

Machiavellianism and its relation with counterproductive activities in Accounting students

Abstract

Objective: To measure and classify Machiavellian personality traits to associate them with counterproductive behavior in future accounting professionals.

Method: The study sample consisted of 137 students enrolled in four Higher Education Institutions: two public ones, one located in the State of Minas Gerais and the other in Espírito Santo, and two private institutions, both located in the State of Minas Gerais. Regarding the data collection procedures, questionnaires were applied to students with current or past professional experience. Descriptive and quantitative analysis was applied to the data, in order to verify if the presence of Machiavellian personality traits could be related to the probability of these students presenting counterproductive behaviors at work.

Results: The Machiavellian profile may be associated with strategic calculation, leadership, desire for status, amoral manipulation and dishonesty; the profile of a counterproductive person, then, is related to the violation of standards and principles of the organization the offender is inserted in, as a result, for example, of thefts, accounting fraud or even low productivity. The results point to the preponderance of a moderate Machiavellian profile among future accounting professionals, however, there is no empirical evidence in this sample that could lead to the conclusion that Machiavellianism is related to counterproductive behavior. Most of the interviewees self-declared a low profile of organizational and interpersonal counterproductivity and there is a strong association between these two variables. The results still allow us to infer that the Machiavellian trait, on average, is more evident in men than in women.

Contribution: To understand that the moderate Machiavellian profile does not necessarily present counterproductive behavior. The results contribute to the area of human resources in its selective processes and periodic evaluations.

Keywords: Machiavellianism, Counterproductive Behavior, Accounting Science Students

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1. Introduction

Professional behavior inspires research in the various areas of knowledge, including accountancy (Lopes, Cardoso, Reina & Reina, 2016, Milan, 2014, Ferreira, 2013 and Wakefield, 2008). Identifying the behavioral profile of future accounting professionals contributes to understanding the reason why some decisions are made or whether the profile would influence whether the individual is more willing to take risks to gain or avoid losses (Weller & Thulin, 2012). Thus, anticipating the analysis of personality traits would allow a better adaptation of the professional to the organizational scenario.

Essentially, it is necessary to emphasize that personality trait evaluations are able to point out the most striking psychological characteristics of a particular person, as well as to categorize their behavior on different occasions. Therefore, there is a great variety of personality tests, one of which allows us to identify the degree of Machiavellianism in an individual (Noronha, 2002, Dalbosco & da Silva Consul, 2011, Godoy & Noronha, 2005, Rocha, Pinto & da Silva, 2015).

First of all, however, it is emphasized that Machiavellianism is not considered a personality disorder (Furnham, Richards, Rangel & Jones, 2014). According to these authors, Machiavellianism is the only part of the triad (Machiavellianism/narcissism/psychopathy) that is not seen as such, but merely as a personality trait.

Machiavellianism has been defined over time as a personality trait or disposition [...] sometimes as a strategy of social conduct [...], which involves manipulating others for personal gain. Overall, ... Machiavellian individuals tend to have a relative lack of affection in interpersonal relationships, they are not concerned with conventional morality, although they are not necessarily immoral and demonstrate low ideological commitment. In addition, they consider that highly Machiavellian individuals outnumber those less Machiavellian when they interact in face-to-face situations, when there is room for improvisation, and in situations involving affective details that are considered irrelevant to victory. [...] Machiavellians should be seen not as unethical, but as individuals capable of sacrificing ethics according to their interests (Lustosa, Roazzi & Camino, 2004).

The bad reputation of this personality trait is grounded in Niccolò Machiavelli's political thought. In his work, a controlling political bias is revealed, with ideas such as "the lie, perception, manipulation and persuasion of voters, with the objective of providing the leader with political and social power" (Judge, Piccolo & Kosalka, 2009, p.866), successful to this day.

It turns out that the detractors of Machiavelli's work appear to ignore the historical and political context of his analysis, labeling it superficially as the forerunner of thought according to which "the ends justify the means". Although it is not properly the object of our study, it is convenient to briefly highlight the historical impropriety of Machiavellian terminology to designate selfish and manipulative behaviors, always with a negative bias: Machiavelli was born in Florence on May 3rd, 1469, and his work is permeated by the political scene of the time, marked by the division of Italy into several despotic principalities. Very simply, one of the Florentine's greatest concerns was precisely Italian unification. According to Gomes (1990, page 101),

[...] the Book *The Prince* speaks of a moment of exception where the State has to be constituted against the background the divided and exploited Italy. It is necessary, at that moment, to establish a unifying power. [...] If the prince governs with extraordinary powers, it is to establish the order and, as soon as this is done, surely the ideal of Machiavelli is that a republic be constituted.

Moreover, "[...] the exercise of the prince's powers of exception must be fleeting. As soon as the order is established, power must pass into the hands of the majority to whom it is effectively incumbent to govern ... "(Gomes, 1990, 102-103).

In this scenario, Alves (2008, p.8) explains that

The criticism against Machiavelli is restricted to the fact that he has allegedly asserted that the ruler can do everything necessary to attain power and preserve it. In this way, power would be an end in itself, which depended on nothing more than the desire to conquer it and the ability to keep it to legitimize itself. In fact, what fundamental problem does Machiavelli focus on in his political speculations? The question Machiavelli is concerned with is whether the ruler can always act in accordance with accepted Christian ethical principles in his time and hope to achieve his goals, or whether he must learn to follow other paths when faced with difficult situations. He does not advise rulers to disregard accepted rules for the sheer pleasure of doing so. On the contrary, he states that the ruler should behave according to those rules whenever possible. In this regard, he affirms that ‘it is praiseworthy for a prince to maintain his faith and to live with integrity whenever possible’ [...].

What he wants to know is if this is indeed possible. In other words, if ethics is enough to show how to act in politics in all situations. Machiavelli departs from evidence, that is, of what the conflicts in the cities are, in order to elaborate his ideas. It should be remembered that, for the author, human nature is highly negative. Man’s wickedness must be understood as a characteristic and becomes fundamental when it comes to the political sphere.

Despite the criticism presented above, the terminology “Machiavellianisms” is used in this work, since it is widely accepted in the academic context, having been, over the years, imbued with meaning by various branches of knowledge. In this sense, the Machiavellian personality trait was defined by Christie and Geis in 1970. They sought to define characteristics such as dexterity, manipulation, as well as the endless search for the necessary means to achieve a political goal. According to Judge et al. (2009), people who have this personality trait are quite strategic and calculating in their thinking, as well as manipulating others according to their interests. In addition to those already cited, Machiavelli’s characteristics are: “reputation, cynicism, strategic calculation, tactics, orientation towards the future, low ethical and moral standards, strategy, lack of principles, amorality and flexibility” (D’Souza, p. 23). Individuals with Machiavellian traits do not feel guilty about unethical behavior (Murphy, 2012).

It is necessary to analyze the definitions given of the act of dishonesty, one of which can be determined as counterproductive behavior in the work environment (Ferreira, 2013), the focus of this study. According to Robinson and Bennet (1995), counterproductive behavior violates the standards and principles of the organization, threatening the wellbeing of the environment. These behaviors interfere with the healthy development of the organization (Marcus & Schuler, 2004, Vardi & Weitz, 2004). For behavior to be evaluated as counterproductive, it should be an undesirable act that does not match the interests of the organization (Marcus & Schuler, 2004). In addition, it has to be intentional, as acts such as these can significantly influence the financial situation of the organization (Rotundo & Sackett, 2002).

Therefore, this study proposes to analyze Machiavellian personality traits at low, moderate and high levels (Lopes et al., 2016), and how these may be related to counterproductive attitudes in the routines of future accounting professionals. Thus, the research problem was: **What is the relation between the Machiavellian personality traits and the traces of counterproductivity in future accounting professionals?**

In total, 137 questionnaires were applied to future accounting professionals, who are or have been professionally active. The measures of personality that were used are: Short Dark Triad (SD3), which in addition to measuring behaviors like narcissism and psychopathy also measures the Machiavellian profile (focus of this study), with nine questions for each of these analyses; and the Workplace Deviance Scale (WDS), with 12 items that are proposed to explicitly evaluate trends to manifest Organizational Counterproductive Behavior (CCT-O) and seven that seek to evaluate Interpersonal Counterproductive Behavior (CCT-I) in the workplace.

These questions are justified as the analysis of the accounting employee's profile can help the organization to create personnel management strategies, thus avoiding internal relationship problems and even financial losses to the corporative world (Zettler, Friedrich & Hilbig, 2011). It is assumed that the identification of the origins of such behavior can contribute to the prevention and development of work organization and to intergroup wellbeing (D'Godoy & Noronha, 2005). In addition, studies involving the Dark Triad represent a good research opportunity, especially due to the interdisciplinarity and relevance of this theme (D'Souza & Jones, 2017).

It is worth noting that Machiavellian behavior is not always associated with bad behavior for the company, but rather, there are authors (Judge et al., 2009, Zettler et al., 2011, Jones & Paulhus, 2010) who consider that staff with these characteristics would be of great use to the organization. D'Souza (2016, p.23) considered that there are indeed negative characteristics associated with Machiavellianism; on the other hand, some have positive repercussions on the work environment, especially for leadership positions, such as future orientation, ability to formulate strategy and flexibility.

Also, the study may contribute to discussions that associate the Machiavellian profile with people who act dishonestly in their work environments, such as the behaviors already associated with Machiavellianism and discussed previously. The aim of this study is to identify the extent to which individuals with medium/high Machiavellian traits present counterproductive behaviors in the organizations they operate in.

2. Theoretical Framework

This chapter discusses the bases that served as drivers for the work, such as: definition of counterproductive behavior at work and the Machiavellian profile, as well as instruments to measure these variables. Finally, studies are presented that provide evidence on how these two variables relate and hypotheses are elaborated in order to test that relationship and to analyze the association of both the counterproductive behavior and the Machiavellian profile with the profile of the respondents.

2.1 Counterproductive behavior at work

According to Robinson and Bennis (1995), counterproductive behavior violates the standards and principles of the organization, whether in hierarchically high or low positions (Vardi & Weitz, 2004), threatening the wellbeing of the environment. They are acts intended to undermine the proper functioning of the organization and its staff. These behaviors interfere with the successful development of the organization (Marcus & Schuler, 2004, Vardi & Weitz, 2004).

This refers to employees' involvement with theft and/or lack of productivity but, in some cases, this behavior is not so evident, as the employee uses means that until then would be considered "legal" to justify his counterproductivity, such as, for example, the use of medical certificates to justify frequent absence from work. Absence due to illness is not considered to be counterproductive; what would be considered as such is the fact that the employee presents several certificates when one is not experiencing an actual disease problem (Cullen & Sackett, 2003). Thus, this behavior must be intentional and not accidental (Ferreira, 2013).

Counterproductivity in the organizational environment may be due to one or more specific situations. These situations may be related to

Financial or social pressures, unfair treatment, precarious working conditions or other events that may cause a sense of disparity and/or offense, provoking in the individual a desire to deal with the issue or express dissatisfaction through counterproductive behavior (Ferreira, 2016, p.8).

These are the motivating factors but, in addition to these, it is also necessary to take into account individual personality factors, such as the person's responsibility, his/her way of adapting and relating, as well as his emotional stability (Dalal, 2005).

In this work, we will use tools to evaluate counterproductive behavior (CCT) in the organization. The Workplace Deviance Scale (WDS), developed by Rebecca J. Bennett and Sandra L. Robinson, published in 2000, evaluates such behaviors through direct content, mainly involving robbery, physical assault, sabotage, absenteeism and other behaviors considered dishonest.

This scale of evaluation divides counterproductive behavior into two strands: organizational and interpersonal. The organization deals with the existing relationships among the members of the organization and, for that reason, an account of their own attitudes is evaluated, for example: if one procrastinates the work to gain extra hours, one works intentionally more slowly than one could, among others. The interpersonal strand focuses on behaviors aimed at undermining existing relationships within the organization, in contexts in which other people would be involved, such as: making a joke of someone, insulting someone, acting grossly within the organizational environment, etc. (Bennett & Robinson, 2000).

Studies focusing on the understanding of behaviors revealed in the work environment show that CCTs interfere with the healthy development of the organization (Fine, Horowitz, Weigler, Basis, 2010, Marcus & Schuler, 2004, Vardi & Weitz, 2004).

2.2 Machiavellian profile approach

People's behavior can be summarized, predicted and explained by personality traits, defined as "[...] relatively stable, consistent, and permanent internal characteristics that are deduced from an individual's pattern of behavior, attitudes, feelings, and habits o" (VandenBos, 2010, p.701).

In 2002, Paulhus and Williams developed a tool to study the behavior of individuals with non-pathological traits of narcissism, Machiavellianism and psychopathy, known as the Dark Triad. The three profiles have some similarities (insensitivity and manipulation), despite their differences (D'Souza, 2016). The purpose of this tool is to analyze and understand "disposition trends through a self-report questionnaire" (D'Souza, 2016, p. 21) without the intention of diagnosing personality disorders or psychological problems (Furnham, Richard & Paulhus, 2014, Almeida, Laranjeira & Dractu, 1996).

Machiavellianism, the focus of this research, is one of the profiles analyzed in the Dark Triad, using the Short Dark Triad (SD3) questionnaire. The term «Machiavellianism» comes from the work «The Prince», 1513. A research theme in the managerial area, this psychological profile exerts a great influence on professional decisions and, consequently, on the world of business (Cyrac & Dharmaraj, 1994).

There are studies that elucidate good and bad behaviors associated with individuals with Machiavellian traits. Thus, when one investigates the traits of Machiavellianism, one perceives a personality characterized by a "... calculating attitude toward human relationships and a belief that ends justify the means, though inhumane" (VandenBos, 2010, p. 574).

The Machiavellian ceaselessly seeks success (victory). Thus, his personal interest reigns over everything, and the decision associated with ethics is easily discarded (Milan, 2014). According to Zettler & Hilbig (2010), employees with this profile focus on making their career satisfying only to their personal needs, striving to get the most out of the situation. Hence, the commitment to the team ends up in the background. In this way, this personality trait can lead to the apex or the professional decline (Mynatt, Omundson, Schroeder & Stevens, 1997).

2.3 Empirical Evidence on Machiavellianism and Counterproductive Behavior of accounting professionals

A survey by Hartmann and Maas (2010) of controllers/management accountants who assessed the susceptibility of involvement in creating budget gaps found that a strong Machiavellian profile is more likely to yield to administrative pressures and create budget slack when in need to make decisions. The expectation of the professional with these characteristics is that he can always perform better than others, even when this is not the factual reality (Jain & Bearden, 2011).

In 2008, Shafer and Simmons investigated the relationship between social responsibility, Machiavellianism, and tax evasion in Hong Kong tax professionals and found evidence that Machiavellianism affects the views expressed by tax professionals on corporate ethics and social responsibility, in addition to affecting professional judgment towards aggressive fiscal minimization.

Another study that related the accountant's Machiavellian profile inferred that those with a profile considered high in Machiavellianism are more likely to commit fraud in reports if they have the opportunity, precisely because of the absence of guilt about unethical behavior (Murphy, 2012). Wakefiel's (2008) research considers that the degree of counter-Machiavellianism is lower than that of other professional groups. There are other studies that contradict this conclusion, though, finding a stronger level of Machiavellianism in the accountant in relation to other professions, mainly in relation to professions related to the social area (Roodpooshiti, Nikoomaram & Mahfoozi, 2012).

People with the Machiavellian profile can be considered strategists and calculators in the way of thinking, as well as having the ability to work in complex businesses (Judge et al., 2009, Jones & Paulhus, 2011). This profile in accounting professionals would be very useful in the business environment, as it would help in short, medium and long-term decision making. Moreover, according to Zettler and Solga's (2013) research, people with a high degree of Machiavellianism have better organizational citizenship behavior than those with a lower degree, even though they have ethical problems (Kish-Gephart, Harrison & Treviño, 2010, Malinowski, 2009).

As for organizational behavior, people with a high Machiavellian profile show higher career commitment, lower organizational commitment (Zettler, Friedrich & Hilbig, 2011), greater behavioral influence (Barbuto & Moss, 2006) and behavioral counterproductivity (O'Boyle, Forsyth, Banks & McDaniel, 2012), further reinforcing the idea that this type of personality cares more about itself, leaving collective interest and well-being aside.

The work of Dahling, Whitaker and Levy (2009) also considers that high Machiavellian profiles are prone to counterproductive behaviors and, consequently, to actions that undermine the well-being of the organization (Fox & Spector, 1999). Harrell and Hartnagel's (1976) survey showed that high Machiavellian employee profiles were willing to steal from both a trusting supervisor and a mistrustful supervisor, while those with a low Machiavellian profile were less willing to steal from the trusted supervisor, out of a sense of reciprocity. Such action is linked to counterproductive organizational behavior when dealing with the appropriation of goods in the workplace without permission.

Based on the above, the following research hypotheses were constructed:

- **H₁**: There is a positive and significant relationship between the counterproductive trait of Machiavellianism and behavior.

In relation to the characteristics of the individuals, some studies argue that Machiavellianism is often associated with the gender of the individuals (men present stronger Machiavellian traits, which would be explained by the theory of the Sexual Role) (Webster & Harnos, 2002, Bolino & Tunley, 2003, Sweeney, Arnold & Pierce, 2009, Grohmann & Battistella, 2012, D'Souza & Lima, 2018, D'Souza, Lima, Jones, Daniel, & Carré, 2019). These studies indicate that this association between the Machiavellian profile and gender is linked to the context in which individuals live and relate. This is observed in macho environments where men are required to have postures associated with the characteristics of that profile. In a similar angle, previous studies have shown (War & Beck, 1990, Avelino & Lima, 2017) that counterproductive behavior can be observed more in men than in women, because women are socialized to obey the rules, while socialization for men is less restrictive in this regard.

Thus, hypotheses 2 and 3 are constructed as follows:

- **H₂**: There is a significant relationship between the respondents' gender and the Machiavellian profile.
- **H₃**: There is a significant relationship between respondents' gender and counterproductive behavior.

Regarding the marital status of the respondents, some evidence suggests that married people tend to present a more marked Machiavellian profile, as they seek greater stability and are therefore more willing to seek means that provide them with greater security in their social environment (Lima, Garcia & Pereira, 2012). In relation to single individuals, however, there are reports that they have a higher level of counterproductive behavior, given their willingness to adopt riskier behaviors than their peers (Lima, Garcia & Pereira, 2012).

- **H₄**: There is a significant relationship between the Machiavellian profile and the fact that the individual is married.
- **H₅**: There is a significant relationship between counterproductive behavior and the fact that the individual is single.

Two hypotheses were also constructed that refer to the relation with the contexts of the students' HEI. Students from public HEI suffer a higher performance charge from the start, considering that the college entrance exam seeks to select them only by evaluations; and also during the course, thinking that the institutional opportunities offered to them are conditioned to their performance, whether in the disciplines or the very selection process to which they are submitted (Formiga, 2004, Santos, 2012, Bublitz, Guido, Lopes & Freitas, 2016). Also, socially, the students of public HEIs are required to obtain better results (academic and professional performance) because, as they have had the opportunity to study in an environment funded by public resources, they feel obliged to become individuals with greater prominence and productivity and, by not satisfactorily discharging this burden, may have their behavior associated with the devaluation of this chance. Therefore, it is believed that students of public HEIs are subjects with stronger Machiavellian traits and even with counterproductive behaviors, with the aim of attending to those longings.

- **H₆**: There is a significant and positive relationship with the Machiavellian profile of public HEI students when compared to those of private HEIs.
- **H₇**: There is a significant and positive relationship with the counterproductive behavior of public HEI students when compared to those of private HEIs.

In relation to age, the results are controversial. It is observed that age is capable of influencing both the development of Machiavellian personality and counterproductive behavior but, at other times the results indicate that there is no relation (Cullen & Sackett, 2003, Sweeney, Arnold & Pierce, 2009, Souza, 2016); the organizational scenario hinders the recognition and representation of everyday events, as these environmental circumstances are increasingly complex. For example, factors such as globalization, technology, legislation, diversity of workforce, decentralization, increased knowledge and the need for rapid change and adaptability contribute to the increasing complexity and ambiguities associated with today's work environment, which affects individual challenges (Thiel, Bagdasarov, Harkrider, Johnson & Mumford, 2012). All this adds up to the desire of people to stabilize their lives, which defies their ethical standards and values (Sweeney, Arnold & Pierce, 2009). On the other hand, it is conjectured that as people age, their values become stricter and, therefore, their beliefs and behaviors become increasingly important, which motivates the individual to pursue more ethical behavioral models (Cullen & Sackett, 2003). Based on this argument, the following hypotheses are formulated.

- H_8 : There is a significant and positive relationship between the Machiavellian profile and the respondent's age.
- H_9 : There is a significant and positive relationship between counterproductive behavior and the respondent's age.

3. Method

The research in question is descriptive in nature, as it aims to analyze the event as it happens in practice, therefore using a survey. As for the approach, it is considered quantitative. In relation to strategy, this study can be considered a survey because it makes use of primary sources, in order to meet its objective of analyzing the association between Machiavellian personality traits and counterproductive behaviors in the work in relation to future accounting professionals (Marconi & Lakatos, 2002).

3.1 Questionnaire

The instrument used consisted of four parts: (i) free and informed consent form (TCLE); (ii) socio-economic information about the participant, including information on gender, age, marital status, race, work experience (trainee or contracted), current professional relationship, income, length of professional experience and satisfaction with the workplace; (iii) nine questions assessing the degree of Machiavellianism extracted from the Short Dark Triad - SD3 (Paulhus & Williams, 2002). The Portuguese version of SD3 was developed by D'Souza (2016). This author developed the translation using a method known as back translation, with a total of seven translators involved. Operationally, three professionals translated into Portuguese, after which these three translations were sent to three other professionals, who translated them back into English; and, finally, the six translations were validated by another qualified translator in the area of psychology (D'Souza, 2016). For this study, we use only the first nine questions of SD3, which identify Machiavellian behaviors. The items were evaluated on a five-point Likert scale, where 1 refers to "I totally disagree", 2 "I disagree", 3 "I neither agree nor disagree", 4 "I agree" and 5 "I totally agree"; and (iv) 19 questions aiming to identify counterproductive behaviors in the work environment through the Workplace Deviance Scale (WDS) (Bennett & Robinson, 2000) in the Brazilian context, developed by Nascimento, Araújo, Andrade and Mendonça (2015). After obtaining authorization from the original authors, researchers from the Federal University of Minas Gerais in the area of Psychology translated this questionnaire, also using back-translation (Nascimento et al., 2015). The items were evaluated on a five-point Likert scale, where 1 refers to "Never", 2 "Very rarely", 3 "Rarely", 4 "Occasionally", 5 "Often", 6 "Very often" and 7 "Always". Both scales followed those used by the Brazilian researchers in translating the instruments.

In D'Souza's work (2016), the classification criterion adopted was: (i) – initially, the average of each individual was measured and, then, the group median was calculated; (ii) for analysis purposes, the following were considered: Low traits - results that were below the median; Moderate traits - median results; and High traits - results above the median. In order to permit a better relationship between the variables “Machiavellianism” and “counterproductivity”, this study adopted the tertile for sample segregation at low, moderate and high levels of Machiavellianism and counterproductivity. The calculation of the tertiles was obtained by dividing the sample range by three for each of the variables that compose the sample. The low level refers to the smallest range and so on for the other levels considered (D'Souza, 2016).

Aiming to guarantee the validity of the instrument to the research context, a pre-test was performed, seeking greater accuracy, so that the data collected could be the most accurate representation possible of the research context. Thus, a pre-test was carried out with three students from a master's degree course in accounting in Minas Gerais to identify possible problems with the questions, and it was verified that the instrument fit its context. Therefore, the instrument was valid to gather the information that supported the signs discussed in this research.

To analyze the reliability of the questionnaire, the Cronbach's alpha test was performed. With regard to the psychometric evidence of the scale provided by the authors of the instrument, Nascimento et. al (2015) presented an alpha of 0.81 for the organizational deviance scale (CCT-O) and 0.77 for interpersonal deviance (Ferreira, 2013); with respect to the Machiavellian alpha, a study developed by D'Souza (2016) found an alpha coefficient of 0.75. Thus, this study results in reliability coefficients close to those presented when the questionnaires were created and translated: General Cronbach's alpha of 0.72, MQ 0.66, CCT-O 0.81 and CCT-I 0.77.

3.2 Variables Analyzed

The mapping of the empirical part of this study was based on the correlational relationships of variables, so that the relationships that occur naturally between them could be described, as presented in Figure 1.

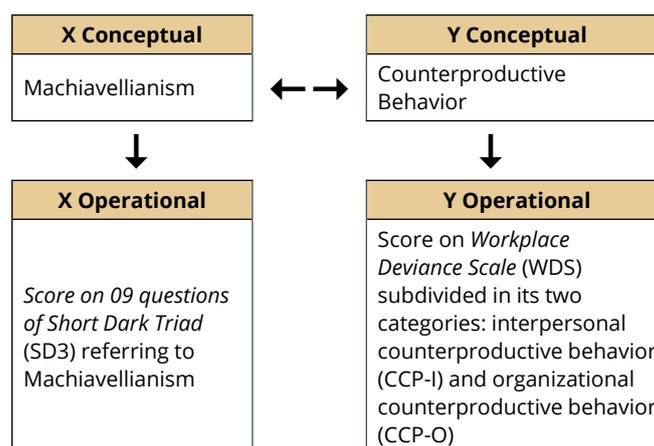


Figure 1. Research Design

3.3 Sample

Two hundred questionnaires were distributed to four HEI: two public, the Federal University of Minas Gerais (UFMG) (located in Belo Horizonte-MG) and the Federal University of Espírito Santo (UFES) (located in Vitória – ES), and two private HEI, located in MG (UNIFOR-MG) (University of Formiga) and Faculdades Pitágoras (Divinópolis branch). The teaching institutions and respondents were selected based on access criteria, which requires greater care for inferences, as the population the sample was selected from might differ substantially. Hence, the results cannot be generalized to the population, as they are restricted to the research sample.

As for the data collection procedures, a questionnaire was applied to students with current or previous professional experience. The respondents from the public institutions had access to the printed questionnaire, applied in the presence of the researchers with the responsible faculty members' consent. Although the respondents from the private institutions had access to the printed questionnaire, the institutions did not permit the researchers' presence on-site, so that only the coordination was present. The data were collected in May and June 2017.

In response, 149 answers were obtained. Some questionnaires were not fully answered, which made the analysis impossible; others were not answered, resulting in a final sample of 137 Accounting students from undergraduate Accountancy programs.

3.4 Data analysis

Before performing statistical tests, it is necessary to describe the data that make up the study sample by means of a descriptive analysis. In this study, the sample is described through graphs and tables that aim to highlight trends and favor the subsequent analysis of the data.

The inferential assumption that the data come from a certain population and are distributed according to the normal distribution is the basis for the application of several statistical tests. The existence of data normality is verified by the application of a normality test. Among the several tests in the literature, the Kolmogorov Smirnov test compares the absolute maximum difference between the cumulative distribution function of the normal distribution and the empirical distribution of the sampled data. The test presents the null hypothesis of data normality against the alternative of absence of normality (Siegel & Castellan Jr., 2006).

In this study, the objective was to verify the existence of significant differences, in relation to Machiavellianism and counterproductive behavior, segregated in relation to social variables, such as gender, race, income, etc. The mean values of two variables can be compared in terms of significant differences by means of a non-parametric Mann-Whitney test. The main difference between the t and Mann-Whitney tests relates to the distribution of the sample data. The t-test assumes the normality of the data, unlike the non-parametric Mann-Whitney test, also known as U-test, which verifies the presence of a significant difference between the measured values of the sampled data and does not require the normality assumption of the data (Devore, 2006).

In order to achieve the proposed objectives, it is necessary to verify the existence of a relationship between the variables in this study. The existence of a relationship between the variables can be investigated using the Pearson correlation coefficient or Spearman's correlation coefficient. The first coefficient assumes the existence of a linear relationship between the variables and also requires that they be measured in a class interval.

The second statistical approach, Spearman's correlation coefficient, is a non-parametric technique - it does not require the guarantee of data normality. Therefore, it does not require, a priori, any kind of assumption about the distribution of analyzed variables. Spearman's coefficient also has the advantage of not strictly capturing the linear relationship between the research variables (Siegel & Castellan Jr., 2006).

4. Results

The descriptive statistics of the sample in this study are presented below. Table 1 shows the results evidenced in relation to social aspects such as: gender, race, type of educational institution (public or private) and marital status. The average profile of the respondents was of female subjects (53%); 56% self-declared white; 86% are single and most are students of public universities.

Table 1
Distribution of the Respondents per gender, race, marital status, public or private education of the participants.

Variable		Frequency		
		Distribution	Absolute	Relative
Gender	Female		73	53%
	Male		64	47%
	Total		137	100%
Marital Status	Single		118	86%
	Married		16	12%
	Separated		3	2%
	Widowed		0	0%
	Other		0	0%
	Total		137	100%
Race	White		77	56%
	Yellow		3	2%
	Black		19	14%
	Mulatto		35	26%
	Indigenous		1	1%
	Missing		2	1%
	Total		137	100%
Type HEI	Public		73	53%
	Private		64	47%
	Total		137	100%

Source: elaborated by the authors

The mean age of participants was 25.4, the median found was 23, with a standard deviation of 7.1, with a minimum age of 18 years and a maximum of 58, and 25 of the respondents did not inform their ages. Also based on the sample data, six distribution ranges of the respondents were developed (Table 2). As verified, 42% of the interviewees (57) are in the age group of 21 to 25 years, followed by 20% of respondents aged 25 to 30 years, and only four respondents are older than 50 years.

Table 2
Distribution of the participants per age range

Range	Frequency	
	Absolute	Relative
Up to 20 years	19	14%
21 to 25	57	42%
25 to 30	27	20%
30 to 40	8	6%
40 to 50	1	1%
Over 50 years	4	3%
Missing	21	15%
Total	137	100%

Source: elaborated by the authors

Table 3 shows the summary and variability measures related to the three main variables of the study: Machiavellian - MQ, Organizational Counterproductive Behavior - CCT-O and Interpersonal Counterproductive Behavior. The descriptive statistics, evidenced in Table 3, allow us to infer that the variable MQ can be normally distributed, as all the summary measures (mean, mode and median) are close. In contrast, the distinction between the same measures for the CCT-O and CCT-I variables allows us to infer a possible asymmetry in their distribution.

Table 3
Statistics Machiavellianism, CCT-O and CCT-I

	MQ	CCT-O	CCT-I
Mean	30.37	21.26	10.45
Median	30.00	20.00	9.00
Mode	30.00	12.00	7.00
Standard Deviation	5.33	7.36	4.31
Minimum	16.00	12.00	7.00
Maximum	45.00	49.00	32.00

Source: elaborated by the authors

In order to verify the fitness of the tests to analyze the research data, the normality test of the variables Machiavellianism - MQ, Organizational Counterproductive Behavior - CCT-O and Interpersonal Counterproductive Behavior - CCT-I was executed. Table 4, below, refers to the normality test of the three main study variables. The results reveal that, at the 0.05 level of significance, only the Machiavellian (MO) variable presents a normal distribution.

Table 4
Kolmogorov- Smirnov Normality Test

Variables	P-Value
Machiavellianism - MQ	0.545
Organizational Counterproductive Behavior - CCT-O	0.000
Interpersonal Counterproductive Behavior - CCT-I	0.000

Source: elaborated by the authors

In relation to the prevalence of the Machiavellian, CCT-O and CCT-I profile, Figure 2 shows that most respondents present a moderate Machiavellian profile (65% of respondents). This result is in line with the work of Wakefiel (2008), who considered that accountants are less Machiavellian than other professional groups studied, as well as the work of D'Souza and Lima (2018) and D'Souza, Lima, Jones and Carré (2019). On the other hand, it goes against the work of Lopes et al. (2016), which indicated a low profile for accounting students. When analyzing the profiles of counterproductive behavior, we found higher concentrations of individuals in the low profile (73% and 89%, respectively).

The information above presents an important contribution of this sample, as it can be inferred that, despite the preponderance of individuals with a moderate profile of Machiavellian behavior, these do not present indications of counterproductive behaviors in the organizations where they act. This finding contradicts some recent studies in the area that related the Machiavellian profile to dishonest performance, such as the ability to deceive and defraud financial reports (Murphy, 2012), perform earnings management (Shafer & Simmons, 2011), and create budget slack in decisions under pressure (Hartmann & Maas, 2010). Although the questionnaire applied here does not directly take into account these types of behaviors, individuals do not self-declare capable of manifesting counterproductive behaviors in their organizational tasks.

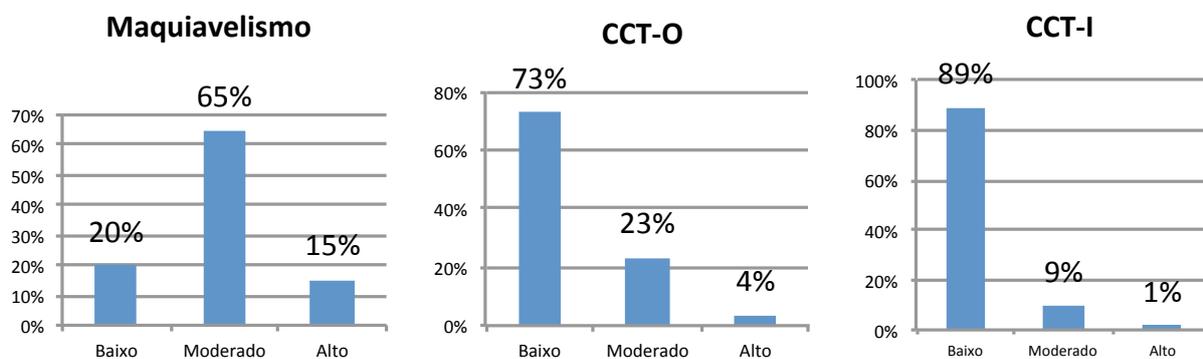


Figure 2. Bar graph of variables MQ, CCT-O and CCT-I

Source: elaborated by the authors (TRAD: Machiavellianism, low, moderate, high)

Table 5, below, shows the Correlation test for the MQ, Organizational Counterproductive Behavior - CCT-O and Interpersonal Counterproductive Behavior - CCT-I variables. Table 5 shows that there is a strong positive (0.626) and significant ($p\text{-value} = 0.000$) positive relationship between the Organizational Counterproductive Behavior (CCT-O) and Interpersonal Productive Behavior (CCT-I) variables, which allows us to infer that a higher degree of CCT-O is related to a higher CCT-I.

In the statistical analysis, based on the correlation presented (Table 5), an individual with a Machiavellian profile does not necessarily represent a profile for counterproductive behavior in organizations. On the other hand, the sample shows a strong correlation between Organizational Counterproductive Behavior and Interpersonal Counterproductive Behavior, which corroborates the results of Nascimento, Araújo, Andrade & Mendonça (2015), who found that only WDS identified a moderate correlation between CCT-O and CCT -I of 0.46, with the result of this study being 0.626.

Table 5

Spearman's correlation test

Variables	P-Value	Coefficient
MQ versus CCT-O	0.073	0.154
MQ versus CCT-I	0.056	0.164
CCT-I versus CCT-O	0.000	0.626

Source: elaborated by the authors

Table 6 presents the mean coefficients of the variables Machiavellianism – MQ, Organizational Counterproductive Behavior - CCT-O and Interpersonal Counterproductive Behavior CCT-I measured in relation to social factors (gender, marital status and type of education). The table reveals that the Machiavellian trait seems to be clearer in men than in women (p -value=0.0254) and in public HEI students (p -value=0.0823). What the marital status is concerned, the Machiavellian characteristics seem to be more present in married individuals, although this association was not confirmed statistically.

Although the studies that also presented this type of analysis did not use the same tool to survey the Machiavellian profile, Grohmann and Battistella (2012) used the Machiavellianism Personality Scale for example, and also concluded that men presented higher means (without statistically significant differences). Besides those authors, Webster and Harnos (2002), Bolino and Tunley (2003), Sweeney, Arnold and Pierce (2009) also identified this behavior. This characteristic can be attributed to the standards that are socially desired of men, in that these required postures end up being similar to the standards defined by the Machiavellian profile.

Table 6

Means of Variables MQ, CCT-O, CCT-I

Variables	Gender		Marital Status			Type of Education	
	Male	Female	Married	Single	Divorced	Private	Public
MQ	31.32	29.51	31.16	30.27	30.33	20.28	31.32
CCT-O	20.84	21.7	20.87	21.33	19.33	19.25	23.01
CCT-I	10.58	10.30	10.00	10.54	9.33	8.92	11.79

Source: elaborated by the authors

In order to verify if the associations presented in Table 6 were statistically significant, Tables 7, 8 and 9 were produced, shown below, which refer to the association test for the variables Machiavellianism - MQ, Organizational Counterproductive Behavior - CCT-O and Interpersonal Counterproductive Behavior - CCT-I, segregated by social factors (gender, marital status and type of educational institution - public or private).

Table 7, referring to the mean test, for the variables MQ, Organizational Counterproductive Behavior - CCT-O and Interpersonal Counterproductive Behavior - CCT-I, refers to the comparison of the mean values of each of the variables in relation to gender (male and female). The observation of the table shows that, at the 0.05 level, all the analyzed variables present significant associations. In relation to CCT-O, women reported having a higher degree, which could be an indication of behavior change regarding the historically reported and expected role for women (War & Beck, 1990).

Table 7

Association Test – per gender

Variables	P-Value
Machiavellianism – MQ	0.00145
Organizational Counterproductive Behavior – CCT-O	0.0040
Interpersonal Counterproductive Behavior – CCT-I	0.0001

Source: elaborated by the authors

Table 8 shows the test of means for the variables MQ, Organizational Counterproductive Behavior - CCT-O and Interpersonal Counterproductive Behavior - CCT-I in relation to the marital status of the sampled individuals. The analysis of the table shows that only the Machiavellian variable (MQ) does not present significant differences in relation to its mean values for the different types of marital status (single, married and divorced). For the other variables, CCT-I and CCT-O, it is significant differences exist in terms of marital status.

Table 8

Association Test – per marital status

Variables	P-Value
Machiavellianism – MQ	0.8271
Organizational Counterproductive Behavior – CCT-O	0.0465
Interpersonal Counterproductive Behavior – CCT-I	0.0026

Source: elaborated by the authors

Regarding the type of higher education institution - public and private - the employee association test indicated a significance level of 10% for MQ and 1% for other dimensions that there is an association with the type of HEI. Table 4 shows that, in the three dimensions, the students of the public HEI had a higher average than those of the private HEI.

Table 9

Association Test – per education type

Variables	P-Value
Machiavellianism – MQ	0.0823
Organizational Counterproductive Behavior – CCT-O	0.0029
Interpersonal Counterproductive Behavior – CCT-I	0.0002

Source: elaborated by the authors

A Correlation test was also performed between the MQ, CCT-O and CCT-I dimensions and the age of the respondents.

Table 10

Correlation MQ, CCT-O, CCT-I with age

Category	MQ	CCT-O	CCT-I	
Age	Correlation	0.0368	0.1141	0.0082
	P-value	0.6961	0.2167	0.9296

Source: elaborated by the authors

According to Table 10, correlations other than low (all below 0.15) are not significant either ($p\text{-value} > 0.1$), which is indicative that age does not influence those three variables. This result may be related to the sample, as approximately 76% of the sample is younger than 30 years of age, and therefore composed mainly of young people, which may have influenced the identification of the effect of life experience on the variables MQ, CCT-O and CCT -I, although it has already been mentioned that the age effect seems to be controversial in the studied variables (Cullen & Sackett, 2003, Sweeney, Arnold & Pierce, 2009, D'Souza, 2016, Thiel et al., 2012).

In summary, based on the data, a positive and low, but statistically non-significant association between Machiavellian and both Organizational and Interpersonal Counterproductive Behavior can be mentioned ($p\text{-value} > 0.05$). This analysis reveals that there is evidence to reject H₁, which is contrary to several works, such as Shafer and Simmons (2008), Hartmann and Maas (2010), Zettler, Friedrich and Hilbig (2011), Murphy (2012), O'Boyle et al. (2012). For the authors, however, this can be explained by the predominantly moderate profile of the students who participated in the research (65% of them have this profile). According to Harrell and Hartnagel (1976), Dahling, Whitaker & Levy (2009), Hartmann and Maas (2010) and Zettler, Friedrich & Hilbig, (2011), the association between Machiavellianism and counterproductive behavior would be perceived only in high Machiavellianism, considering that their moral limitations would be more elastic than individuals with lower and moderate profiles (Murphy, 2012).

Another hypothesis that the data support is related to the respondents' gender. H₂ and H₃ signaled that the respondents' gender influences the variables and, in this study, it was found that they could not be rejected, that is, there is evidence to indicate that the respondents' gender is something that is associated with degrees of Machiavellianism and Counterproductive Behavior, according to Ward and Beck (1990), Webster and Harnos (2002), Bolino and Tunley (2003), Sweeney, Arnold and Pierce (2009), Grohmann and Battistella (2012), Avelino and Lima (2017), D'Souza and Lima (2018), D'Souza, Lima, Jones, Daniel and Carré (2019).

Regarding H₄ and H₅, again based on the results, H₄ did not present a statistically significant association ($p\text{-value} = 0.8271$); on the other hand, H₅ was statistically significant ($p\text{-value} < 0.05$). Considering that an association was identified regarding the marital status of the respondents, the data of this research indicate that married respondents do not have a Machiavellian level higher than the other marital statuses, although single individuals who participated in the study reported higher counterproductive behavior.

For H₆ and H₇, evidence has been found that permits concluding that, for the first, there is no statistically significant association ($p\text{-value} = 0.0823$) whereas, for the second, the association is statistically significant ($p\text{-value} < 0.01$). These hypotheses indicated that the public HEI students participating in the research would present a more marked degree of Machiavellianism and Counterproductive Behavior than those of private HEIs, which was therefore partially in line with other works (Formiga, 2004, Santos, 2012, Bublitz, Guido, Lopes & Freitas, 2016).

Finally, with respect to age, base for H₈ and H₉, the research data demonstrated that the relationship is weak and not significant. Therefore, both H₈ and H₉ were rejected ($p\text{-value} > 0.1$).

5. Conclusion

This work sought to evaluate the relationship between the Machiavellian personality traits and the traits of counterproductivity in future accounting professionals. For this purpose, 137 questionnaires were applied in four higher education institutions: the Federal University of Minas Gerais (UFMG), the Federal University of Espírito Santo (UfesFES), the University of Formiga (UniforNIFOR-MG) and the Faculdades Pitágoras (Divinópolis Branch), and the study sample consisted of two public institutions and two private institutions.

The literature shows that personality traits can explain people's behavior, as well as justify their negative and positive attitudes. The presence of these traits can sometimes demonstrate organizational disadvantages, but may also prove to be advantageous, especially when the degree found is moderate (D'Souza & Lima, 2015). In addition, several researches present a negative view of the Machiavellian profile, which is particularly due to their behavior within the organization, which is characterized by the manipulation of something to their benefit.

In the conceptualization of Machiavellianism, literature associates its main characteristics with personalities that act for their own benefit, coldly, as most of the authors who approach the subject describe the Machiavellian individual as people who considers their individual interests as superior to the interests of the group they are inserted in. The counterproductive behavior of employees of a given institution may deviate the company from the goal proposed by its top executives and shareholders, and individuals with Machiavellian characteristics may lead the company along paths that are not satisfactory to its policies and practices.

Based on the assumption that Accounting encompasses equity information of the organization, it should be verified if Machiavellian accountants could manifest counterproductive behaviors in their work, elaborating distorted information and that did not portray the actual equity position of the entity.

The main finding of this work was the lack of empirical evidence to conclude about the existence of a relationship between Machiavellian and counterproductive behaviors in relation to future accounting professionals. Although it cannot be affirmed that the moderate trait of Machiavellianism is present in most of the interviewees (65%), the results of counterproductivity showed that most of the interviewees self-declared a low profile of organizational and interpersonal counterproductivity (73% and 89%). This result goes against the results found by several authors who conclude that individuals with moderate to high Machiavellian profiles decide opportunistically, through strategies that maintain their reputation and allow the achievement of personal goals and objectives (Milan, 2014, Zettler & Hilbig, 2010, Vandembos, 2010, D'Souza, 2016, Shafer & Simmons, 2008). According to Judge et al. (2009), Zettler et al. (2011), Jones and Paulhus (2010) and D'Souza (2016), however, when individuals show moderate traits in relation to the Dark Triad characteristics, they can reveal talents, creativity, innovation, and better individual and corporate performances, so some degree of Machiavellianism can be of benefit.

The results allow us to infer that the Machiavellian trait seems to be more evident in males than in females (31% males and 29% females), as found by Grohmann and Battistella (2012), when using a different instrument, known as the Machiavellianism Personality Scale.

The identification of professional profiles helps companies in their selective processes as well as in periodic evaluations with the purpose of promoting organizational development (Ferreira, 2013). Thus, the results presented here can help human resources professionals to better recruit and train employees. Authors, such as Judge et al. (2009) and Jones & Paulhus (2011) have identified that people with Machiavellian profiles are strategists and calculators and have the ability to work in complex businesses. Zettler and Solga (2013) conclude that people with a high degree of Machiavellianism have better organizational citizenship behavior. As a contribution of this study, the understanding that the moderate Machiavellian profile does not necessarily present counterproductive behavior can help the management area in its selection processes and evaluations, revealing support that reject paradigms that are often resistant to this professional profile and that associate it, often unfairly, with patterns of behavior.

In fact, the data of this research evidence a positive relationship between the interpersonal and organizational counterproductive behavior, allowing to infer that a higher level of organizational counterproductivity among professionals is associated with higher levels of interorganizational counterproductivity. This finding can be confirmed in Nascimento et al. (2015), who found a moderate correlation, suggesting that they are related.

The results point to the need for more studies in the Brazilian context that analyze the profile of the accounting professional, with a view to evidencing manifestations of behaviors more clearly, also recommending the inclusion of a variable that signals the professional's length of experience, as this would permit analyzing whether that variable can influence Machiavellianism or counterproductive behavior.

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