness. *Accounting Forum*, 39(3), 201-224.
- Loo, R. (2002). Tackling ethical dilemmas in project management using vignettes. *International Journal of Project Management*, 20(7), 489-495.

- Lu, C.-S., & Lin, C.-C. (2014). The effects of ethical leadership and ethical climate on employee ethical behavior in the international port context. *Journal of Business Ethics*, 124(2), 209-223.
- MacDonald, P. (1999). Power, type I, and type III error rates of parametric and nonparametric statistical tests. *The Journal of Experimental Education*, 67(4), 367-379.
- MacGregor, J., & Stuebs, M. (2014). The silent samaritan syndrome: Why the whistle remains unblown. *Journal of Business Ethics*, 120, 149-164.
- Mayer, C. (1997). Corporate governance, competition, and performance. *Journal of Law and Society*, 24(1), 152-176.
- Mayer, D., Kuenzi, M., Greenbaum, R., Bardes, M., & Salvador, R. (2009). How low does ethical leadership flow? Test of a trickle-down model. *Organizational Behavior and Human Decision Processes*, 108, 1-13.
- Mayhew, B., & Murphy, P. (2009). The impact of ethics education on reporting behavior. *Journal of Business Ethics*, 86, 397-416.
- McCrae, R., & Costa, P. (1995). Trait explanations in personality psychology. *European Journal of Personality*, 9, 231-252.
- McCrae, R., & Costa, P. (1997). Personality trait structure as a human universal. *American Psychologist*, 52(5), 509-516.
- McCrae, R., & Costa, P. (2008). The five-factor theory of personality. In O. John, R. Robins, & L. Pervin, *Handbook of personality: Theory and research* (pp. 159-181). New York: Guilford Press.
- McMullen, D., & Sanchez, M. (2010). A preliminary investigation of the necessary skills, education requirements, and training requirements for forensic accountants. *Journal of Forensic & Investigative Accounting*, 2(2), 30-48.
- Mele, D., Rosanas, J., & Fontrodona, J. (2017). Ethics in finance and accounting: Editorial introduction. *Journal of Business Ethics*, 140, 609-613.
- Melis, A. (2005). Corporate governance failures: To what extent is Parmalat a particularly Italian case? *Corporate Governance: An International Review*, 13(4), 478-488.

- Miska, C., Stahl, G., & Fuchs, M. (2018). The moderating role of context in determining unethical managerial behavior: A case survey. *Journal of Business Ethics, 153*, 793-812.
- Mocan, N. (2008). What determines corruption? International evidence from microdata. *Economic Inquiry, 1-18*.
- Moerland, P. (1995). Alternative disciplinary mechanisms in different corporate systems. *Journal of Economic Behavior & Organization, 26*(1), 17-34.
- Moon, H. (2001). The two faces of conscientiousness: Duty and achievement striving in escalation of commitment. *Journal of Applied Psychology, 86*(3), 533-540.
- Moore, C., Detert, J., Klebe Treviño, L., Baker, V., & Mayer, D. (2012). Why employees do bad things: Moral disengagement and unethical organizational behavior. *Personnel Psychology, 65*(1), 1-48.
- Morgan, D. (2008). Snowball sampling. In L. Given, *The SAGE encyclopedia of qualitative research methods* (pp. 797-801). Thousand Oaks, CA: SAGE .
- Mostovicz, E., Kakabadse, N., & Kakabadse, A. (2011). Corporate governance: Quo vadis? *Corporate Governance: International Journal of Business in Society, 11*(5), 613-626.
- Murphy, P. (2012). Attitude, machivellianism and the rationalization of misreporting. *Accounting, Organizations and Society, 37*, 242-259.
- Murphy, P., & Dacin, T. (2011). Psychological pathways to fraud: Understanding and preventing fraud in organizations. *Journal of Business Ethics, 101*(4), 601-618.
- Murphy, P., & Free, C. (2016). Broadening the fraud triangle: Instrumental climate and fraud. *Behavioral Research in Accounting, 28*(1), 41-56.
- Mutlu, C., Van Essen, M., Peng, M., Saleh, S., & Duran, P. (2018). Corporate governance in China: A meta-analysis. *Journal of Management Studies, 55*, 943-979.
- Nasir, N., Ali, M., & Ahmed, K. (2018). Corporate governance, board ethnicity and financial statement fraud: Evidence from Malaysia. *Accounting Research Journal, 32*(3), 514-531.
- Nolen-Hoeksema, S., Fredrickson, B., Loftus, G., & Lutz, C. (2014). *Atkinson & Hilgard's introduction to psychology*. Hampsire: Cengage Learning EMEA.

- Novikova , I., & Vorobyeva, A. (2019). The Five-factor model: Contemporary personality theory. In K. Keith, *Cross-cultural psychology: Contemporary themes and perspectives, Second edition* (pp. 685-706). John Wiley & Sons Ltd.
- O'Fallon, M., & Butterfield, K. (2005). A review of the empirical ethical decision-making literature: 1996–2003. *Journal of Business Ethics*, 59(4), 375-413.
- OECD. (2015). G20/OECD principles of corporate governance. *OECD Publishing*.
- Organization for Economic Co-Operation and Develop. (2004). Retrieved from <https://www.oecd.org/corporate/ca/corporategovernanceprinciples/31557724.pdf>
- Ozyilmaz, A., Erdogan, B., & Karaeminogullari, A. (2018). Trust in organization as a moderator of the relationship between self-efficacy and workplace outcomes: A social cognitive theory-based examination. *Journal of Occupational and Organizational Psychology* , 91, 181-204.
- Pallant, J. (2016). *SPSS survival manual*. New York: McGraw-Hill.
- Park, B.-J. (2018). Audit committees and managerial influence on audit quality: "Voluntary" versus "mandatory" approach to corporate governance. *Australian Accounting Review*, 29(1), 266-280.
- Payne, E., & Ramsey, R. (2005). Fraud risk assessments and auditors' professional skepticism. *Managerial Auditing Journal*, 20(3), 321-330.
- Pedneault, S., Sheetz, M., & Rudewicz, F. (2012). Forensic accounting. In H. Silverstone, M. Sheetz, S. Pedneault, & F. Rudewicz, *Forensic accounting and fraud investigation for non-experts* (pp. 1-15). New York: John Wiley & Sons, Inc.
- Perols, J., Bowen, R., Zimmermann, C., & Samba, B. (2017). Finding needles in a haystack: Using data analytics to improve fraud prediction. *The Accounting Review*, 92(2), 221-245.
- Perry, C., Riege, A., & Brown, L. (1999). Realism's role among scientific paradigms in marketing research. *Irish Marketing Review*, 12(2), 16-23.
- Persons, O. (2005). The relation between the new corporate governance rules and the likelihood of financial statement fraud. *Review of Accounting and Finance*, 4(2), 125-148.
- Pervin, L. (1994). A critical analysis of current trait theory. *Psychological Inquiry*, 5, 103-113.

- Pervin, L., & Lewis, M. (1978). Overview of the internal-external issue. In L. Pervin, & M. Lewis, *Perspectives in interactional psychology* (pp. 1-22). Boston: Springer.
- Petrick, J., & Scherer, R. (2003). The Enron scandal and the neglect of management integrity capacity . *American Journal of Business*, 18(1), 37-49.
- Pickett, K., & Pickett, J. (2002). *Financial crime. Investigation and control*. New York: John Wiley & Sons, Inc.
- Popova, V. (2012). Exploration of skepticism, client-specific experiences, and audit judgments. *Managerial Auditing Journal*, 28(2), 140-160.
- Pulliam, S. (2003). ‘Over the line: A staffer ordered to commit fraud balked, then caved pushed by WorldCom bosses, Accountant Betty Vinson helped cook the books – a confession at the Marriott. *Wall Street Journal*.
- Quick, R., & Warming-Rasmussen, B. (2009). Auditor independence and the provision of non-audit services: Perceptions by German investors. *International Journal of Auditing*, 13, 141-162.
- Quinn, R., & Spreitzer, G. (1991). The psychometrics of the competing values culture instrument and an analysis of the impact of organizational culture on quality of life. *Research in Organizational Change and Development*, 5, 115-142.
- Rae, K., & Subramaniam, N. (2008). Quality of internal control procedures. Antecedents and moderating effect on organisational justice and employee fraud. *Managerial Auditing Journal*, 23(2), 104-124.
- Ragatz, L., & Fremouw, W. (2010). A critical examination of research on the psychological profiles of white-collar criminals. *Journal of Forensic Psychology Practice*, 10(5), 373-402.
- Ramamoorti, S. (2008). The psychology and sociology of fraud: Integrating the behavioral sciences component into fraud and forensic accounting curricula. *Issues in Accounting Education*, 23(4), 521-533.
- Ramamoorti, S., & Olsen, W. (2007). Fraud: the human factor. *Financial Executive*, 53-55.
- Ramaswamy, V. (2007). New frontiers: Training forensic accountants within the accounting program. *Journal of College Teaching & Learning*, 4, 31-38.

- Ravisankar, P., Ravi, V., Raghava Rao, G., & Bose, I. (2011). Detection of financial statement fraud and feature selection using data mining techniques. *Decision Support Systems*, 50, 491-500.
- Reinstein, A., & McMillan, J. (2004). The Enron debacle: More than a perfect storm. *Critical Perspectives on Accounting*, 15, 955-970.
- Reinstein, A., & Taylor, E. (2017). Fences as controls to reduce accountants' rationalization. *Journal of Business Ethics*, 141, 477-488.
- Revelle, W. (2009). Personality structure and measurement: The contributions of Raymond Cattell. *British Journal of Psychology*, 100, 253-257.
- Reynolds, S., & Ceranic, T. (2007). The effects of moral judgment and moral identity on moral behavior: An empirical examination of the moral individual. *Journal of Applied Psychology*, 92(6), 1610-1624.
- Rezaee, Z. (2005). Causes, consequences, and deterrence of financial statement fraud. *Critical Perspectives on Accounting*, 16, 277-298.
- Riivari, E., Lämsä, A.-M., Kujala, J., & Heiskanen, E. (2012). The ethical culture of organisations and organisational innovativeness. *European Journal of Innovation Management*, 15(3), 310-331.
- Rijsenbilt, A., & Commandeur, H. (2013). Narcissus enters the courtroom: CEO narcissism and fraud. *Journal of Business Ethics*, 117(2), 413-429.
- Robinson, D. (2008). Auditor independence and auditor-provided tax service: Evidence from going-concern audit opinions prior to bankruptcy filings. *Auditing: A Journal of Practice and Theory*, 27(2), 31-54.
- Robinson, S., Curtis, M., & Robertson, J. (2018). Disentangling the trait and state components of professional skepticism: Specifying a process for state scale development. *Auditing: A Journal of Practice & Theory*, 37(1), 215-235.
- Rodgers, W., Soderbom, A., & Guiral, A. (2015). Corporate social responsibility enhanced control systems reducing the likelihood of fraud. *Journal of Business Ethics*, 131, 871-882.

- Roe, M. (1993). Some differences in corporate structure in Germany, Japan, and the United States. *The Yale Law Journal* , 102, 1927-2003.
- Rose, J., Brink, A., & Norman, C. (2018). The effects of compensation structures and monetary rewards on managers' decisions to blow the whistle. *Journal of Business Ethics*, 150, 853-862.
- Ruiz, M., & College, R. (1995). B.F Skinner's radical behaviorism. Historical misconstructions and grounds for feminist reconstructions. *Psychology of Women Quarterly*, 19, 161-179.
- Ruiz-Barbadillo, E., Gomez-Aguilar, N., & Carrera, N. (2009). Does mandatory audit firm rotation enhance auditor independence? Evidence from Spain. *Auditing: A Journal of Practice & Theory*, 28(1), 113-135.
- Ruiz-Palomino, P., & Martínez-Cañas, R. (2014). Ethical culture, ethical intent, and organizational citizenship behavior: The moderating and mediating role of person–organization fit. *Journal of Business Ethics*, 120(1), 95-108.
- Saunders, M., Lewis, P., & Thornhill, A. (2015). *Research methods for business students*. Essex: Pearson Education.
- Sawilowsky , S. (1990). Nonparametric tests of interaction in experimental design. *Review of Educational Research*, 60(1), 91-126.
- Schein, E. (1990). Organizational culture. *American Psychologist*, 45(2), 109-119.
- Schuchter, A., & Levi, M. (2015). Beyond the fraud triangle: Swiss and Austrian elite fraudsters. *Accounting Forum*, 39(3), 176-187.
- Schulein, J. (2003). On the logic of psychoanalytic theory. *The International Journal of Psychoanalysis*, 84(2), 315-330.
- Schunk, D. (1989). Self-efficacy and achievement behaviors. *Educational Psychology Review*, 1(3), 173-208.
- Securities and Exchange Commission v. Parmalat Finanziaria S.p.A., No. 03 CV 102666 (PKC) (S.D.N.Y.) (December 30, 2003).

- Seifert, D., Sweeney, J., Joireman, J., & Thornton, J. (2010). The influence of organizational justice on accountant whistleblowing. *Accounting, Organizations and Society*, 35, 707-717.
- Seipp, E., Kinsella, S., & Lindberg, D. (2011). Xerox, Inc. *Issues in Accounting Education*, 26(1), 219-240.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: a skill building approach*. London: John Wiley & Sons.
- Shan, Y. (2013). Can internal governance mechanisms prevent asset appropriation? Examination of type I tunneling in China. *Corporate Governance: An International Review*, 21(3), 225-241.
- Sharma, V. (2004). Board of director characteristics, institutional ownership, and fraud: Evidence from Australia. *Auditing: A Journal of Practice & Theory*, 23(2), 105-117.
- Shleifer, A., & Vishny, R. (1997). A survey of corporate governance. *The Journal of Finance*, 52(2), 737-783.
- Siddiqui, S. (2015). The association between corporate governance and firm performance – a meta-analysis. *International Journal of Accounting and Information Management*, 23(3), 218-237.
- Silverstone, H., & Sheetz, M. (2007). *Forensic accounting and fraud investigation for non experts*. New Jersey: John Wiley & Sons. Inc.
- Singleton, T., & Singleton, A. (2010). *Fraud auditing and forensic accounting*. Hoboken: John Wiley & Sons. Inc.
- Skinner, B. (1953). *Science and human behavior*. New York: Macmillan.
- Skinner, B. (1971). *Beyond freedom and dignity*. New York: Knopf.
- Smith, D., & Snell, W. (1996). Goldberg's bipolar measure of the Big-Five personality dimensions: reliability and validity. *European Journal of Personality*, 10, 283-299.
- Solomon, R. (1992). Corporate roles, personal virtues: An Aristotelean approach to business ethics. *Business Ethics Quarterly*, 2(3), 317-339.
- Solomon, R. (2004). Aristotle, ethics and business organizations. *Organization Studies*, 25(6), 1021-1043.

- Stevens, E., Monorey, R., & Webster, J. (2019). Professional skepticism: The combined effect of partner style and team identity salience. *International Journal of Auditing*, 23, 279-291.
- Street, M., & Street, V. (2006). The effects of escalating commitment on ethical decision-making. *Journal of Business Ethics*, 64(4), 343-356.
- Subbady, R., Gendron, Y., & Lam, H. (2009). The organizational context of professionalism in accounting. *Accounting, Organizations and Society*, 34(3-4), 409-427.
- Sun, J., Kent, P., Qi, B., & Wang, J. (2019). Chief financial officer demographic characteristics and fraudulent financial reporting in China. *Accounting & Finance*, 59(4), 2705-2734.
- Sutherland, E. (1940). White-collar criminality. *American Sociological Review*, 5(1), 1-12.
- Svanberg, J., & Ohman, P. (2015). Auditors' identification with their clients: Effects on audit quality. *The British Accounting Review*, 47, 395-408.
- Svanberg, J., & Ohman, P. (2017). Does charismatic client leadership constrain auditor objectivity? *Behavioral Research in Accounting*, 29(1), 103-118.
- Sweeney, B., Arnold, D., & Pierce, B. (2010). The impact of perceived ethical culture of the firm and demographic variables on auditors' ethical evaluation and intention to act decisions. *Journal of Business Ethics*, 93(4), 531-551.
- Taggar, S., & Parkinson, J. (2007). Personality tests in accounting research. *Journal of Human Resource Costing & Accounting*, 11(2), 122-151.
- Tavakoli, A., Keenan, J., & Crnjak-Karanovic, B. (2003). Culture and whistleblowing an empirical study of Croatian and United States managers utilizing Hofstede's cultural dimensions. *Journal of Business Ethics*, 43, 49-64.
- Taylor, E., & Curtis, M. (2018). Mentoring: A path to prosocial behavior. *Journal of Business Ethics*, 152, 1133-1148.
- Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousand Oaks: SAGE Publications, Inc.

- Tett, R., & Guterman, H. (2000). Situation trait relevance, trait expression, and cross-situational consistency: Testing a principle of trait activation. *Journal of Research in Personality, 34*(4), 397-423.
- Thornhill, W. (1995). *Forensic accounting: How to investigate financial fraud*. New York: Irwin Professional Publishers.
- Timifeyev, Y. (2015). Analysis of predictors of organizational losses due to occupational corruption. *International Business Review, 24*(4), 630-641.
- Torre, D., & Durning, S. (2015). Social cognitive theory: thinking and learning in social settings. In J. Cleland, & S. Durning, *Researching medical education, First edition* (pp. 105-116). John Wiley & Sons, Ltd.
- Transparency International Organization. (2006). *Global corruption report*. London.
- Treviño, L., Butterfield, K., & McCabe, D. (1998). The ethical context in organizations: Influences on employee attitudes and behaviors. *Business Ethics Quarterly, 8*(3), 447-476.
- Triandis, H. (2018). *Individualism and collectivism*. New York: Routledge.
- Triandis, H., Bontempo, R., Villareal, M., Asai, M., & Lucca, N. (1988). Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. *Journal of Personality and Social Psychology, 54*(2), 323-338.
- Trompeter, G., Carpenter, T., Desai, N., Jones, K., & Riley, R. (2013). A synthesis of fraud-related research. *Auditing: A Journal of Practice & Theory, 32*(Supplement 1), 287-321.
- Trompeter, G., Carpenter, T., Jones, K., & Riley, R. (2014). Insights for research and practice: What we learn about fraud from other disciplines. *Accounting Horizons, 28*(4), 769-804.
- Turner, M. (2014). An investigation of big five personality and propensity to commit white-collar crime. *Advances in Accounting Behavioral Research, 17*, 57-94.
- Tuschke, A., Sanders, W., & Hernandez, E. (2014). Whose experience matters in the boardroom? The effects of experiential and vicarious learning on emerging market entry. *Strategic Management Journal, 35*, 398-418.

- Ugrin, J., & Odom, M. (2017). Does viewing sacrificed integrity as a negotiable cost promote acceptance of fraud?. *Journal of Forensic Accounting Research*, 2(1), 71-90.
- Umphress, E., Bingham, J., & Mitchell, M. (2010). Unethical behavior in the name of the company: The moderating effect of organizational identification and positive reciprocity beliefs on unethical pro-organizational behavior. *Journal of Applied Psychology*, 95(4), 469-780.
- Unerman, J., & O'Dwyer, B. (2004). Enron, WorldCom, Andersen et al.: A challenge to modernity. *Critical Perspectives on Accounting*, 15, 971-993.
- Valentine, S., & Rittenburg, T. (2007). The Ethical Decision Making of Men and Women Executives in International Business Situations. *Journal of Business Ethics*, 71(2), 125-134.
- Van Akkeren, J., & Buckby, S. (2017). Perceptions on the causes of individual and fraudulent co-offending: Views of forensic accountants. *Journal of Business Ethics*, 146, 383-404.
- Van Scotter, J., & Roglio, K. (2018). CEO bright and dark personality: Effects on ethical misconduct. *Journal of Business Ethics*.
- Victor, B., & Cullen, J. (1988). The organizational bases of ethical work climates. *Administrative Science Quarterly*, 33(1), 101-125.
- Vouzinas, G. (2019). Advancing theory of fraud: the S.C.O.R.E. model. *Journal of Financial Crime*, 26(1), 372-381.
- Wahid, A. (2019). The effects and the mechanisms of board gender diversity: Evidence from financial manipulation. *Journal of Business Ethics*, 159, 705-725.
- Weber, R. (2004). Editor's comments: The rhetoric of positivism versus interpretivism: A personal view. *MIS Quarterly*, 28(1), 3-12.
- Weimer, J., & Pape, J. (1999). A taxonomy of systems of corporate governance. *Corporate Governance*, 7(2), 152-166.
- West, A. (2009). Corporate governance convergence and moral relativism. *Corporate Governance: An International Review*, 17(1), 107-119.
- Wilt, J., & Revelle, W. (2015). Affect, behaviour, cognition and desire in the Big five: An analysis of item content and structure. *European Journal of Personality*, 29, 478-497.

- Wolfe, D., & Hermanson, D. (2004). The fraud diamond: Considering the four elements of fraud. *CPA Journal*, 74, 38-42.
- Ye, P., Carson, E., & Simnet, R. (2011). Threats to auditor independence: The impact of relationship and economic bonds. *Auditing: A Journal of Practice & Theory*, 30(1), 121-148.
- Yoshikawa, T., Tsui-Auch , L., & McGuire, J. (2007). Corporate governance reform as institutional innovation: The case of Japan. *Organization Science*, 18(6), 973-988.
- Young, R. (2017). Blowing the whistle: Individual persuasion under perceived threat of retaliation. *Behavioral Research in Accounting*, 29(2), 97-111.
- Zahra, S., Priem, R., & Rasheed, A. (2005). The antecedents and consequences of top management fraud. *Journal of Management*, 31(6), 803-828.
- Zhao, H., Zhang, H., & Xu, Y. (2016). Does the dark triad of personality predict corrupt intention? The Mediating Role of Belief in Good Luck. *Frontiers in Psychology*, 7, 608.
- Zhou, W., & Kapoor, G. (2011). Detecting evolutionary financial statement fraud. *Decision Support Systems*, 50, 570-575.

Appendix 1: Letter of Introduction

Dear participants,

The present research, which examines employees' propensity to commit or engage in fraudulent acts, is being conducted as part of my Doctoral dissertation in the Department of Business Administration at the University of the Aegean.

Fraud is a multidimensional phenomenon that triggers great damage and huge losses to firms, economy, and society. That being the case, the investigation of how personal attributes, demographics and personality traits, and ethical organizational culture affect an employee's fraudulent behavior are the main research questions of this study.

Given the sensitivity of this issue, responders' anonymity is ensured. Also, all the information provided by you will be handled with absolute confidentiality and they will be used solely for the purposes of the present study.

Estimated time to complete the questionnaire is 10 to 12 minutes. I am in your disposal for any questions.

Thank you for your participation.

Sincerely,

Georgios Papachristou

PhD Student

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Appendix 2: Questionnaire Survey Instrument

Section I

Please circle/tick the following information

1. Gender

Male	
Female	

2. Age

<26	26-35	36-45	46-55	>55

3. Level of Education

High School	Bachelor	Master	PhD

4. Working Experience (years)

<1	1-5	6-10	>10

5. Working Industry

Banking	
Manufacturing	
Healthcare	
Trade	

Insurance	
Education	
Energy	
Industrial	
Technology	
Telecommunication	
Food and Hospitality	
Agriculture and Fishing	
Transportation	
Publication	
Other	

6. The firm you work in, is

- a. Listed
- b. Non-Listed

7. Tenure in the firm (years)

<1	1-5	6-10	>10

8. Position

Employee	Manager	Executive/Owner

9. Annual Compensation (euros)

<20.000	20.000-40.000	>40.000

Section II

Here are several characteristics that may or may not apply to the organization you are working for. Please tick a number for each statement.

1	2	3	4	5	6
Disagree Strongly	Disagree Moderately	Disagree Slightly	Agree Slightly	Agree Moderately	Agree Strongly

1. The organization makes it sufficiently clear to me how I should conduct myself appropriately towards others within the organization

1	2	3	4	5	6

2. The organization makes it sufficiently clear to me how I should deal with confidential information responsibly.

1	2	3	4	5	6

3. The organization makes it sufficiently clear to me how I should deal with external persons and organizations responsibly.

1	2	3	4	5	6

4. In my immediate working environment, it is sufficiently clear how we are expected to conduct ourselves in a responsible way.

1	2	3	4	5	6

5. My supervision sets a good example in terms of ethical behavior.

1	2	3	4	5	6

6. My supervisor communicates the importance of ethics and integrity clearly and convincingly.

1	2	3	4	5	6

7. My supervisor does as s/he says.

1	2	3	4	5	6

8. My supervisor is honest and reliable.

1	2	3	4	5	6

9. The conduct of the Board and (senior) management reflects a shared set of norms and values.

1	2	3	4	5	6

10. The Board and (senior) management sets a good example in terms of ethical behavior.

1	2	3	4	5	6

11. The Board and (senior) management communicates the importance of ethics and integrity clearly and convincingly.

1	2	3	4	5	6

12. The Board and (senior) management would never authorize unethical or illegal conduct to meet business goals.

1	2	3	4	5	6

13. I am not asked to do things that conflict with my conscience in my immediate working environment.

1	2	3	4	5	6

14. I do not have to sacrifice my personal norms and values in order to be successful in my organization.

1	2	3	4	5	6

15. I have adequate resources at my disposal to carry out my tasks responsibly.

1	2	3	4	5	6

16. I am not put under pressure to break the rules in my job.

1	2	3	4	5	6

17. In my immediate working environment, everyone has the best interests of the organization at heart.

1	2	3	4	5	6

18. In my immediate working environment, a mutual relationship of trust prevails between employees and management.

1	2	3	4	5	6

19. In my immediate working environment, everyone takes the existing norms and standards seriously.

1	2	3	4	5	6

20. In my immediate working environment, everyone treats one another with respect.

1	2	3	4	5	6

21. If a colleague does something which is not permitted, my manager will find out about it.

1	2	3	4	5	6

22. If my manager does something which is not permitted, someone in the organization will find out about it.

1	2	3	4	5	6

23. In my immediate working environment, adequate checks are carried out to detect violations and unethical conduct.

1	2	3	4	5	6

24. Management is aware of the type of incidents and unethical conduct that occur in my immediate working environment.

1	2	3	4	5	6

25. In my immediate working environment, there is adequate opportunity to discuss unethical conduct.

1	2	3	4	5	6

26. In my immediate working environment, reports of unethical conduct are taken seriously.

1	2	3	4	5	6

27. In my immediate working environment, there is ample opportunity for discussing moral dilemmas.

1	2	3	4	5	6

28. In my immediate working environment, there is adequate opportunity to correct unethical conduct.

1	2	3	4	5	6

29. In my immediate working environment, ethical conduct is valued highly.

1	2	3	4	5	6

30. In my immediate working environment, ethical conduct is rewarded.

1	2	3	4	5	6

31. In my immediate working environment, employees will be disciplined if they behave unethically.

1	2	3	4	5	6

32. If I reported unethical conduct to management, I believe those involved would be disciplined fairly, regardless of their position.

1	2	3	4	5	6

Section III

*Here are a few characteristics that may or may not apply to you. Please circle the number next to each statement to indicate the extent to which **you agree or disagree with that statement.***

1	2	3	4	5
Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

I am someone who...

1.	Is talkative	1	2	3	4	5
2.	Tends to find fault with others	1	2	3	4	5
3.	Does a thorough job	1	2	3	4	5
4.	Is depressed, blue	1	2	3	4	5
5.	Is original, comes up with new ideas	1	2	3	4	5
6.	Is reserved	1	2	3	4	5
7.	Is helpful and unselfish with others	1	2	3	4	5
8.	Can be somewhat careless	1	2	3	4	5
9.	Is relaxed, handles stress well.	1	2	3	4	5
10.	Is curious about many different things	1	2	3	4	5
11.	Is full of energy	1	2	3	4	5

12.	Starts quarrels with others	1	2	3	4	5
13.	Is a reliable worker	1	2	3	4	5
14.	Can be tense	1	2	3	4	5
15.	Is ingenious, a deep thinker	1	2	3	4	5
16.	Generates a lot of enthusiasm	1	2	3	4	5
17.	Has a forgiving nature	1	2	3	4	5
18.	Tends to be disorganized	1	2	3	4	5
19.	Worries a lot	1	2	3	4	5
20.	Has an active imagination	1	2	3	4	5
21.	Tends to be quiet	1	2	3	4	5
22.	Is generally trusting	1	2	3	4	5
23.	Tends to be lazy	1	2	3	4	5
24.	Is emotionally stable, not easily upset	1	2	3	4	5
25.	Is inventive	1	2	3	4	5
26.	Has an assertive personality	1	2	3	4	5
27.	Can be cold and aloof	1	2	3	4	5
28.	Perseveres until the task is finished	1	2	3	4	5
29.	Can be moody	1	2	3	4	5
30.	Values artistic, aesthetic experiences	1	2	3	4	5
31.	Is sometimes shy, inhibited	1	2	3	4	5
32.	Is considerate and kind to almost everyone	1	2	3	4	5
33.	Does things efficiently	1	2	3	4	5
34.	Remains calm in tense situations	1	2	3	4	5
35.	Prefers work that is routine	1	2	3	4	5

- | | | | | | | |
|-----|-----------------------------------------------|---|---|---|---|---|
| 36. | Is outgoing, sociable | 1 | 2 | 3 | 4 | 5 |
| 37. | Is sometimes rude to others | 1 | 2 | 3 | 4 | 5 |
| 38. | Makes plans and follows through with them | 1 | 2 | 3 | 4 | 5 |
| 39. | Gets nervous easily | 1 | 2 | 3 | 4 | 5 |
| 40. | Likes to reflect, play with ideas | 1 | 2 | 3 | 4 | 5 |
| 41. | Has few artistic interests | 1 | 2 | 3 | 4 | 5 |
| 42. | Likes to cooperate with others | 1 | 2 | 3 | 4 | 5 |
| 43. | Is easily distracted | 1 | 2 | 3 | 4 | 5 |
| 44. | Is sophisticated in art, music, or literature | 1 | 2 | 3 | 4 | 5 |

Section IV

Here are three scenarios describing three different situations. Please read them and state the extent to which you would engage to this activity.

Scenario 1

You are the accountant at a company. You notice the firm manipulates its financial statements by overstating its assets and total revenues for the last five years. You report it to your supervisor and the chief accountant, and he admits it. The scheme is perfectly concealed; internal auditors have expressed themselves very satisfied with company's internal controls and external auditors have expressed an unmodified opinion over the financial statements. Thus, there is no way the financial statement fraud to be detected.

Your boss offers you a large amount of money not to report anything. There is no chance of you getting caught.

Please circle the extent to which you would engage in this activity:

1	2	3	4
Not at all	Very little	Somewhat	To a great extent

Scenario 2

You are the accountant at a company. One of your family members suffers from a serious disease and to get his treatment you need a great amount of money. However, you do not have this money and cannot borrow it from anybody. The only solution is to embezzle it by the firm's treasury to which you have access. Please notice that according to its latest financial statements, the company is extremely profitable and there is no chance of getting bankrupt. You can conceal this cash embezzlement; so, there is no chance of getting caught.

Please circle the extent to which you would engage in this activity:

1	2	3	4
Not at all	Very little	Somewhat	To a great extent

Scenario 3

You are the accountant at a company, responsible for preparing its financial statements. Your boss asks you to manipulate income statement and balance sheet by capitalizing some of the firm's expenses, in order to meet stakeholders' expectations. For this action, he offers you a large amount of money as a bonus on top of your annual compensation. There is no chance of getting caught.

Please circle the extent to which you would engage in this activity:

1	2	3	4
Not at all	Very little	Somewhat	To a great extent

Appendix 3: Journals' Abbreviations

A & F	Accounting and Finance
Ab	Abacus
ABR	Accounting and Business Research
AF	Accounting Forum
AH	Accounting Horizons
AJPA	Auditing: A Journal of Practice & Theory
AOS	Accounting, Organizations and Society
AP	Applied Psychology
ARJ	Accounting Research Journal
BRA	Behavioral Research in Accounting
CAR	Contemporary Accounting Research
CGIR	Corporate Governance: An International Review
CPA	Critical Perspectives on Accounting
DSS	Decision Support Systems
FIP	Frontiers in Psychology
IJA	International Journal of Auditing
IJAIM	International Journal of Accounting and Information Management
IJAIS	International Journal of Accounting Information Systems
JAAR	Journal of Applied Accounting Research
JAR	Journal of Accounting Research
JBE	Journal of Business Ethics
JCF	Journal of Corporate Finance

JEP	Journal of Experimental Psychology: General
JFAR	Journal of Forensic Accounting Research
JFSAB	Journal of Forensic Studies in Accounting and Business
JIFMA	Journal of International Financial Management and Accounting
JMIS	Journal of Management Information Systems
MAJ	Managerial Auditing Journal
MAQ	Management Accounting Quarterly
PP	Personnel Psychology
RAF	Review of Accounting and Finance
TAR	The Accounting Review