



I keep my mind on my money and my money on my mind: Trait Machiavellianism in business majors

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ABSTRACT

Recent research has shown a particularly positive association between Machiavellianism and academic major choices, namely Economics, Law, and Politics. Interestingly, previous findings indicated that the academic major Business – usually portrayed as power-hungry and greedy in mainstream media and movies – was not positively associated with Machiavellianism. In this paper, we posit that these prior results are incomplete since Business is a college major encompassing several sub-fields (e.g., Advertising, Finance, Human Resources). Using a sample of 2630 participants from 110 countries and nine business majors, we found overall support for a significant association between Machiavellianism and specific business specializations, with Finance majors scoring highest on Machiavellianism. We compare these findings to prior results and break down results by gender.

1. Introduction

Previous scholarship has highlighted that distinct academic disciplines attract students with varying personality profiles (Harris, 1993; Vedel, 2016; Vedel & Thomsen, 2017). Notably, Gruda et al. (2023) recently observed a robust correlation between Machiavellianism and academic majors such as Economics, Law, and Politics. These authors postulated that individuals exhibiting high levels of Machiavellianism are motivated by aspirations of power, status, and social dominance, thus gravitating towards “things-oriented” majors which are more conducive to realizing these objectives (Gruda et al., 2023) rather than “people-oriented majors” such as Education, Nursing or Social Work. However, this previous study did not corroborate a somewhat expected association between Machiavellianism and the academic major Business. This finding is despite prevailing societal portrayals of corporate professionals, particularly those in leadership roles, as power-driven, attention-seeking, and acquisitive (Zitelmann, 2020). All of these characteristics align quite well with Machiavellianism. In this paper, we argue that this incongruity is due to the broad categorization of business-related disciplines, which might obscure nuanced distinctions within the field.

With business degrees representing about 18 % of the 2.1 million bachelor's degrees awarded in the U.S. during the 2020–2021 academic

year (National Center for Education Statistics, 2023), this major occupies a significant portion of the college degree landscape. However, business encompasses a heterogeneous array of disciplines, including Finance, Human Resources, and Marketing, each with distinct attractors for different individuals. It is therefore important to disaggregate the business major category into more refined sub-disciplines and reassess the association between Machiavellianism and various business sub-disciplines. Doing so, we endeavor to develop more targeted insights for business schools, educators, career counselors, and business students, thereby facilitating judicious decisions aligned with individual personality traits and educational and to some degree vocational aspirations.

1.1. Machiavellianism and college majors

Prior scholarship has extensively scrutinized the nexus between the Big Five personality traits and college major preferences across disciplines (Vedel, 2016), illuminating a discernible relationship between student personality and major selection across the humanities, sciences, and social sciences (Harris, 1993). Recent investigations have extended this exploration to encompass the Dark Triad traits (Vedel & Thomsen, 2017). Machiavellians, in particular, exhibit adeptness in influencing others to achieve their desired objectives, employing tactics such as

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deception, manipulation, coercion, or force (Gruda et al., 2023), to accrue power and positions of authority. Vedel and Thomsen (2017) observed that students majoring in Business and economics exhibited significantly higher Machiavellian scores compared to their counterparts in Political Science and Law, with both cohorts surpassing Psychology majors in Machiavellian tendencies. Nevertheless, the respective small sample size from a single country and the limited number of academic majors constrained Vedel and Thomsen's study.

Another study by Tang and Chen (2008) found that Machiavellianism mediated the relationship between the love of money and unethical behavior, primarily among (male) business students but not psychology students. However, again, Tang and Chen (2008) treated the academic major business as a monolithic field and did not identify nor distinguish between different sub-fields of business.

The most recent study (Gruda et al., 2023) on this topic expanded this research trajectory with a substantially larger sample encompassing diverse majors and countries across academic disciplines. Their findings revealed that individuals who score high on Machiavellianism are more likely to choose "things-oriented" majors, such as Economics, Law, and Politics, rather than "people-oriented" majors like Education or Nursing. "Things-oriented" majors emphasize working with systems, objects, or abstract concepts, where interpersonal interactions are less central. Examples include fields such as engineering, finance, or economics, where success is typically linked to obtaining and interpreting information and resources. In contrast, "people-oriented" majors involve careers centered around human interaction and care, such as Nursing, Social Work, or Education, where interpersonal skills and relationships are key. This distinction is crucial in understanding Machiavellianism, as Machiavellians prefer environments where they can achieve dominance and success through strategic manipulation. "Things-oriented" majors align much better with the strategic, goal-driven nature of Machiavellianism, resulting in careers with more opportunities for control and influence, than "people-oriented" majors.

Building upon these findings, we argue for a closer examination of the relationship between Machiavellianism and college major selection. Specifically, in this study, we focus on the relationship between Machiavellianism and several business sub-fields including Accounting, Advertising, Event Management, Finance, Human Resources, International Business, Management, Marketing, and Operations Management. We argue that business sub-disciplines feature both things-oriented and people-oriented majors, and therefore should be examined separately and not as one category. We expect majors such as those more directly associated with money (i.e., Finance) to be particularly attractive to Machiavellian individuals due to their emphasis on gaining power, and monetary rewards, as well as obtaining key strategic organizational positions (e.g., Chief Financial Officers).

Finally, in the present study, we also examine gender differences. Gender has played a significant role in prior studies examining Machiavellianism (Collison et al., 2020), as well as Machiavellianism and academic major selection, with consistent findings showing that men tend to score higher on Machiavellian traits than women (Gruda et al., 2023; Vedel & Thomsen, 2017), regardless of the academic major participants chose. Gender differences are crucial to explore because they not only reflect societal expectations and gender roles but also provide insight into how personality traits such as Machiavellianism manifest in different academic and career choices. For example, while Gruda et al. (2023) found that Machiavellianism is associated with "things-oriented" majors, men were also more likely to be drawn to the same majors, including Economics, Law, and Politics. Examining gender in our study allows us to determine whether these established patterns extend to business sub-fields, where both "things-oriented" (e.g., Finance) and "people-oriented" (e.g., Human Resources) majors exist. Male students may be drawn more to power-centric fields like Finance, while female students may be more likely to pursue people-oriented fields like Human Resources. By including gender in our analysis, we not only provide a comparison to previous studies but also position our findings within the

broader context of how gender and personality traits interact to shape academic and career trajectories. This allows for a more fine-grained understanding of how Machiavellianism operates across genders within the business major landscape.

2. Methods

The sample of this study derives from a publicly available dataset (<https://openpsychometrics.org>) comprised of 2630 participants (46.83 % female) across 110 countries, who provided self-report Machiavellianism scores and indicated they completed one of nine business-related academic majors (minimum 50 observations per business major). Only participants who specified a business sub-discipline major, instead of merely indicating they studied "Business" were included in the present study. Data collection occurred between July 2017 and March 2019. Included majors are listed in Table 1.

2.1. Measures

2.1.1. Machiavellianism

Machiavellianism ($\alpha = 0.88$; $M = 3.32$, $SD = 0.77$) was assessed using the online version of the 20-item MACH-IV scale (1 = disagree, 5 = agree; Christie & Geis, 2013). Items were presented at random and included statements such as "It is hard to get ahead without cutting corners here and there" and "The best way to handle people is to tell them what they want to hear."

2.1.2. Demographics

To be able to provide a comparison to findings of prior work (Gruda et al., 2023), we examined results by gender as well.

3. Results

Machiavellianism scores were standardized (z-scores) for comparison. Machiavellian group-mean reliability was high ($ICC(2) = 0.87$). The $ICC(2)$ measures how reliably the average Machiavellianism score for each major reflects the overall level of Machiavellianism within that group. The obtained result indicates that differences in Machiavellianism can be attributed to the choice of major, rather than random individual variation. Furthermore, a one-way ANOVA concluded significant standardized Machiavellian score differences between business college majors ($F = 7.92$, $p < .001$). This strengthens our argument that certain college majors systematically attract individuals with higher

Table 1
Overview of examined business majors.

	M	SD	n	n _{male}	n _{female}
Accounting	3.23	0.74	698	344	354
Advertising, public relations and sales	3.25	0.81	108	36	72
Event, hospitality, sports and tourism management	3.29	0.76	165	80	85
Finance	3.53	0.79	547	372	175
Human resources	3.10	0.79	102	33	69
International business	3.38	0.84	58	29	29
Management	3.26	0.77	499	265	234
Marketing	3.28	0.76	399	213	186
Operations management	3.37	0.73	54	35	19
Comparison majors					
Economics	3.45	0.75	1185	797	388
Law	3.51	0.76	1246	675	571
Politics	3.52	0.76	1042	631	411

Note: Comparison majors = majors previously identified as associated with Machiavellianism (Gruda et al., 2023), these majors were solely included for comparison reasons and do not constitute the sample used for analyses; $n = 2630$ participants (min. 50 observations per major).

levels of Machiavellianism. To visualize the distribution of standardized Machiavellianism scores across college majors, we graphed results accordingly (Fig. 1).

As shown in Fig. 1, we found substantial differences in Machiavellianism scores across most business majors. Participants with the lowest Machiavellianism scores had majored in Human Resources (standardized mean scores (M) = -0.29), while finance majors scored highest (M = 0.27).

To provide a comparison to previous findings, we juxtapose examined business specializations with previously identified college majors that were positively associated with Machiavellianism (i.e., Economics, Law, and Political Science). The data used for the comparison between business majors and these additional comparison majors all came from the same publicly available dataset. Solely for this comparison (not applicable to the remaining analyses shown in this paper), z-scores were calculated by standardizing Machiavellianism scores across the entire dataset, including both business and non-business majors. Results show that Finance majors scored higher on Machiavellianism than Economics (M = 0.04, $t = -2.07, p = .04$), but not significantly higher than Law (M = 0.13, $t = 0.37, p > .10$), and Political Science majors (M = 0.13, $t = 0.21, p > .10$).

A mean comparison test ($t = 15.12, p < .001$) indicated that male participants (M = 0.26) scored significantly higher on Machiavellianism than female participants (M = -0.29). Significant gender differences were found for the majors Accounting ($t = 8.40, p < .001$), Event, Hospitality, Sports and Tourism ($t = 3.11, p = .002$), Finance ($t = 5.35, p < .001$), Human Resources ($t = 3.88, p < .001$), International Business ($t = 3.64, p < .001$), Management ($t = 5.92, p < .001$) and Marketing ($t = 4.77, p < .001$). No gender differences were found in the majors Advertising, Public Relations, and Sales and Operations Management, most likely due to the limited sample of these sub-disciplines in our data set. To illustrate gender differences results, we graphed Machiavellianism scores across majors and genders. Respective results are shown in Fig. 2.

As shown in Fig. 2, for men, the highest levels of Machiavellianism were found among those majoring in International Business (M = 0.55), followed closely by Finance (M = 0.43) and Human Resources (M = 0.24). These results suggest that men who pursue these majors score

higher on Machiavellianism. Notably, majors like Management (M = 0.16), Marketing (M = 0.16), and Operations Management (M = 0.19) also exhibit positive associations with Machiavellianism for men, but to a lesser degree. Men in the remaining majors show slightly lower but still positive levels of Machiavellianism.

In contrast, for women, Machiavellianism scores tended to be lower across all majors, especially in Human Resources (M = -0.54), International Business (M = -0.39), and Management (M = -0.35). Women majoring in Finance (M = -0.07) were less likely to score high on Machiavellianism (M = -0.07). This suggests that women in these fields exhibit fewer Machiavellian tendencies compared to their male counterparts. Notably, women majoring in Accounting (M = -0.40) and Event, Hospitality, Sports, and Tourism (M = -0.26) were the least likely to score high on Machiavellianism. Across all majors women score significantly lower on Machiavellianism compared to men, highlighting a gender-based difference in how Machiavellian traits manifest across business fields.

4. Discussion

Within the academic landscape of college majors, Business stands out for its diverse array of sub-disciplines, each appealing to students with distinct personalities and interests. This varied field implies that certain branches of business studies might align more closely with particular student personality profiles. In this study, we found that participants majoring in Finance exhibited the highest levels of Machiavellianism, surpassing those in traditionally “Machiavellian-associated” majors such as Economics, Law, and Politics. This finding suggests a unique allure of Finance for individuals with highly Machiavellian traits, potentially due to its more direct association with financial rewards and power dynamics compared to other business majors (e.g., Human Resources).

Furthermore, our study shed light on substantial gender differences in Machiavellianism across business majors. Male participants consistently scored higher on Machiavellianism than their female counterparts, with particularly pronounced disparities in fields like Finance, Entrepreneurship, and Operations Management. This gender disparity underscores the influence of gender on the interplay between personality traits and academic preferences, aligning with previous research

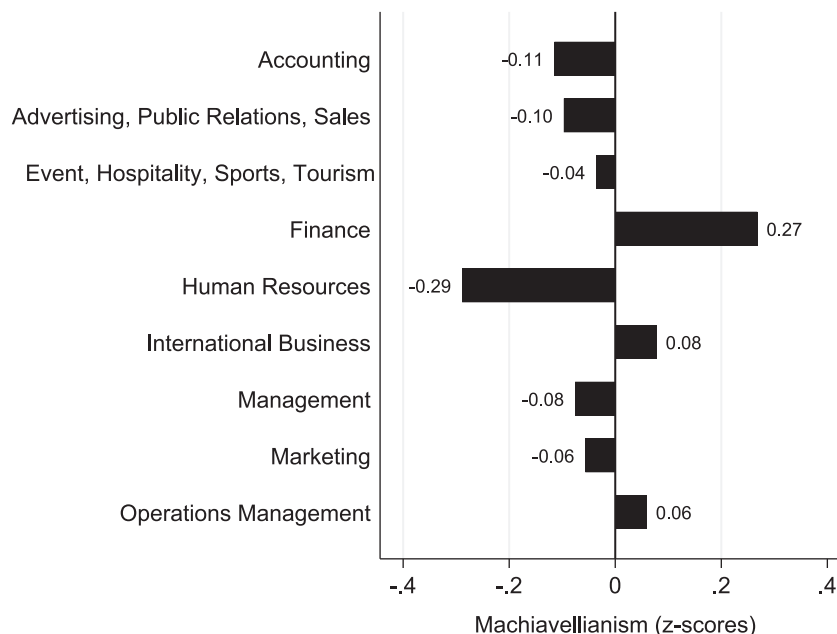


Fig. 1. Machiavellianism scores by college major. Note: n = 2630 participants (min. 50 observations per major).

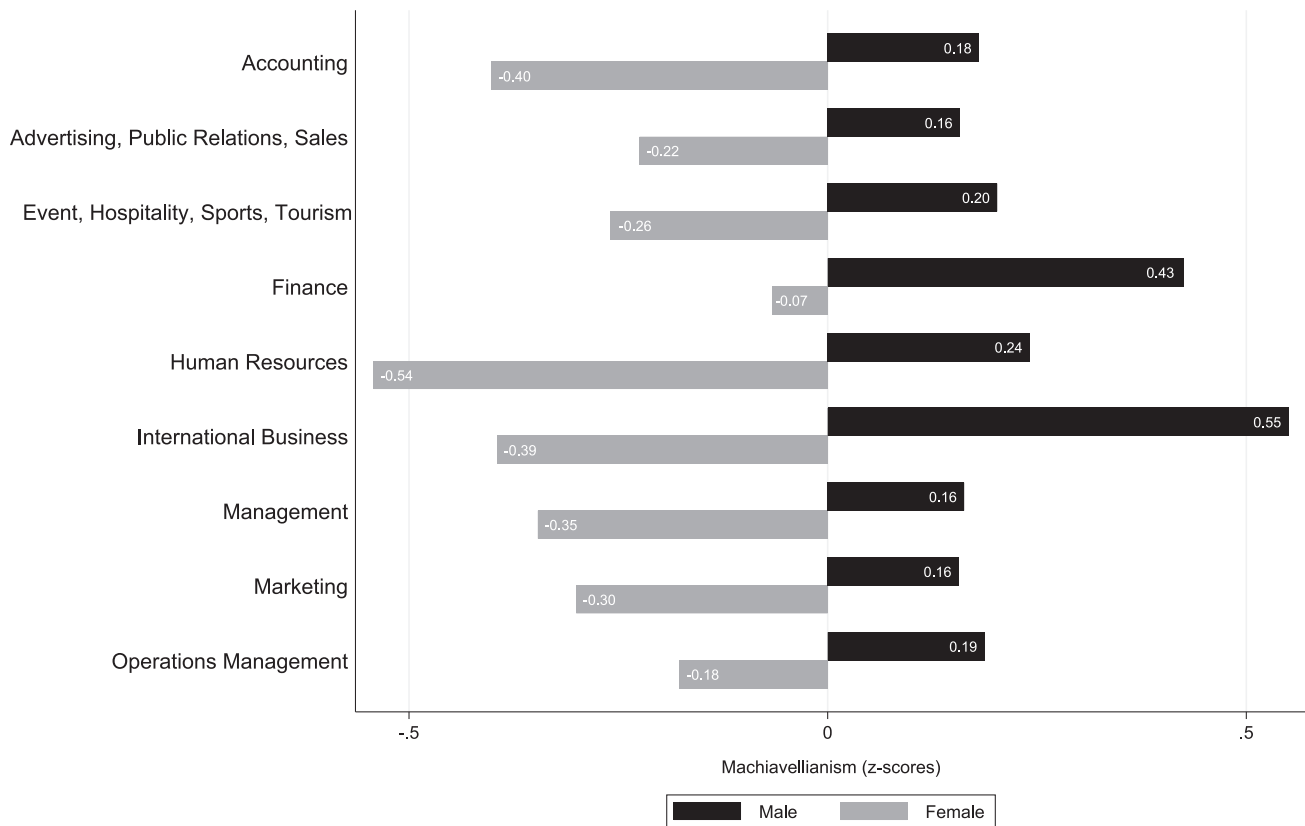


Fig. 2. Machiavellianism scores by college major and gender. Note: n = 2630 participants (min. 50 observations per major).

that has identified similar trends in college majors more broadly (Gruda et al., 2023).

Our findings have important implications for both theory and practice. We contribute to the growing body of literature on personality traits and academic major selection. By focusing on business sub-fields rather than broad academic categories, we provide a more granular understanding of how Machiavellian traits influence specific educational and career choices. This research can inform future studies that might examine how personality traits interact with academic environments and career outcomes, expanding our understanding of the role of dark personality traits in higher education as well as in business major-related professions.

Practically, our study offers valuable insights for educators, career counselors, and business schools. Understanding that certain business majors, such as Finance, attract individuals with high levels of Machiavellianism can help institutions tailor their educational programs to better align with student personalities and career aspirations. For example, business schools could design courses or ethical training programs that address the potential for unethical behavior among students attracted to power and financial gain. Career counselors can also use this information to guide students towards fields that match their personality traits, fostering a more informed decision-making process for students selecting a major or career path.

5. Limitations

The study’s reliance on a publicly available dataset administered solely in English constitutes a significant limitation. This reliance could introduce a selection bias, as the dataset may not fully capture the diversity of global perspectives on Machiavellianism and business majors. However, given the large size of the dataset presented in this paper with

thousands of participants across over 100 countries, we are confident that this study a) allows for more reliable statistical analyses and increases the power to detect meaningful differences between groups and b) offers a diverse range of cultural and educational backgrounds, strengthening the external validity of our findings. These strengths make our study an important contribution to understanding how personality traits influence academic and career choices across various cultural settings.

Second, this study uses the MACH-IV scale, which while widely recognized and validated, only provides a broad overview of Machiavellianism without the granularity afforded by more extensive facet-level and multidimensional measures of Machiavellianism (e.g., Kückelhaus et al., 2020; Rauthmann & Will, 2011). It would be particularly interesting to examine whether individual Machiavellianism facets, as a result of using multidimensional measures, such as strategic planning, cynicism, or interpersonal manipulation, vary significantly within the Business major sub-disciplines.

Unlike prior work, we were not able to examine country-specific differences in Machiavellianism scores across business majors, due to the limited sample of indicated majors per country. Nevertheless, the variability in Machiavellianism scores across different countries for specific majors (see Gruda et al., 2023) points to the potential influence of national educational policies, market dynamics, and cultural attitudes towards certain professions, and likely specific business specializations as well. Specific business fields might be more aligned with or conducive to Machiavellian behaviors and aspirations in some cultures, reflecting broader societal values and economic structures. We encourage future research to consider the importance of the socio-cultural backdrop when examining the relationship between personality traits and academic major choices.

6. Conclusion

We explored the link between Machiavellianism and business major selections, uncovering gender-specific patterns in a broad participant sample. Our findings reveal a clear preference for specific business disciplines, most prevalently Finance, among highly Machiavellian individuals.

CRedit authorship contribution statement

Dritjon Gruda: Writing – review & editing, Formal analysis, Data curation, Conceptualization. **Jim A. McCleskey:** Writing – original draft, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

All data used in this paper is public. A link to the data depository has been made available in the paper.

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